High Rise / Low Carbon Series

# Program Summary
## Series Launch

### Program Brief

On February 3, 2022, NYSERDA and Building Energy Exchange hosted the inaugural event of their High Rise/ Low Carbon Series, showcasing the Empire Building Challenge program and commitments of four real estate partners to pioneer new models for cold-climate high-rise building decarbonization.

**The Empire Building Challenge (EBC)** is a $50 million NYSERDA program that accelerates the decarbonization of tall buildings through public-private partnerships to bring scalable carbon-neutral retrofit approaches to the New York market.

**The High Rise / Low Carbon Series** highlights NYSERDA's EBC and the commitments of the Challenge Partners. The series is designed to inspire action among New York's building industry stakeholders and invite the world's top solution providers to join New York on its journey towards a low-carbon future.

### Project Highlights

**These four showcase projects** provide decarbonization blueprints—comprehensive, scalable design and engineering approaches applicable to a wide swath of New York's existing buildings.

**345 Hudson** • Hudson Square Properties adopts a circular systems approach to heating and cooling, using innovative thermal networking to share heat between tenants throughout the building— and between neighboring buildings. This innovative system will effectively recycle heat across the portfolio, drastically reducing overall energy use.

**The Empire State Building** • Empire State Realty Trust will target several pilot floors, electrifying space conditioning loads and recovering waste heat, to bring New York's most iconic building to carbon neutrality by 2030.

**The Heritage Complex** • L+M Fund Management targets full electrification side-by-side major envelope improvements, carefully designed to minimize resident disruption, offering a roadmap to decarbonization for low- to moderate-income properties across New York.

**The Whitney Young Manor** • Omni New York targets major envelope upgrades, a centralized heat pump system, and a ventilation system overhaul, across two affordable multifamily buildings in Yonkers, NY, as part of a major property recapitalization.

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## Program Takeaways

**The scale of action needed to decarbonize our existing buildings is unprecedented.** New York City is home to over 5 billion square feet of iconic real estate. By 2050, 90% of New York City's one million buildings will need to implement energy efficiency upgrades.

**Demand for all-electric, carbon-neutral buildings is skyrocketing.** The retrofit market is poised to explode, with an estimated value of $17-24 billion dollars by 2030. Investors and tenants seek buildings that meet ESG commitments and pose low to no regulatory risks, with respect to local and state policies, as well as science-based targets established by leading international bodies.

**A global issue requires a global solution.** To accelerate building decarbonization, we need global collaboration and cooperation at a scale never seen before. Look to other countries with proven track records and established solutions for inspiration. Consider new ways of system thinking, rather than individual technologies.

**Review and reduce.** Analyze your building's energy profile, identify heat waste, as a first step to defining your retrofit project. Prioritize load reduction (envelope improvements), and/or energy recovery and energy storage (hydronic thermal networks) as part of your strategy.

**A long-term, phased approach to building decarbonization is essential.** Incorporate strategy into capital planning and asset management processes, phasing building upgrades to align with key milestones like tenant turnover or end of system useful life. Invest in central building infrastructure to lower demand, then install right-sized heating and cooling equipment. This theme is central to the Resource Efficient Electrification heuristic, an approach emerging out of EBC partner collaboration that distills common strategies across the Challenge's showcase projects.

**Grid readiness is a key consideration, but not an obstacle, to building electrification.** At the state level, the grid is ready to electrify. We do not expect to see a shift from a winter-peaking grid to a summer-peaking grid for another 15 years or so, which comports with a planning horizon that incorporates adequate grid investments. On a building level, electric service upgrades are not always required— and in the case of the four EBC projects, electric loads are often reduced from pre-retrofit scenarios, given deep energy efficiency improvements, energy recovery, and storage.

**Prioritize tenant engagement.** For both commercial and residential tenants, outreach and education is critical. Share project timelines, detail energy and quality-of-life benefits, and address questions and concerns. Coordinate with management staff, construction teams, and occupants, to minimize tenant disruption. Engage tenants in energy conservation by increasing transparency around energy usage.

**Additional Topics for Future Consideration:**

- Embodied carbon considerations
- Long-term management plans for building systems
- Fully electrifying residential buildings— e.g. induction stoves
- Adapting building decarbonization strategies to landmarked buildings
- The role of envelope improvements in office buildings
- Airtightness considerations and measurement
- Building decarbonization & risk management

**Panel**

Mike Izzo
Vice President for Carbon Strategy,
Hines

Will Sibia
(representing Hudson Square Properties)
Founder, urbs | Urban Systems

Dana Schneider
Senior VP, Director of Energy & Sustainability,
Empire State Realty Trust

Joseph Weishaar,
Vice President,
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Anna Weiss
Vice President,
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**Moderator**
Janet Joseph
Senior Vice President for Strategy and Market Development,
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