

Beat the Heat With Weatherization & Building Envelope Upgrades

August 16, 2023



Today's Agenda

- Opening Remarks
- New York City's Pathway to Carbon Neutrality
- Building Envelope & Weatherization Incentives
- Building Envelopes for Energy Use & Emissions Reductions
- Breakout Sessions



Today's Speakers



Gledis Korra,

Project Verification

Specialist, NYC

Accelerator









Peter Goldberg, Section Manager, Portfolio Planning & Analysis, Con Edison



Amy Schmidt, **Director of Building** and Construction, Plastics Division, American Chemistry Council



Jay Crandell, Technical Consultant, Foam Sheathing Committee, American Chemistry Council







OPENING REMARKS



NYC Accelerator Overview and NYC's Pathway to Decarbonization



New York City's Pathway to Decarbonization

- + 68% of New York City's emissions comes from buildings
- + 90% of New York City buildings will still be here in 2050
- New York City aims to be carbon neutral by 2050
 - Building decarbonization policies
 - Free technical assistance
 - Economic development
 - Equitable transition away from fossil fuels



How Can NYC Accelerator Help?

- + Provide technical assistance for building upgrades
- Deliver expert advice to determine requirements and help meet local energy laws
- Connect buildings with service providers for energy and carbon reduction projects
- Identify applicable financial incentive programs and financing, such as NYC Accelerator PACE



How Does NYC Accelerator Work?

- + Who is eligible?
 - Any privately owned New York City building ≥5,000 square feet (new or existing)
 - Smaller buildings referred to partner organizations
- + How does it work?
 - Call us and get connected with a dedicated Account Manager
 - Receive objective advice customized to your needs
- + How much does it cost, and what's the catch?
 - No catch, no cost, no sign-up or commitment



How Can NYC Accelerator Help You?

Typical Customer Experience







NYC's Building Emissions Law: Local Law 97



Local Law 97 (LL97)

- Market Rate buildings >25,000 square feet will meet ambitious carbon reduction targets
 - First carbon emissions limit will be applied in 2024-2029
 - Second carbon emissions limit will be applied in 2030-2034
 - Lower limits will follow in 2035 and beyond to reach 80% reduction by 2050

Under existing conditions:

- 75%-80% of properties meet 2024-2029 LL97 limits
- 25%-30% of properties meet 2030-2034 LL97 limits
- Affordable Housing buildings >25,000 square feet have varying requirements
 - Meet LL97 emission limits within a defined timeframe OR
 - Implement Prescriptive Energy Conservation Measures ("Prescriptive Path")

LL97 Carbon Emissions Limits



This visual is a conceptual aid and does not represent actual emissions caps established under LL97.



LL97: How Existing Buildings Could Meet 2030 Limits

RANGE OF BUILDINGS	SAMPLE SCOPES TO MEET 2030 LIMITS	GHG REDUCTIONS
Buildings already	 Invest in maintenance 	22%-29%
performing close to	 Install low-flow fixtures 	
2030 targets	 Air seal building 	
	 Heating system upgrades 	
Buildings that are	All of the above, PLUS:	29%-48%
significantly	 Roof insulation and air sealing 	
underperforming	 Replace heating system with more efficient 	
	system	
	 Lighting improvements 	
	 Heating system controls and sensors 	
The worst-performing	All of the above, PLUS:	44%-63%
buildings (the worst	 Install heat pump hot water heaters 	
20 th percentile)	 Upgrade old windows 	



LL97 and Affordable Housing

- + Local Law 97 requires most buildings ≥25,000 gross square feet to meet ambitious carbon reduction targets. There are two main sections of the law:
 - Article 320 outlines emissions limits for different occupancy types starting in 2024, with increasingly stringent carbon caps every 5 years until 2050. Some affordable housing is subject to delayed compliance requirements.
 - Article 321 establishes an alternate pathway for certain types of affordable housing, providing the choice of a prescriptive pathway or meeting 2030 emission limits to reach compliance by 2024.



LL97 PECMs (Article 321)

Prescriptive Pathway

Heating and hot water system repairs and upgrades:

- 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
- Installing radiant barriers behind all radiators
- Insulating all pipes for heating and/or hot water
- Installing indoor and outdoor heating system sensors and boiler controls
- + Steam system repairs and upgrades (for buildings with steam):
 - Insulating steam system condensate tank and water tank
 - Replacing or repairing all steam traps
 - Installing or upgrading steam system master venting
- + Upgrading common area lighting
- Weatherizing and air sealing walls, windows, doors, and ductwork
- + Installing timers or sensors on local exhaust fans





Tools & Resources



Building Energy Snapshot Tool

Click to watch



GET STARTED WITH NYC ACCELERATOR

NYC Accelerator provides resources, training, and one-on-one expert guidance to help building owners and industry professionals improve energy efficiency and reduce carbon emissions from buildings in NYC.

Contact Us



LOOK UP YOUR BUILDING

e our convenient tool to get specific information about your building's energy use and Local Law 97 compliance status. Then contact NYC Accelerator



NYC Accelerator Financing Assistance



NYC Accelerator's Financing Assistance

- Identify applicable financing programs
 - Relevant to specific project needs
 - Fit with building use and financial structure
- + Assist in navigating financing options
 - Connection to capital providers and lenders
 - Engage building stakeholders in the process
 - Improve understanding of various financing products
 - Guidance navigating options



NYC Accelerator PACE Financing



Benefits

- + 100% financing, fixed rate, non-recourse
- + Long-term financing. Loan term based on the weighted average useful life of improvements for up to 25-30 years. Longer-term financing extends repayment period, lowers payment
- Lower energy expenses help offset the loan repayments with potential for positive cash flow
- The positive GHG impacts of the improvements can improve your building's energy efficiency rating and help compliance with LL97
- Transferable upon property sale. New owner enjoys energy savings and continues loan payments
- + PACE can **retroactively finance improvements** completed up to 3 years earlier



Building Envelope and Weatherization Incentives

Shaun Hoyte, Section Manager

Peter Goldberg, Section Manager

August 16, 2023



About Con Edison

We deliver electricity, gas, and steam to 10 million people.

- That's about 44% of New York State's electricity needs
- We provide natural gas to 1.2 million customers.
- We operate the largest steam distribution system in the U.S.





The Evolution of the Utility's Role in Clean Energy



Core Business

Three Commodities: Electric, Gas and Steam **Our Customers**

Diverse market segments, unique building stock **Growth Strategy**

Investing \$1.8B in "EE" and heating electrification by 2025 **Trusted Energy Advisor**

Promote customer choice, education and incentives



Con Edison's Clean Energy Commitment



Build the Grid of the Future

Build a resilient, 22nd century electric grid that delivers 100% clean energy by 2040.

Empower All of our Customers to Meet their Climate Goals

Accelerate energy efficiency with deep retrofits, aim to electrify the majority of building heating systems by 2050, and all-in on electric vehicles.

Reimagine the Gas System

Decarbonize and reduce the utilization of fossil natural gas, and explore new ways to use our existing, resilient gas infrastructure to serve our customers' future needs.

Lead by Reducing our Company's Carbon Footprint

Aim for net zero emissions (Scope 1) by 2040, focusing on decarbonizing our steam system and other company operations.

Partner with our Stakeholders

Enhance our collaboration with our customers and stakeholders to improve the quality of life of the neighborhoods we serve and live in, focusing on disadvantaged communities.



Con Edison is Increasing Support for Envelope Projects



conEdison

Why?

- Climate Leadership and Community Protection Act (CLCPA)
- Smart Electrification

How?

- Larger Incentives
- Launching Excel-Based Calculator
- Working with Stakeholders to Enable
 Longer Term Incentive Offers

Con Edison Building Envelope Incentives

Residential (1 – 4 family)

Insulation (Attic, Walls, Basement); Air Sealing Multifamily (5 units and above)

Air Sealing; Roof and Wall Insulation; Window Replacement Commercial & Industrial

Window Film; Cool Roof; Window Inserts; Window Replacement; Wall and Roof insulation Small-Medium Business

Cool Roof; Window Film; Window Skins; Window Insert; Window Replacement; Air Sealing; Roof/Wall Insulation; Intelligent Shading NYS Clean Heat Program

Envelope + Air-Source Heat Pumps;

or

Envelope + Ground-Source Heat Pumps;

Eligibility: Existing Building, Gut Rehab, or New Construction



Commercial & Industrial Energy Efficiency Program

12-story 67,000 sq ft Office Building in Manhattan Image: Sow Window Inserts and HVAC Controls Image: Sow Window Inserts and HVAC Controls Image: Sow 930 Mlbs of steam, 4,173 kWh annually; 51 tons of CO2 reduced Image: Sow Project Total: \$324,698.04 Incentive: \$226,076.21 Customer: \$98,621.83 Image: RESULTS Payback: 3.1 years		Case Study	
Sow Window Inserts and HVAC Controls Sow 930 Mlbs of steam, 4,173 kWh annually; 51 tons of CO2 reduced Cost Project Total: \$324,698.04 Incentive: \$226,076.21 Customer: \$98,621.83 RESULTS Payback: 3.1 years		12-story 67,000 sq ft Office Building in Manhattan	HEATING & COOLING
Image: Several seve	≧∕∕ sow	Window Inserts and HVAC Controls	
Project Total: \$324,698.04 Incentive: \$226,076.21 Customer: \$98,621.83 Payback: 3.1 years Payback: 3.1 years	ENERGY SAVINGS	930 Mlbs of steam, 4,173 kWh annually; 51 tons of CO2 reduced	
RESULTS Payback: 3.1 years	😂 COST	Project Total: \$324,698.04 Incentive: \$226,076.21 Customer: \$98,621.83	
		Payback: 3.1 years	ENERGY MANAGEMENT SYSYEMS



Multifamily Energy Efficiency Program







Plastics Division

Building Envelope Improvements for Energy and Emissions Reductions



ACC represents more than **190 companies engaged in the business of chemistry**—an innovative, economic growth engine that is helping to solve the biggest challenges facing our country and the world. Our members are the leading companies engaged in all aspects of the business of chemistry, from the largest corporations to the smallest, and everything in between.

They are the people and companies creating the groundbreaking products that are improving the world all around us by making it healthier, safer, more sustainable and more productive.

Product Types:

- Extruded Polystyrene Insulation (XPS)
- Expanded Polystyrene Insulation (EPS)
- Polyisocyanurate Insulation (PIR/ISO)
- Phenolic

Product Applications & Functions:

- Above-grade wall insulation
- Below-grade wall insulation
- Above-deck roof insulation
- Air-sealing & Moisture Control



Foam Sheathing Committee

FSC supports the use of foam plastic insulating sheathing in U.S. building and construction applications by promoting its benefits, conducting research, and supporting the development of industry resources for its installation, code compliance, and best practices.



continuousinsulation.org

Product Types:

- Closed-Cell Spay Polyurethane Foam (ccSFP)
- Open-Cell Spay Polyurethane Foam (ocSFP)
- Low-Pressure Spray Polyurethane Foam
- One-Component Spray Polyurethane Foam



Product Applications:

- Above-grade wall insulation
- Below-deck roof insulation
- Above-deck roof insulation
- Air-sealing & Moisture Control

Spray Foam Coalition

SFC supports the use of spray polyurethane foam in U.S. building and construction applications by promoting its benefits, shaping public policy, and supporting its safe manufacture, transport, and application.

SPRAYFOAM

www.whysprayfoam.co



www. sprayfoam.org

Product Types Represented:

- Spray foam insulation
- Continuous insulation
- EIFS insulation systems
- Water resistive barriers
- Air barriers
- Exterior cladding
- Flame retardants



Focus:

- Fire safety
- Above-grade wall assemblies



www.modernbuilidngalliance. us



NAMBA is a leading voice for the safe and effective use of plastic building materials in building envelopes. NAMBA members believe that an informed public and robust codes and standards are an essential part of supporting a multi-layered approach to building fire safety.

A century old problem in need of a modern solution!

83% were built before 1940

Manhattan Building Age 1719-2019

There are more than 1 million buildings in NYC, and many of those are clustered within the Manhattan borough, spanning architectural styles and hundreds of years. This interactive visualization dives into the details of these buildings, focusing on the year of original construction, dating back to 1719.



Aesthetic appeal

Weather resistance



Energy-efficiency

Fire safety

With building operations accounting for an estimated 30 percent of greenhouse gas emissions in the United States, installing air sealing and insulation is a critical first step toward permanently decarbonizing the U.S. building sector and enables efficient use and sizing of higher-performance, lower-carbon HVAC equipment, like heat pumps.

A recent ICF study found that envelope retrofits could lower emissions equivalent to **40%** of natural gas-fired generation in the U.S.

Insulation upgrades can be a costeffective tool to help building owners reduce their carbon footprint to meet corporate carbon reduction goals and local building performance standards, in advance of the transition to electrification.

Upgrading roof and pipe insulation alone was found to have an average national **Benefit to Cost Ratio of 1.61**.





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BREAKOUT SESSIONS

1. BUILDING STAKEHOLDERS: Making Practical Envelope Improvements – Achieving Energy and Emissions Savings

2. CONTRACTORS & SERVICE PROVIDERS: Leveraging Building Envelope Measures to Maximize Energy Savings and Incentives



#1 Load Reduction



Microsoft PowerPoint - Creating a Retrofit Plan_SG.pptx (rdh.com)

Triggers and Timing



Envelope Project Considerations

- Compliance with other relevant code requirements:
 - Water Resistive Barrier requirements
 - Vapor Retarder requirements
 - Fire Safety requirements
 - Structural requirements
 - Mechanical Ventilation requirements
- Sequencing of the project elements.
- Tenant impacts and communication plan.



Commercial buildings responsible for 20% of our energy use and air leakage is responsible for 6% of buildings energy use.

Windows and Building Envelope Research and Development: Roadmap for Emerging Technologies (energy.gov)

> ORNL/ABAA modeled a 25,000 ft² retail building in Syracuse NY and determined that savings from going to a 1.0 to a 0.4 air leakage rate could reduce moisture transfer ~30% and yield energy cost savings of ~\$3,377 annually. Estimating the Energy, Economic and Durability Benefits of Air Barrier Systems (osti.gov)

> > 2021 IECC/ASHRAE 90.1-19 max. air leakage rate = 0.40 cfm/ft² @75 Pa. ASHRAE 90.1-22 max. air leakage rate = 0.35 cfm/ft² @75 Pa.

Air Leakage Fun Facts

The commercial energy code didn't start requiring the installation of air barriers until 2009 and only recently started required testing for SOME new buildings in the 2021 IECC/ASHRAE 90.1-19.

ABAA-Technical-Note-1-Air-Barriers.pdf

- 2014 NIST study surveyed 387 Buildings
- The buildings were built between 1950-2014
- The age of the buildings did not show an appreciable difference in air leakage performance.
- But . . . the installation of an air barrier was the best indicator of lower air leakage
- Buildings with air barriers had 70% less air leakage than those without air
 - barrivers US Commercial Building Envelope Air Leakage Database

Common Air Sealing Materials:

- Foam Plastic Insulating Sheathing
- Roof Membranes
- Medium Density 2-Component Spray Foam Insulation
- Low Density 2-Component Spray Foam Insulation/Sealants
- 1-Component Spray Foam Sealants
- Flexible building wraps and sheet materials
- Liquid applied air and water resistive barriers
- Aerosol air sealants
- Caulk
- Tape and Flashing materials

Air sealing detail checklist (penetrations):

- Floor & Ceiling penetrations
 - Plumbing
 - Electrical
 - Ducts
 - Recessed lighting
- Wall penetrations
 - Plumbing
 - Electrical wiring and boxes
 - Ducts & soffits
 - Windows
 - Doors
 - Vents
 - Through wall or window HVAC units
- Roof penetrations
 - Electrical
 - Vents
 - Equipment mounts



Air sealing detail checklist (intersections):

- Parapet roof/wall intersection
- Exterior wall/floor intersection
- Exterior wall/foundation intersection
- Exterior wall/demising wall intersection
- Interior (corridor) wall/demising wall intersection
- Interior (corridor) wall/floor intersections



Air Sealing Resources

Continuousinsulation.org - Applications/Air Barrier

Analysis of US Commercial Building Envelope Air Leakage (nist.gov)

Air Sealing for Savings.pdf (nationalgridus.com)

<u>Case Study of Envelope Sealing in Existing Multiunit</u> <u>Structures (nrel.gov)</u>

Building America Best Practices Series, Vol. 10 - Retrofit Techniques & Technologies: Air Sealing, A Guide for Contractors to Share with Homeowners (energy.gov) NYCA_TP_RoomAC.pdf (accelerator.nyc)

<u>SWA-MultifamilyAirSealingGuide-Steel.pdf</u> (swinter.com)

<u>Air Barrier Systems in Buildings | WBDG -</u> <u>Whole Building Design Guide</u>

<u>Case Study Guidelines V7 (airbarrier.org)</u>

Investigation of the impact of commercial building envelope airtightness on HVAC energy use (govinfo.gov)

Roof Retrofits

Full roof replacements typically occur every 30-40 years. Recovers may be performed to extend the life of existing systems in good repair.

Considerations:

- Insulate to minimum code or above
- Curbs, door sills and/or parapets may have to be raised or otherwise addressed (e.g., tapered roof insulation, etc.)



Never tear down anything unless you are prepared to build something better in its place.

-Napoleon Hill



Roof Retrofits

There are several roof types to consider. Green, Blue/Purple, IRMA/PMR, singleply, etc.

Your options will be dependent on your goals and existing structure.

There are also several different insulation types used: most common is PIR/ISO. Other options include spray foam, XPS, and EPS. Insulation type may be dependent on roofing system chosen.



Roof Retrofit Savings



Projected Roof Retrofit Savings

Potential Savings Estimates for Buildings in Climate Zone 5

	Building Type	Annual Total Energy Savings	Cumulative Total Energy Cost Savings	Cumulative Energy Cost Savings per SF	Total CO₂e Savings per SF
	Primary School	10%	\$354,078	\$4.78	81.62 lbs.
_	Retail Store	6%	\$63,871	\$2.56	44.79 lbs.
	Strip Mall	6%	\$78,192	\$3.47	53.60 lbs.
	Small Office	6%	\$18,991	\$3.45	38.60 lbs.

Climate Zone 5 - Buffalo NY.pdf

Roof Retrofit Resources

<u>Climate Zone 4 - New York Ci.pdf</u> (ymaws.com)

<u>Climate Zone 5 - Buffalo NY.pdf</u> (ymaws.com)

<u>NYCA_TP_Roof Insulation_new.pdf</u> (accelerator.nyc)

pima_-_insulation_fact_sheet.pdf (ymaws.com)

Insulation Savings Existing Buildings | Polyiso

Roofing Systems | WBDG - Whole Building Design Guide



Wall Retrofits

Major fuels consumption by region and end use, 2018 percentage



Data source: U.S. Energy Information Administration, Commercial Buildings Energy Consumption Survey

Space heating made up at least two-thirds of end-use consumption for natural gas, district heat, and fuel oil. Electricity was consumed most for cooling, ventilation, lighting, and other end uses.

Wall Retrofits

- Walls can be retrofitted from the interior or exterior
- Many options suitable for different wall and cladding types, including below-grade walls.
- Consider adding continuous insulation for its thermal bridging mitigation and condensation control characteristics.
- Proper checks must be done to ensure condensation control (as now supported by modern building codes).
- Make sure that walls meet the fire safety requirements of the building code. Often NFPA 285 assembly compliance will be required.



Wall Retrofits

- Continuous insulation inherently mitigates framin g thermal bridges in wall assemblies.
- Major thermal bridges at roof-wall, floor-wall, and window-wall junctures can also be mitigated.
 - Required in latest model energy codes.
- Maximizes thermal and moisture protection of a building envelope and occupants (efficiency, durability, resilience, & comfort).
- Wall insulation upgrades can save 20 to 100 times its embodied carbon and reach carbon neutrality within 1 year of operation after retrofit (similar for roof insulation retrofits).



Whitney Young Manor demonstrates the benefits of overcladding and hydronic distribution to enable heat pump technology



Empire Building Challenge Case Study

Envelope Improvements: Over-cladding using Exterior Insulation and Finishing System (EIFS) helps reduce heat loss and air infiltration while avoiding façade maintenance costs associated with LL11. This measure is combined with the new Dedicated Outside Air System (DOAS) to make sure adequate fresh air is injected into the building.

Hydronic Distribution: The new water-based distribution piping will enable the integration of different heating sources and allow heat sharing between end-uses, such as DHW production during cooling season. The construction team plans to pilot cross-linked polyethylene (PEX) piping to reduce cost and improve durability.

Heat Source Optionality: The project team plans to integrate different heat sources connected to the central hydronic piping. This includes centralized air source heat pumps, Wastewater Energy Transfer (WET) system and gas-fired condensing boilers as back-up.

2019 Baseline	Expected by 2035	
96 kBtu/SF/yr	48 kBtu/SF/yr	50%
54% Natural Gas + 46% Electricity	25% Natural Gas + 75% Electricity	
1,456 tCO2e/yr	273 tCO2e/yr	4 81%

Wall Retrofit Resources

Tax Incentives for Energy Efficient Homes & Commercial Buildings | Continuous Insulation with Foam Sheathing Steel Frame Wall Calculator | Continuous Insulation with Foam Sheathing

<u>NYCA_TP_Wall Insulation Tech Primer.pdf</u> (accelerator.nyc)

Technical_article_CSI_Mag_Final-7-2016.pdf (airbarrier.org)

LSU Uses Atlas' Polyiso CI to Retrofit Historic Stadium | SBC Magazine

Are "Superwalls" an Effective Energy Efficiency Retrofit? | SBC Magazine Fire Safety Resources, Articles & Fact Sheets | NAMBA (modernbuildingalliance.us)

New NYC Building Code Requirements Are Changing Exterior Walls - North American Modern Building Alliance

Continuous Insulation for Commercial Walls | Continuous Insulation with Foam Sheathing

2020 NYCECC - How-to Guide: Supporting Documentation: Building Envelope

Leveraging Building Envelope Measures to Maximize Energy Savings and Incentives

Breakout Session



Custom Envelope Savings Calculator

Market Segments	Available for all Con Edison Utility Programs
Standardizing Calculations	Fills in the void of standardized savings calculation guidance for baselines
Less Conservative than NYS TRM	Capacity to provide reliable savings estimates, with a less conservative approach than TRM standard
What the Calculator Won't Do	The calculator will not replace energy modeling
Envelope Savings Calculator Capability	Ability to calculate savings for window replacement, window inserts, air leakage sealing, opaque shell insulation



Residential Program (1-4 Family)

Eligibility

To be eligible, you must:

- Live in or own a single-family home
- Use Con Edison gas for heating or delivered fuel (like oil, propane, or wood) for heating with central AC for cooling

How to Save

- Select a contractor from the approved list of vendors
- Free site visit from the contractor to assess energysaving upgrades
- Contractor performs the work and subtracts up to \$5,000 off the final invoice

Get up to \$5,000 When You Insulate Your Home

Save money and stay comfortable year-round with professionally installed insulation and air sealing.

FIND A CONTRACTOR





Multifamily Program (5 units and above)

Eligibility

- Must be an existing multifamily, residential building(s) with five (5) or more units in each building. New construction not eligible.
- Directly metered gas and/or electric service. For gas projects, SC-14 or customers receiving service via a negotiated contract are not eligible.

Installed Measure	Incentive Detail	Market Rate Incentive \$	Affordable Housing Incentive \$	
Roof and Wall Insulation	R-11 added			
	R-19 added	\$200 per MMBtu		
	R-38 added			
Windows		\$200) per MMBtu	
Air Sealing	This package will include repair and weather			
	sealing of louver vents, exterior doors,	ć2 nor thorn	Γ_{rad} up to $C/**\Gamma_{rad}$	
	common area windows, and the general	\$5 per therm	Free up to \$67 **Free	
	perimeter of the basement			

Register to become a participating contractor here: Con Edison MF PC Application



Commercial & Industrial

Eligibility

- Large commercial & industrial Con Edison customers with electric and/or gas service
- Active, directly metered electric account with an average billed demand of at least 100 kW on a rolling 12-month basis
- Directly metered gas customer, not on a negotiated contract (excludes SC-14 customers)
- For Secondary Steam incentives:
 - Eligible Con Edison electric account
 - Active Con Edison steam service
 - Measures installed must save both electric and steam energy

Measure	Eligibility Criteria	Incentives	Unit
Window Film*	Buildings with electric A/C and gas heat, with single pane windows only.	\$1	Sq. ft.
Cool Roof	Buildings with electric A/C and gas heat only. Existing roof must be exposed to insolation. Areas covered by solar panels, HVAC, bulkheads, skylights, etc., are not included in the roof square footage.	\$50	1,000 Sq. ft.
Other Envelope Measures	Includes window replacement, installation of secondary window systems, exterior wall, and roof insulation, or other upgrades to existing building envelope that reduce energy loss.	\$0.68 \$120 p \$20 p	per kWh ber MLbs er therm

Register to become a participating contractor here: Con Edison C&I PC Application



Small-Medium Business

Eligibility

- Small to medium-sized businesses and non-profits with Con Edison electric and/or gas service
- Active, directly metered electric account with an average billed demand of 0 to 300 kW on a rolling 12-month basis
- Directly metered gas customer, not on a negotiated contract (Excludes SC-14 customers)

Envelope Measures				
MEASURE NAME	INCENTIVE RATE	INCENTIVE CAP		
Cool Roof 🎇	\$0.68 / kWh \$20 / therm	70%		
Window - Film 🗱	\$0.68 / kWh \$20 / therm	70%		
Window Skins 🎇	\$0.68 / kWh \$20 / therm	70%		
Window - Glazing 🎇	\$0.68 / kWh \$20 / therm	70%		
Window - Replacement 🎇	\$0.68 / kWh \$20 / therm	70%		
Air Leakage Sealing 🎇	\$0.68 / kWh \$20 / therm	70%		
Insulation - Opaque Shell 🎇	\$0.68 / kWh \$20 / therm	70%		
Roof Insulation 🎉	\$0.68 / kWh \$20 / therm	70%		
Intelligent Shading 🗱	\$0.68 / kWh \$20 / therm	70%		
Storm Window Insert 🞇	\$0.68 / kWh \$20 / therm	70%		
X high potential energy savings				



Market Segments for Con Edison Utility Programs: NYS Clean Heat Program

Offerings and benefits

- Con Edison offers incentives for customers who install heat pumps alongside building envelope upgrades to reduce their heating/cooling load.
- Coupling heat pumps with building envelope upgrades can:
 - Lower energy bills
 - Reduce required heat pump equipment size and cost
 - Promote high-performing buildings

Eligibility

- Heat pumps must be sized to building heating loads
- Two tiers of incentives for heat pumps + envelope based on construction type and percentage of load reduction
- Savings based on combined savings from heat pumps and envelope determine Tier

Construction type	Eligibility Criteria	Tier 1 Requirement	Tier 2 Requirement
Existing buildings	Exceed existing condition	> 5%	>30%
Existing buildings - Gut Rehab	Applicable code (NYSECC or NYCECC)	> 5%	>10%
New Construction (GSHP only)	Applicable code (NYSECC or NYCECC)	> 5%	>10%

Register to become a participating contractor here: New York State Clean Heat PC Application



Market Segments for Con Edison Utility Programs: NYS Clean Heat Program

Heat Pump + Envelope Incentives

Incentives are based on the tier for which a project qualifies

Segment	GSHP Incentives (\$/MMBTU)		ASHP Incentives (\$/MMBtu)
	New Construction & Gut Rehab	Existing Buildings	Existing Buildings
Multifamily*	Tier 1 - \$125 Tier 2 - \$150	Tier 1 - \$200 Tier 2 - \$225	Tier 1 - \$200 Tier 2 - \$225
SMB*	\$125	\$200	\$150
C&I*	Tier 1 - \$125 Tier 2 - \$225	Tier 1 - \$200 Tier 2 - \$225	Tier 1 - \$120 Tier 2 - \$150

*For more information on incentive capping, please refer to Clean Heat website listed on the Resource Page

Register to become a participating contractor here: New York State Clean Heat PC Application



Energy Efficiency Pilots: Emerging Measures/Technology

New Measure Integration Process

- Step 1: Technology Submission
- Step 2: New Tech Committee Presentation
 - Case Studies
 - Custom Energy Calculator; if Available
- Step 3: Engineering Review (Savings Calculator Development)
- Step 4: Finance Review to Pilot
- Step 5: Locate 5-10 Pilot sites
- Step 6: Conduct Pre-Measurement & Verification
- Step 7: Conduct Post-Measure & Verification
- Step 8: Review Results
- Step 9: Launch in Program & Scale

Current Measures Piloted

- Endotherm: Hydronic Additive Improving Heat Transfer
- Window Inserts: Secondary Window
- **Electrocell**: Water Treatment to Improve Coil Efficiency
- Aerofoil: Attachment to Improve Refrigerated Case Efficiency
- WexEnergy: Window Film Creating an Air Gap
- **Subsidized Financing**: Interest Rate Buy-Down for EE projects

Future Pipeline

- Aeroseal: Interior Duct Sealing Technology
- Digital Pressure Relief Valve (Steam Controls)
- Thermal Energy Storage: Phase Change Material for Efficient Ops
- **Firomar**: Self-Supporting Insulated Exterior Paneling



Con Edison Program Resources

Residential

- Email: <u>weatherization@conedisonresidential.com</u>
- Visit: <u>https://www.conEd.com/Residential</u>

Multifamily

- Email: <u>Multifamily@coned.com</u>
- Visit: <u>https://www.conEd.com/Multifamily</u>

Commercial & Industrial

- Email: <u>Commercial@coned.com</u>
- Visit: <u>https://www.coned.com/LargeCommercial</u>

Small-Medium Business

- Email: <u>Smallbusiness@coned.com</u>
- Visit: <u>https://www.conEd.com/Small-Business</u>

NYS Clean Heat Program

- Email: <u>CleanHeat@conEd.com</u>
- Visit: <u>https://www.coned.com/HeatPumps</u>

Energy Efficiency Pilots

- Email: <u>EEDMPilots@conEd.com</u>
- Visit: <u>https://www.coned.com/EEDMPilots</u>

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Stay In Touch

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