

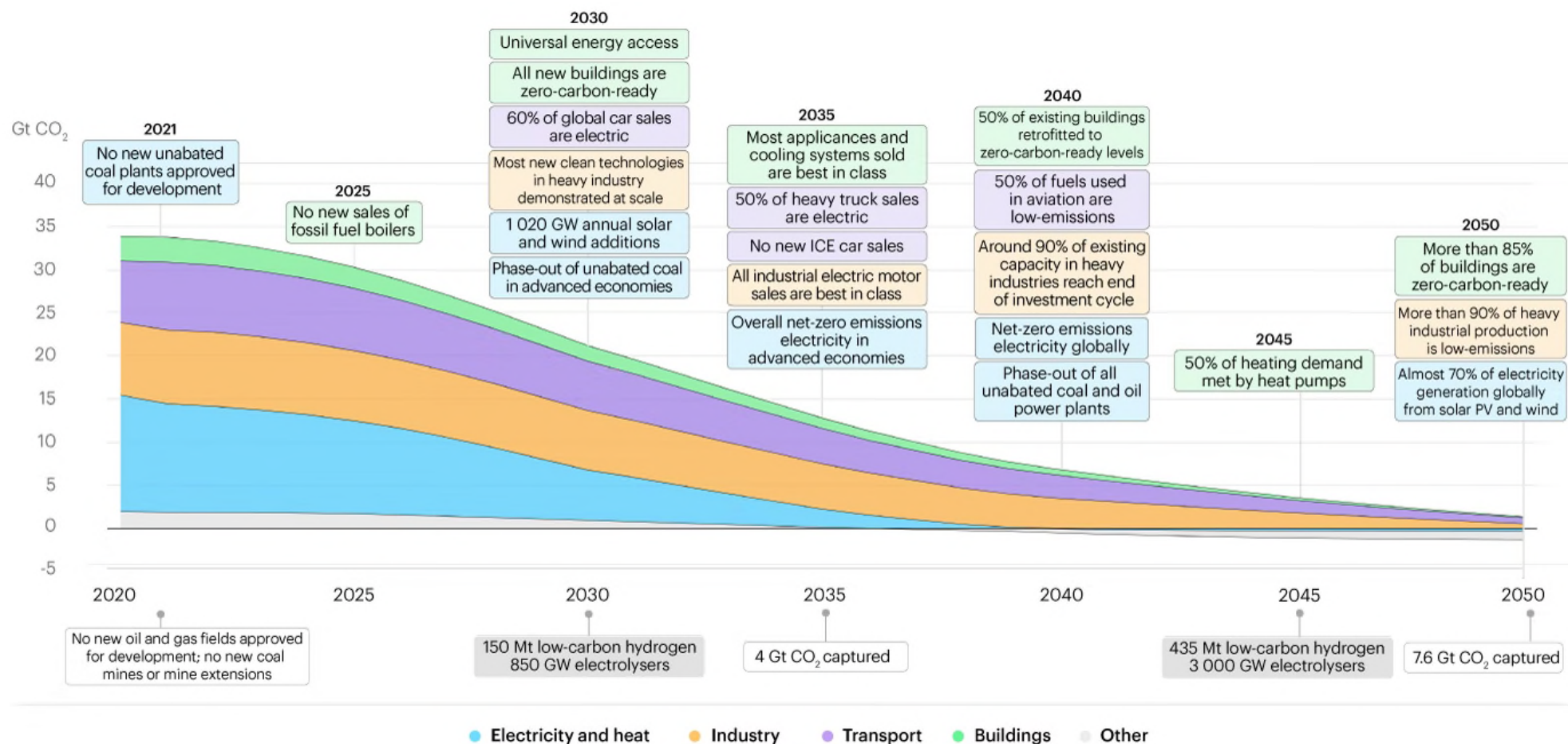


# Decarbonizing New York's Buildings

Clean Buildings, Clean  
Electricity, Clean  
Economy

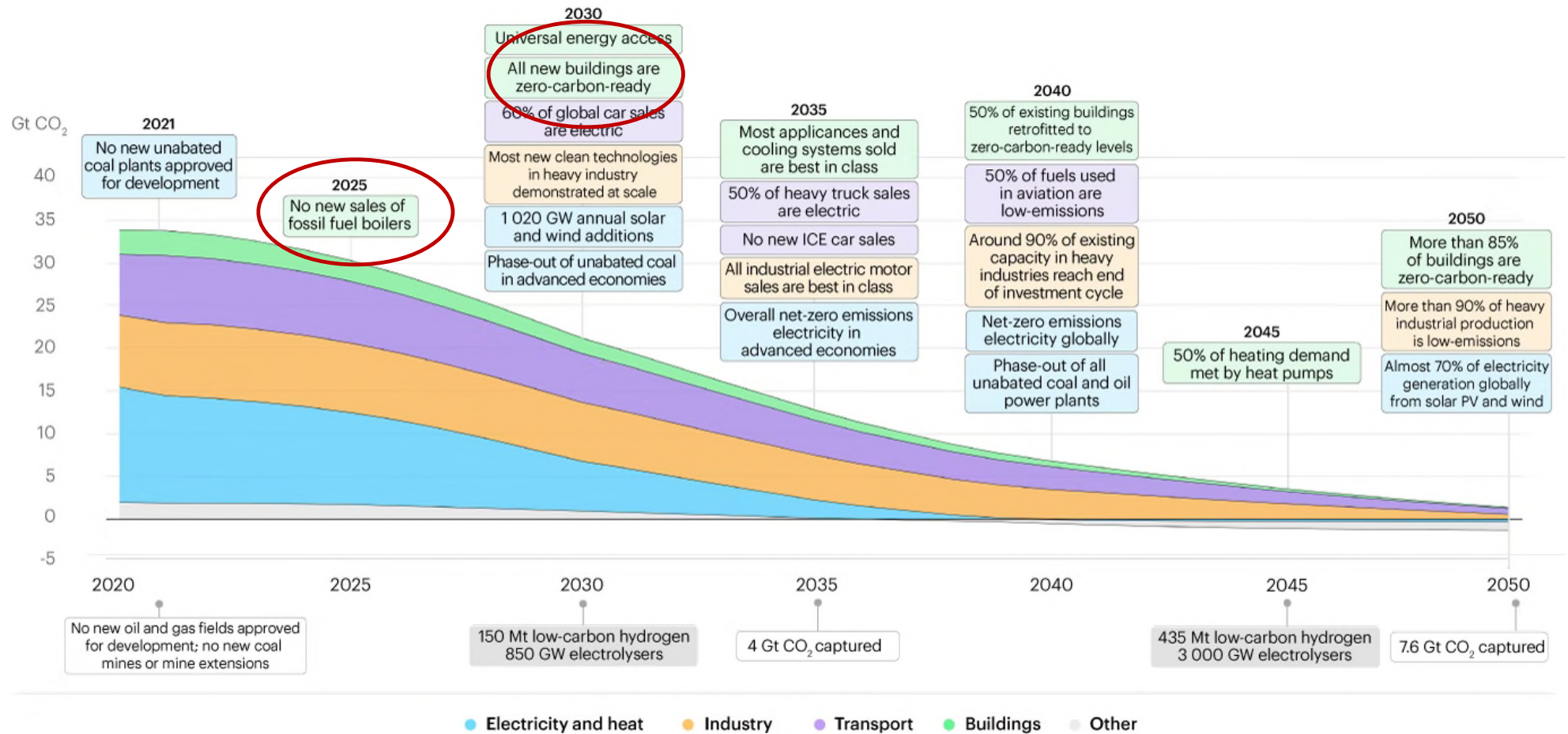
Ben Furnas  
Earth Day @ New York Bar Association  
4.22.2022

## International Energy Agency – The “Narrow but Achievable” Path to Net-Zero by 2050

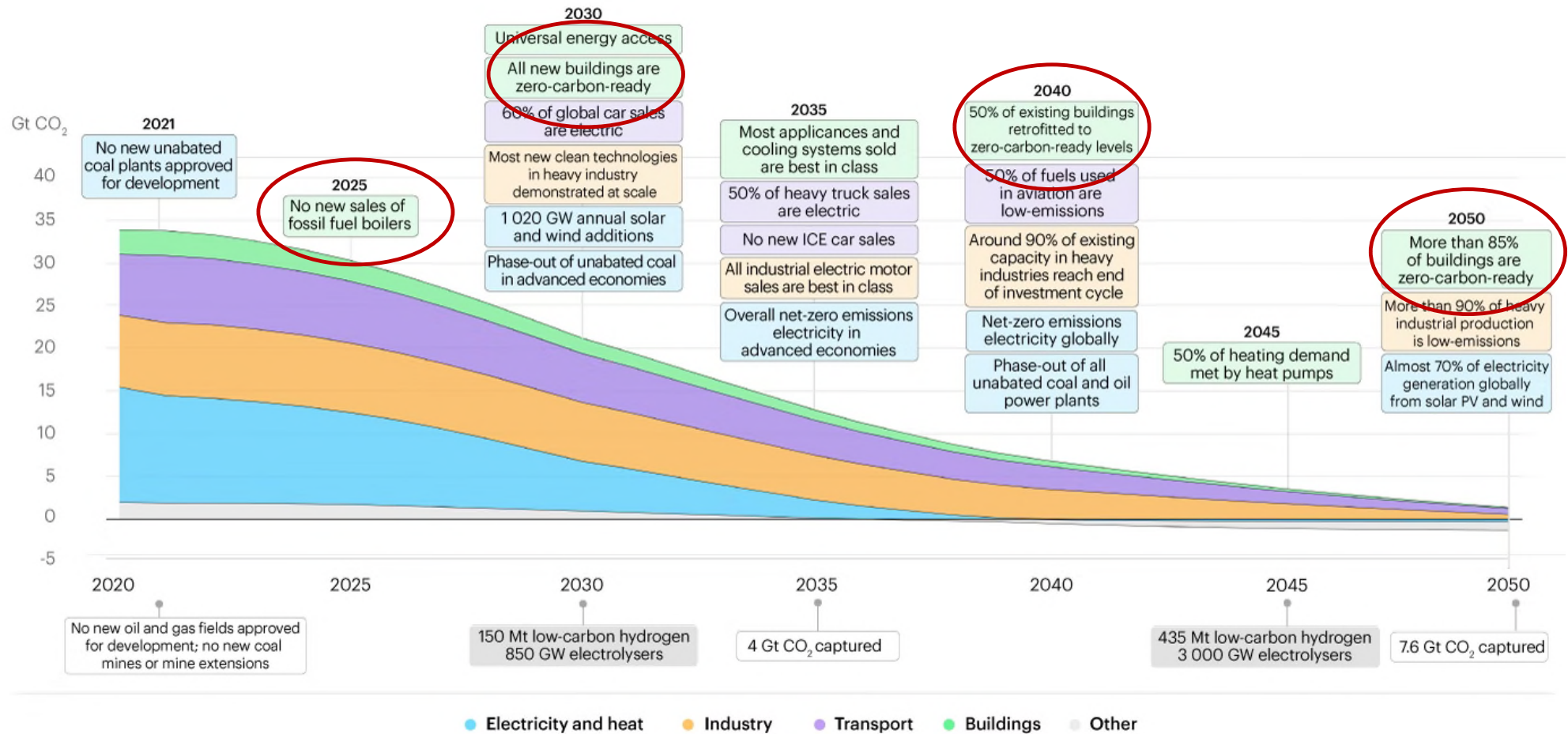




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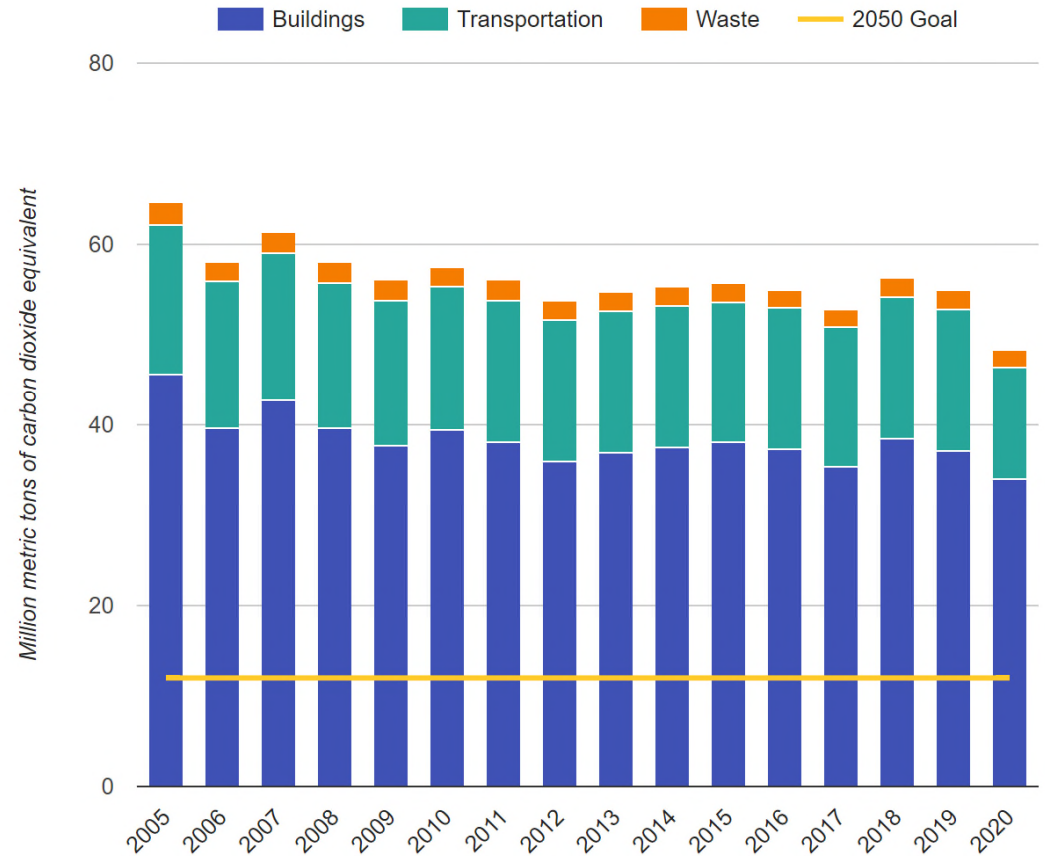


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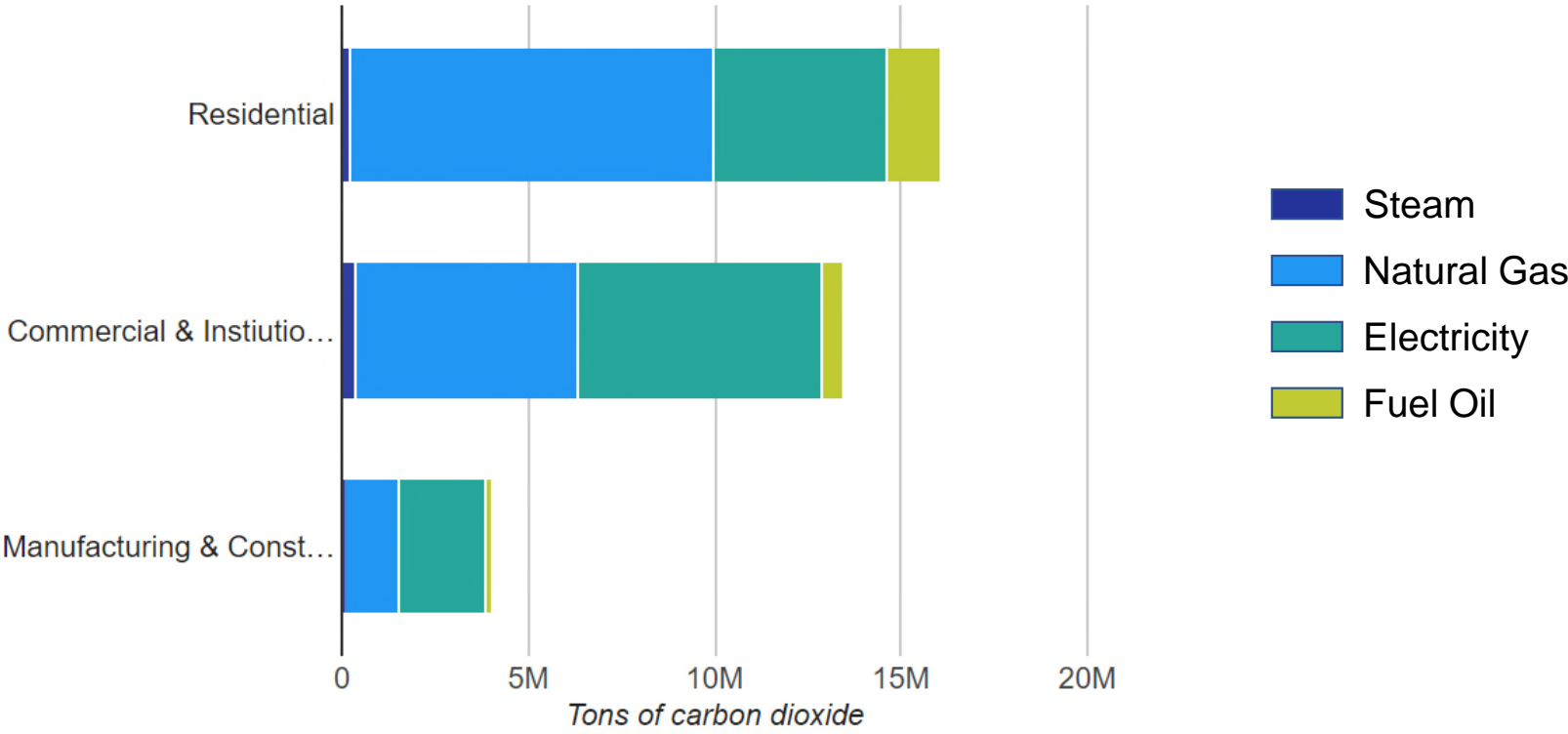


Emissions in NYC  
come overwhelmingly  
from fossil fuels used  
to heat, cool, and  
*power* our buildings.

## Annual Greenhouse Gas Emissions



# Citywide Emissions in Buildings



# **The Building Decarbonization To-Do List**

- ☐ Improve Efficiency & Electrify Existing Building Systems (Local Law 97)
- ☐ Ensure New Buildings are Electrified/Zero-Emission Ready (Local Law 154)
- ☐ Clean Up New York City's Electricity Grid (Local Law 97 & CLCPA)





# Existing Buildings

## Local Law 97



## Citywide Building Areas

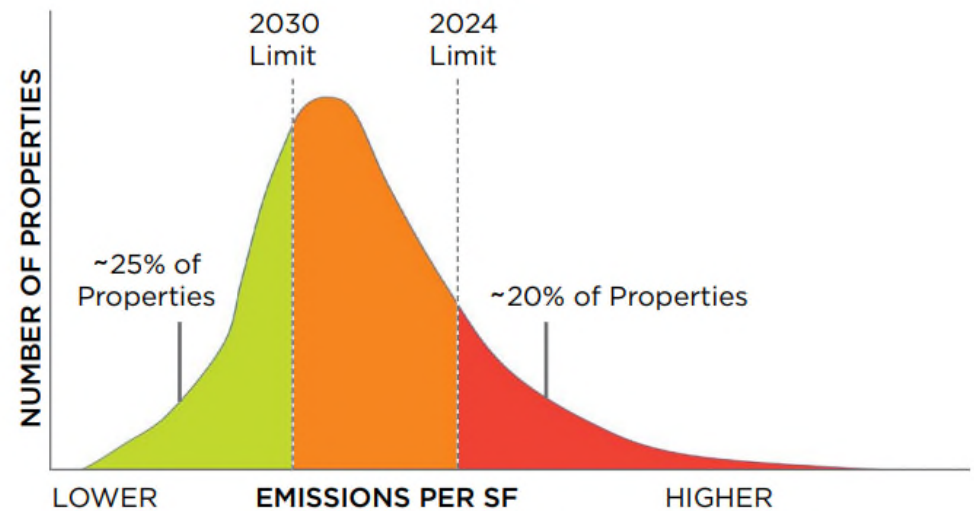
Nearly 60 percent (3.15 billion SF) of NYC building area is covered by the emissions law. Medium buildings are between 25,000 SF and 50,000 SF.



\*Millions of square feet

SOURCE: NYC DEPARTMENT OF PLANNING PLUTO DATASET 2017

## Emissions Distribution of Covered Properties



This graph is meant as a conceptual aid and does not represent actual properties or emissions limits.

## Emission Intensity Limits

- Multifamily Residential
- Commercial
- Hotel

### *10 Use Groups*

Granular remapping in progress

	2024-29 limit (kg of CO <sub>2</sub> e per SF)	2030-34 limit (kg of CO <sub>2</sub> e per SF)
Occupancy Group <b>R-2</b> (includes apartments)	6.75	4.07
Occupancy Group <b>B</b> (includes offices)	8.46	4.53
Occupancy Group <b>R-1</b> (includes hotels)	9.87	5.26

## Prescriptive Measures

### • More than 35% Rent Regulated

- Adjusting temperature set points for heat and hot water to reflect appropriate space occupancy and facility requirements.
- Repairing all heating system leaks.
- Maintaining the building's heating system, including but not limited to ensuring that system component parts are clean and in good operating condition.
- Installing individual **temperature controls** or insulated radiator enclosures with temperature controls on all radiators.
- **Insulating all pipes** for heating and/or hot water.
- Insulating the steam system condensate tank or water tank.
- Installing indoor and outdoor heating system sensors **and boiler controls** to allow for proper set-points.
- Replacing or repairing all **steam traps** such that all are in working order.
- Installing or upgrading steam system **master venting** at the ends of mains, large horizontal pipes, and tops of risers, vertical pipes branching off a main.
- Upgrading **lighting** to comply with the standards for new systems set forth in section 805 of the New York city energy conservation code and/or applicable standards referenced in such energy code on or prior to December 31, 2024.
- **Weatherizing** and air sealing where appropriate, including windows and ductwork, with focus on whole-building insulation.
- Installing timers on **exhaust fans**.
- Installing **radiant barriers** behind all radiators.

Flexible price signal:

- Up to **\$268 per metric ton** CO2e over building limit.

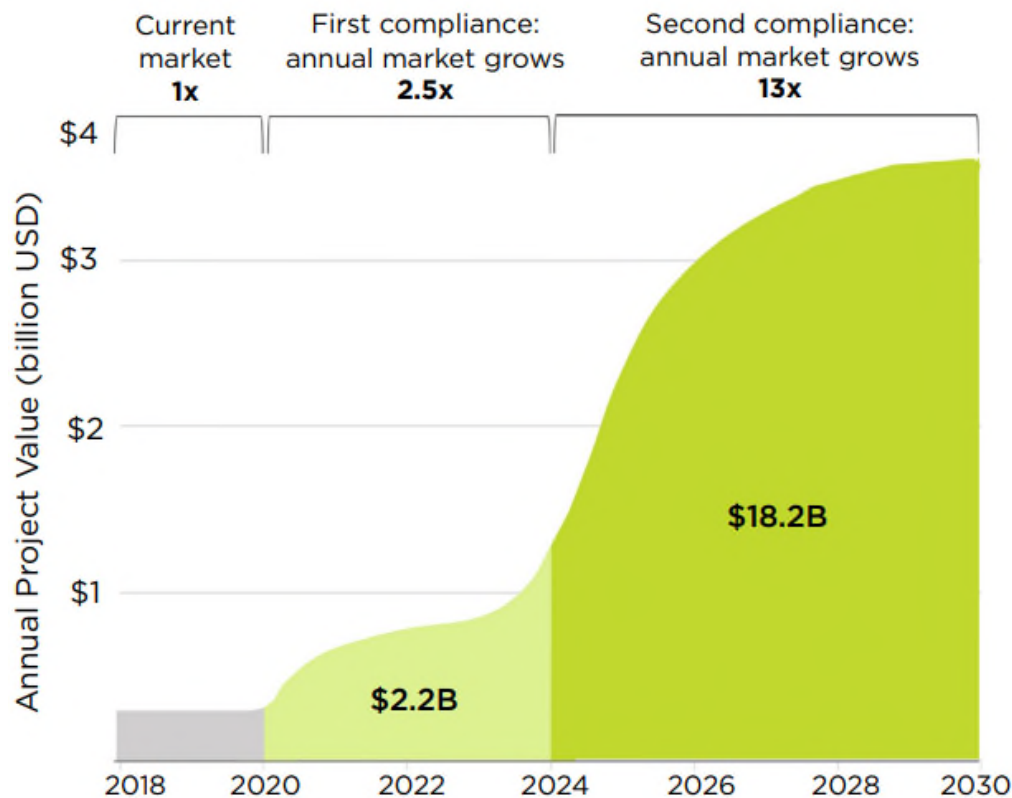
Many paths to compliance:

- Energy **Efficiency** Upgrades
- Building **Energy Management** Improvements
- **Tenant Energy Use** Improvements
- **Fuel Switching**
- **Electrification**
- Support **Cleaning of NYC Grid** (Renewables in NYC or “directly sinking” into Zone J)
- **Offsets** (up to 10% of energy use)



## The Market Must Grow

*The first compliance period will need the retrofit market to at least double in annual investment, and the second compliance period will require over \$3B in annual investment.*



A \$20 billion market for energy efficiency & clean building upgrades.

5.3 million metric tons of GHG reductions – equivalent to entire emissions of San Francisco.

Proportional air quality & health improvements.



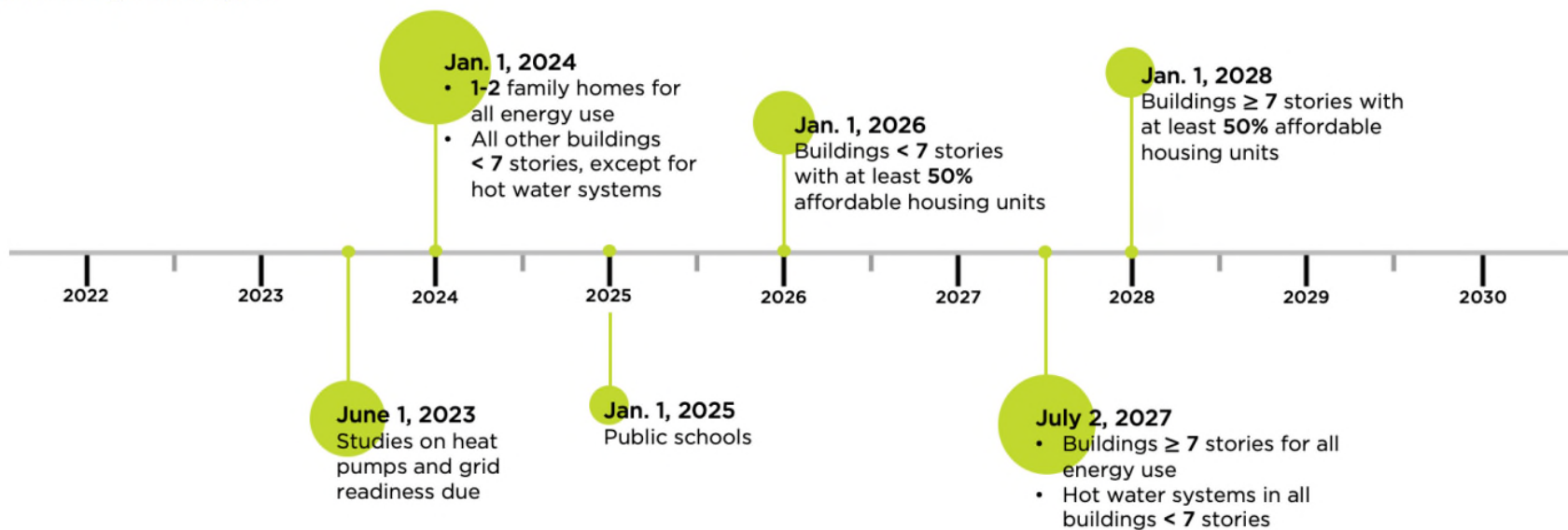


# Electric New Buildings

Local Law 154

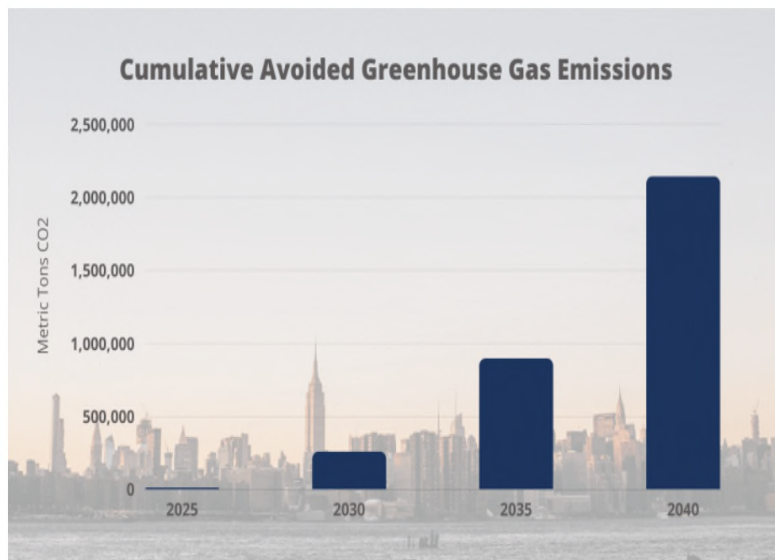
## Implementation Timeline

*Requirements phase in over five and a half years, allowing time for the market to ramp up with more products, training and design strategies*



## Carbon and Cost Savings for New York City

The climate benefits of Introduction 2317 would be substantial: about **2.1 million tons** of carbon emissions would be saved by 2040, equivalent to the annual emissions of 450,000 cars. The change could also yield several hundred million dollars in ratepayer savings by 2040, due to avoided spending on new gas connections.



## NYC set to enact gas ban with national implications

By David Iaconangelo | 12/15/2021 07:07 AM EST

### *N.Y.C.'s Gas Ban Takes Fight Against Climate Change to the Kitchen*

New York will become the nation's largest city to enact a ban on gas heat and stoves in new buildings. It's a major step away from fossil fuels that is expected to influence wider markets.

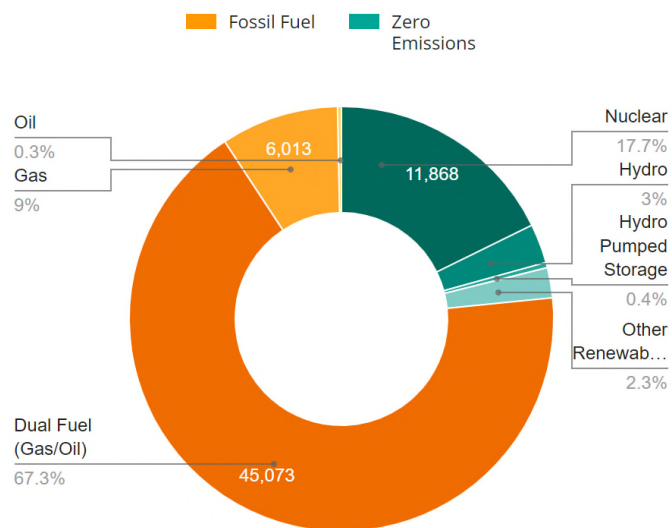




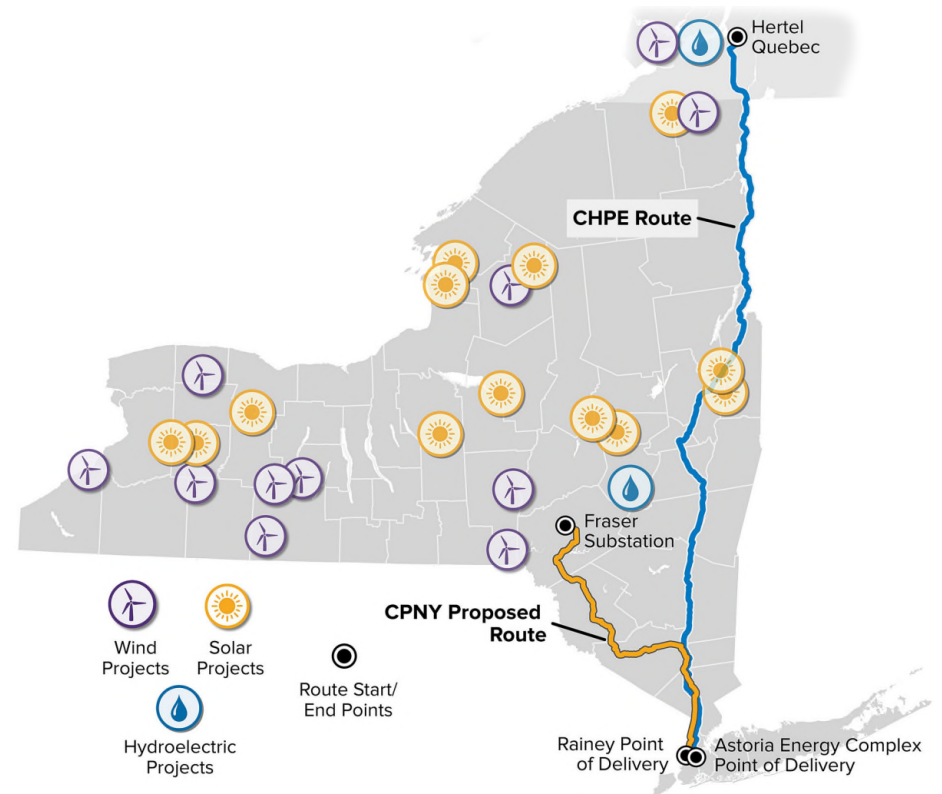
Clean Electricity



## NYC Area Power Mix (2020)

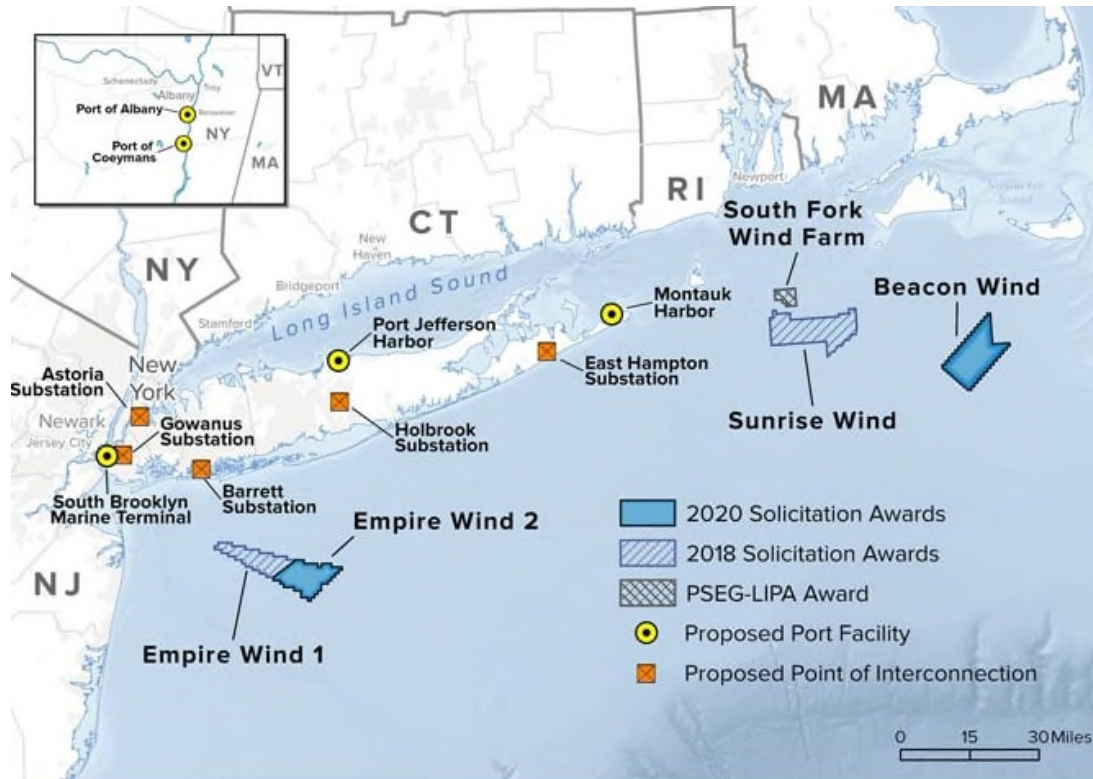


Note: This data does not represent the recent closure of the Indian Point nuclear power plant, which closed in 2021.



**CHPE:** 1,250 MW Canadian Hydropower & Wind

**CPNY:** 1,300 MW Wind + Solar + Pumped Storage



Five offshore wind projects in active development – the largest offshore wind pipeline in the nation totaling more than 4,300 megawatts.

Goal: 9,000 MW by 2035

# THE WALL STREET JOURNAL.

COMMERCIAL REAL ESTATE

## JPMorgan's New Manhattan Headquarters to Be All Electric Powered

Bank says 1,388-foot skyscraper on Park Avenue to rely on hydroelectric power source

**The future...**



JPMorgan plans to consolidate a number of its New York offices after a new Park Avenue tower, shown in a rendering, is completed around 2025.