

Mayor's Carbon Challenge for Multifamily Buildings Program Design for Property Management Firms

Overview

Background

In 2007, Mayor Bloomberg launched *PlaNYC*, a comprehensive set of strategies to create a greener, greater New York City. Recognizing the threat that global climate change poses to public health, safety, and the environment, *PlaNYC* sets the ambitious goal to reduce citywide emissions by 30% by the year 2030. Because the energy used in New York City's buildings contributes roughly 75% of the city's annual GHG emissions, increasing the energy efficiency of our buildings represents the greatest opportunity to meet this goal.

Residential buildings account for the largest source of New York City's emissions, making up 37% of citywide emissions and 48% of the emissions from buildings. Significant opportunities exist to increase the efficiency of these buildings. The City's first benchmarking report shows that the highest energy-consuming residential buildings consume nearly 4.5 times more energy than their energy efficient counterparts. If all of New York City's large buildings were brought up to the median energy use intensity (EUI) in their category, it would reduce the total energy use of large buildings by 18% and cut GHG emissions by 20%.

Strategies to increase the energy efficiency of multifamily residential buildings are well understood. Opportunities include upgrades to outdated heating, ventilation, and air conditioning (HVAC) systems, installation of energy efficient lighting and controls, and improvements to the building envelope. Case studies from NYSERDA's Multifamily Performance Program routinely demonstrate energy savings of 30% or more from these and other strategies, generating thousands of dollars in cost-savings as a result. Moreover, meeting the emissions reduction target will build on the work many buildings are already required to undertake under current law, including mandatory benchmarking of energy use, energy audits, and retro-commissioning of building systems under NYC Local Laws 84 and 87, and heavy heating oil conversions under the NYC Department of Environmental Protection's heating oil regulations.

The Mayor's Carbon Challenge is a voluntary challenge to leaders within the private and institutional sectors to match City government's own goal to reduce GHG emissions by 30% in ten years. Currently, 17 of the leading universities, the 11 largest hospital systems, and 10 global corporations with commercial office space in New York City have partnered with the NYC Mayor's Office to reach this goal. Property management firms that manage multifamily buildings now have the opportunity to join these leaders in the Mayor's Carbon Challenge. For more information, please visit www.nyc.gov/carbonchallenges.

The Challenge

The New York City Mayor's Office invites property management firms to join universities, hospitals, and commercial offices to reduce greenhouse gas (GHG) emissions from either individual buildings or a portfolio of selected buildings by 30% in ten years. Participating management firms will help selected buildings reduce their energy use and emissions, measured as carbon dioxide equivalent per gross square foot (CO₂e/sq ft), by 30% within ten years of starting the Challenge.

Benefits of the Challenge

The Mayor's Carbon Challenge offers property management firms and their participating multifamily buildings the opportunity to demonstrate leadership in energy efficiency and be recognized for their efforts. Property managers will have direct access to the Mayor's Office and industry experts to provide technical assistance and best practices needed to realize reductions in energy use, costs, and GHG emissions.

Structure of the Program

The Mayor's Carbon Challenge consists of the following (described in detail later in the document):

1. **Accept the Challenge:** To accept the Challenge, each participating property management firm ("participating firm") must submit a participation letter to the NYC Mayor's Office confirming their commitment to reduce emissions of individual buildings *or* a selected portfolio of buildings by 30% over ten years.
2. **Choose Participating Buildings:** Each participating firm will identify multifamily buildings to include individually or as part of a Mayor's Carbon Challenge portfolio ("Challenge portfolio") and secure participation letters from representatives of each building. Participating firms are required to submit these letters within six months of joining the Mayor's Carbon Challenge.
3. **Track Carbon Emissions.** Participating firms will submit an annual carbon emissions inventory using NYC Local Law 84 energy use benchmarking data and report strategies for meeting the Challenge goal using a standard template provide by the Mayor's Office. To accurately measure energy consumption, participating firms must collect whole-building data for electricity, steam, and natural gas use as well as heating fuel oil purchases for each of the buildings in their Challenge portfolio.
4. **Regular Partner Meetings.** The Mayor's Office will organize regular meetings with participating firms to provide updates and encourage the exchange of ideas. At least one representative from each participating firm should attend each meeting. Representatives from individual buildings are welcome but not required to attend.
5. **Working Groups.** The Mayor's Office will convene voluntary working groups as needed to help develop new initiatives and/or to resolve issues as they arise.
6. **Access to Resources and Technical Expertise.** The Mayor's Office and the New York State Energy Research and Development Authority (NYSERDA) will provide direct

access to staff and information to connect participants with financial incentive programs. Additionally, a Technical Advisory Group (TAG) will provide technical assistance to the Mayor's Office and the Challenge participants.

7. ***Promotion and Recognition.*** The Mayor's Office will provide promotion and recognition of participating firms and the buildings in their Challenge portfolio, including press conferences, news releases, social media outreach, and information posted on the PlaNYC Green Buildings & Energy Efficiency website.

Completing the Challenge

To complete the Mayor's Carbon Challenge, each participating firm will achieve a 30% reduction in emissions from each individual building or across their Challenge portfolio, subject to verification by the Mayor's Office and NYSERDA.

Details of the Program

1. Accept the Mayor's Carbon Challenge

To accept the Mayor's Carbon Challenge, a participating property management firm ("participating firm") must submit a participation letter to the NYC Mayor's Office committing to reduce emissions, measured as carbon dioxide equivalent per gross square foot (CO₂e/sq ft), either from individual buildings or a portfolio of buildings by 30% in ten years.

2. Choose Participating Buildings

Each participating firm will identify the buildings to include in the Mayor's Carbon Challenge and secure participation letters from the building owner or the co-op or condo board president. Participating buildings must also agree to share annual energy and water use benchmarking data with their participating firm through the US Environmental Protection Agency (US EPA) Portfolio Manager tool.

- **Individual Buildings:** Participating firms may sign up buildings to participate individually to achieve a 30% reduction in emissions. A representative from each of these buildings will submit a participation letter committing to a 30% reduction in emissions and to share their annual energy and water use benchmarking information.
- **Portfolio of Buildings:** Alternatively, participating firms may sign up buildings to participate in the Challenge within a portfolio of buildings and achieve a 30% reduction across this portfolio. Buildings participating within the "Challenge portfolio" are not required to achieve a 30% reduction in emissions individually, but must commit to a target of at least 15% reductions and to share their annual energy and water use benchmarking information.
- **Adding Buildings to the Challenge.** A participating firm may add a building to the Challenge provided that the firm secures a participation letter from the building and receives approval from the Mayor's Office. If the building will participate within a Challenge portfolio, the building's energy use and square footage will be added to the portfolio-wide inventory in the year that it is added.
- **Removing Buildings from the Challenge.** It is not uncommon for buildings to change property management firms over a ten-year timeframe. Participating firms may choose to either keep or remove these buildings in the Challenge.
 - *Keeping Buildings that Change Management Firms:* If a building that changes management firms is included within a Challenge portfolio, the most recent emissions and square footage of the building will be held constant for the remaining years of the program. If the building participated as an individual building, the Mayor's Office will work with the new property management firm or with the individual building to reach the 30% goal.
 - *Removing Buildings that Change Management Firms:* If a building that changes management firms is included within a Challenge portfolio, the

emissions and square footage of the building will be removed from the inventory in the year that the building is removed. If the building participated individually, the Mayor’s Office will work with the new property management firm or with the individual building to reach the 30% goal.

- *Square Footage of the Challenge Portfolio:* Normalizing emissions per square foot allows for comparison to base year emissions from the Challenge portfolio if buildings are added or removed from the Challenge portfolio. However, the square footage of the portfolio must remain at least 70% of the original square footage of the portfolio. If the square footage decreases to less than 70%, firms will be required to replace lost square footage with new buildings.

2. Tracking Carbon Emissions and Reporting an Emissions Reduction Strategy

Each participating firm will track all energy use and associated emissions of participating buildings annually and report a strategy to achieve the emissions reduction goal.

- ***Carbon Emissions Inventory.*** Participating firms will submit an annual carbon emissions inventory using Local Law 84 benchmarking data to measure energy use and emissions from each building. Participating firms will be required to input this data into a carbon emissions inventory calculator tool provided by the Mayor’s Office to track progress toward the goal.
- ***Emissions Reduction Strategy:*** The Mayor’s Office will provide each participant with a standard reporting template for participating firms to report their strategies to meet the Challenge goal.
- ***Data and Disclosure.*** All building-based energy use and associated emissions data will be received and kept confidentially by the Mayor’s Office and NYSERDA. Any disclosed information will be anonymized and/or aggregated, unless a participant gives explicit approval to the Mayor’s Office and NYSERDA to release their data. When a Challenge participant reaches the 30% goal, the Mayor’s Office and NYSERDA will assist with promotion of this progress.

Methodology for the Carbon Emissions Inventory

Participants will aggregate the whole-building energy use annually by fuel type and amount for all buildings participating individually or within their Challenge portfolio. Participating firms will input the data into the carbon emissions inventory calculator for each calendar year, from the base year until the end year. The inventory calculator automatically applies carbon coefficients, fixed at 2005 levels, to each fuel type and divides this value by gross square feet to find carbon emissions per gross square foot (CO₂e/sq ft). Note that the energy use data required for the carbon emissions inventory is the same data that required for NYC Local Law 84.

- **Base Year.** Each participating firm must choose a base year of 2010 or later from which the 30% reduction goal is measured. If using the portfolio approach, every building in the original Challenge portfolio must use the same base year.
- **Start Year.** The start year of the Challenge is the first calendar year after which the participating firm accepts the Challenge.
- **End Year.** The end year is ten years from the start year of the Challenge. To meet the Challenge goal, participating firms must reduce individual building or portfolio-wide carbon emissions per square foot by 30% by December 31 of that year.
- **Calendar Year.** Energy use information for all Carbon Emissions Inventories must be aggregated on a calendar year basis (January 1 – December 31).
- **Fuel Types.** All Challenge participants measure whole-building energy use by fuel type and amount. Energy use is reported using the following metrics:
 1. Electricity: Kilowatt-Hours (kWh)
 2. Natural gas: Thermal Units (Therms)
 3. Heating oil distillates No. 2, No. 4 and No. 6: US Gallons (US Gal)
 4. Steam: Thousand Pounds (Mlbs)
 5. Propane or other fuels used for backup generation: US Gallons (US Gal)
- **Scaling Up Energy Use.** Before 2012, ConEd’s billing system was unable to combine energy use from two accounts where apartments changed occupants, meaning that ConEd’s building-level energy data included energy use from an average of just 70-90% of the units in the building. If a participating firm selects a base year of 2010 or 2011 for their Challenge portfolio, they will be required to “scale up” energy use for their buildings to adjust for this discrepancy in ConEd data. NYSERDA will provide participants with a simple tool that automatically scales up the energy use data.
- **Commercial Leased Space.** All space leased by a third party property owner from the building owner, co-op/condo board or residents from buildings participating in the Challenge. If these spaces are separately sub-metered, they may be removed from the buildings’ total energy use.
- **Carbon Emissions per Square Foot.** The Challenge uses carbon dioxide equivalent per gross square foot (CO₂e/sq ft) as its metric to track emissions. Measuring emissions per square foot allows for the possibility that buildings may be added or removed from a Challenge portfolio over the ten-year timeframe.
 - **Carbon Dioxide Equivalent.** The level of carbon dioxide (CO₂) that would have the same climate impact as a given concentration and type of greenhouse gas.

- **Gross Square Feet.** The total number of square feet measured between the exterior surfaces of the enclosing fixed walls of all of the Challenge participant's buildings. This includes spaces such as vent shafts, stairs, basements, etc.
- **Carbon Coefficients.** A carbon coefficient determines the level of carbon dioxide equivalent (CO₂e) associated with a given amount of fuel or energy use. All carbon coefficients for the Mayor's Carbon Challenge were developed by the Mayor's Office and are in compliance with the 2012 United States Community Protocol for Accounting and Reporting Greenhouse Gas Emissions (USCP).
 - **Electricity and Steam.** The Mayor's Carbon Challenge uses New York City-specific carbon coefficients for electricity and steam, fixed at 2005 levels. Because the coefficients for electricity and steam can vary significantly across years, fixing the coefficients at 2005 levels ensures that Challenge participants receive credit for their efforts, and not for exogenous changes to the supply.
 - **Natural Gas, Propane, and No. 2, No. 4, and No. 6 Heating Oils.** The Mayor's Carbon Challenge uses the nation-wide carbon coefficient for natural gas, propane, and No. 2, No. 4, and No. 6 heating oils, which were developed by the U.S. Environmental Protection Agency (EPA).

3. Regular Partner Meetings

The Mayor's Office will organize regular partner meetings several times per year. At least one representative from each participating firm should plan to attend each meeting. Representatives from buildings in the Challenge portfolio are welcome but not required to attend.

Meetings will include, but are not limited to:

- An update from the Mayor's Office staff
- Presentations by Challenge participants
- Presentations by technical experts and guest speakers of interest
- Open discussion

4. Working Groups

The Mayor's Office will organize volunteer working groups of Challenge participants to discuss and develop solutions to any additional issues as they arise. These working groups will be convened on an as-needed basis. Potential points of discussion include clarifying accounting methodologies for mixed use space, leased space, and buildings that are added or removed from the Challenge portfolio.

5. Access to Resources and Technical Expertise

The Mayor's Office and NYSERDA will provide direct access to staff and information to connect participants with financial incentive programs. In addition, there is a Technical

Advisory Group (TAG) to support the Challenge. The TAG includes the following:

- The NYC Mayor's Office
- NYSERDA
- New York City Energy Efficiency Corporation (NYCEEC)
- NYC Clean Heat
- Urban Green Council
- Leading engineering and consulting firms

6. Promotion and Recognition

The Mayor's Office will recognize the efforts and achievements of the participating firms and their buildings. Promotion and recognition will include, but is not limited to:

- Press release from the Mayor's Office
- Individually tailored PlaNYC and GreeNYC promotional materials
- Inclusion of property management firm/co-op or condo building name, logo and profiles on official NYC documents, website, and social media outlets
- The ability to self-promote participation in the Challenge, including the use of the Mayor's Carbon Challenge logo on vetted documents, collateral, web pages, social media, or other informative media.