

DEP Gets Some Gr\$\$n for Going Green

PlaNYC set the ambitious goal of reducing carbon emissions from municipal facilities by 30 percent by 2017 and, to date, the City has achieved a 12 percent reduction in emissions compared to the Fiscal Year 2006 baseline. To help close the gap by 2017, the Department of Citywide Administrative Services (DCAS) created the Accelerated Conservation and Efficiency (ACE) program, which funds capital projects that will significantly reduce energy use and emissions, can be completed by 2017, and have a cost-share component.

With a nearly half million dollar contribution from DCAS and the New York State Energy Research and Development Agency, DEP has completed energy audits at all in-city wastewater treatment plants and several upstate facilities. These audits helped to identify a number of energy conservation measures, some of which recently received \$2.8 million in funding through the ACE Program. The projects include



A new low-horsepower, high-speed blower for low demand periods has been installed at the Rockaway Wastewater Treatment Plant. If the trial period is successful, ACE funds will be used to purchase the blower for permanent use. A similar blower will replace an existing high-horsepower blower at the Bowers Bay Wastewater Treatment Plant.

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Spotlight on Safety

Prevention through Design

Many businesses and government entities throughout America are "going green" by focusing on energy efficiency and more environmentally friendly construction and work practices. These emerging green industries have created new kinds of occupations and workers and, as a result, they face exposures to new hazards in the workplaces. One of the best ways to address exposure to some of these hazards is through planning, organization, and engineering. This process is known as Prevention through Design (PtD)

and its goal is to design out or minimize hazards and risks to prevent and control occupational injuries, illnesses, and fatalities. The National Institute for Occupational Safety and Health (NIOSH) is leading a PtD initiative to promote this concept and to highlight its importance in all business decisions. In fact, a growing number of business leaders are recognizing PtD as a cost-effective means to enhance occupational safety and health.

Go to [NIOSH - Prevention through Design](#), for more information.

At DEP, everyone is responsible for safety. If you or anyone on your team is concerned about your working conditions, it's okay to ask your supervisor or your bureau's EHS liaison how they can help. If you've still got questions, you can call the EHS Employee Concerns Hotline. It's DEP's responsibility to acknowledge and fix unsafe situations, procedures, and practices. With your help, we'll not only get the job done, we'll make it safer for ourselves, our coworkers, our families, and our city.

CALL (800) 897-9677 OR SEND A MESSAGE THROUGH PIPELINE. HELP IS ON THE WAY.

Commissioner's Corner: Energy Edition

Vincent Sapienza, Deputy Commissioner of the Bureau of Wastewater Treatment, is guest commentator this week.



One part of DEP's mission to protect public health and the environment is the collection and treatment of the 1.3 billion gallons of wastewater that New York City produces each day. What people may not realize is that this one part of our mission requires the vast majority of the energy that DEP uses. In fact, the energy used to collect and treat wastewater to federal Clean Water Act standards, and thereby protect our local waterways, consumes about 88 percent of DEP's total energy use. The 96 Pump Stations and 14 treatment plants operated by the Bureau of Wastewater Treatment (BWT) consume significant amounts of electricity, fuel oil, and natural gas and, last year, required the expenditure of more than \$80 million to supply the necessary energy. And, the demand for power continues to grow each year as new systems are activated and increase our energy footprint.

Energy audits of all 14 wastewater treatment plants were recently completed to identify opportunities to reduce demand, particularly in the energy intensive areas of pumping, aeration, and dewatering. BWT has already begun implementing several initiatives to increase efficiency. The OpX program has also helped us develop operational set points and standard operating procedures that will help us react quickly if power usage at our facilities veers from ideal levels. We've also partnered with the city's Department of Citywide Administrative Services and the New York Power Authority to upgrade some older equipment, like centrifuges, which pay for themselves through reduced power costs.

One particular energy opportunity that we've been pursuing is harvesting more of the fuel that our own wastewater treatment processes generate. During

digestion, anaerobic bacteria feed on the organic material in sewage sludge and in the process produce methane gas, or natural gas. This natural gas is currently being utilized for some of our applications, but there is more available that can be used to generate electricity or sold to natural gas utilities, and both of these options are actively being explored. We are also looking at other ways of integrating renewable energy into our operations. Later this year, installation will begin on a 200,000 square foot solar array atop the Port Richmond Wastewater Treatment Plant on Staten Island that will generate 1.6 million kilowatt hours and supply as much as 10 percent of the plant's energy needs.

In addition to cutting expenditures and helping to keep rates low for our customers, reducing our energy use will also cut our output of greenhouse gas emissions, which is good for the environment and will help the City reach the PlaNYC goal of a 30 percent reduction in municipal emissions by 2017.

I'd like to thank all the men and women of BWT and all the other bureaus that are working every day to help us become an even more efficient department while we continue to protect public health and the environment. Please send recommendations on how and where energy saving opportunities exist to: NYCEnergy@dep.nyc.gov.

Why Energy Matters to...



Esperanza Olivera, Chief of Facilities Management, Bureau of Water Supply

I provide support to the Bureau of Water Supply's (BWS) Facility Responsible Managers, which includes preparing and administering the bureau's expense budget for facility services and office equipment, energy management, and coordination with building management and vendors on facility projects. Energy management is important to me because there are significant environmental and economic costs of generating and using energy, and our actions today will impact the quality of life for future generations.

Energy management begins with a comprehensive understanding of the bureau's energy needs and usage. As the Energy Bureau Liaison, I organize, analyze, and communicate the bureau's energy use and costs to the DEP Energy Office. BWS has over 150 electric and gas accounts across four different

utilities that use approximately 175 billion British Thermal Units (enough to power approximately 1,950 homes) at a cost of \$4.6 million per year. I am responsible for opening, closing, and transferring all electric and gas accounts and meters for BWS facilities and to report any energy needs and billing discrepancies back to the Energy Office. Reconciling facility names and addresses with utilities has been particularly challenging because of the wide geographic range of BWS's operations and the fact that many of our facilities are in remote locations. I also work with facility managers to understand the causes of significant changes in their facilities' energy use. To this end, my team and I are developing more customized reports on the bureau's energy use and costs for our facility managers. This information will also help our Planning and Operations directorates identify opportunities for energy conservation and equipment optimization projects, which will also assist in reaching DEP's goal of becoming energy neutral in the near future.

(DEP Gets Some Gr\$ for Going Green... continued)

the purchase and installation of low-horsepower, high speed blowers at the Bowery Bay and Rockaway wastewater treatment plants, LED (light-emitting diode) lighting for the Oakwood Beach Wastewater Treatment Plant, and high-efficiency bubble ceramic diffusers for the Coney Island Wastewater Treatment Plant. Together, these projects will reduce annual emissions by 3,690 metric tons, reduce total electricity use at these four plants by about 10 percent (or over 12 million kilowatt hours per year), save close to \$1.5 million on annual energy costs, and have a simple payback of under four years.

The ACE allocation is just the latest example of outside funding that DEP's Office of Energy has been able to obtain. Since 2009, DEP has received grant funding from local, state, and federal agencies totaling nearly \$90 million. This money has been used for projects to upgrade digester gas systems at multiple wastewater treatment plants in order to capture fugitive methane emissions, as well as for the design of a 12 megawatt



High-efficiency fine bubble ceramic diffusers will be installed in the aeration tanks of the Coney Island Wastewater Treatment Plant. The current diffusers have been in operation for over 17 years and are nearing the end of their useful life.

cogeneration system at the North River Wastewater Treatment Plant. When completed, these projects will eliminate 109,319 metric tons of carbon emissions each year and reduce annual energy costs by \$6.6 million. Securing outside funds helps to keep rates low for DEP customers, enables energy and greenhouse gas management projects to begin sooner, and frees up funds for other important projects.

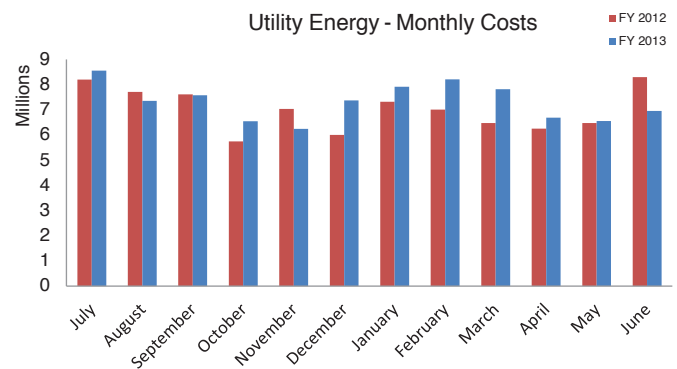
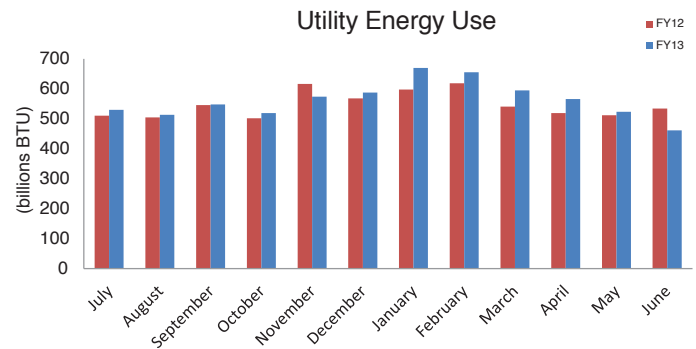
Equipment Spotlight

During times of high electricity use, such as hot summer days, different areas of the city may experience a voltage reduction. A voltage reduction by the electricity provider lowers the amount of power being delivered in order to avoid a blackout or brownout. However, voltage reductions can interrupt operations by tripping equipment off and has the potential to damage critical equipment at DEP's wastewater treatment plants. To protect the equipment and to ensure that all wastewater is properly treated, earlier this summer installation of voltage meters was completed at all 14 in-city plants. The meters measure the amount of voltage going into the plants and are equipped to send an alarm to the



Bureau of Wastewater Treatment Communications Center if there is a voltage reduction of five percent or more. The alarm will allow managers and plant staff to make any necessary operational adjustments and inspect equipment for damage.

DEP Utility Energy Use and Costs



For Fiscal Year 2013, DEP spent close to \$88 million on 2.9 trillion British Thermal Units of electricity, natural gas, and steam. As compared to Fiscal Year 2012, energy cost increased by 4.4 percent and energy consumption increased by 4.5 percent.

We welcome your feedback! To submit an announcement or suggestion, please email us at: newsletter@dep.nyc.gov.