

Contract Details

Contract Type:

Design/Build; Own, Operate,
Maintain; Power Purchase
Agreement

Technology Type:

Biogas; Combined Heat and Power;
Cogeneration; Renewable Energy

Energy Savings:

30,000,000 kWh annually

Energy Project Size:

4.2 MW

Summary

In November 2008, the City of Dallas entered into a 20-year lease agreement with Ameresco for the development of a cogeneration facility. The combined heat and power plant provides the City a source of clean energy and aids the City in meeting State legislation calling for reduced energy consumption and utilization of renewable energy.



At the Southside Wastewater Treatment Plant in Dallas, Ameresco designed a cogeneration facility that utilizes the biogas to feed three generators. The heat captured from the engines produces hot water, which is utilized by the digesters.

Customer Benefits

While energy costs were rising, the City of Dallas (City) set goals to become as green as possible. Due to the minimal up-front costs for the City, and Ameresco's agreement to design, own, operate and maintain the cogeneration facility, the wastewater treatment plant proved to be a successful public-private partnership that provides the City a source of renewable electricity, which meets the State mandate. Biogas could reduce the City's electricity usage nearly 4 percent. In addition to the savings in electricity purchases, reduced energy consumption and carbon reduction, a guaranteed minimum amount of hot water is provided by the cogeneration plant for heating the digester solids.

Ameresco's responsibility for operating and maintaining the combined heat and power (CHP) plant reduces the City's risk and ensures the plant functions at an optimal level. The City should not be as vulnerable to price spikes or shortages associated with the grid because the purchase price for the electricity produced by the cogeneration facility is guaranteed.

Accolades

"Ameresco has played a significant role on the project by designing, constructing, financing and operating a 4.2 MW combined heat and power facility that will help the City meet its financial and environmental goals. Ameresco's project team utilized good quality control, customer service and site safety to deliver a facility that exceeded our expectations."

*- Richard V. Wagner, P.E.
Senior Program Manager
Wastewater Facilities Management
Dallas Water Utilities*

Environmental Benefits

Through the City's partnership with Ameresco, Dallas is expected to save the equivalent of 36,429 metric tons of CO₂ per year. The green benefit from this carbon reduction is roughly equal to:

- ▶ 361 acres of pine forest absorbing carbon
- ▶ 7,143 cars taken off the road for one year
- ▶ 3,095 households powered for one year

The project helps reduce the need for energy from traditional power plants fueled by fossil fuels.



About the City of Dallas, TX

The ninth-largest city and part of the fourth-largest metropolitan area in the nation, Dallas covers approximately 343 square miles and has a population of 1,299,543. Visitors are exposed to a city that models its slogan, "Live large. Think big.™" Its pioneering spirit is alive and well, and the philanthropic contributions from its many residents continue to enrich the community and quality of life. Dallas is also a leading business and meeting city. In 2010, 24 area businesses were named Fortune 500 companies.

Learn more at
www.dallascityhall.com.

About Ameresco

Ameresco, Inc. (NYSE:AMRC) is one of the leading energy efficiency and renewable energy services providers. Our energy experts deliver long-term customer value, environmental stewardship, and sustainability through energy efficiency services, alternative energy, supply management, and innovative facility renewal all with practical financial solutions. Ameresco and its predecessors have constructed billions in projects throughout North America.

For more information about Ameresco and our full-range of energy efficiency and renewable energy solutions, please visit www.ameresco.com.



The facility provides a guaranteed minimum amount of hot water for heating the round-the-clock operations of the digester vessels and boilers, and a minimum amount of electricity.

Services Provided

The Southside Wastewater Treatment Plant is located on over 2,800 acres, approximately twenty miles southeast of downtown and is operated by Dallas Water Utilities (DWU). The citizens of Dallas produce about 150 tons of biosolids each day. The plant's treatment capacity is roughly 110 million gallons of wastewater per day. Wastewater solids from the City are fed into heated digester vessels where they decompose by anaerobic digestion, which is a bacterial process carried out in the absence of oxygen. A by-product of this process is biogas, which contains 60% methane, and can be used as a green energy source. DWU used a portion of the biogas produced to fuel the boilers, which heated the digesters, the remaining amount of gas was flared.

In November 2008, the City of Dallas entered into a 20-year lease agreement with Ameresco for the development of a CHP plant. Ameresco designed, permitted, constructed, owns, and currently operates and maintains the CHP plant. The average daily biogas production from the digesters is 1.3 million cubic feet per day with an energy value of 550-600 Btu/cf. Now, the entire amount of biogas is fed into three Jenbacher Model 420 generators which have a combined nominal capacity of 4,200 kW. The heat

produced by the engines is captured for use in DWU's hot water loop to heat the digester solids. This project generates roughly 30,000 renewable energy credits (RECs) per year. Due to the demand and energy savings realized, the project qualified for incentives under the local utility's Commercial Standard Offer Program (CSOP).

Throughout the construction and coordination phases, Ameresco maintained a smooth progression to provide the purchasing experience the City demanded. Additionally, Ameresco worked with a local contractor, hired a plant operator from the Dallas area, and continues to support the local economy by purchasing consumables from local suppliers.

Ameresco persisted to overcome permitting challenges to obtain both the building permit and the air permit for the back-up fuel (natural gas). The facility qualified under the Texas standard air permit system for biogas, but the air permit for the natural gas (back-up fuel) required a new source performance standards (NSPS) permit. It took over a year to get the NSPS permit, which required Ameresco to obtain a single boundary agreement with the City. After a lengthy process, Ameresco was granted the necessary construction permits.



Aerial view of the facility and the City in the background.