

CREATING AN ENERGY EFFICIENCY “MARKETPLACE” WITHIN CITY GOVERNMENT OPERATIONS

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Overview

In order to accelerate its energy efficiency program and meet an ambitious reduction goal, New York City developed an internal market for energy efficiency efforts. Through a variety of programs fostering competition among its largest energy consumers as well as education and incentive programs, the City has adopted behavioural changes, encouraged creativity, and created a shared sense of responsibility along with metrics for energy efficiency value. This diversified approach, a shift from a prior top-down strategy, has allowed for increased engagement among stakeholders, and an increase in the number, types, and quality of projects. This efficiency “marketplace” will enable the City to achieve its energy reduction goal in a more cost-effective manner and with greater speed.

Background

In Fiscal Year (FY) 2006, the operation of New York City’s government resulted in the emission of 3.9 million tCO₂e, and the City’s government used approximately 6.5% of New York City’s overall energy. In July 2008, the City released its Long-Term Plan to Reduce Energy Consumption and Greenhouse Gas Emissions of Municipal Buildings and Operations (Long-Term Plan). This plan was a road map for achieving the goal first outlined in PlaNYC in April 2007—to reduce emissions from City government 30% from FY 2006 levels by 2017—then further codified through executive order 109 of 2007 and local law 22 of 2008. The local law and the executive order also established a funding stream for energy efficiency and GHG reduction initiatives, committing 10% of the City’s annual energy budget for these measures (approximately \$800 million in 2008, resulting in \$80 million in energy efficiency investments), and established a governance structure for the City’s efforts.

The Long-Term Plan enumerated the scale of the 30% reduction, outlined a strategy for reaching that goal, and estimated the cost of the strategy at \$2.3 billion. The strategy focused on buildings, the City’s largest source of emissions, with plans for large-scale retrofits and the introduction of an Operations and Maintenance program for City buildings. Together, these programs comprised 57% of the overall strategy’s GHG reductions. In addition, the City’s strategy included plans to improve efficiency at some of the City’s 14 in-city wastewater treatment plants through retrofits and methane emissions capture, efficiency upgrades for street lighting, and plans to increase the efficiency of the City’s fleet through right sizing, adopting proven vehicle technology, and continue to pilot new technologies.

While New York City has achieved some success in reducing greenhouse gas emissions from government operations 30% from 2006 levels by 2017 (“30x17”) through energy efficiency, much more needs to be done to ensure achievement of the ambitious target. Continued implementation of current initiatives, including comprehensive retrofits and audits and retro-commissioning for buildings, vehicle fleet fuel reduction, and WWTP methane control, must be augmented by new and innovative measures to ensure the GHG goal is achieved.

Additional pathways were needed to achieve the goal the 30x17 goal. Therefore, the City needed to shift from a top down strategy managed directly by a single stakeholder/agency focusing on one type of project to an expanded, diversified plan engaging multiple agencies and supporting a variety of project types and implementation strategies. The City developed a number of competitive programs all with the goal of creating a sense of shared ownership and accountability for reaching the GHG reduction goal, encouraging creativity and innovation, and helping the City select those projects with the best return on investment (the highest energy savings for dollars invested).

Methods

Accelerated Conservation and Efficiency Program (ACE) – A competitive inter-agency program providing \$100 million for quick energy efficiency and clean heat retrofits, prioritizing projects with quick implementation timelines, and high energy savings. The ACE Program overall is expected to contribute over 5% of the City government's 30% reduction by 2017.

Expenses for Conservation and Efficiency Leadership (ExCEL) – A competitive interagency program to support City facility operators in their energy reduction efforts. DEM has allocated \$1.6 to fund energy-reducing operations and maintenance measures, tools and equipment to assist facilities personnel, training programs, and outreach and communication efforts for awareness activities. The proposed measures are estimated to reduce 840 metric tons of annual greenhouse gas emissions

Energy Smart Competition - The City's highest energy consuming agencies will compete to have the largest reductions in annual usage. Agencies that beat the citywide average reduction in energy usage are awarded with City funding and the agency with the largest reduction will get additional funding and recognition. The goal of the competition is to identify and reward City agencies that have shown excellence in meeting the stringent PlaNYC 2030 energy usage reduction goals.

Energy Management Institute – A targeted training program for energy management professionals in city agencies at no cost to the agencies.

Results

- Improved capital allocation and cost effectiveness for energy projects
- Increased innovation and project diversity across facilities
- Greater agency participation and increase in projects
- Cost-share programs to leverage economics across agencies
- Increased energy system interest, knowledge and expertise for City employees
- Shared responsibility and accountability for meeting the energy reduction targets
- Adaptive and flexible planning mechanisms that build upon previous models

Conclusions

- By creating an internal market-place for energy efficiency, the City was able to decrease its project management burden, and quickly identify and select projects with the best return on investment (identify more projects more quickly and select those projects with the highest savings per dollar invested).
- By rewarding energy reductions, the City was able to encourage energy efficient behaviour as well
- An effective strategy with multiple stakeholders requires a shared sense of responsibility – a top-down implementation approach does not work for broad energy reduction targets reliant on behavioural change.
- Ambitious energy reduction goals require diversified strategy, including project types and implementation methods
- There is a difference between a policy plan and an implementation plan; in order to execute an effective long-term strategy, and at times you must re-evaluate and innovate to adapt to current conditions.