

## **NYC Carbon Challenge for Multifamily Buildings Program Design for Property Management Firms**

### **Background**

In September 2014, recognizing the existential threat that climate change poses to New York City and the world, Mayor Bill de Blasio set the ambitious goal to reduce citywide greenhouse gas (GHG) emissions 80% below 2005 levels by 2050 (80 x 50). Because the energy used in New York City's one million buildings represents 73% of citywide GHG emissions, and more than 90% of the buildings that exist today will still be here in 2050, improving the energy efficiency of the city's existing building stock represents the greatest opportunity to reduce citywide GHG emissions.

New York City cannot achieve its ambitious emissions reduction goal without the help of its residential sector. Residential buildings account for the largest single source of New York City's emissions, making up 37% of citywide emissions and 48% of building emissions. The City's first benchmarking report shows that the highest energy-consuming buildings consume nearly 4.5 times more energy than their more 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%.

Significant opportunities exist for multifamily buildings to decrease their GHG emissions, including upgrades to outdated heating, ventilation, and air conditioning (HVAC) systems, installation of energy efficient lighting and controls, and building envelope improvements. Moreover, efforts to reduce emissions builds on the work that many buildings are already required to undertake by 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 mandated by the NYC Department of Environmental Protection.

The NYC Carbon Challenge, started in 2007, 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. To date, New York City's 17 leading universities, the 11 largest hospital organizations, 12 global companies, 19 residential management firms, and 19 hotels have pledged to voluntarily reduce their building-based emissions by 30% or more within the next ten years.

The City of New York invites property management firms that manage portfolios of multifamily buildings to join the NYC Carbon Challenge. Participants will join a well-established program that includes 19 residential management firms that have committed to significant reductions in GHG emissions and have begun to implement innovative energy reduction measures.

For more information, please visit [www.nyc.gov/carbonchallenges](http://www.nyc.gov/carbonchallenges) and <http://www.nyc.gov/html/gbee/html/challenge/multifamily-buildings.shtml>.

## The Challenge

The New York City Mayor's Office invites property management firms to join universities, hospitals, commercial offices, and hotels to reduce greenhouse gas (GHG) emissions from either individual buildings or a portfolio of selected buildings by 30% or more over the course of ten years. Participating management firms will help selected buildings reduce their energy use and emissions, measured as carbon dioxide equivalent per gross square foot (CO<sub>2</sub>e/sq. ft.), by 30% or more within ten years of starting the Challenge.

## **Benefits of the Challenge**

The NYC 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 NYC 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 an NYC 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 NYC 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. Buildings that are not required by NYC Local Law 84 to submit energy use benchmarking data can track progress by reporting common area electricity usage and whole building fuel consumption or by purchasing aggregate energy use data from the local utility company.
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 will be required to 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. **Annual One-on-One Meetings.** The Mayor's Office staff and the Challenge participants will meet one a year to review the participant's progress, consider any obstacles to achieving reductions, and discuss a strategy to reach the carbon reduction goal.
7. **Access to Resources and Technical Expertise.** The Mayor's Office will provide direct access to staff and information to connect participants with financial incentive programs, industry experts, other peers and city agencies.
8. **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 Mayor's Office of Sustainability website.

### **Completing the Challenge**

To complete the NYC Carbon Challenge, each participating firm will achieve their selected Challenge goal from each individual building or across their Challenge portfolio, subject to verification by the Mayor's Office. There are no negative consequences or punitive repercussions for not meeting the Challenge goal.

## Details of the Program

### 1. Accept the NYC Carbon Challenge

To accept the NYC 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 (CO<sub>2</sub>e/sq. ft.), either from individual buildings or a portfolio of buildings by 30% over the course of ten years.

### 2. Choose Participating Buildings

Each participating firm will identify the buildings to include in the NYC 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%, 40%, or 50% reduction in emissions. A representative from each of these buildings will submit a participation letter committing to the selected 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%, 40%, or 50% reduction across this portfolio. Buildings participating within the “Challenge portfolio” are not required to achieve a 30%, 40%, or 50% reduction in emissions individually, but must commit to a target of at least 15% reduction in emissions 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%, 40%, or 50% 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.

### 3. Tracking GHG 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.

- **GHG Emissions Inventory.** Participating firms will submit an annual Carbon Emissions Inventory using NYC 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. Buildings that are not required by NYC Local Law 84 to submit energy use benchmarking data can track progress by reporting common area electricity usage and whole building fuel consumption or by purchasing aggregate energy use data from the local utility company.
- **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. Any disclosed information will be anonymized and/or aggregated, unless a participant gives explicit approval to the Mayor's Office to release their data. When a Challenge participant reaches the 30%, 40%, or 50% goal, the Mayor's Office 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 (CO<sub>2</sub>e/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 for the 30% reduction goal, 2007 or later for the 40% reduction goal, or 2005 or later for the 50% reduction goal. 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%, 40%, or 50% 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. Heating oil distillates No. 2, No. 4, and No. 6 with biodiesel blend: US Gallons (US Gal)
  5. Steam: Thousand Pounds (Mlbs)
  6. Propane or other fuels used for backup generation: US Gallons (US Gal)
  7. On-site/locally-based off-site renewable electricity: Kilowatt-Hours (kWh)
- **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.

- **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.
- **GHG Emissions per Square Foot.** The Challenge uses carbon dioxide equivalent per gross square foot (CO<sub>2</sub>e/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 (CO<sub>2</sub>) 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 (CO<sub>2</sub>e) associated with a given amount of fuel or energy use. The NYC Carbon Challenge carbon coefficients for electricity and steam were developed by the Mayor's Office and are compliant with the Compact of Mayors and the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) BASIC level.
  - **Electricity and District Steam.** The NYC 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 NYC Carbon Challenge uses the carbon coefficients for natural gas, propane, and heating oils #2, 4, and 6, which were developed by Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC).
  - **Onsite and Locally-Based Offsite Renewable Electricity.** The electricity generated by onsite and locally-based offsite renewable sources (wind, solar, or geothermal) will have a carbon coefficient of 0.00.

#### 4. 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

## **5. 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.

## **6. Annual One-on-One Meetings**

Annual one-on-one meetings will be held by the Mayor's Office of Sustainability between each Challenge partner and Mayor's Office staff. Meetings will cover:

- Background information about the Challenge partner and major changes to their portfolio
- Current progress toward the Challenge goal
- Status of deliverables to Mayor's Office, including the Climate Action Plan and annual updates to the Carbon Emissions Inventory
- Strategy moving forward, any issues or complications to achieving the goal, and potential solutions to help achieve success

## **7. Access to Resources and Technical Expertise**

The Mayor's Office will provide direct access to staff and information to connect participants with financial incentive programs, industry experts, other peers, and City agencies.

## **8. Promotion and Recognition**

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

- Press announcements from the Mayor's Office
- Placement of news articles and other media highlighting the success of Challenge participants
- Promotion of participant involvement at Mayor's Office and industry events
- Individually tailored Mayor's Office of Sustainability promotional materials

- Inclusion of firm 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 NYC Carbon Challenge logo on vetted documents, web pages, social media, or other media