

# NYC Climate Mobilization Act

# OneNYC 2050

30 initiatives across 8 goals  
to secure our city's future



**Achieve carbon neutrality and 100% clean electricity  
Require buildings to cut their emissions  
Hydro-power City government**



## **LOCAL LAWS 92 AND 94**

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**requiring that the roofs of certain buildings be covered in green roofs or solar PV systems**

## **LOCAL LAW 95**

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**a building energy efficiency grade**

## **LOCAL LAW 96**

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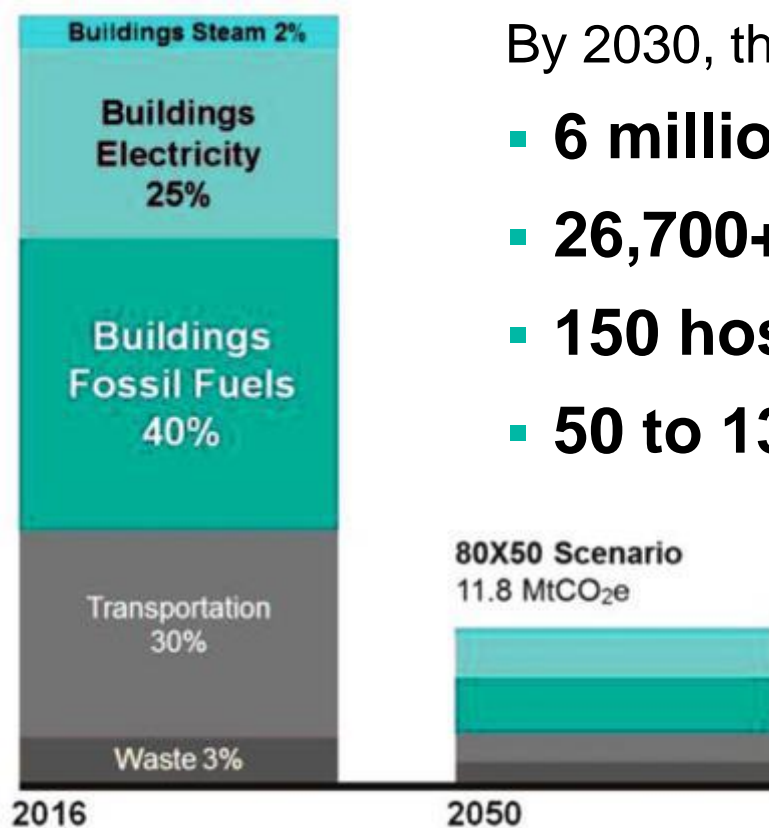
**establishing a sustainable energy loan program (ie. PACE)**

## **LOCAL LAW 97**

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**the commitment to achieve certain reductions in greenhouse gas emissions by 2050**

## NYC emissions: 51.7 MtCO<sub>2</sub>e



By 2030, the Climate Mobilization Act will achieve:

- **6 million tons of CO<sub>2</sub>e reduced**
- **26,700+ jobs created**
- **150 hospitalizations avoided per year**
- **50 to 130 deaths prevented per year**

# LOCAL LAW 92 & 94

requiring that the roofs of certain buildings be covered in green roofs or solar PV systems



**New construction and substantial renovations required to install solar PV, green roofs, or both**

## LOCAL LAW 92 & 94

### requiring that the roofs of certain buildings be covered in green roofs or solar PV systems

- Applies to all new buildings, building expansions, and structural roof work.
- All available roof space must be covered in green roofs, solar or both.
- Roofs will have a required reflectance & emittance to mitigate urban heat island effect, including pitched roofs.
- Affordable housing has alternative compliance for 5 years while HPD studies the bills' impacts.
- Feasibility exemptions available.
- State, local and federal incentives for solar and flexible ownership models

# LOCAL LAW 95

## a building energy efficiency grade

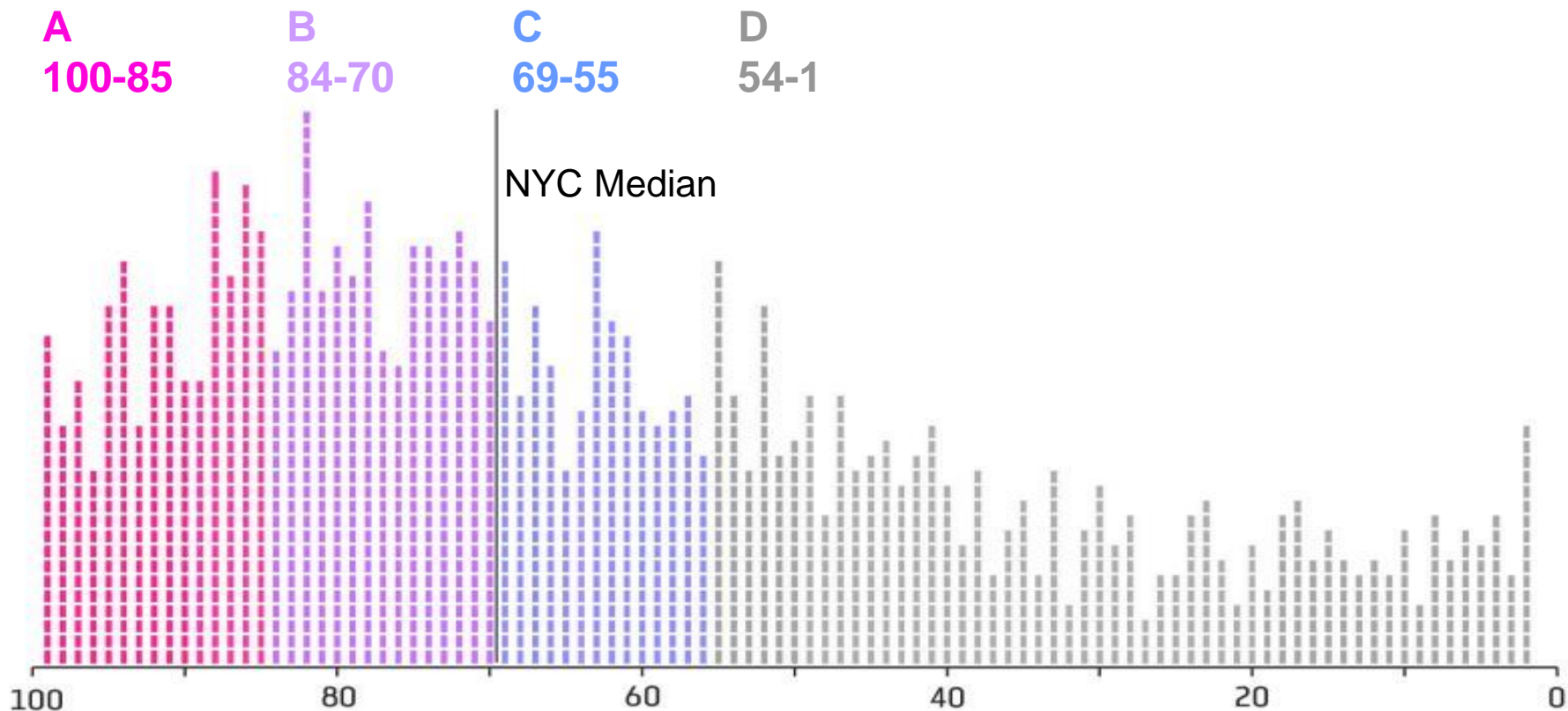


**Energy grades to be posted on buildings larger than 25,000sf in size, beginning October 2020**



# LOCAL LAW 95

## a building energy efficiency grade



# LOCAL LAW 96

establishing a sustainable energy loan program (ie. PACE)

**Financing for energy efficiency and renewable energy projects  
with long terms and little or no money down**



# LOCAL LAW 96

## establishing a sustainable energy loan program (ie. PACE)

- Loans are made using private funds through pre-qualified capital providers
- Loans are repaid as a charge on a building's property tax bill
- Debt service is sized to the savings from the efficiency/clean energy project
- Debt remains on the property and is transferrable upon sale of the property

# LOCAL LAW 97

the commitment to achieve certain reductions in greenhouse gas emissions by 2050



**BUILDINGS LARGER THAN 25,000SF IN SIZE:**

**Greenhouse gas emissions limits must be met starting in 2024**

# LOCAL LAW 97

## the commitment to achieve certain reductions in greenhouse gas emissions by 2050

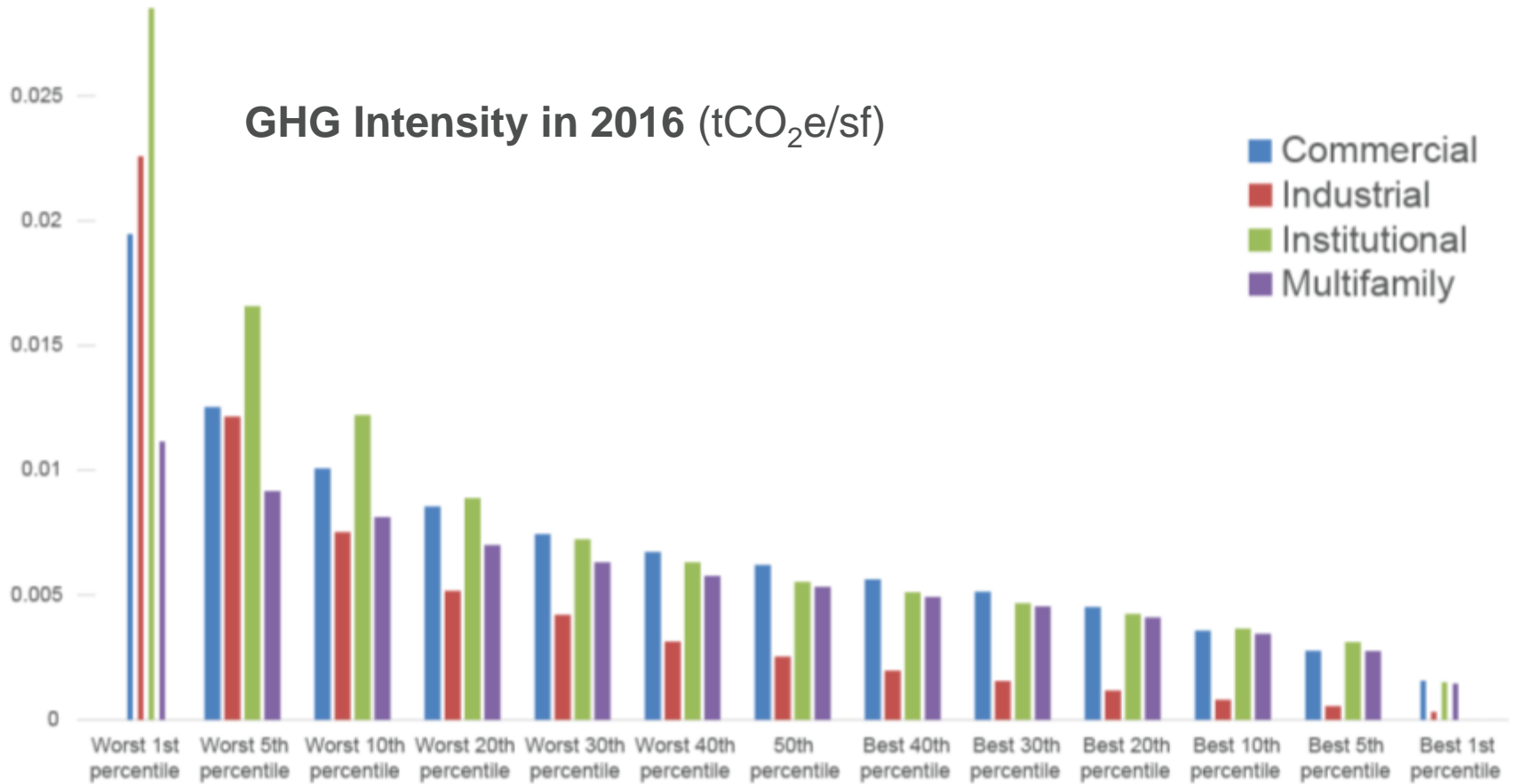
- Creation of a DOB “Office of Building Energy and Emissions Performance”
- Convening of an advisory group on future limits
- Prescriptive energy conservation measures for rent regulated housing
- Study for a building carbon trading scheme
- City operations GHG reductions of 40% by 2025 and 50% by 2030
- NYCHA properties need to meet GHG reductions of 40% by 2030

# LOCAL LAW 97

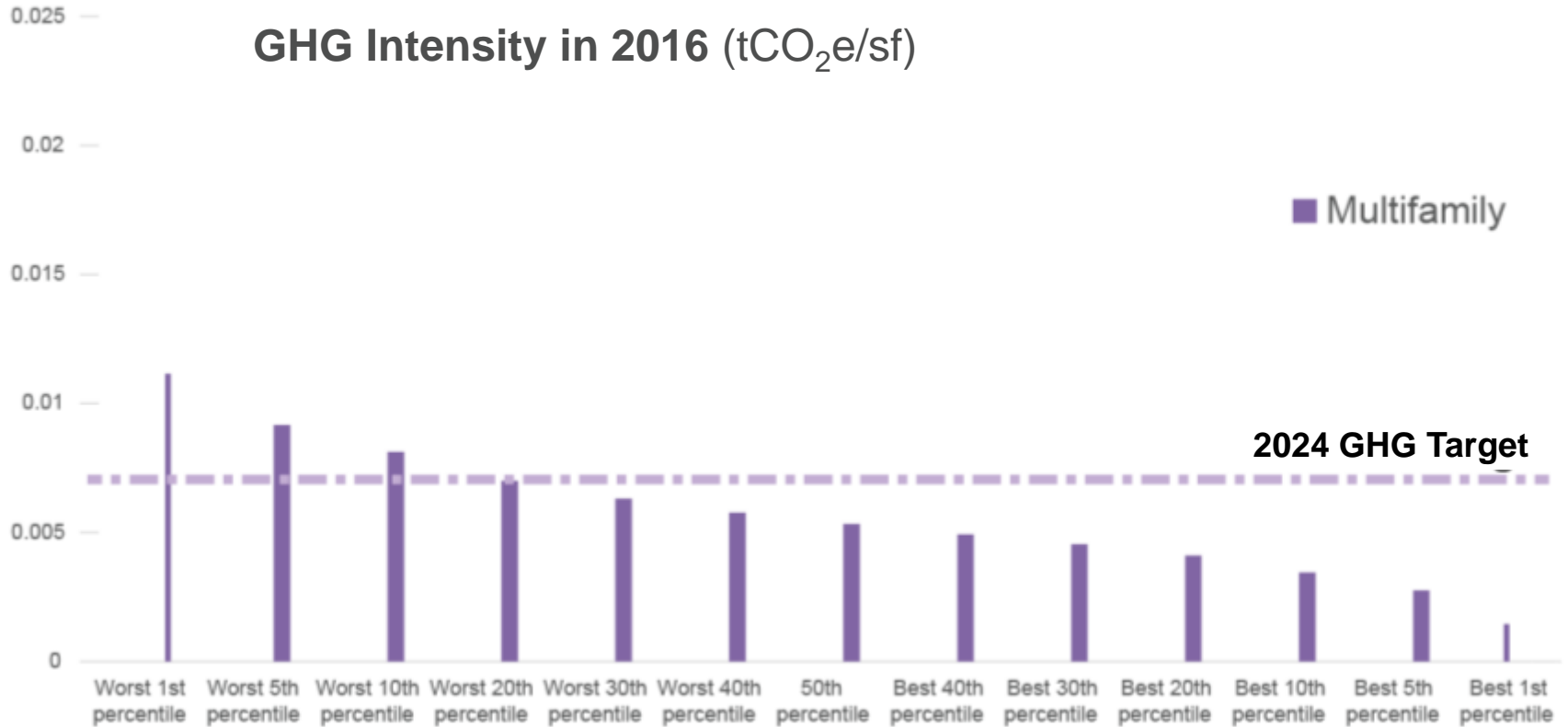
## the commitment to achieve certain reductions in greenhouse gas emissions by 2050

- By May 1, 2025, building owners must report emissions from CY 2024
  - Emissions are reported every year for each full calendar year
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- The emissions target is more stringent beginning in CY 2030
  - The 2030-2034 target aligns buildings with the City's 40X30 goal
  - For 2035 and beyond, targets will be set by DOB rulemaking based on recommendations from an advisory committee

## GHG Intensity in 2016 (tCO<sub>2</sub>e/sf)

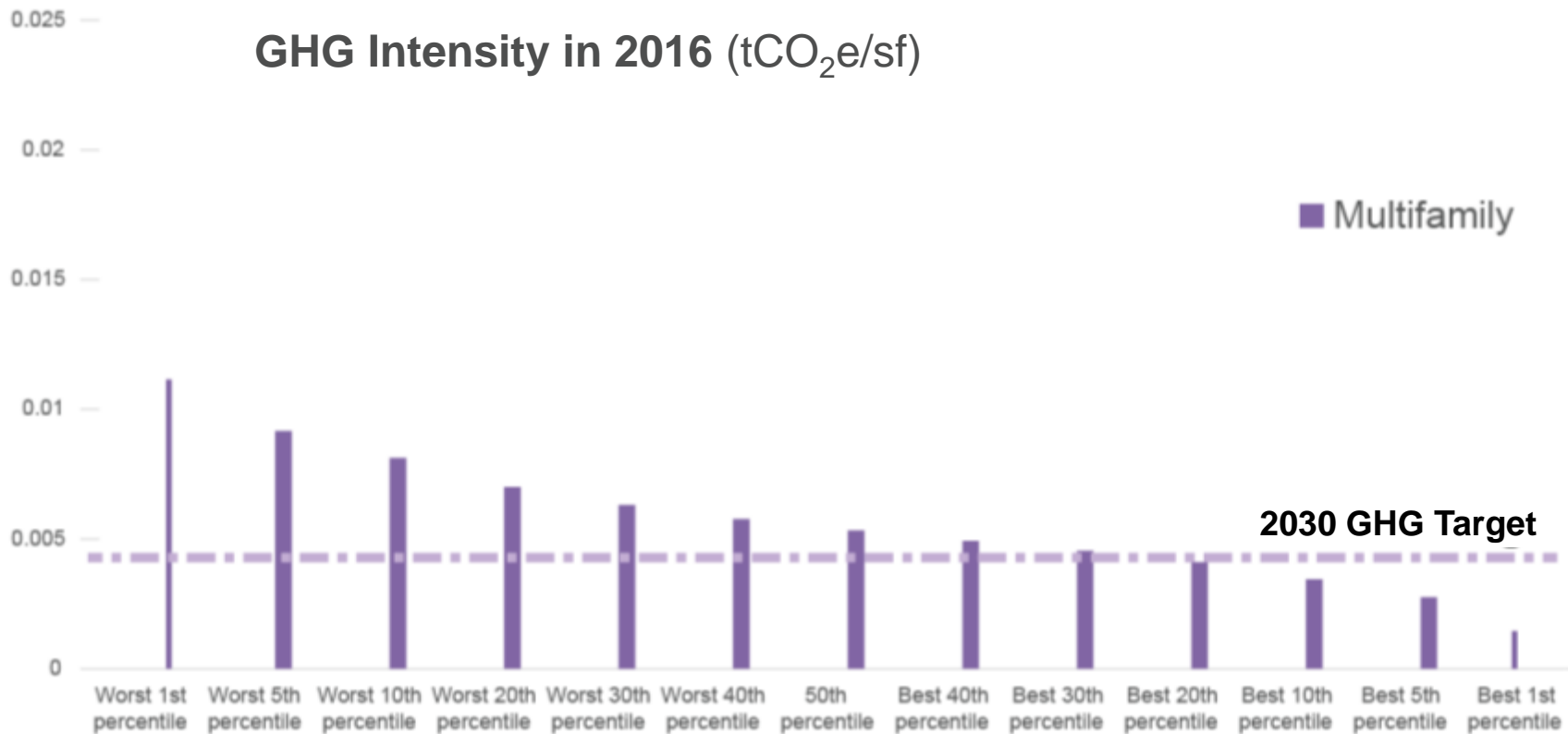


## GHG Intensity in 2016 (tCO<sub>2</sub>e/sf)

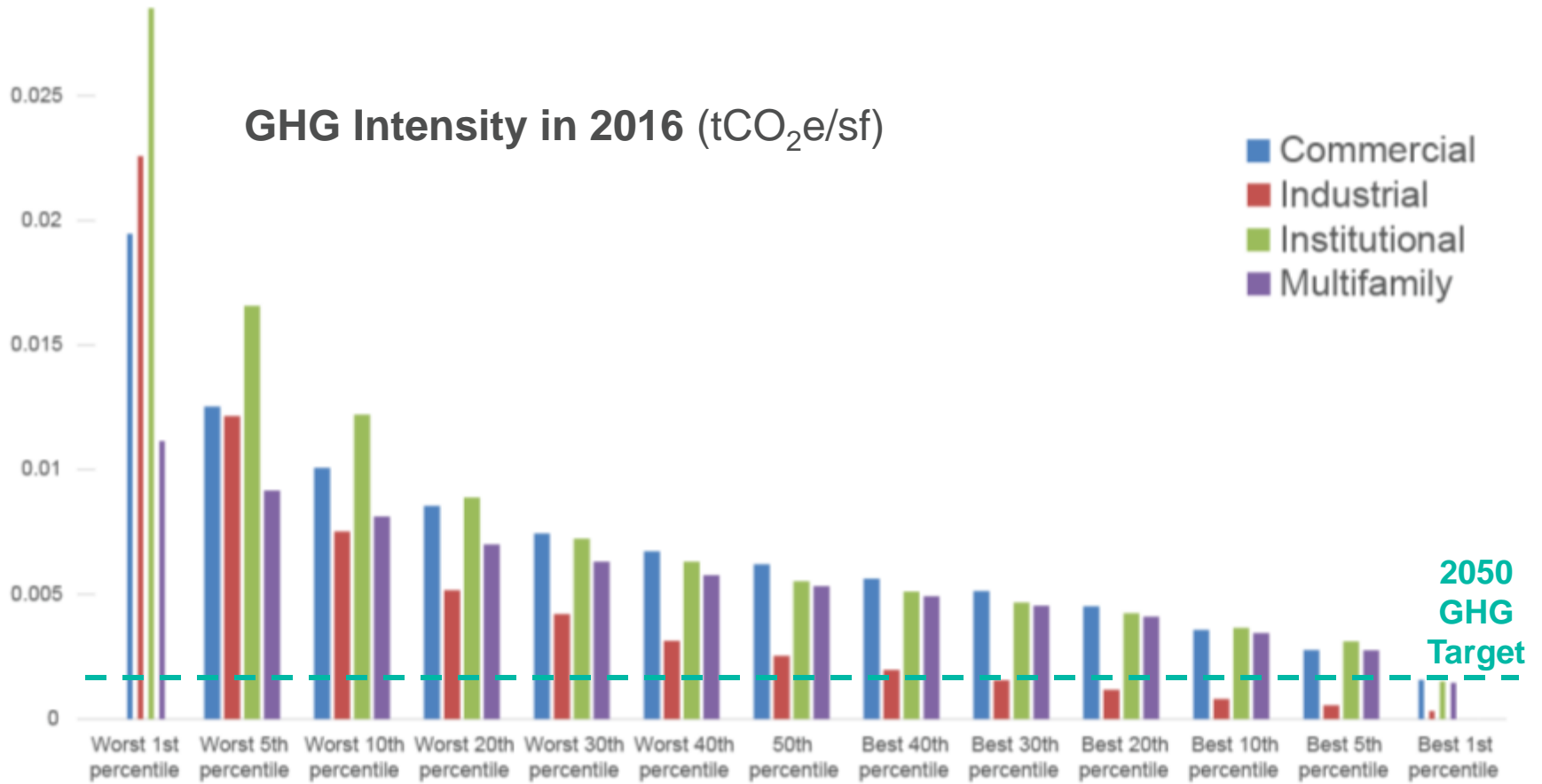




## GHG Intensity in 2016 (tCO<sub>2</sub>e/sf)



## GHG Intensity in 2016 (tCO<sub>2</sub>e/sf)



# LOCAL LAW 97

the commitment to achieve certain reductions in greenhouse gas emissions by 2050

## 2024-2029 Targets

Use Group	GHG target (tons/sf)	GHG Target (kg/sf)
Group I-2 – Hospital, Group B – Laboratories, Group H – High Hazard, Group B – Civic Emergency	0.02381	23.8
Group M - Mercantile	0.01181	11.8
Group I-1 – Senior Assisted Living	0.01138	11.3
Group A - Assembly	0.01074	10.7
Group R-1 – Hotels and Dormitories	0.00987	9.8
Group B - Business	0.00846	8.7
Group E – Education, Group I-4 - Daycare	0.00758	7.6
Group R-2 – Residential, multifamily	0.00675	6.8
Group F – Factory & Industrial	0.00574	5.7
Group S – Storage, Group U - Parking	0.00426	4.3

# LOCAL LAW 97

the commitment to achieve certain reductions in greenhouse gas emissions by 2050

## 2030-2034 Targets

Use Group	GHG target (tons/sf)	GHG Target (kg/sf)
Group I-2 – Hospital, Group B – Laboratories, Group H – High Hazard, Group B – Civic Emergency	0.01193	11.9
Group M - Mercantile	0.00403	4.3
Group I-1 – Senior Assisted Living	0.00598	6.0
Group A - Assembly	0.00420	4.2
Group R-1 – Hotels and Dormitories	0.00526	5.3
Group B - Business	0.00453	4.5
Group E – Education, Group I-4 - Daycare	0.00344	3.4
Group R-2 – Residential, multifamily	0.00407	4.1
Group F – Factory & Industrial	0.00167	1.7
Group S – Storage, Group U - Parking	0.00110	1.1

EUI WUI **GHG**

Reporting Year: 2017

250 Broadway



Office

**7.86**

GHG Intensity  
(kgCO<sub>2</sub>/ft<sup>2</sup>)

**GHG Intensity Target\***

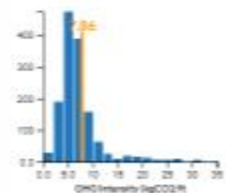
2025 Target **8.46** kgCO<sub>2</sub>/ft<sup>2</sup>

2030 Target **4.53** kgCO<sub>2</sub>/ft<sup>2</sup>

\*Estimated to be verified by a professional engineer or architect

Building Information

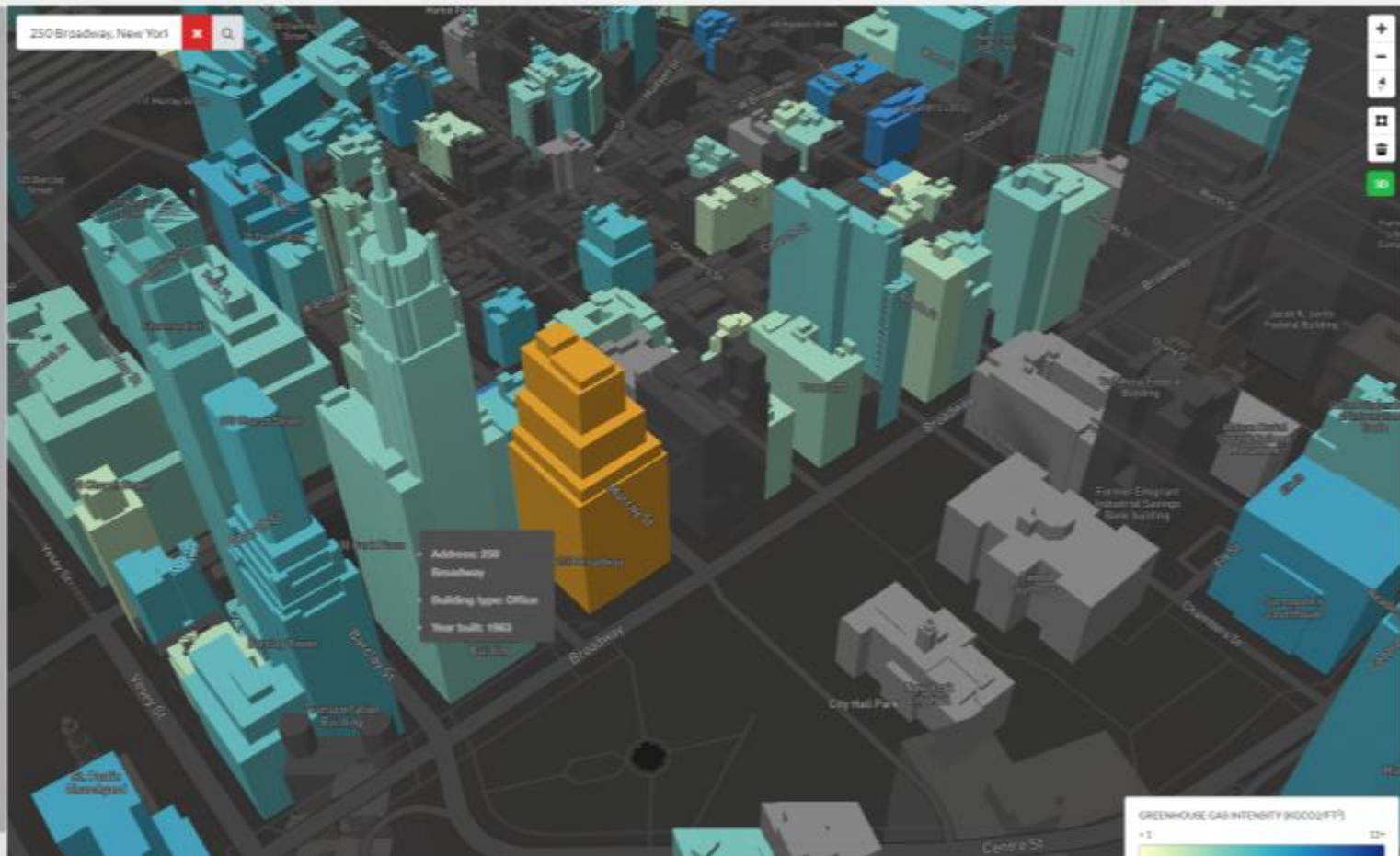
Distribution Comparison



Time Series Comparison

Building Type Breakdown

250 Broadway, New York



# LOCAL LAW 97

the commitment to achieve certain reductions in greenhouse gas emissions by 2050

## GHG coefficients

Energy Source

2024-2029  
(tons CO<sub>2</sub>e/kBtu)

Utility electricity

0.0000847

Additional rules for campus-style electricity systems that share on-site generation, but make use of the utility distribution system and for buildings not connected to the utility distribution system to come

Natural gas combusted on-site

0.00005311

#2 fuel oil combusted on-site

0.00007421

#4 fuel oil combusted on-site

0.00007529

District steam

0.00004493

Other, including distributed energy resources

TBD

# LOCAL LAW 97

## the commitment to achieve certain reductions in greenhouse gas emissions by 2050

- Each property has a “GHG budget” based on the occupancy classifications of the spaces within the property.
- A registered architect or engineer will need to calculate the building’s GHG budget and report annual GHG emissions total for the property.
- GHG emissions that exceed the building’s GHG budget is subject to penalty at \$268 per metric ton of CO<sub>2</sub>e.

### CALCULATING A BUILDING'S GHG BUDGET - 2024

**EXAMPLE:** Mixed-use building, 230,928 sf in size

30,034 sf retail space on ground floor

200,894 sf residential and accessory spaces

- The bill sets GHG building emissions intensity limits by occupancy classification in 2024:

Group M (mercantile) limit is 0.01181

Group R (residential) limit is 0.00675

- The 2024 GHG budget for the building is calculated as:

$$(30,034 \times 0.01181) + (200,894 \times 0.00675) = \mathbf{1,711 \text{ metric tons CO}_2\text{e}}$$



### CALCULATING A BUILDING'S GHG BUDGET - 2024

**EXAMPLE:** Mixed-use building, 230,928 sf in size

**The 2024 GHG budget for the building is 1,711 tCO<sub>2</sub>e**

- In 2024, the building reports energy consumption as:
  - 4,145,742 kbtu of Gas
  - 15,214,348 kbtu of Electricity
- The 2024 GHG budget for the building is calculated as:  
 $(30,034 \times 0.01181) + (200,894 \times 0.00675) = \mathbf{1,711 \text{ metric tons CO}_2\text{e}}$
- Portfolio Manager applies GHG coefficients to the electricity and gas consumption to generate a total of **1,632 metric tons CO<sub>2</sub>e for 2024**

### CALCULATING A BUILDING'S GHG BUDGET - 2030

**EXAMPLE:** Mixed-use building, 230,928 sf in size

30,034 sf retail space on ground floor

200,894 sf residential and accessory spaces

- The bill sets GHG building emissions intensity limits by occupancy classification in 2030:

Group M (mercantile) limit is **0.00403**

Group R (residential) limit is **0.00407**

- The 2030 GHG budget for the building is calculated as:  
 $(30,034 \times 0.00403) + (200,894 \times 0.00407) = \mathbf{939 \text{ metric tons CO}_2\text{e}}$

## CALCULATING A BUILDING'S GHG BUDGET - 2030

**EXAMPLE:** Mixed-use building, 230,928 sf in size

**The 2030 GHG budget for the building is 939 tCO<sub>2</sub>e**

- If in 2030 the building generates a total of 1,632 tCO<sub>2</sub>e, the building exceeds the GHG budget by 693 tCO<sub>2</sub>e and does not comply
- The penalty is calculated by multiplying \$268/metric ton CO<sub>2</sub>e by the extent which the 2030 GHG emissions exceed the GHG budget  
**\$268 x 693tCO<sub>2</sub>e = \$185,724 penalty for CY 2030 emissions**

### PRESCRIPTIVE MEASURES FOR AFFORDABLE HOUSING

- 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.

### SPECIAL CIRCUMSTANCES

- Variance to adjust a building's 2024 GHG target based upon excessive emissions attributable to high-intensity uses and not the building condition
- Alternate GHG target set for hospitals and healthcare facilities with excessive emissions

# LOCAL LAW 97

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**City operations 40% GHG reduction by 2025 and 50% by 2030**

**NYCHA goal of 40% by 2030**

# NYC Energy Efficiency Programs



Free, personalized advisory services to streamline the process of energy efficiency improvements



- Trusted advisor to buildings
- Insights into building needs
- Custom approach
- Simplified process
- Ongoing assistance

# NYC Energy Efficiency Programs

## Building Community

New technology, networking  
inspiring stories, community

## Everyday Efficiency

Incremental measures, focus  
on systems and products

## High Performance

Long term, holistic, integrated  
retrofit plans





# NYC Energy Efficiency Programs in 2019

## Large and Mid-size Existing Buildings

FOCUS:

**Buildings larger than 25,000sf**

**All affordable housing**



## Small Buildings in Targeted Neighborhoods

FOCUS:

**Buildings 5,000 - 25,000sf in size**

**Upper Manhattan and Central Brooklyn**



# NYC Energy Efficiency Programs in 2019

## High Performance New Construction

FOCUS:

**Buildings larger than 25,000sf  
to exceed the Energy Code**



## High Performance Retrofit Track

FOCUS:

High performance retrofits as part of capital planning



# NYC Energy Efficiency Programs in 2019

## NYC Building Operator Training

FOCUS:

**30-hour no-cost training on multifamily building energy equipment and operations**

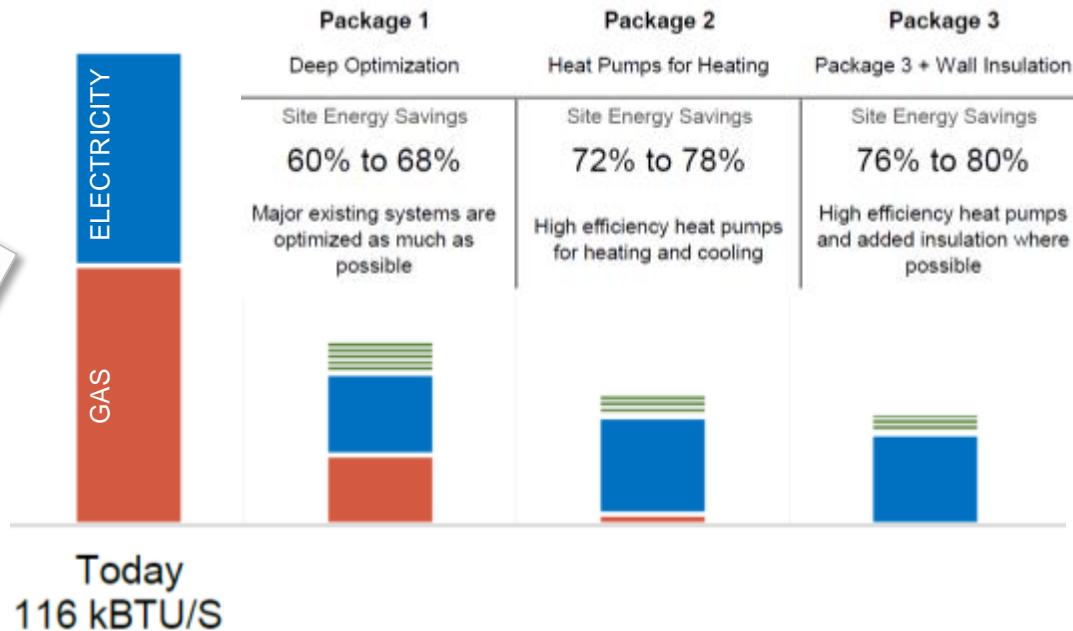
Maintenance Staff  
Management  
Superintendents  
Owners  
Co-op Boards



# Deep Energy Retrofit Planning Analysis



## Potential Site Energy Use Reductions for Your Building 850 WEST 53 STREET



## Improvements to Existing HVAC and Lighting Systems



## Adding exterior insulation, better windows, and air sealing





# Conversion to Heat Pumps for Heat and Hot Water



# Investments in Carbon-Free Power



# Operations and Maintenance



# Tenant Engagement and Coordination



# NYC Climate Mobilization Act