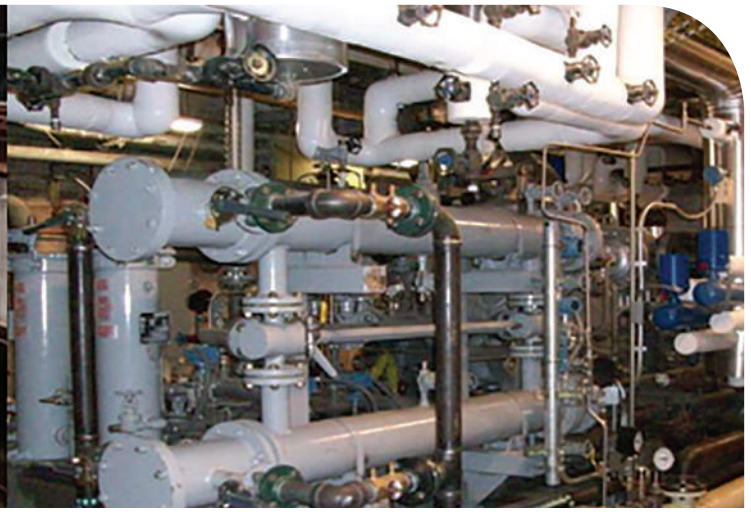


NEW YORK CITY, NEW YORK

Cogeneration re-development brings reliable and sustainable electricity and thermal energy to college campus in New York





NEW YORK CITY, NEW YORK



Contract Facts

13.4 MW

peak cogeneration plant size

\$5 million

annual energy cost reduction

43,400

estimated tons per year CO₂
emissions reduction

Facilities

22

buildings with cogenerated
electricity

37

buildings with thermal service

**EPA ENERGY
STAR CHP**
award winner

Scope

Veolia's energy consulting division, SourceOne, served as Owner's Representative for the re-development of a combined heat and power (CHP) facility for a university based in Manhattan. SourceOne provided technical and financial review, contract preparation, coordination of the project team and utility liaison. Services included review of equipment selection, space allocation, preparation of financial pro-formas and development of O&M and fuel cost models.

Challenge

In order to meet increasing demands for electricity, steam and hot water, the university sought to expand its existing 7 MW cogeneration plant. The new configuration allows the CHP to operate in island mode and also supports the college's Climate Action Plan by reducing greenhouse gas (GHG) emissions. The vast majority of the college's GHGs in 2009 came from energy needed to heat, cool, and power its buildings.

Solution

With two combustion turbines, two heat recovery steam generators and a steam turbine, the expanded CHP system generates up to 90,000 pounds of steam per hour and 13.4 MW of electricity. This microgrid system serves the electrical needs of 22 buildings and provides steam and hot water to 37 buildings

on campus. The university generates revenue by selling excess electricity to Con Edison when campus demand is low. The images at the top of the page show the construction of the plant in progress, as well as the fully commissioned system.

Result

The project allows the university to avoid 43,400 tons of emissions per year. In 2012, its microgrid was an important advantage following Hurricane Sandy (cover photo shows impact to NYC grid system). While the majority of Manhattan was without power, most of its campus was unaffected, highlighting district energy as a resilient and sustainable energy model. The resilience and efficiency of this system was acknowledged in 2013 when the college was awarded an EPA ENERGY STAR

award for its CHP installation. On the left panel is **Mike Byrnes**, SourceOne's Executive Vice President and Chief Operating Officer, who has since commented at a CHP summit on the project's success.