

Energy Conservation Steering Committee ANNUAL UPDATE 2010

October 22, 2010

Message from Deputy Mayor Goldsmith

Consistent with the study my office recently released, *Maximizing Efficiency in NYC Government: A Plan to Consolidate and Modernize Back-Office Operations*, the City's energy management initiatives to achieve a 30% reduction in energy consumption and greenhouse gas emissions will lead to cost savings for the City while maintaining, if not improving, its level of service. Critically, the City will utilize a data-driven approach to audits and retrofits and deploy an enterprise metering and monitoring system. There are energy-saving opportunities in every City building; we just need to provide the right tools, training, and awareness to find and act on them. With commitment from those at both the leadership level and the ground level, New York City can serve as a model to the rest of the country and the rest of the world for saving energy and money.

Message from Deputy Commissioner Maron

On behalf of the DCAS Division of Energy Management staff, I would like to congratulate our colleagues across City government for the wonderful energy conservation accomplishments over the past year. Climate action involves collaboration across City agencies. For example, it took the cooperation of no less than 28 City agencies to benchmark the City's 2,790 largest buildings. We wouldn't have a robust O&M plan or metering strategy without our willing partners at DOE who participated in various pilots over the past year. Similarly, DOITT has been an essential partner in the development of SEPTS. And of course, FDNY, DSNY, DOT, NYPD, DPR, DOC, CUNY, DEP, and others have enthusiastically worked with us to implement retrofit projects and to identify sites for solar electric, solar hot water, and cool roof installations. We anticipate that our collaborations with agencies will become even stronger as we move forward, and I am excited to see what we can achieve together in the coming year.

In October 2007, Mayor Michael R. Bloomberg issued Executive Order 109, which mandated the PlaNYC goal of reducing municipal greenhouse gas emissions 30 percent by 2017 (30x17), created the Energy Conservation Steering Committee, and set a dedicated funding stream for achieving the goal. In Spring 2008, the Division of Energy Management (DEM) at the Department of Citywide Administrative Services (DCAS) was named the lead in the implementation of the Steering Committee's plan to achieve the 30x17 goal. Since then, DEM has ramped up completion of energy retrofits by over 200% a year; finalized the roll-out strategy for the City's Operations and Maintenance initiative; organized the first Green Team at the Manhattan Municipal Building; and developed software to better track and manage the energy performance of City facilities. These accomplishments have set a strong foundation for achievement of the 30x17 goal and better energy management Citywide.



Other key activities to support the goal include:

- **Implementing the Greener, Greater, Buildings Plan (GGBP), a four-piece legislative package signed by Mayor Bloomberg in December 2009.** The City achieved its first GGBP milestone by benchmarking the energy use of City buildings in May 2010, and continues to move forward with audits, retro-commissioning, and retrofits for buildings over 50,000 square feet.
- **Proving that investments in building retrofits lead to real energy cost savings.** In February 2010, the City's consultants completed a measurement and verification study which found that 97 lighting retrofits completed before 2007 led to \$4 million in annual energy cost savings.
- **Rolling out the Energy Efficiency Operations and Maintenance (O&M) Plan to ensure that the City operates and uses buildings as efficiently as possible.**
- **Developing the Sustainability, Energy, and Property Tracking System (SEPTS).** Once completed, SEPTS will enable better tracking and coordination of sustainability and capital projects across City agencies.

Now that the City has hired staff, developed strategic plans, and prepared to deploy various energy management tools to the agencies, many of the pieces are in place. As the end of 2010 nears, the City is poised to move full steam ahead in its efforts to capture energy savings and increase sustainability in all areas of municipal operations.

Energy Management by the Numbers

- 87,000,000: Dollars in federal and state grant monies awarded to NYC for energy efficiency and clean energy projects.
- 4,000,000: Annual dollar savings on the City's utility bill due to building retrofits since 2008.
- 80,786: Metric tons of Greenhouse Gas emission reductions from capturing methane at the City's wastewater treatment plants to date (CO₂e).
- 15,000: Metric tons of Greenhouse Gas emission reductions from building retrofits since 2008 (CO₂e).
- 5,973: Total alternative fuel vehicles in the City's fleet.
- 2,790: City-owned buildings benchmarked using the Federal Environmental Protection Agency's Portfolio Manager tool.
- 109: Building audits completed or underway since 2008.
- 95: Building retrofits completed since 2008.

PROGRAM HIGHLIGHTS



SEPTS

In Winter 2011, the City expects to deploy the Sustainability, Energy, and Property Tracking System (SEPTS), a database that will centrally collect, track, and report on information concerning the energy and environmental performance of City government buildings and capital projects. SEPTS is the result of a collaboration between DCAS and DOITT with the support of DOE, SCA, DDC, OMB, and the Mayor's Office. The system will integrate and build on multiple existing databases, improving data to support many operational functions. SEPTS will facilitate tracking and compliance for the City's new sustainability- and building-related laws; allow DCAS's Division of Real Estate Services (DRES) to more efficiently collect agency occupancy information and space requests; automate building benchmarking and reporting; create a consistent format for building data across City agencies; coordinate agencies' project selection and implementation; and make it easier for agencies to collect, update, and verify building and project data.

Benchmarking

On May 1, 2010 the City completed energy benchmarking for all its facilities larger than 10,000 square feet - 2,790 buildings in all. The benchmarking information helps the City identify the best opportunities for emissions reductions and is crucial in the process of selecting audits and retrofits. DCAS is currently working with partner agencies to refine the benchmark data. By May 2011, DEM will make the information publicly available in accordance with Local Law 84.

Training & Outreach

In conjunction with the O&M Plan, the City is rolling out an outreach strategy that equips agency energy teams with energy management tools, educates building users, motivates agencies with accountability and recognition, and shares New York City's experience with the private sector and other municipalities. Outreach activities and materials to date have included a recognition ceremony for O&M pilot participants, monthly energy updates to agency energy teams, light switch stickers reminding occupants to turn off lights, the formation of the City's first Green Team at the Manhattan Municipal Building, and posters to encourage building tenant involvement at agencies participating in Peak Load Management. Last year the City offered energy management training to 233 facility operators and energy managers, and soon we will open an energy efficiency training center for school custodial engineers and launch a refurbished website that highlights energy management tools and case studies.

Scaling up & Diversifying

The City is working to diversify its contracting vehicles to more quickly and cost-effectively implement energy conservation measures in buildings. For example, DCAS and DDC are collaborating to integrate efficiency work into DDC capital projects. Additionally, DCAS is developing a Request for Proposals (RFP) to Energy Service Companies (ESCOs) for energy services in City-owned buildings smaller than 50,000 square feet and hopes to release another RFP for larger buildings later in the year in order to expand the City's contracting capacity, streamline project implementation, and achieve better value. The City is also leveraging existing requirements contracts and job order contracts for O&M related tasks, including steam trap and thermostat replacements, boiler tune ups, weatherization, and pipe insulation.

Metering & Monitoring

To better monitor its energy use and inform operational decisions, the City is deploying an Energy Enterprise Metering System (EEMS) that supports the City's commitment to energy efficiency, peak load management, and smart networks. The City will build on existing meters and Building Management System (BMS) units by installing electric, steam, fuel oil, and natural gas smart meters and integrating them with Citywide monitoring software. In addition, EEMS will automatically control energy consuming equipment and peak demand load through existing BMS units. The City plans to release an RFP for EEMS software development in early 2011, and the system is expected to be operational by the end of 2011. The new system will help set the foundation for the future smart grid, connecting emerging technologies like solar photovoltaic, cogeneration (cogen), and electric vehicles.

Operations & Maintenance

The City is currently rolling out the Energy Efficiency Operations and Maintenance Plan, a strategy that draws on the results of a year-long pilot and a consultant study of best practices. The preliminary roll-out phase, which involves the seven largest agencies, focuses on repairing, maintaining, and operating existing equipment efficiently; increasing training and outreach to improve skills and raise awareness; and providing management oversight, accountability, and transparency. DCAS is providing agencies with tools to foster more preventative maintenance and efficient operations, including training for staff, tenant outreach, computerized maintenance management systems, meters and monitoring systems, energy managers, and more. In exchange, agencies are expected to meet annual energy reduction targets, report on the roll-out of the O&M plan, and track their energy performance.

ARRA

The City has made significant progress on projects funded by the \$80.8 million Energy Efficiency and Conservation Block Grant (EECBG) awarded as part of the American Recovery and Reinvestment Act (ARRA).

- The first 64 ARRA-funded audit sites have kicked off.
- Retrofit projects at a number of the City's most iconic buildings, including NYPD Headquarters and the main branch of the New York Public Library, are in the design phase and will go into construction next summer.
- Citywide roll out of the O&M plan is underway.
- In October 2009 DOE began installing boiler fuel catalysts and economizers in schools with boilers burning No. 4 and No. 6 oils.
- Feasibility studies for cogeneration at 1 Centre Street and the North River Wastewater Treatment plant kicked off in October.
- Though not directly related to the City's carbon footprint, two other projects being funded through EECBG are also progressing:
 - o A study to assess compliance with the City's energy code kicked off in August.
 - o This fall, the City expects to create a Local Development Corporation to administer an energy efficiency Revolving Loan Fund.

30x17 PROJECT UPDATES

EXISTING BUILDINGS: RETROFITS & REPLACEMENTS
 Since 2008, 95 retrofit projects and 45 energy audits have been completed. Over 230 additional retrofit projects and 64 energy audits are currently underway. In accordance with the GGBP, the City will conduct comprehensive energy audits, retro-commissioning, and retrofits in buildings over 50,000 square feet. Additionally, DCAS will work to increase efficiencies in buildings smaller than 50,000 square feet through a small building retrofit program. The RFP for this program will be released in Fall 2010.

EXISTING BUILDINGS: OPERATIONS & MAINTENANCE (O&M)
 In June 2010, the City completed a year-long O&M pilot program at 16 facilities managed by DCAS and DOE. The pilot resulted in an average of 11.3% energy savings through no-cost measures such as changing temperature settings. Based on the lessons learned from the pilot, DEM has developed an Energy Efficiency Operations and Maintenance Plan, which is currently being rolled out to the City's seven largest agencies.

EMERGING TECHNOLOGIES
 DCAS continues to pilot new technologies in its buildings. This year's pilots include dimmable ceiling-fixture ballasts at 1 Centre Street and a Demand Ventilation System, which will adjust ventilation air flow based on occupancy, at the Manhattan Criminal Court. Additionally, DCAS was awarded NYSERDA grants to fund solar hot water installations at 18 FDNY facilities.

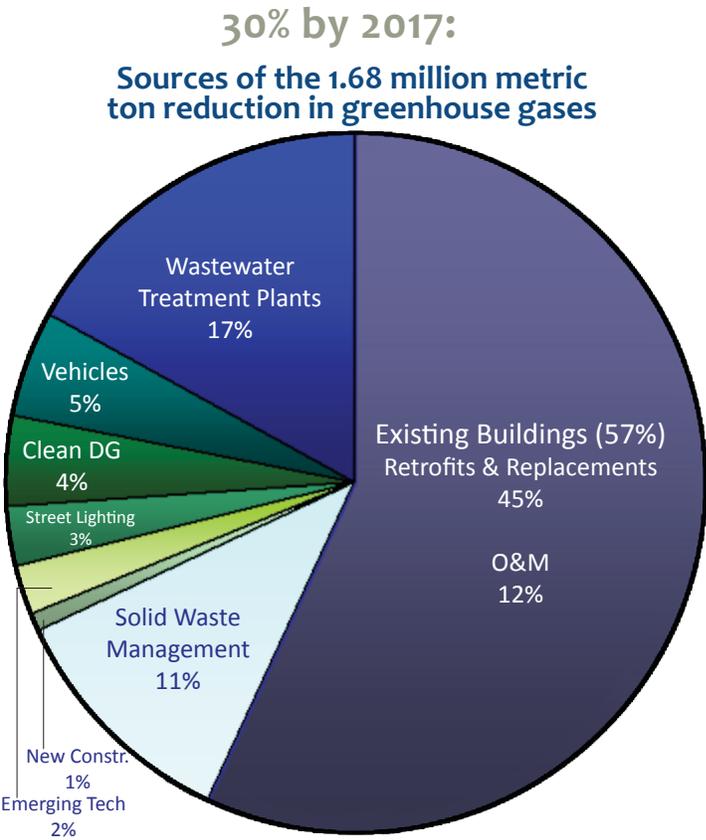
STREET LIGHTING
 Since January 2009, DOT installed over 106,000 energy efficient lights on streets, parks, highways, and bridges. These projects are expected to reduce energy consumption of public lighting by 25%. The City is also piloting light-emitting diode (LED) technologies in Central Park and along FDR Drive.

CLEAN DISTRIBUTED GENERATION: COGENERATION
 The City is currently working on several cogeneration (cogen) projects, on-site energy generation that uses clean or renewable fuel sources to produce electricity and steam or hot water. Cogen projects include a Combined Heat and Power (CHP) plant at Rikers Island, which has reached the 90% design milestone and will go into operation in 2013, and multiple feasibility studies to explore large-scale CHP at a complex of office buildings and court houses and in wastewater treatment plants.

RENEWABLES
 The City is pursuing 3 MW of solar photovoltaic (PV) in collaboration with DOT, DSNY, DEP, NYPD, DOHMH, and DOE. Eight small solar PV systems are currently in design and the City has received ARRA funding for the installation of another five large systems. An RFP for third-party ownership and installation of solar on City buildings will be released in Fall 2010.

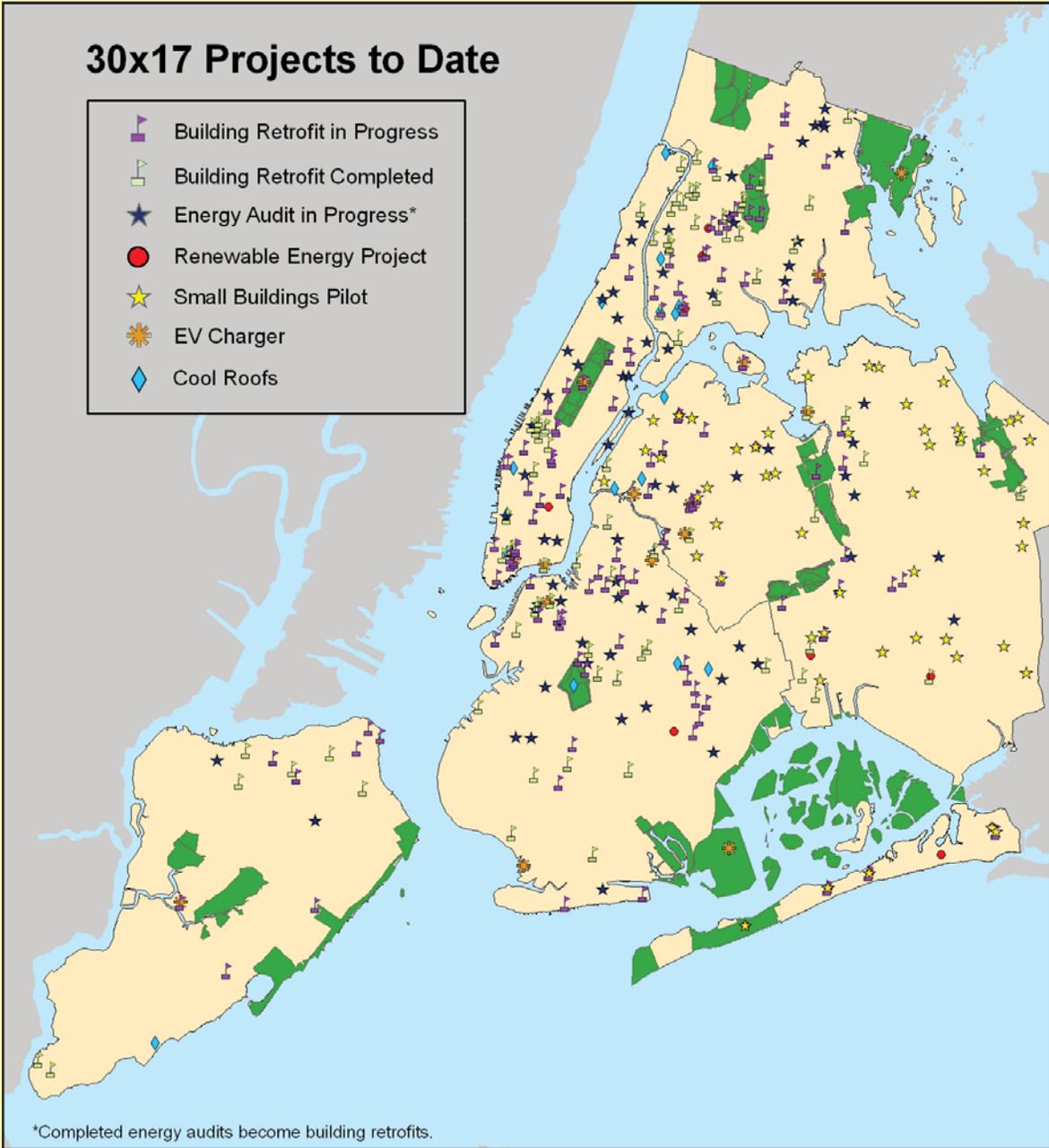
VEHICLES
 The City's fleet is currently over 24% hybrid or alternative fuel vehicles, including 353 electric vehicles. In January 2010, the City launched the Clean Fleet Transition Plan to ensure that vehicles are replaced with right-sized and efficient vehicles to further green the fleet. As part of this effort, the City is introducing at least 42 additional electric vehicles to the fleet and will receive 42 chargers through a U.S. DOE grant to support the expansion of charging station infrastructure.

WASTEWATER TREATMENT PLANTS
 The greenhouse gas reduction strategy for wastewater treatment plants focuses on methane reduction and beneficial reuse projects as well as energy efficiency improvements to DEP's core operations. Projects completed since 2006 and projects underway will reduce DEP's carbon footprint by 236,310 metric tons of CO₂e per year.



30x17 Projects to Date

-  Building Retrofit in Progress
-  Building Retrofit Completed
-  Energy Audit in Progress*
-  Renewable Energy Project
-  Small Buildings Pilot
-  EV Charger
-  Cool Roofs



*Completed energy audits become building retrofits.

FULL STEAM AHEAD

The City has made substantial progress over the past year moving CO₂e reductions forward by benchmarking all City buildings over 10,000 square feet, building SEPTS, continuing to retrofit buildings, and finalizing the Operations & Maintenance Plan. Over the next few months, the City will fully deploy SEPTS, begin to implement the O&M Plan at the City's seven largest agencies, and roll out the Energy Enterprise Metering System Citywide. In addition to ramping up the number of audits and retrofits in buildings larger than 50,000 square feet, the City will also take on its smaller buildings with the release of an RFP for energy services. The solar RFP promises expanded solar opportunities at City facilities and the City fleet continues to become greener as hybrids and electric vehicles replace traditional sedans and trucks. Additionally, a new user-friendly website will be launched to serve as a centralized hub for energy management and to inform the public about what New York City government is doing to lead the way towards a **greener, greater future**.



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