

EBC Cohort 2 Orientation: Workshop Materials

The goal of the Orientation Workshop is to support the development of effective Strategic Decarbonization Plans by defining target criteria and sharing best practices from EBC Cohort 1.

In order to make the best use of the Cohort's time in the Orientation Workshop, **please bring your team with an understanding of key background concepts** and begin gathering documentation for your asset and technical baselines before the meeting.

Review of Key EBC Concepts

Suggested background reading:

2019 NYC legislation setting carbon emission caps for large buildings in NYC. Policy timelines, options for compliance, and impacts of noncompliance will be inputs in an effective Strategic Decarbonization Plan.

- [All about LL97](#)
- [Climate Mobilization Act Overview](#)
- [LL97 Carbon Emissions Calculator](#)

2019 NYS legislation setting a Net Zero Emissions target for New York state by 2050, with specific targets for grid decarbonization over time and investment in disadvantaged communities. The CLCPA's decarbonization targets should be used to inform assumptions for New York's electrical grid emissions.

- [Unpacking New York's Big New Climate Bill: A Primer](#)
- [Climate Act](#)

Beyond the targets established by the CLCPA, additional context to support assumptions for grid and steam system emissions rates is provided by NYISO and ConEd, respectively.

- [New York's Clean Energy Grid of the Future](#), New York ISO's Annual Grid & Markets Report
- [A Comprehensive View of Our Steam System through 2050](#), ConEdison Steam Long-Range Plan

For NY to reach its goals of decarbonizing NY buildings and the grid that provides their electricity, the two will have to work together to maintain a resilient system. Buildings that prepare to interact with the grid will be positioned to best capture the benefits of automated demand management.

- [GEB Factsheet from DOE](#)
- [A National Roadmap for Grid-Interactive Efficient Buildings](#) (pages 7-26)

There are limited examples of large building decarbonization retrofits in the market. The first cohort of Empire Building Challenge participants demonstrated a comprehensive approach to efficiently decarbonizing buildings in New York.

- EBC [Knowledge Base](#): Repository of useful articles and links to aid Resource Efficient Decarbonization.
 - [Resource Efficient Decarbonization Overview](#)
 - [Misconceptions about Decarbonization](#)
 - [Intervention Points and Best Practices](#)
- [Empire Building Playbook](#): The Playbook illustrates how to develop a long-term, cost-effective building decarbonization plan based on the approach taken by winning members of EBC Cohort 1.

External articles:

- [Resource Efficient Decarbonization in NESEA 2021 BuildingEnergy Magazine](#)
- [How to get New York City's Biggest Buildings to Zero Carbon](#)
- [Decarbonizing tall buildings with a New York State of Mind](#)

Begin Gathering Asset and Technical Baseline Inputs

While the Orientation Workshop will not require use or reference of the below materials, beginning to gather and share this information early will ensure key considerations are factored in from the outset. Additionally, the workshop provides an opportunity to address questions that are prompted by the below inputs.

- Building characteristics
- Building thermal envelope characteristics
- Building equipment inventory including age and remaining useful life (target ~80% of building's energy use, particularly fossil fuel equipment)
 - Existing system functionality documentation
 - Basic diagrams of building energy distribution (electrical, thermal, sanitary, etc.)
- 12- to 18-months of granular utility data
 - Submetering data as applicable
- Energy consumption by end-use (space heat, DHW, cooling, etc.)
 - E.g. Develop 8760-hour profiles for heating, cooling, DHW and heat rejection, disaggregated by equipment and zone
- Documented operational problems (comfort / system performance / warranty) and relevant tenant feedback
- Recently completed energy conservation measures or building upgrades
- Major capital project limitations due to pre-existing conditions or unique considerations
- Relevant organizational priorities and initiatives, investor goals, ESG requirements
- Upcoming key capital events including but not necessarily limited to:
 - Building repositioning
 - Loan re-syndication
 - Major tenant movements or requests
 - Equipment end-of-useful-life
 - Damaged equipment needed repair or replacement due to fire, extreme weather, etc.
 - Regulator mandated upgrades (e.g. LL11)
- Asset-level cost and budget projections for all capital improvement projects
 - 5 – 10 year capital plans (longer if available)
 - Budget for upcoming replacements
- Asset cash flow pro forma showing building level net operating income
- Leasing plan, tenant roll, and other relevant data (key tenant turnover dates and lease terms)
- Financial assumptions
- Capital planning model typically used in organizational decision-making

Other Resources

Tools and Resources are available to support a Carbon Neutrality Roadmap and Strategic Decarbonization Plan:

- [Strategic Decarbonization Assessment \(SDA\) Tool](#): a long-term financial planning tool for building owners to incorporate and manage carbon emissions and energy use in their capital investment strategies.
- [Technology Database](#): a repository of technology solutions that target building thermal loads and enable building decarbonization [restricted access to be provided by NYSERDA separately].

Presentation Material



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Workshop Recordings

[Part 1: Workshop Introduction and Program Details](#)

[Part 2: Condition Assessment and Engineering Strategies](#)

[Part 3: Capital Planning and Business Case](#)