

Green Innovation Grant Program

Project Title: Combined Heat & Power & Anaerobic Digestion

Grant Recipient: Cities of Gloversville & Johnstown

Location: Fulton County, NY

Green Infrastructure Practice: Environmental Innovation & Energy Efficiency

EFC Grant Amount: \$6,044,132

(ARRA)

Total Project Amount: \$10,315,702

GIGP ROUND **1**



Project Completed

Project Description:

This Gloversville/Johnstown Joint Wastewater Treatment Facilities (GJJWWTF) upgrade was designed to treat 13 million gallons of wastewater per day. In the 1990's, the plant attracted two cheese and yogurt manufacturers to relocate to the adjacent industrial park; their high-strength dairy whey now comprises 60% of the plant's load. This whey feeds anaerobic digesters, which provide biogas to fuel two 350 kW engine generators that operate either in parallel to the utility or independently to provide power during emergencies. As a result, the greenhouse gas emissions from plant operations have been reduced by 600% from 2009 levels.

The GJJWWTF is the first U.S. wastewater treatment plant that can produce 100% of its own power using renewable digester gas to fuel a combined heat and power (CHP) system. A total of 5.2 million kilowatt hours of electricity were generated during 2012 and the Anaerobic Digester System produced an average of 13.4 million cubic feet of biogas per month. A significant portion of the biogas powered the facility's cogeneration system, while the remaining biogas was flared. The zero-net energy-capable facility has resulted in approximately \$400,000 of electrical energy savings per year through the generation of renewable power on site.

Digester and Cogeneration Facility

This environmentally innovative CHP project treats municipal wastewater, additional sludge, and high strength industrial food processing wastewater. Benefits include preventing water pollution, generating digester biogas (methane), and utilizing waste heat created by the generators as a green heating source for the anaerobic digester. GJJWWTF's leadership and innovation has bolstered economic development in the region.

GIGP funding of this project facilitated completion of the CHP program at the facility. The recipient received co-funding from US Department of Commerce Economic Development Administration and New York State Energy Research and Development Agency (NYSERDA).



Winner of the 2012 Grand Prize - Industrial American Academy of Environmental Engineers and Scientists

