RETROFITTING TO SCALE:
50,000 BUILDINGS IN 10 YEARS

June 18, 2019 © Urban Green Council
INTRODUCTION: Retrofit Market Analysis

John Mandyck
CEO, Urban Green Council

Mandyck joined Urban Green Council in 2018 as its first-ever CEO. He capped a 25-year career as Chief Sustainability Officer for United Technologies Corporation. He also serves as a Visiting Scientist at the Harvard University T.H. Chan School of Public Health and as an Adjunct Professor at the University of Connecticut School of Business. Mandyck is the founding chair of the Corporate Advisory Board for the World Green Building Council, a former board chair of Urban Green, and co-author of the book *Food Foolish*. 
LL97 COMPLIANCE DEADLINES: 2024 AND 2030

ANNUAL PROJECT VALUE

$4B  $3B  $2B  $1B

$470M  $2.2B  $18.2B

2018  2020  2022  2024  2026  2028  2030
LL97 SECOND COMPLIANCE DEADLINE: 2030

ANNUAL PROJECT VALUE

- $4B
- $3B
- $2B
- $1B

141,000 Jobs Created

$2.2B

$470M

$18.2B

2018 2020 2022 2024 2026 2028 2030
LL97 SECOND COMPLIANCE DEADLINE: 2030

“Best Case” Steady Growth

- $470M (2018)
- $2.2B (2020)
- $18.2B (2030)

ANNUAL PROJECT VALUE:
- $1B
- $2B
- $3B
- $4B

Growth Rates:
- 1x
- 2.5x
- 13x
TIME IS OF THE ESSENCE

What if the uptake is slower than expected?

ANNUAL PROJECT VALUE

$4B
$3B
$2B
$1B

1x  2.5x  13x

$470M  $2.2B  $18.2B

2018  2020  2022  2024  2026  2028  2030
RETROFITTING TO SCALE: 50,000 BUILDINGS IN 10 YEARS

June 18, 2019 © Urban Green Council
SESSION 1: Greatest Opportunities for Scale

Panelists:

Nicole Ceci, PE
Principal Mechanical Engineer, Steven Winter Associates

Chris Cayten, LEED AP
Principal, Code Green Solutions
SESSION 1: Greatest Opportunities for Scale

Nicole Ceci, PE
Principal Mechanical Engineer, Steven Winter Associates

Steven Winter Associates specializes in energy, sustainability and accessibility consulting to improve commercial, residential and multifamily buildings. Ceci helps clients meet their energy savings goals and has provided sustainability services for over 30 million SF of multifamily buildings. In addition, she has completed citywide studies on New York City energy usage performance for New York City Energy Efficiency Corporation and Fannie Mae, and advises the Mayor’s Office of Sustainability on data-driven approaches to policies promoting energy savings.
Getting to Scale - Multifamily

Nicole Ceci, PE
Principal Mechanical Engineer
Getting to Scale - Multifamily

NYC has over 1B SF of large multifamily buildings, made up of a mix of owned, rented, market-rate, affordable, private, public, downtown, uptown, etc. (you get the idea, it’s a diverse group)
The biggest question is

What are we saving?
Carbon
What do we scale first?

What can every building do that will have a LASTING and positive impact?

- Technology uptake
- Mindset shifting
The Right Technology and Mindsets

- Electrification of DHW
- Heat submetering
- Plan other major systems overhauls leading up to end of useful life
Throwing good/bad money after bad/good

- Capital can be wasted by doing business as usual work that does not save carbon
  - First cost, energy cost, and LL97 fines
- Capital can be wasted by doing good work that isn’t top of the list
- Focus now on scaling the core work that leads to 80x50
Nicole Ceci, PE
Principal Mechanical Engineer
Steven Winter Associates, Inc.
307 Seventh Avenue, Suite 1701
New York, NY 10001
nceci@swinter.com
Chris Cayten, LEED AP
Principal, CodeGreen Solutions

CodeGreen is a leading sustainability and energy efficiency consulting firm based in New York City, working with over 550 million SF of property across the country. Cayten works with large real estate organizations to develop and implement successful energy and sustainability management programs that improve building performance, increase occupant health and reduce environmental footprints. Since 2009, he has worked with New York City policy makers on numerous initiatives to improve the energy performance of existing buildings across the city.
Commercial Buildings in Context
Importance of Commercial Buildings

Source: NYC Mayor’s Office

The diagram illustrates the breakdown of building count, area, and GHG emissions across different types of buildings in NYC. The categories include:

- 1 to 4 Family
- Multifamily
- Commercial
- Industrial
- Institutional

- **Building Count**
  - 82% 1 to 4 Family
  - 9% Multifamily
  - 3% Commercial
  - 3% Industrial
  - 2% Institutional

- **Area**
  - 41% 1 to 4 Family
  - 6% Multifamily
  - 15% Commercial
  - 11% Industrial
  - 12% Institutional

- **GHG Emissions**
  - 29% 1 to 4 Family
  - 29% Multifamily
  - 11% Commercial
  - 11% Industrial
  - 11% Institutional
GHG by End Use – The Importance of Tenants

58% of GHG emissions are attributed to tenants.

Source: NYC Mayor’s Office
GHG by Fuel Type

Source: NYC Mayor’s Office
Meaningful carbon reduction in commercial buildings requires integration of disparate systems
Meaningful carbon reduction in commercial buildings requires integration of disparate systems.
Multiple barriers prevent these systems from communicating effectively.
What will it Take?
Integration & Education
Step 1: Integration of Adjacent Systems
Step 2: Integration of All Systems
Mutual Education
More Granular Control
- Increase zones for heat, ventilation and A/C
- Floor by floor, region by region
- Major equipment must be more flexible
- Constant volume and whole building systems must be upgraded
- Predictive scheduling

More Sensors and Inputs
- Occupancy counters (by floor, region, etc)
- Daylight sensors
- Temp and CO2 sensors

More Granular Metering
- Split out lighting, HVAC, plug loads for base building and tenants
- Floor by floor, tenant by tenant
- Shorter metering intervals

Communicate Actionable Data to Each Stakeholder
- Engineers, Property Managers, Asset Managers, Tenants
- Needs to be clear and specific (monthly tenant usage covering lighting, plug loads and HVAC)
- Real-time or near-real-time
- Data requires context, relative terms like % change over time or comparison to peers
Change Behavior / Habits
- Turn off unused equipment
- Adjust office hours
- Dress codes
- Seating by work schedule to optimize HVAC

Pay Attention to:
- Energy Dashboards
- Monthly statements

Personal Monitoring
- Personal carbon footprint tracking
- Body temp, heart rate “fit-bits”

Communicate to Building and Operators
- Passively through occ. sensors, etc.
- Communicate changes in schedule
**Flexible Energy Grid**
- Real-time energy supply control
- Bi-directional energy flow
- Predictive energy demand control

**Measure Real-Time Carbon Intensity**
- Better measurement of total GHG
- CO2, methane, etc
- Real-time system GHG efficiency (steam)

**Send Proper Signals to Buildings (and occupants)**
- Cost
- Hourly Carbon intensity
- Day ahead
- Real-Time

**Pay Attention to:**
- Building and occupant demands
- Weather
- Schedules, holidays
Thank you

Christopher H. Cayten, LEED AP
ccayten@codegreensolutions.com
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SESSION 2: Innovations and Examples of Scale

Moderator:
Clay Nesler, Vice President of Sustainability and Regulatory Affairs, Johnson Controls

Panelists:
Anne Evens, PhD, Chief Executive Officer, Elevate Energy
Tom Feeney, Vice President of Operations & Engineering, Peter Cooper Village Stuyvesant Town
Loic Chappoz, Multifamily Team Lead, NYSERDA
Clay Nesler
VP of Global Sustainability and Regulatory Affairs, Johnson Controls

Johnson Controls delivers integrated building technologies and solutions to customers in over 150 countries. Nesler is responsible for global sustainability and policy initiatives. He currently serves on the board of the American Council for an Energy-Efficient Economy, the General Services Administration Green Buildings Advisory Group, the executive group of the US DEP/EPA Senior Environmental Employment Action Network, and the International Energy Agency’s Energy Efficiency Industry Advisory Board. Nesler helped establish the UN Sustainable Energy for All Building Efficiency Accelerator with World Resources Institute, where he serves as industry co-convener and senior advisor.
Elevate Energy is a nonprofit organization in Chicago dedicated to designing and implementing clean energy and efficiency programs that lower costs, protect the environment, and ensure that the benefits of energy efficiency reach those who need them most. Evens manages a growing staff of over 100 talented professionals and provides oversight for programs related to energy efficiency retrofits in multifamily buildings, building energy performance, regional energy and climate planning, and dynamic electricity pricing initiatives. Evens has worked in energy efficiency and affordable housing for over 25 years in both the nonprofit and governmental sectors in the U.S. and in southern Africa.

Anne Evens, PhD
Chief Executive Officer, Elevate Energy
Retrofitting to Scale:  
50,000 Buildings in 10 Years

Anne Evens, PhD  
June 18, 2019
Retrofitting 64M sq ft of conditioned space

- Applications: 83,394 units
- Assessments: 81,970 units
- Retrofitted: 48,415 units

Repeat
Retrofitting To Scale

- Understand your building stock and it’s sub-segments
- Replicable, Scaleable Strategies per sub-segment
- Long term relationships (over 50% of our pipeline is repeat customers)

Big Problem → Big Opportunity
Building Segmentation: 5+ Unit Building, Pre-war, Low-rise

- 15,595 (10%) buildings and 199,294 (29%) units
- Investor-owned, rental, gas-fired heat & hot water, master metered
- Masonry, flat roofs, one- and two-piped steam

Standard Assessment and Retrofit Package, Incentives and Pricing
Building Segmentation: 2-4 Unit Building, Pre-war, Masonry

- 79,903 (54%) buildings and 202,924 (30%) units
- Owner-occupied and investor-occupied depending on the neighborhood
- Individual metered forced hot air

Standard Assessment and Retrofit Package, Incentives and Pricing
Building Segmentation: 2-4 Unit Building, Pre-war, Frame

- 41,159 (28%) Buildings and 97,892 (14%) Units
- Owner-occupied and investor-occupied depending on the neighborhood
- Individual metered forced hot air

Standard Assessment and Retrofit Package, Incentives and Pricing
Why it Works!

- Building owners see an increase in NOI
- Contractors see new jobs
- Tenants see increased comfort and reduced bills
Thank You

Anne Evens, PhD
Chief Executive Officer
Elevate Energy
Peter Cooper Village Stuyvesant Town is a private real estate development in Manhattan consisting of 110 residential buildings. In 2018, the development became the first-ever multifamily community in New York to be awarded LEED Platinum certification. Feeney leads operations and engineering for the development. He has over 38 years of experience in property management and building operations.
Peter Cooper Village
Stuyvesant Town

Tom Feeney
Vice President of Operations & Engineering
Peter Cooper Village Stuyvesant Town
Brief History and Property Overview

- **Peter Cooper Village**
  - 21 Structures
  - 21 Addresses
  - 4 Control rooms
  - 4 Water Towers

- **Stuyvesant Town**
  - 35 Structures
  - 89 Addresses
  - 14 Control rooms
  - 4 Water Towers

- **Property Overview**
  - Constructed between 1942 – 1947 post WWII
  - 80 Acres
  - 11,246 apartments
    - Range from Studios – 5 Bedroom apartments
  - Property Staffing
    - Trades
Project Overview

- Building Management System
- LED Lighting – Common Area & Stairwells
- Primary Heat Exchangers
- Ventilation Louver Install – Stairwells & Lobby
- Garage VFD Installation
- Interval Meter Installation
Solar Photovoltaic system

JUNE, 2018 PHOTO
STUYTOWN HAS 22 ACRES OF ROOFTOPS

View video at: https://vimeo.com/241181513
Scope of Work

• 61 Individual Solar Photovoltaic Systems
• Cool Roof Coating Installation
• ~ 9,671 Solar Panels
• ConEd Electric Interconnection
• Coordination with CHP Accounts
Combined Heat and Power
Scope of Work

- Two 1,150 kW CHP Units
- Three 500 hp Boilers
- Disconnect Four ConEd Steam Hubs
- ConEd Electric Interconnection
- New Mechanical Building
Steam Hub Modifications
- Increasing CHP efficiency from 62% to 80+%
Buildings Benefiting From the CHP Project
CO #2 Update

- NEW PLAN STEAM HEATING AND HOT WATER SUPPLY
- NEW PLANT ELECTRIC ACCOUNTS OFFSET
- ELECTRICITY OFFSET AND HEATING
LEED for Communities Platinum

- Certification demonstrates commitment to sustainable growth and progress, and provides a platform to communicate overall sustainability goals and performance to our key stakeholder and broad community
- Energy Star Scores: ST: 85, PCV: 84
Thank You

Tom Feeney
Vice President of Operations & Engineering
Peter Cooper Village Stuyvesant Town
Loic Chappoz, LEED GA
Multifamily Team Lead, NYSERDA

NYSERDA promotes energy efficiency and the use of renewable energy sources. Chappoz leads NYSERDA’s multifamily team, focusing on improving the efficiency of existing residential buildings across the state. Prior to his work with NYSERDA, Chappoz worked as an independent consultant on energy efficiency policies in Europe, as a fuel efficiency specialist in the airline industry and as a commercial pilot.
Retrofitting to Scale: 50,000 Buildings in 10 Years

Loic Chappoz, Multifamily Team Lead, NYSERDA
June 18, 2019
Productivity evolution, 1995–2015

Gross value added\(^1\) per hour worked

Index: 100 = 1995

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<th>Year</th>
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<td>2015</td>
<td>140</td>
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Compound annual growth rate

Total: 1.76%

Construction: -1.04%

Source: McKinsey Global Institute, Reinventing Construction: a Route to Higher Productivity, 2017
50-70% energy use reduction
Adapt the supply chain

Improve onsite execution

Technology and innovation
Photos: Courtesy of Factory Zero
Owner / Developer

Solution Provider

Component Suppliers
- Mechanical pod
- Integrated envelope solution
- Integrated roof system

Suppliers
- Heating and cooling
- Ventilation
- Air barrier
- Insulation
- Hot water
- Controls
- Windows
- Etc.
A New Model That Enables Scale

All electric, net zero energy buildings at <50% of the cost of initial pilots

The market is scaling up
- 4,500 retrofits completed
- 5,000 new construction projects completed
RetrofitNY: Supporting the Creation of Scalable Retrofit Solutions in NY

Industry-designed, cost-effective, standardized solutions

Drive industrialization and reduce costs
Key Learnings from the First Phase

**Successes**
- 6 viable solutions
- Several projects anticipated to be built
- Very engaged owners
- Supply chain starting to innovate

**Challenges**
- Cost
- Electrification of hot water in larger buildings
- Supply chain
Loic Chappoz
Multifamily Team Lead
NYC Office
loic.chappoz@nyserda.ny.gov
RETROFITTING TO SCALE: 50,000 BUILDINGS IN 10 YEARS

June 18, 2019 © Urban Green Council
SESSION 3: SCALING IT UP

Moderator:
Robert Johnson, Senior Vice President, Hannon Armstrong Sustainable Real Estate

Panelists:
• Sabrina Kanner, Executive Vice President & Head of Design & Construction, Brookfield Properties
• Dan Friend, Regional Sales Manager, NORESCO
• Richard Benkowski, LEED AP, Training Specialist, United Associated Department of Education
• Kelly Dougherty, LEED Green Associate, Director of Energy Management, FirstService Energy
Robert Johnson  
Senior VP, Hannon Armstrong

Hannon Armstrong Sustainable Infrastructure Capital, Inc. is a finance company that provides debt and equity financing for sustainable infrastructure projects. Johnson is responsible for growing the federal and industrial market sectors. He leads Strategic Client Accounts, where he structures financing solutions for sustainable infrastructure projects. Johnson has been at the leading edge of the building systems and energy efficiency industries and has built businesses across a range of products and related systems, including building controls, lighting, HVAC, renewable energy, communications and life safety.
Robert Johnson
Senior Vice President, Hannon Armstrong
Urban Green Council
June 18, 2019
Hannon Armstrong Overview

First U.S. public company solely dedicated to investments in climate change solutions

HASI LISTED NYSE

BEHIND-THE-METER
- Energy Efficiency
- Distributed Generation
- Storage

GRID-CONNECTED
- Wind
- Solar
- Storage

SUSTAINABLE INFRASTRUCTURE
- Stormwater Remediation
- Environmental Restoration
- Transmission & Communications

PRINCIPAL INVESTOR
~$1 Billion Invested Annually
$5.5 Billion Managed Assets

First U.S. public company solely dedicated to investments in climate change solutions

$5.5 Billion Managed Assets
~$1 Billion Invested Annually

BEHIND-THE-METER
GRID-CONNECTED
SUSTAINABLE INFRASTRUCTURE
Global Temperature and Carbon Dioxide (CO₂)
Shades of Green - CO2 Reduction Impacts

Source: EIA, CME Group, Company Filings, HannieMae data, Hannon Armstrong Analysis. Cogeneration includes net fuel cost.
Hannon Armstrong Provides Debt and/or Equity Financing for High Growth Sectors

**COMMERCIAL**
- Property Assessed Clean Energy (“PACE”)
- Energy Services Agreement (“ESA”)
- Power Purchase Agreement (“PPA”)

**STATE & LOCAL**
- Energy Services Agreement (“ESA”)
- Public Private Partnerships (“P3”)

**FEDERAL**
- Energy Savings Performance Contract (“ESPC”)
- Utility Energy Savings Contract (“UESC”)
- Utility Privatization (“UP”)

**Market Sector Financing**
Robert Johnson
Senior Vice President
Hannon Armstrong
Brookfield Properties provides industry-leading portfolio management and development capabilities. In her 36-year tenure with the company, Kanner has played a key role in the construction, design and development or redevelopment of more than 40 million SF of signature Brookfield projects. She serves on the board of directors of Urban Green Council, the New York Building Congress, the Salvadori Center, the Opus Group, Cedar Realty Trust and the Regional Plan Association, and on the board of trustees of the National Building Museum and the Beverly Willis Architecture Foundation.
Scaling it Up: Good, Fast and Cost-Effective

Sabrina Kanner
Executive Vice President, Design & Construction
Brookfield Properties

Case Study: 5 Manhattan West
5 Manhattan West
(aka 450 W 33 St)
BEFORE
5 Manhattan West (aka 450 W 33 St) AFTER
5 Manhattan West (aka 450 W 33 St) AFTER
Close-up of 33rd Street Elevation – BEFORE
Focus on Daylight
Measured Effects on Productivity

Productivity increases 18% in working spaces with a high level of daylight.
- World Green Building Council, 2013

Students improve their results by up to 14% and learn 20-26% faster in spaces with a high level of daylight.
- World Green Building Council, 2013

Health-related costs are 41% lower, and turnover rate is 35% lower for employees who are thriving with a strong sense of well-being.
- Gallup
5 Manhattan West – Total Building Electric Cost: Pre/During/Post Recladding

![Electric Cost Chart]
5 Manhattan West – Total Building Steam Cost: Pre/During/Post Recladding
5 Manhattan West Breezeway
THANK YOU

Sabrina Kanner
Executive Vice President, Design & Construction
Brookfield Properties
Dan Friend
Regional Sales Manager, NORESCO

NORESCO uses design-build and performance-based contracting to deliver energy and maintenance savings and infrastructure upgrades to existing facilities. For over 28 years, Friend has helped municipalities, universities, schools and hospitals lower energy and operational costs and use the savings to improve their working, learning and healing environments. In his work, Friend addresses customer-specific objectives, recognizes cost-effective opportunities, and presents strategies to ensure customers achieve their long-term goals.
SCALING IT UP: GOOD, FAST, AND COST-EFFECTIVE

HOW ENERGY SAVING PERFORMANCE CONTRACTING (ESPC) WORKS

DAN FRIEND, NORESCO
What Is ESPC?

• Infrastructure improvements funded by utility savings

• Opportunity to achieve multiple objectives:
  ▪ Reduce energy and water usage and costs
  ▪ Leverage operating budget
  ▪ Meet sustainability goals
  ▪ Address deferred maintenance
  ▪ Use no capital expenditure

• Streamlined procurement

• Cash flow positive transactions

• Guaranteed results from an energy service company (ESCO)
ESPC Project Model

ESPC Project Costs Paid from Existing Utility and Operations and Maintenance (O&M) Budgets

$ Utility and O&M Bill

Before ESPC Contract

$ Utility and O&M Bill

Customer Share

Energy Cost Savings

During ESPC Contract

$ Utility and O&M Bill

Customer Share

After ESPC Contract

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Strategies for Covering Large Portfolios of Buildings

Phased Approach: Divide a portfolio of buildings into smaller groups and develop each group as a separate project.

- **Advantage:** Provides some level of energy savings and facility infrastructure improvement more quickly.
- **Advantage:** Shows a “proof of concept” before larger investments are made.
- **Advantage:** Applies lessons learned to future phases, allowing for continuous process improvement.
- **Disadvantage:** Creates a longer timeline before all facilities are touched.

All-Inclusive Approach: Develop a single holistic project across an entire portfolio of buildings in a single phase.

- **Advantage:** Improves all buildings at the same time using the same or similar technologies.
- **Advantage:** Engages economies of scale, potentially providing the best overall return on investment.
- **Disadvantage:** Creates a large initial investment in both time and money.
Thank You

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Richard Benkowski, LEED AP
Training Specialist, United Association Department of Education

The United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States, Canada (UA) is affiliated with the national building trades and represents approximately 340,000 plumbers, pipefitters, sprinkler fitters, service technicians and welders in local unions. Benkowski develops programs for energy efficiency and water conservation initiatives to increase the awareness and skill sets of UA journey workers who construct, maintain and service high-performance buildings.
Scaling It Up:
Repeatable, Reliable, Cost Effective, Deliverable Manpower

Rich Benkowsk, Training Specialist
United Association; Three Park Place, Annapolis, MD
PRODUCTIVITY AND THE WORKFORCE:
Creating a “Think & Do” Mindset
UA Apprenticeship Program

Over 40,000 Enrolled

5 Years of Training

Over 300 Locations
UA Apprenticeship Program

Over 1200 Hours in the Classroom

10,000 Hours of On-the-Job Training

45 College Credits Earned
UA Instructor Training Program

INSTRUCTOR TRAINING PROGRAM

August 10-16, 2019
Ann Arbor, Michigan

30 YEARS

BUILDING OUR PROGRAM IN PARTNERSHIP WITH WCC

65 Years & Counting
- Washtenaw Campus
- Ann Arbor, MI

2,000 Attendees
- Professional
- Technical

“Certified Instructor”
- 200 Hours of Course Work
- 15 Credits Earned

Washtenaw Community College
UA Training Partnerships with Major Manufacturers:

The Variable Flow, Chiller, and CO₂ Classes are listed in the Regional Catalog & the MCAA website:

1. Mitsubishi
2. Johnson Controls
3. Daikin
4. Emerson
5. Carrier
Next.......just add ICE!
UA Service Tech Mobile Lab

UNION PLUMBERS, FITTERS, WELDERS AND SERVICE TECHNICIANS

Servicing America for Over 130 Years

Heating, Plumbing, Ventilation, Air-Conditioning and Refrigeration

Mobile Service Tech Training Lab
NEXT STEPS:
Include the Contractors in Strategic Planning
Thank You

Rich Benkowski
Training Specialist

United Association
richb@UANET.org
Kelly Dougherty, LEED GA
Director of Energy Management, FirstService Energy

FirstService Residential is the largest manager of residential communities in North America. Kelly Dougherty develops and implements long-term efficiency strategies for FirstService Residential properties to reduce energy use, emissions and costs. She works with industry leaders and government agencies to keep clients informed on the latest technologies and regulatory requirements. Dougherty also develops training seminars on efficiency best practices for property managers and building staff. Her efforts have strengthened FirstService Residential’s commitment to reducing their portfolio’s energy consumption.
The energy management and advisory subsidiary of FirstService Residential

Kelly Dougherty
Director, Energy Management
FS Energy
FirstService Residential

- **7,600** Residential Properties
- **24 States & 3 Provinces**
- **5 Million** Residents
- **1.6 Billion** Sq. ft Residential Real Estate

- **15,000** FirstService Residential Associates
- **1.6 Million** Residential Units
- **530** Managed Properties in NY
- **360,000** Metric Tons GHG Emissions - NYC
To enhance our property management business by leading our clients to reduce energy consumption, costs, and emissions.
## Climate Mobilization Act Impact

### Total Actual Building GHG

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<th>More Fines (%)</th>
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### 2024 % of Buildings With Fines

- 80% No Fines
- 20% Fines

### 2030 % of Buildings With Fines

- 77% No Fines
- 23% Fines
Stakeholder Engagement and Planning

- Owners
- Capital Planning & Energy Reduction Planning
- Subject Matter Experts
- Building Operators
- Property Managers
Kelly Dougherty
Director, Energy Management
FS Energy
Kelly.Dougherty@fsenergyservices.com
RETROFITTING TO SCALE: 50,000 BUILDINGS IN 10 YEARS

June 18, 2019 © Urban Green Council
ALL ABOUT NYC’S HISTORIC BUILDING EMISSIONS LAW

On May 18, the City of New York enacted Local Law 97 of 2019—the most ambitious climate legislation for buildings enacted by any city in the world. The new law places buildings on a path to meet the city’s goal to reduce overall carbon emissions 80 percent by 2050. Buildings represent nearly 70 percent of those emissions.

When Urban Green convened the 80x50 Buildings Partnership in 2017 to draft the Blueprint for Efficiency, we knew we needed an ambitious yet actionable plan. We’re pleased that many Blueprint elements are reflected in the new law, including more feasible timelines, a green power purchase option, a provision for carbon trading between buildings, and future refinement through an advisory board process.