

# New York's Paths to New Technology Deployment in the Buildings Sector

John Williams, Vice President  
Policy and Regulatory Affairs

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# Buildings Sector in New York

## Some statistics on buildings in New York...

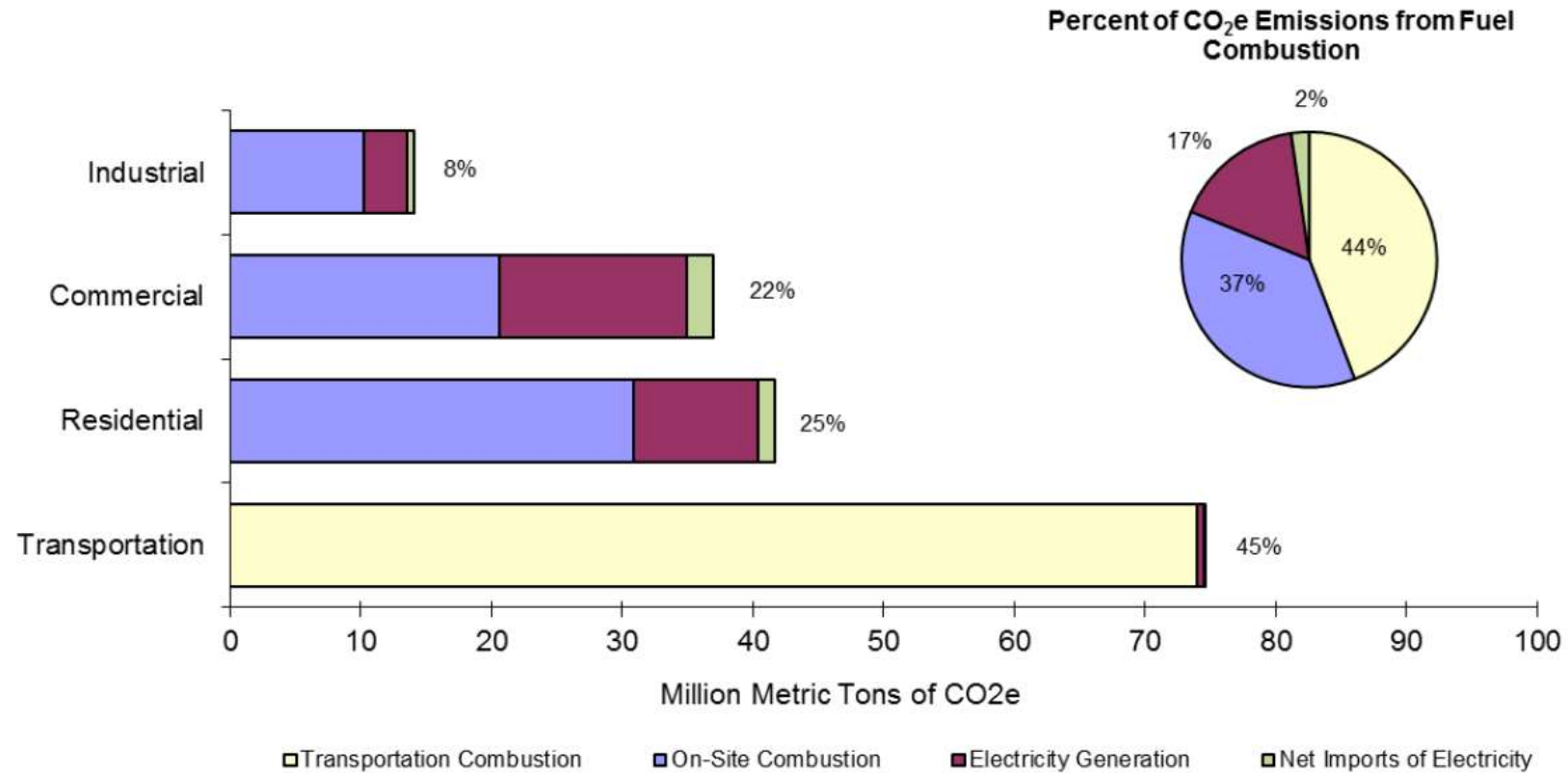
- > 8.2 million housing units
- > 5.2 million single family homes
  - About 2/3 of all home in New York State are single-family homes
  - Close to one-quarter are 75 years old or more
- > Approximately 100 million square feet of new construction built each year

## In 2016

- > Residential energy use per housing unit: 126 MMBtu (44th nationally)
- > Commercial energy use per non-manufacturing employee: 124 MMBtu (39th nationally)
- > Industrial energy use: 247 MMBtu (50<sup>th</sup> nationally)

# Buildings Sector Greenhouse Gases

**Total CO<sub>2</sub>e from Fuel Combustion: 167 Million Metric Tons  
(81% of Total GHGs)**



# Climate Leadership and Community Protection Act

**Puts New York on the path to carbon neutrality with nation's most aggressive GHG reduction goals: 40x30, 85x50**

- > Codifies clean energy targets
  - 70 percent renewable energy by 2030
  - 100 percent clean electricity by 2040
  - 9,000 megawatts of offshore wind by 2035
  - 6,000 megawatts of distributed solar by 2025
  - 3,000 megawatts of energy storage by 2030
  - 185 trillion British thermal units of on-site energy savings by 2025
- > Commitments to disadvantaged communities and just transition

# New York Buildings Initiatives

## > Programs

- RetrofitNY
- C&I Carbon Challenge
- Heat Pump Initiative
- Buildings of Excellence
- Net Zero Energy Pilots

## > Analysis

- Carbon Neutral Buildings Roadmap
- Building Electrification Roadmap

# Programs

# RetrofitNY

> Purpose:

- Renovate affordable multifamily buildings while achieving or approaching net-zero energy use
- Creating standardized and scalable processes that will improve residents' comfort and buildings' energy performance

> Design-build teams are participating in the first series of pilot projects

> Initial designs completed for the net-zero or near net-zero retrofits listed below

<b>Team Lead</b>	<b>Building Owner</b>	<b>Size</b>	<b>Location</b>
ICAST	Beacon Communities	Two stories (18 units)	Troy, NY
The Levy Partnership	JOE NYC	Six stories (21 units)	New York, NY
Bright Power	Volmar	Five stories (42 units)	Bronx, NY
SWBR	Conifer Real Estate	Two stories (24 units)	Portville, NY
King + King Architects	Rock PMC	Two stories (40 units)	Phoenix, NY
Chris Benedict, RA	RiseBoro	Four stories (46 units)	Brooklyn, NY

# Commercial and Industrial Carbon Challenge

- > Purpose: Provide a dedicated expert to large energy users to plan and implement energy-saving, carbon-reduction projects
- > Winners work one-on-one with a dedicated NYSERDA resource to implement proposed projects, rather than navigating multiple different NYSERDA or utility initiatives
- > Created based on market feedback
- > Up to \$15 million available, ranging from \$500,000 to \$5 million per successful proposal
- > New Empire Building Retrofit Challenge: \$30 million for high-profile commercial and large multi-family buildings



# Heat Pump Initiative

- > New Public Service Commission initiative: Commitment for new \$2 billion for Energy Efficiency activities through 2025
- > Includes over \$450 million for utility program heat pump incentives; focus on retail market incentives/approaches
- > NYSERDA to invest \$200 million for market development, including supply chain expansion, workforce training, and consumer awareness

# Buildings of Excellence

- > Purpose: To support the design, construction, and operation of low-carbon emitting multifamily buildings
- > Selected projects provide comprehensive data on design, construction, and cost that can be analyzed and shared to increase the number of low- to zero-carbon buildings
- > Launched in March 2019 as a \$40 million competition with three rounds of awards
- > Round 1:
  - Originally earmarked for \$10 million in funding
  - Response so strong (53 proposals), awarded an additional \$8 million
  - Total of \$18 million for 28 projects
- > Round 2: Open now

# Net Zero Energy Pilots

- > Purpose: Support for developing energy performance standards and institutional mechanisms to enable design, construction, and operation of net zero buildings within a portfolio type
- > \$1 million annually, with awards of up to \$250,000 for technical guidance
- > Available to large real estate portfolio owners – real estate developers, colleges and universities, retailers
- > Approved applicants also receive help with identifying other NSYERDA programs that can offer additional financial and technical assistance

# Analysis

# Carbon Neutral Buildings Roadmap

- > Identify potential pathways to a carbon neutral building stock
  - Taking into account differences in building type, geography, timeframe
- > Establish insights that will help align NYSERDA strategy & programs with 85x50
- > Research critical decarbonization issues & identify further research needs
- > Engage Stakeholders, including technical experts and market heavyweights
- > Send long-term market signal
- > Raise awareness of the benefits of carbon neutrality
- > Create a living document with regularly scheduled updates
  - Phase 1 focused on single family residential, multifamily residential, offices, and higher education

# Building Electrification Roadmap

- > 10-year Roadmap outlining market-development milestones and public policies and investments to advance building electrification in New York State
- > Chart the course for transforming the way in which New Yorkers heat and cool our buildings
- > Key outputs:
  - “State of the market” vision for 2030, by market segment and building typology
  - 2030 building electrification goal for NYS
  - Assessment of the current market
  - Recommendations for public policies and programs
  - Engaged constituency for market advancement
  - Identification of high potential partnering opportunities with other jurisdictions & organizations

# Thank You!

# Questions?