



Broward County Water and Wastewater Division



“This exciting new endeavor is a tangible example of the steps Broward County is taking to help residents save money and ensure our environment for future generations.”

Barbara Sharief, Commissioner, Broward County

THE OPPORTUNITY

Broward County is the second-most populous county in the state of Florida, with approximately 2 million residents. County leaders sought a green, environmentally responsible solution to improve the overall functionality of its wastewater treatment facilities. In 2011, with the goal of lowering its overall energy, operational, and maintenance costs, Broward County began investigating the implementation of FOG receiving and cogeneration system technology to improve its aging facilities. Driven by a passion to reduce its greenhouse gas emissions and carbon footprint, Broward County leaders partnered with ENGIE Services U.S. (ENGIE) on this comprehensive green initiative.

THE PARTNERSHIP

Broward County Water and Wastewater Division worked with ENGIE to implement a cogeneration system at the wastewater treatment facilities. Cogeneration, or combined heat and power, is the simultaneous production of electricity and heat from a single fuel source, in this case biogas, which is produced during the anaerobic digestion process at the wastewater treatment plant. As part of the complete cogeneration system, ENGIE installed a methane fueled engine-generator, which produces power from the biogas so that it can be used by the plant to offset power purchased from the local utility, Florida Power & Light. The cogeneration system significantly reduced the treatment plant's annual

Program Highlights

- Guaranteed savings of more than \$26MM over 17 years
- Reduces greenhouse gas emissions by 8,893 metric tons annually, equivalent to removing 1,879 cars from the road every year
- The cogeneration engine generator offsets the purchase of utility power at the wastewater treatment plant by 25%
- Received regional and statewide recognition for sustainability leadership at the annual Southeast Florida Climate Compact conference

Technical Scope

- Installed a complete new system that collects fats, oils, and grease (FOG) and sends it directly to the anaerobic digesters for more efficient treatment



Technical Scope (continued)

- Provided a biogas cleaning system for the conditioning and transfer of biogas to the engine generator
- Installed a new cogeneration engine generation system with the capability of producing up to 1.99 MW of power
- Provided electrical and control integration for operation of the new systems

energy consumption, possessing the capability to produce up to 1.99 megawatts of power. Broward County also worked with ENGIE to transform common urban waste into additional energy savings, by building a highly efficient system that uses recycled fats, oils and grease (FOG) to create additional methane for generating electricity. Diverting the FOG from the secondary treatment processes reduces the amount of energy required to treat and handle the material. By treating FOG directly in the digesters, biogas production is increased, which enhances the amount of energy that can be offset at the facility.

3 DIMENSIONS OF IMPACT

ENGIE is committed to building three dimensions of impact in every customer's future:



Supporting People



Saving Money



Protecting the Environment

In recognition of this tremendous contribution to helping the County achieve its sustainability goals, the treatment plant received the Broward County Seal of Sustainability for environmental stewardship benefiting the environment, economy and community. At program completion, Broward County became the first county in South Florida to use recycled FOG as a way to create additional methane for generating electricity. This project represents a huge step in proactive innovation for the County while providing a sense of pride and accomplishment for the community as a whole. Thanks to this innovative program, Broward County has enhanced the facility by lowering energy costs and improving plant processes and operations by turning community waste into an asset. With guaranteed savings of more than \$26 million over 17 years and substantial greenhouse gas emissions reductions, the project ensures a more environmentally and economically healthy future for Broward County residents.

