30x17 Energy Conservation Steering Committee ANNUAL UPDATE

December 2009

In October 2007, Mayor Bloomberg issued Executive Order 109. It mandated that City government reduce its energy consumption and its greenhouse gas (GHG) emissions 30 percent by 2017 (30x17) and established the Energy Conservation Steering Committee, chaired by Deputy Mayor Edward Skyler, to create the plan to achieve this goal. In July 2008, the Steering Committee released *The Long-Term Plan to Reduce Consumption and Greenhouse Gas Emissions of Municipal Buildings and Operations (Long-Term Plan)*, a comprehensive and cost-effective strategy based on existing technologies and best practices. In Spring 2009, the Steering Committee designated the new Division of Energy Management (DEM) at the Department of Citywide Administrative Services (DCAS) as the City's lead in the implementation of the *Long-Term Plan*.

July 8, 2008, release of the *Long-Term Plan*. (from left: Ashok Gupta, Natural Resources Defense Counsel; Ray Kelly, Commissioner New York Policy Department, Mayor Michael R. Bloomberg, Deputy Mayor Ed Skyler, and Gil Quiniones, New York Power Authority.)

The City has been busy these past few months setting a strong foundation for the achievement of the 30x17 goal, scaling up project implementation, and centralizing the efforts of the *Long-Term Plan*. It is benchmarking its buildings, creating new data management systems, studying metering technologies, and testing operations & maintenance best practices. The City has expanded its energy audit program to ensure that the most cost-effective retrofits move forward and has rolled out training for City staff to maintain the energy savings achieved. Agencies are also scoping out clean and renewable energy applications and continuing to green the City's fleet. And this is just the beginning of the City's effort to make City government operate in a greener, greater way.

Planned Annual Greenhouse Gas Reductions by 2017 by Project Group - 1.68 million metric tons (mt) per year	
Existing Buildings: Replacements & Retrofits	741,408 mt, 45%
Existing Buildings: Operations & Maintenance	194,930 mt, 12%
Clean Distributed Generation	65,278 mt, 4%
Vehicles	89,000 mt, 5%
Street Lighting	52,434 mt, 3%
Wastewater Treatment Plants	285,793 mt, 17%
Solid Waste Mgt Plan	192,000 mt, 11%
New Construction	17,268 mt, 1%
Emerging Technologies & Trends	41,889 mt, 2%

Source: *The Long-Term Plan to Reduce Energy Consumption and Greenhouse Gas Emissions of Municipal Buildings and Operations*

MESSAGE FROM THE DEPUTY MAYOR

Two years ago, as part of *PlaNYC*, we set the ambitious goal of reducing greenhouse gas emissions from New York City's municipal buildings and operations 30% by 2017. While much of the work still lies in the years ahead, we are proud to report on the Energy Conservation Steering Committee's progress to date. With over $280 million committed and planned since we launched this, New York City is continuing to lead by example in the fight against climate change. We have also begun to tackle one of the city's largest hurdles — existing building — with energy-efficient retrofits in the pipeline at over 220 locations. Accounting for nearly 80% of the greenhouse gas emissions citywide, a comprehensive strategy to make our buildings more efficient is critical to achieving our goals for City government and for the rest of the city.

Edward Skyler
Deputy Mayor

MESSAGE FROM THE COMMISSIONER

Reducing our greenhouse gas emissions in the face of global climate change is a critical task for New York City. I am proud that DCAS is leading the City's efforts to meet the energy goals of *PlaNYC*. Our new Division of Energy Management, led by Deputy Commissioner Ariella Maron, is launching many innovative and exciting programs, with much more to come. I look forward to working together with our colleagues in all City agencies as we implement our comprehensive strategy for better energy management.

Martha K. Hirst
Commissioner

PROGRESS HIGHLIGHTS

As the City continues to ramp up to achieve the 30x17 goal, implementing a more strategic approach to energy management is crucial to success. In addition to increasing the number of retrofit projects completed, the City has focused on a set of new initiatives to identify the best opportunities to deploy clean energy and efficiency projects, pilot strategies to improve energy management at facilities, and track building performance.

Clean Distributed Generation

Clean Distributed Generation (Clean DG) systems are small, on-site energy generating systems that use clean or renewable fuel sources to generate electricity and/or to capture and utilize waste heat. Available Clean DG technologies include combined heat and power (HP) systems, solar photovoltaic (PV) systems and building-integrated wind turbines. The *Long-Term Plan* identifies Clean DG as contributing up to 4 percent to the GHG reduction target. EDC and DCAS have surveyed the 30 most promising facilities to install Clean DG technologies and plan to release an RFP for feasibility and engineering consulting services in 2010.

Metering & Monitoring

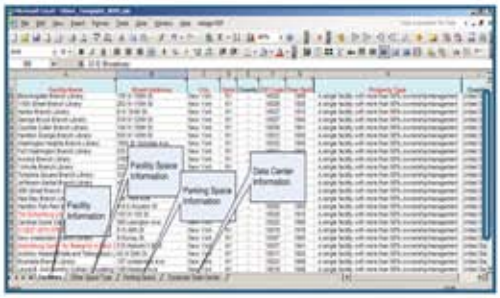
Advanced metering systems collect and analyze real-time energy use data, providing information that aids effective demand management solutions and building operations support. Metering is a proven technique to reduce energy consumption. It provides accurate and instantaneous access to energy use and emissions data and demonstrates to building staff that the City is tracking energy performance in its buildings. The City has launched two related metering programs: 1) In collaboration with the New York Power Authority (NYPA) and EnergyICT, the City is testing and evaluating metering and monitoring systems in eight pilot facilities.

2) The City is also working with consultants to provide metering and monitoring solutions for various classifications of City buildings and to create an implementation plan for Citywide deployment. This study will take into account lessons learned from the pilot.

Audits

An energy audit provides a comprehensive understanding of a building's energy systems and identifies all cost-effective opportunities for energy savings. To date, the City has completed 22 comprehensive energy audits of City-owned buildings with another 14 energy audits near completion. Implementation of the measures recommended in these audits is estimated to save the City over $5 million in energy costs annually and will reduce GHG emissions by over 1,000 metric tons annually. The City is expanding the program significantly to cover at least 100 audits a year.

Benchmarking



The U.S. EPA Portfolio Manager allows users to track and benchmark building energy performance and, in some cases, compares similar buildings' characteristics against a national survey to apply an ENERGY STAR rating. Following the lead of the City's Department of Education (DOE), the City launched a benchmarking initiative in May 2009 to expand this effort to other agencies. With support from agency Energy Teams, City staff is verifying building information and expects to have all City-owned buildings over 10,000 square feet benchmarked by the end of FY10. The City will analyze the benchmarking data and use the information to prioritize building energy efficiency upgrades.

Operations & Maintenance

O&M consists of building-level practices associated with routine maintenance that prevent equipment degradation and ensure efficient systems operations. The City commissioned an O&M study that identified energy-saving O&M opportunities and best practices. A pilot to develop and implement facility-level O&M plans was recently completed in November 2009 in 16 buildings (10 schools and 6 municipal buildings); and with great support from facility staff, the City has already made energy saving O&M improvements to building systems and operational practices. The City will base its O&M Citywide rollout program on the outcomes of this pilot.

American Recovery and Reinvestment Act

The City applied for and was awarded an $80.8 million Energy Efficiency and Conservation Block Grant from the U.S. Department of Energy in September 2009. The grant will help fund existing and upcoming *Long-Term Plan* projects through FY12, including energy audits, energy efficiency retrofits, improved code compliance, improved O&M practices, retro-commissioning, and Clean DG. In all, $16 million will be applied to a Revolving Loan Fund to support the City's Greener, Greater Buildings Plan. According to the Department of Energy's estimated calculations, the projects funded by this grant will create or retain 1,957 jobs, reduce GHG emissions by 882,395 metric tons, and save 13,410,242 million BTUs of energy.

Additionally, the City submitted applications to the New York State Energy Research and Development Authority under the State Energy Program grant opportunity for $6.1 million to fund three types of PlaNYC projects: energy efficiency retrofits, renewable energy projects, and clean fleet initiatives.

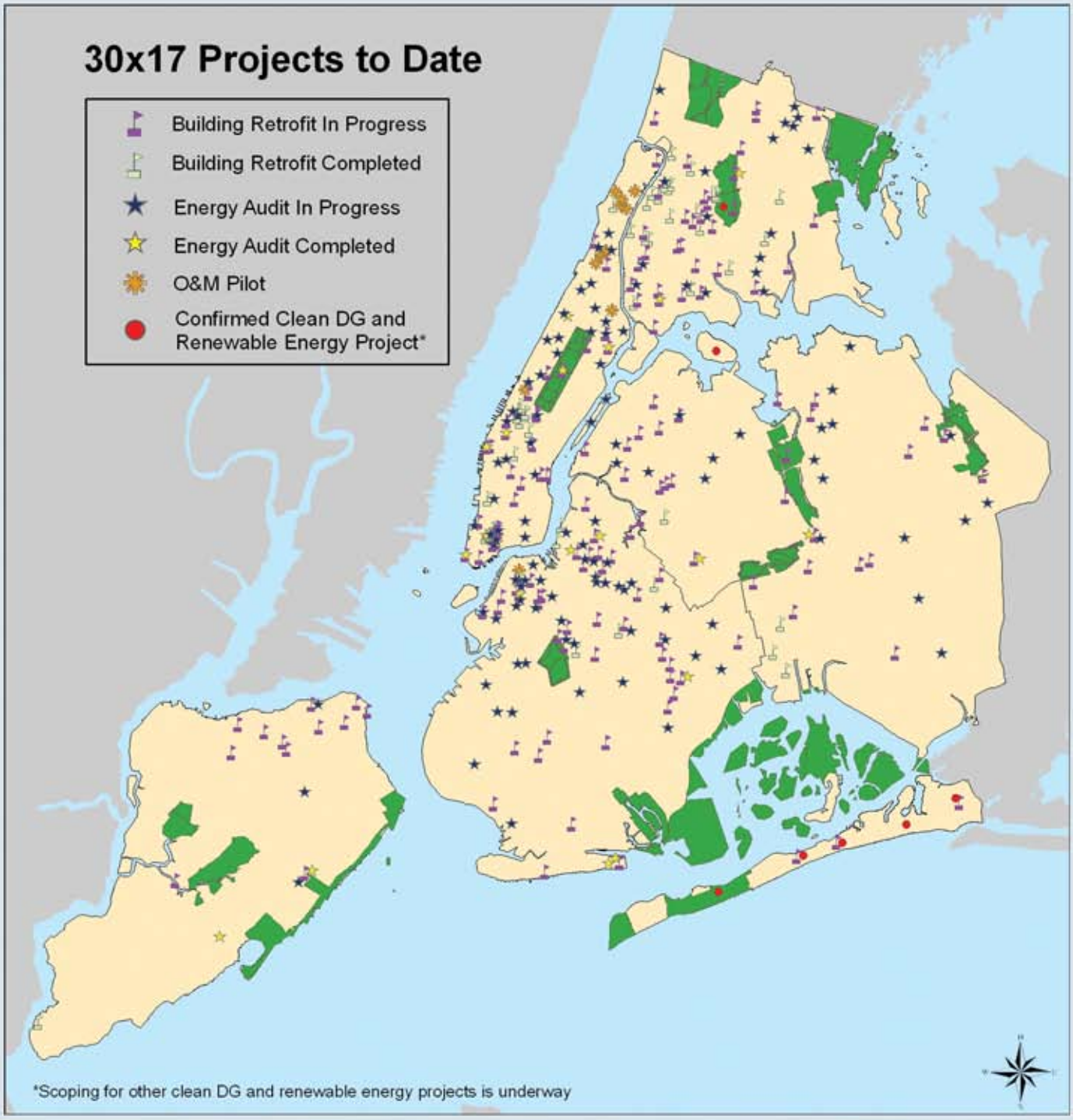
STATS AT A GLANCE

Since the release of the Long-Term Plan in July 2008, the City has been retrofitting buildings with energy-efficient technologies, performing comprehensive energy audits, and investigating processes needed for Citywide deployment of energy management efforts. Below are snapshots of our work on GHG reduction projects and other supporting programs:

Energy efficiency retrofit projects completed or in the pipeline will result in:

- 222 facility upgrades
- $22 million in energy cost savings
- 85,500 metric tons of GHG reduction

		STATUS	PROGRESS
PROJECT GROUPS	Existing Buildings: Replacements & Retrofits	Launched	Since 2007, 62 projects have been completed. Over 160 additional projects are in the pipeline, as well as 100 comprehensive building energy audits.
	Existing Buildings: Operations & Maintenance (O&M)	Pilot Phase	An O&M study to compile best practices and to identify areas of improvements in City buildings was completed in September 2009. An O&M pilot was rolled out to 16 buildings to test recommendations from the study. The City is in the process of hiring a new O&M Director to oversee the deployment of the O&M program Citywide.
	Clean Distributed Generation (Clean DG)	In Survey	ASite surveys completed for the 30 most promising City facilities to install Clean DG technologies. An RFP for consulting services for feasibility and engineering studies is under development and expected to be released by early 2010.
	Vehicles	Launched	In FY08 and FY09, the City purchased 421 hybrid replacement vehicles. The City developed a clean fleet transition plan that will go into effect by the end of the year.
	Street Lighting	Launched	The City has installed energy efficient-lighting on streets, parks, highways and bridges, which is expected to reduce energy consumption by 25%. In addition, in 2009, the City began piloting various LED technologies in Central Park and along FDR Drive. The agency plans to fully deploy LEDs in those locations after the pilot phase.
	Wastewater Treatment Plants	Launched	Emissions have been reduced by 27% at the Wards Island Wastewater Treatment Plant and the captured methane is being used productively. Other methane projects are in the process of analysis or design, including two sites that are being evaluated as part of Clean DG efforts.
	Emerging Technologies	In Survey	The pilot for third-party financing for solar electric panels on City buildings is still underway, and the City has received responses to an RFI that will inform revisions to the RFP to better reflect current industry conditions. The City is pursuing solar thermal installation on five firehouses. The City is also collaborating with NYPA to evaluate biomass energy projects and is working on a “safe” building-mounted wind turbine pilot.
SUPPORTING PROGRAMS	Building Energy & Environment Tracking System (BEETS)	In Survey	The City has hired a consultant, Tririga, to develop a Citywide building and project information system. The project is expected to be completed in Summer 2010.
	Metering & Monitoring	Pilot Phase	A metering and monitoring technology study is underway to identify best available technologies and to create a deployment strategy. The City kicked-off a pilot to install metering and monitoring systems in various buildings in September to help inform this effort.
	Measurement & Verification	In Survey	A consultant-led study to evaluate energy savings of completed building retrofit projects will be completed in December. The study will also recommend a process for the City to conduct regular measurement and verification.
	Benchmarking	Launched	Data for 48 libraries has been uploaded to EPA Portfolio Manager, and data for 186 more buildings has been sent to EPA for uploading. Building data has been verified by City agencies for an additional 1,100 buildings with agencies’ staff working on data for another 2,300 buildings. Collected and verified buildings data will be uploaded to U.S. EPA Portfolio Manager by the end of FY10.
	Training & Outreach	Launched	In FY09, 75 City staff members participated in three training programs: Certified Energy Manager, Building Operators Certification, and Overview of Building Systems. For FY10, the courses will be offered numerous times for participation by 255 staff members. Additionally, DEM has hosted a series of inter-agency meetings for agency staff to share best practices and their experiences.



NEXT STEPS

Over the next few months, the City will finalize some of its key studies, such as the measurement and verification analysis and benchmarking. We will also begin to assess the impact of its pilots, including the O&M and the metering and monitoring pilots. In addition, we will kick-off new efforts, such as a solar thermal pilot on five firehouses and our newly enhanced energy audit program. With the strong foundation we are setting, we will also continue to scale up implementation as we move over 200 retrofit projects through the design and construction process and begin to deploy our O&M strategy Citywide. Finally, by FY11 we will receive bids from our updated RFP for the installation of solar electric panels on City buildings, begin investment-level studies for the most promising Clean DG installations, and continue to transition to an even cleaner fleet.

For more information please visit:
http://nyc.gov/html/dcas/html/resources/oec_planyc.shtml

DCAS
Division of Energy Management

PlaNYC