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## **DEP Unveils New Algae Biofuel Pilot Project**

*Pilot Converts Wastewater Algae at Rockaway Treatment Plant into Fuel*

Environmental Protection Commissioner Cas Holloway today unveiled a new pilot project that will convert algae into biofuel. The \$387,000 project runs treated wastewater through a mechanical device, called an Algal Turf Scrubber, built at the Rockaway Wastewater Treatment Plant in Queens. Wastewater contains nitrogen and phosphorous, which are the primary food source nutrients for plant growth. Through photosynthesis, algae grows on the Algal Turf Scrubber, which is then harvested and processed into butanol, a high quality fuel that can be put right into a gas tank. DEP is working in partnership with HydroQual, Biohabitats and the University of Arkansas to pilot this cutting edge technology.

“The Algal Turf Scrubber is DEP’s latest effort to convert what has until now been considered waste into productive resources like energy,” said Commissioner Holloway. “This project is still in the pilot phase, but the results are promising; we can convert algae grown from the wastewater New Yorkers produce every day to high quality fuel that can be put right in your gas tank. Technologies like this are at the cutting edge of Mayor Bloomberg’s PlaNYC vision of a greener, greater New York.”

The Algal Turf Scrubber is a system that consists of two 350-foot metal sloped troughs and mimics a stream ecosystem by varying flow currents and using sunlight to promote algae growth. One of the algae processing system’s two sloped troughs receives 40 gallons of treated wastewater per minute and the other receives 20 gallons per minute. When sufficient algae growth occurs, typically at 10 to 14 day intervals, the algae is removed using wet/dry vacuums. This is needed because algae has a high water content and the removal system allows for easy separation of the algae from the water. The algae is then sent to the chemical engineering department at the University of Arkansas, where it is converted to biofuel. The Algal Turf Scrubber is a patented technology developed by Dr. Walter Adey and help by the Smithsonian Institution.

The algae biofuel project is part of the Jamaica Bay Watershed Protection Plan. Last month, DEP released an updated version of the plan, which shows the progress DEP is making on its goals to protect one of the most bountiful wildlife habitats in the Northeastern United States and tracks initiatives including wastewater treatment plant upgrades, oyster and eelgrass pilot restoration projects, a wetlands restoration at Paerdegat Basin, and green infrastructure projects. The updated plan is available online at [www.nyc.gov/dep](http://www.nyc.gov/dep).

DEP has recently taken significant steps to make the city more environmentally sustainable, including:

- Earlier this month, DEP issued a Request for Proposals seeking a vendor to process and market sludge for beneficial re-use. Sludge is a residual solid that is a byproduct of the wastewater treatment process. Since sludge is organic material, it can be reused as fertilizer or soil conditioner for parks, farms, lawns, and golf courses; to produce clean energy; and other potential applications, such as asphalt-paving mixes. The Request for Proposals seeks technologies that are cost-effective and conserve natural resources, and is designed to allow for the widest possible range of options that meet those criteria.
- In September, Mayor Bloomberg unveiled the NYC Green Infrastructure Plan, which will improve harbor water quality by capturing and retaining stormwater runoff before it enters the sewer system. The plan, if endorsed by the State, will save \$2.4 billion in capital costs. Some of the first green infrastructure projects for this plan are being piloted in the Jamaica Bay Watershed.
- Also in September, DEP placed a small oyster bed and a field of reef balls within Jamaica Bay to evaluate oyster growth, survival, reproduction, water quality and ecological benefits. Oyster reefs once thrived in Jamaica Bay, forming an important habitat for many species and filtering Bay water. The findings of this pilot will inform future attempts to restore oyster habitat in the Bay.
- In May, DEP launched the second phase of the Eelgrass Restoration Project to help improve Jamaica Bay's local ecosystem. The project consists of 1,000 individual plantings and is part of the City's efforts to improve the overall water quality and ecology of Jamaica Bay. The project is being done in collaboration with Cornell Cooperative Extension and the National Park Service and includes approximately 1,000 eelgrass plantings at three sites near Breezy Point, Breezy Point Yacht Club, and Dubos Point. Eelgrass is a type of submerged aquatic vegetation that grows in estuaries and shallow bays. It is important for fish and shellfish as shelter and habitat. Additional future eelgrass plantings in the bay is planned.

DEP manages the city's water supply, providing more than 1 billion gallons of water each day to more than 9 million residents, including 8 million in New York City, and residents of Ulster, Orange, Putnam and Westchester counties. Approximately 7,000 miles of water mains, tunnels and aqueducts bring water to homes and businesses throughout the five boroughs, and 7,400 miles of sewer lines take wastewater to 14 in-city treatment plants. For more information, visit [www.nyc.gov/dep](http://www.nyc.gov/dep) or follow us on Facebook at [www.facebook.com/nycwater](http://www.facebook.com/nycwater).

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