

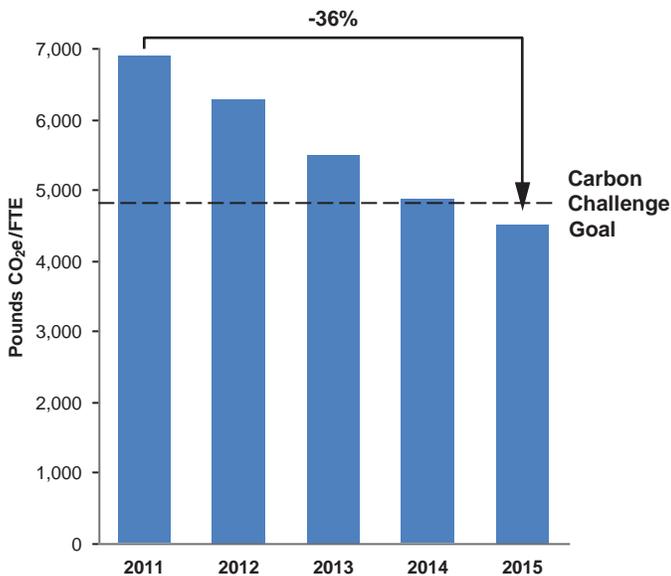
Case Study: BlackRock and Rudin Management Coordination

One of New York City's major commercial tenants leads the way in reducing GHG emissions through innovative efficiency strategies and coordination with the building owner.

BlackRock is a global investment management corporation headquartered in midtown Manhattan, with 580,000 square feet of leased office space across three buildings. As a participant in the NYC Carbon Challenge for Commercial Offices, BlackRock has reduced energy use and GHG emissions from its leased office spaces and data centers through a combination of energy efficiency retrofits, efficient space utilization, and coordinated upgrades in tenant and landlord shared building systems.

Working with New York City-based CodeGreen Solutions, BlackRock has identified numerous energy savings measures. To date, BlackRock's greatest reduction in energy use has come from a data server virtualization project that reduced the electricity use of their data center at 40 East 52nd Street by more than 50 percent. BlackRock has also retrofitted all lighting fixtures and controls at its three office locations, replacing many existing halogen and fluorescent fixtures with LED-based technology with occupancy-based sensors. This project is expected to reduce electricity consumption by over 950,000 kiloWatt hours (kWh) and yield an estimated \$180,000 in annual savings. Additionally, BlackRock installed 75 new electricity sub-meters across its three buildings, allowing operations staff to monitor existing lighting, plug loads, and heating, ventilation and air-conditioning (HVAC) systems in near real-time to gather information on energy consumption patterns and quickly identify and correct energy use anomalies, such as excessive after-hours consumption. The sub-meters will also allow BlackRock to baseline, evaluate, and track the impact of additional energy conservation measures as they are planned and implemented.

BlackRock has also partnered closely with its owner, Rudin Management Company, Inc. (RMC), to reduce the energy consumption of shared building systems within BlackRock's office space at 40 East 52nd Street. Both parties have agreed to split the capital costs and cost savings of ten air handling units that are being retrofitted with variable frequency drive (VFD) enabled, premium efficiency motors for all return and supply fans. This project is expected to reduce electricity consumption by 850,000 kWh and yield an estimated \$160,000 in annual savings. The VFDs are able to modulate the air flow more precisely, improving tenant comfort and control. This project also opens up potential for future demand response opportunities by allowing for time of day load adjustment reductions.



To meet the Carbon Challenge goal, which is measured per full time equivalent employee, BlackRock also worked to use its office space more efficiently by converting underutilized office space to denser workplaces and building out new spaces to highly energy efficient standards. Since 2011, BlackRock has added over 650 employees while reducing the overall energy use in its office space by over 15 percent.

In just five years, BlackRock has achieved the Carbon Challenge goal by reducing GHG emissions per full time employee from the energy used in their office spaces and data centers by more than 36 percent. Over the coming years, BlackRock will continue to invest in efficiency projects and explore additional coordination opportunities with RMC to further reduce energy consumption and GHG emissions.