#ONENYC

Decarbonization and Electrification

Opportunities and Challenges

IEA-EPRI Decarbonisation Workshop
November 7-8, 2018



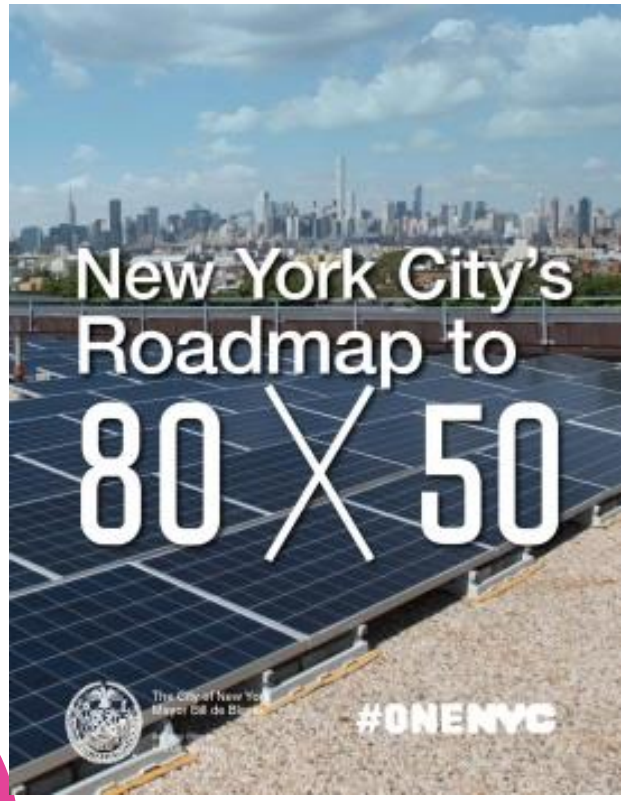
New York City has committed to 80x50

Our Growing, Thriving City

Our Just and Equitable City

Our Sustainable City

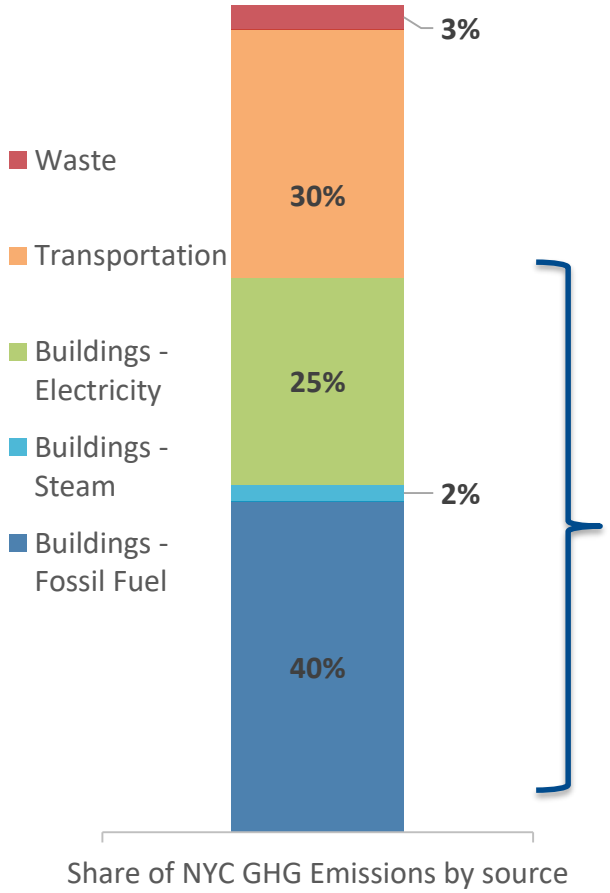
Our Resilient City



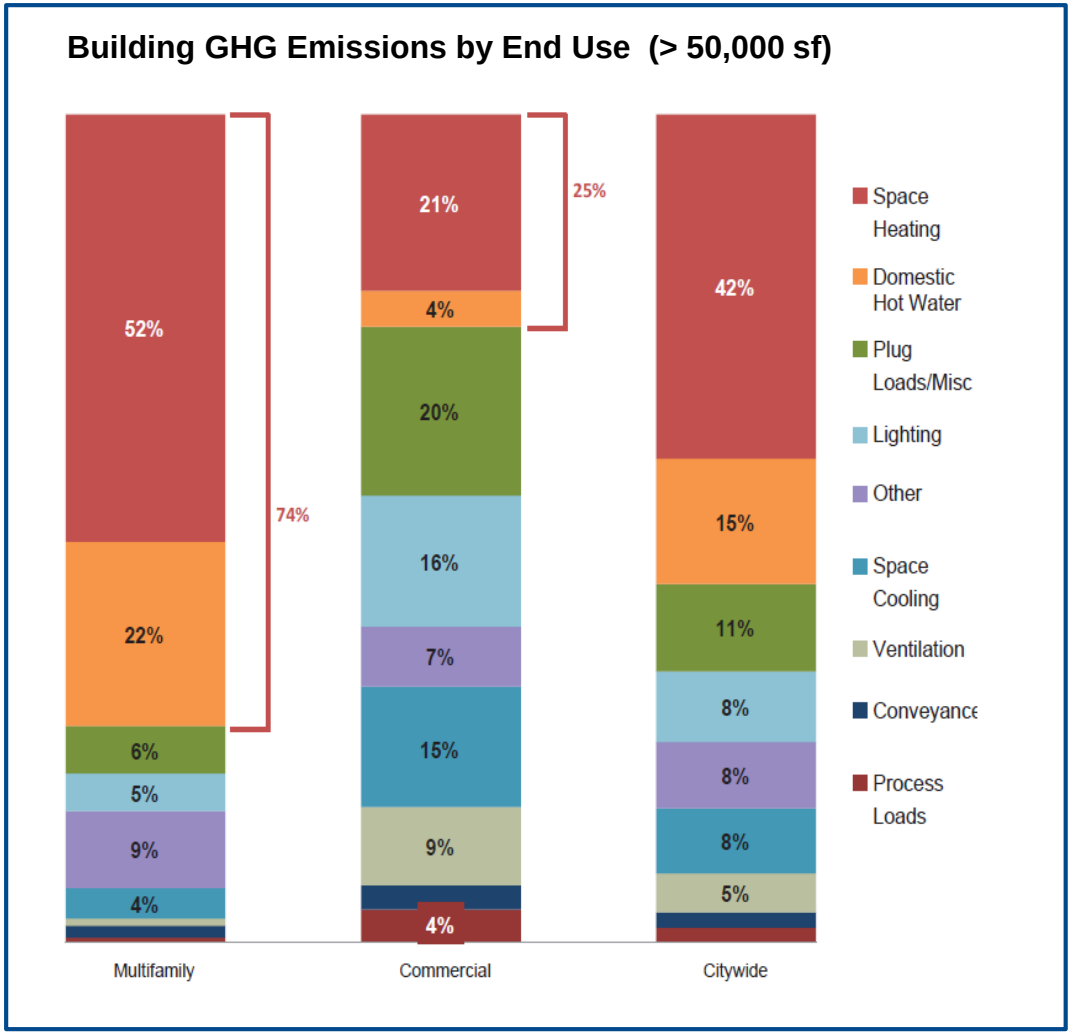
Co-Benefits

- Air Quality
- Job Development
- Quality of Life
- Access
- Equity
- Health and Well Being
- Affordability
- Resiliency
- Innovation

Where do GHG emissions come from?



Share of NYC GHG Emissions by source

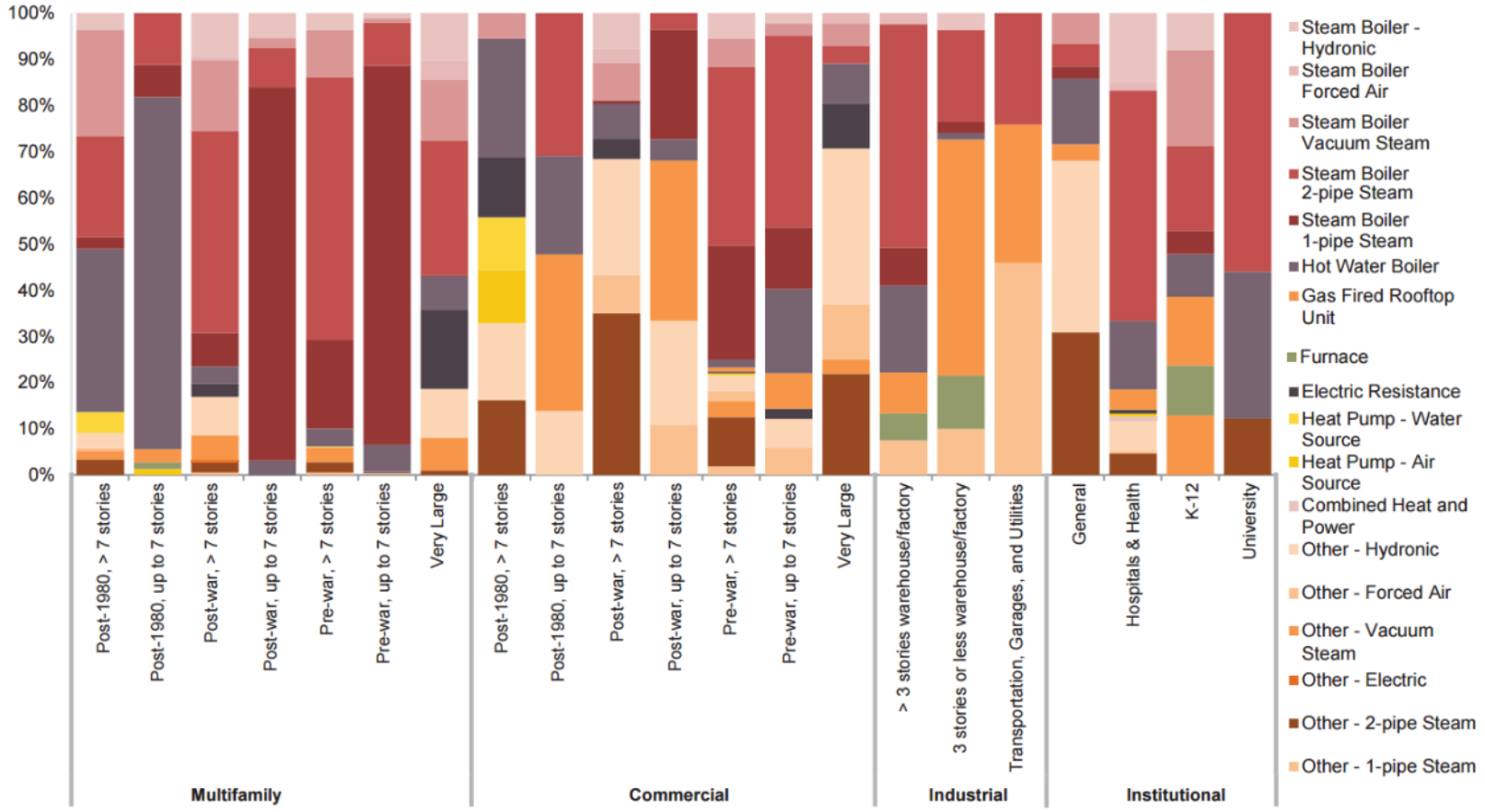


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Building Heating Systems: Existing Conditions

Heating distribution systems by building typology for large building >50k sf in size



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Why Building Electrification?

70% *of citywide emissions come from the energy used in buildings*

60% *of building-based emissions come from on-site fossil fuel use for heat and hot water production*

To achieve 80 x 50…

100% *of buildings will need to complete a deep energy retrofit*

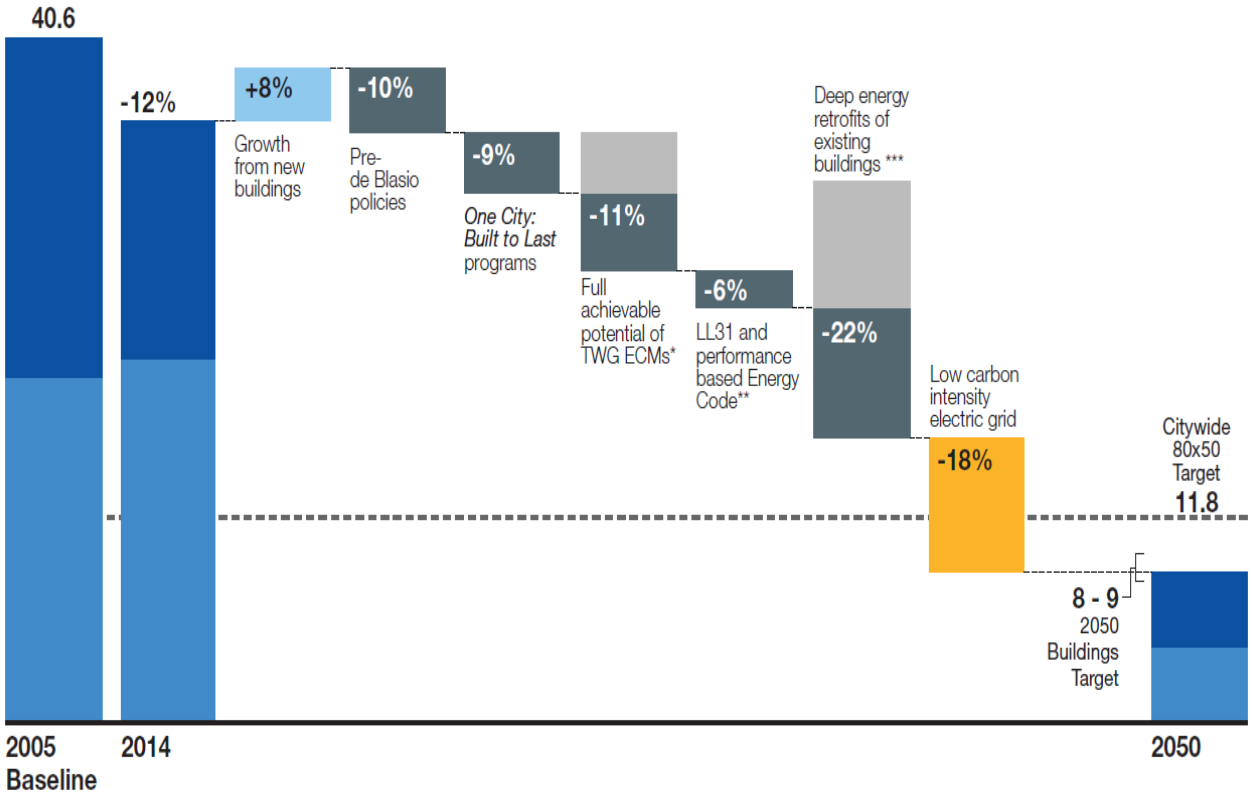
50-60% *of buildings must convert to high efficiency electric heat pumps*

90%+ *of buildings must electrify hot water systems*

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What is Needed to Achieve 80x50?

Buildings Deep Energy Retrofit Pathway to Achieve 80x50

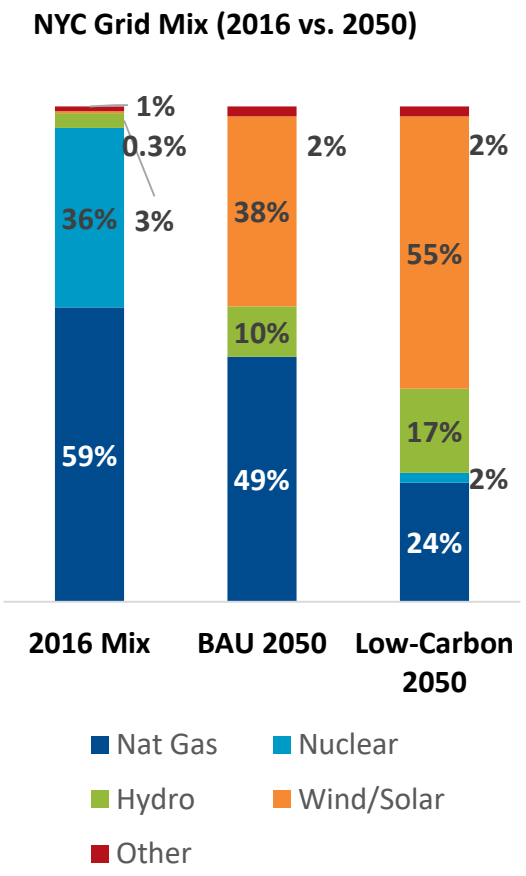


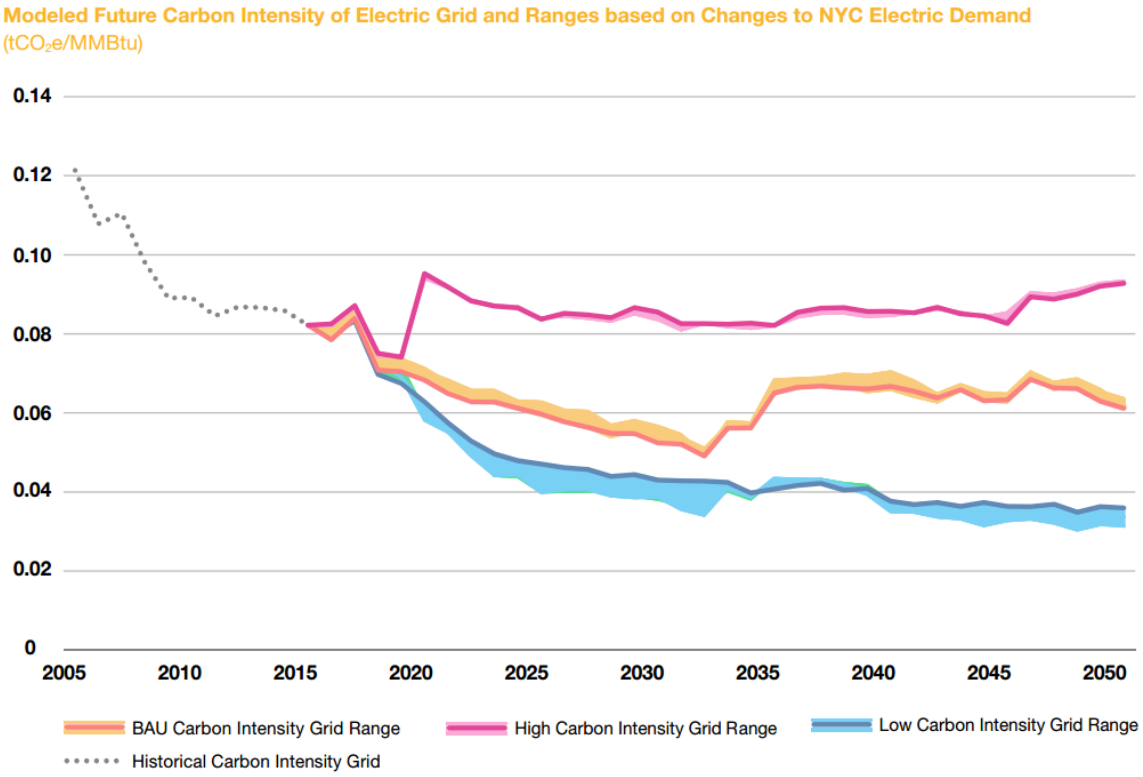
- NYC must implement **deep energy retrofits in every building** that achieve a 40-60% reduction in energy use
- **50-60% of buildings must also install high efficiency electric heating systems** to move away from fossil fuel-based heating systems.
- **Renewables-based grid (70%+ carbon-free)**

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Decarbonizing NYC's Electric Supply

A significant shift is needed; nuclear retirements only make the problem worse





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Next Steps

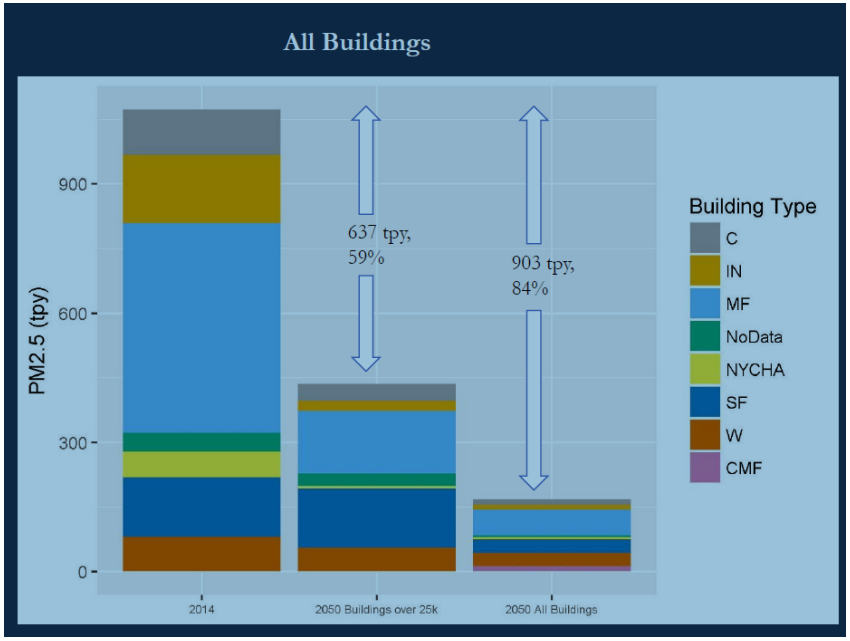
Addressing gaps, understanding costs, trade-offs and co-benefits

Study will add to research identifying citywide pathways to achieve Mayor de Blasio's climate change goals while ensuring safe, reliable, and affordable energy

NEW YORK – The Mayor's Office of Sustainability and electric and gas utilities Con Edison and National Grid have announced a Request for Proposal (RFP) that will begin the process of evaluating different pathways that New York City can pursue to effectively reach its goal of achieving 80 percent reduction in carbon emissions over 2005 levels by 2050, while maintaining safe, affordable, and reliable delivery of energy.

This study will use the City's 2016 Roadmap to 80x50 and other prior research as a framework to assess the costs and benefits of different measures to achieve deep decarbonization across energy supply and distribution, buildings, and transportation.

It also will account for potential costs to different stakeholders, system reliability, ease of implementation, and cumulative GHG reductions. Given the significant changes necessary to achieve this goal by 2050, this project will assess and outline a variety of technical and economic pathways for energy infrastructure and building improvements



conEdison nationalgrid



Thank you!

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