



NYSERDA

A Roadmap for Carbon Neutral Buildings and the Green New Deal

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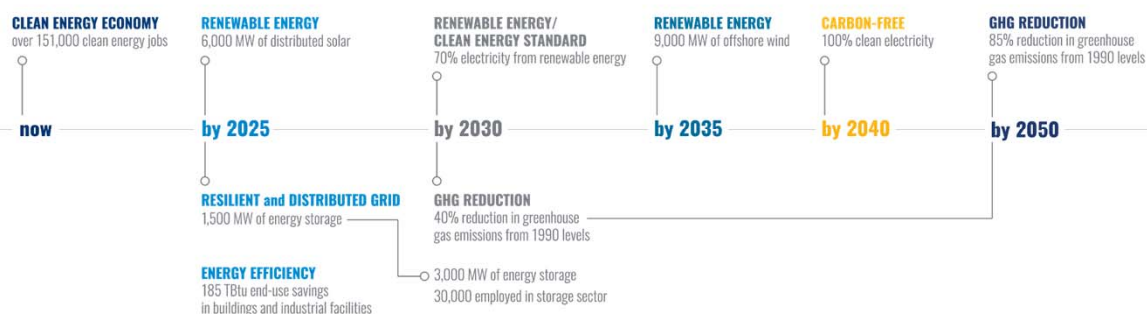
NYSERDA Mission and Vision

Mission: Advance innovative energy solutions in ways that improve New York's economy and environment

Vision: Serve as a catalyst – advancing energy innovation, technology, and investment; transforming New York's economy; and empowering people to choose clean and efficient energy as part of their everyday lives

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New York State Clean Energy Goals Climate Leadership and Community Protection Act (CLCPA)



35% - 40% of the benefits of state CLCPA investments must flow to disadvantaged communities



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New York City Climate Mobilization Act (CMA)

- Local Law 97 - places emissions limits on New York City's large buildings (> 25,000 sq. ft.), both commercial and residential, starting in 2024.
 - Alternative prescriptive path for rent regulated buildings

CMA also includes :

- Local Laws 92 & 94 – Green Roofs & Solar PV
- Local Law 95 – Building Labeling
- Local Law 96 – PACE
- Local Law 98 – Wind Energy



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Greenhouse Gas Emissions Reduction Target

85

by

50

New York's 85x50 emissions reduction target will require a carbon neutral statewide building stock



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Vision: Carbon Neutral Buildings



A Roadmap to Achieve a Fully Carbon Neutral Building Stock Statewide by Mid-Century



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Defining a “Carbon Neutral Building”

100% of buildings must operate at net zero carbon

2050

WorldGBC definition:
A net zero carbon building is highly energy efficient with all remaining energy from on-site and/or off-site renewable sources



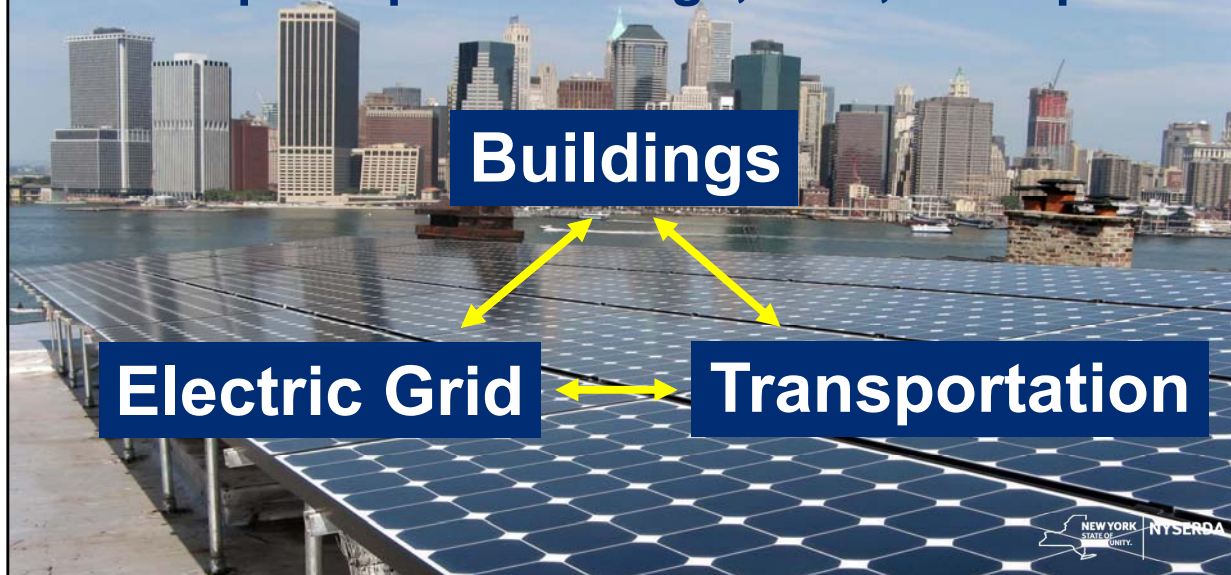
**Graphic for illustration purposes only*

- Reduce energy demand (efficiency)
- Decarbonize onsite energy services
- Balance from clean energy (onsite/community/grid)
- Real time response to grid conditions



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Roadmap Scope: Buildings, Grid, Transport



Carbon Neutral Buildings Roadmap



- Explore pathways necessary to achieve a carbon neutral building stock
- Research critical building decarbonization issues
- Engage stakeholders
- Send long-term market signal & mobilize different sectors
- Raise awareness of the benefits of carbon neutrality
 - Energy savings
 - Health, comfort, and productivity
 - Resilience
- Provide guidance for other state agencies and local governments
- Living document



Roadmap Scope

New Construction

- Design and deliver economic, emission-free buildings
- Driving Energy Codes to Zero

Existing Buildings

- Comprehensive vs Phased Capital Plan

Multiple Sectors

- Multifamily, Office, Single-Family Residential, Higher Education
- Additional sectors in future Roadmap updates

"All new SUNY buildings will be designed to achieve net zero carbon emissions... We will work to educate and expand the clean energy workforce of New York State."

— Kristina M. Johnson, SUNY Chancellor

"It's less about cost and more about cash flow. My netZero Village cost more at construction but is delivering net positive income."

— David Bruns, Developer



netZero Village. Credit: EMA for NYSEERDA.



Components of the Roadmap



NYSERDA Programs Informing the Roadmap



Advancing Building Energy Codes & Metrics

Energy code allows New York to harness new construction activity & the cycle of building upgrades to drive long term energy performance.

Process of developing carbon-focused, performance-based metrics to support deeper carbon savings

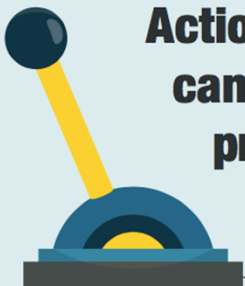


REV principle: engage private sector capital

Cost reduction



**Net Zero Carbon at
business-as-usual cost**




**Action in seven areas
can boost sector
productivity by
50–60%**

- Reshape regulation
- Rewire contracts
- Rethink design
- Improve procurement and supply chain
- Improve onsite execution
- Infuse technology and innovation
- Reskill workers

5–10x productivity boost

possible for some parts of the industry by moving to a manufacturing-style production system

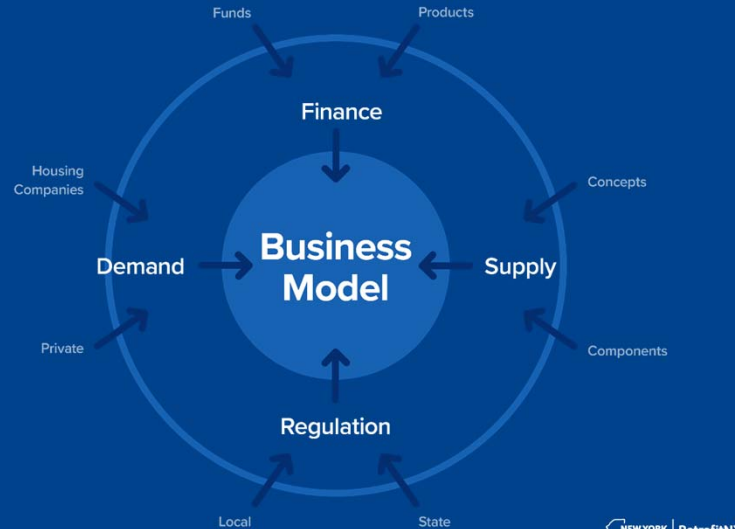


MCKINSEY GLOBAL INSTITUTE


McKinsey&Company

Revolutionizing the way multifamily buildings are renovated, keeping residents in their homes.

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Nyserda.ny.gov/RetrofitNY

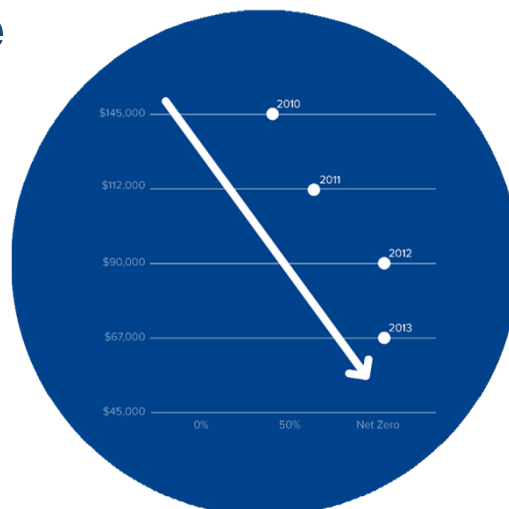


RetrofitNY

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Key Achievements of the Energiesprong program

- Net zero energy buildings at 40% of the cost of initial pilots
- The market is scaling up
 - ✓ 4,500 retrofits completed
 - ✓ 4,000 n/c projects completed
 - ✓ 20,000 projects in the pipeline



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Conventional Process

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Prefabricated High Performance Components

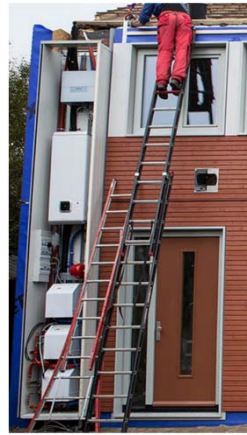
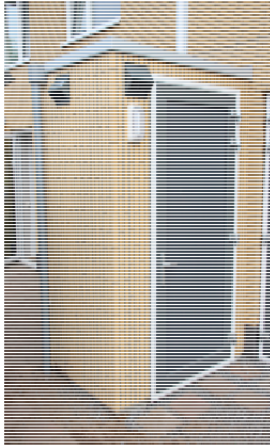


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Conventional Configuration



Integrated Mechanical Systems



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RetrofitNY Round 1 Design Pilots

Location: Troy, NY

Project: Two-stories (18 Units)

Owner: Beacon Communities

Team: ICAST

Location: Phoenix, NY

Project: Two-stories (40 units)

Owner: Rock Property

Team: King + King Architects

Location: Portville, NY

Project: Two-stories (24 units)

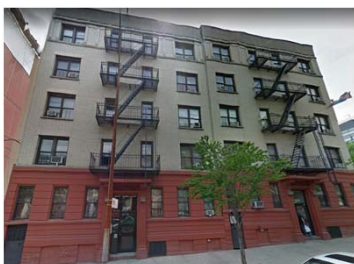
Owner: Conifer Reality

Team: SWBR



RetrofitNY Round 1 Design Pilots

Location: Bronx, NY
Project: Five-stories (42 Units)
Owner: Volmar
Team: Bright Power



Location: New York, NY
Project: Six-stories (21 units)
Owner: Joe NYC
Team: Levy Partnership



Location: Brooklyn, NY
Project: Four-stories (46 units)
Owner: RiseBoro
Team: Chris Benedict RA



Buildings of Excellence (BoE)

Intent

Stimulates the design, construction, and operation of very low, or zero carbon emitting buildings

Elements

- Use design and construction methods that are replicable and achieve broad-based adoption
- Provide superior financial benefits
- Beautiful buildings and health living environments



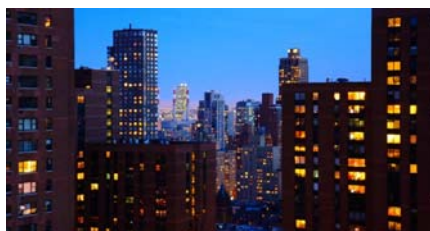
Net Zero Energy for Economic Development (NZEED)

Intent

- Encourages the design and construction of commercial, industrial, government and mixed-use facilities to achieve Net Zero Energy performance in economic development projects

Elements

- One stop service for incentives
- Streamlined program requirements
- Multi-year program



Community Scale (Category B)



Desired Outcomes

1. Increase investments in energy efficiency and distributed energy
2. Economic development and just transition to clean energy economy
 - Local component manufacturing facilities
 - Construction/retrofit activities
3. Construction industry productivity gains
4. Optimized electrification and deep carbon emissions reduction
5. Improved air quality and reduction of toxic pollutants
6. Improved productivity & indoor health



Thank you for your participation.

