JENBACHER

COMBINED HEAT AND POWER FACILITY

helps wastewater treatment plant increase efficiency, reduce power costs, and meet environmental compliance

»Our wastewater treatment plant is saving costs through our efficient and reliable combined heat and power system as well as with the use of process gas. Instead of having to buy gas for our operations, sometimes we are actually able to export power to the local electric utility.«

Keith Jones,
Superintendent of Wastewater Winston-Salem/Forsyth County Utilities

Background

Winston-Salem/Forsyth County Utilities provides high quality water, wastewater, and solid waste services to approximately 361,000 residential, business, and industrial users. Because of their commitment to responsible use of resources, reliable delivery and stewardship of the environment, the department wanted to cut power costs and increase the efficiency of its Muddy Creek Wastewater Treatment Plant. Located on the southern border of Forsyth County and permitted for 21 million gallons per day of residential and industrial wastewater, the plant sought a solution that would allow it to increase efficiency, achieve environmental compliance, and reduce long-term power costs.

Solution

At the heart of the newly installed cogeneration facility is a single Jenbacher J416 engine running on sewage gas. The combined heat and power (CHP) solution produces 1.1 MW of power.

Muddy Creek relies on excess thermal energy created during the engine's operation to promote its wastewater treatment processes. The facility's efficient and economical method of energy conversion achieves lower energy costs through the use of process gas instead of purchasing gas from utilities. For improved economics, the plant is now able to coordinate interconnection with the local electric utility to export power when possible.

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Results

Following installation in March 2020, the Muddy Creek Wastewater Treatment Plant has been living up to expectations—delivering greater efficiency, reducing power costs, and meeting environmental compliance for gas emissions from the facility.

Customer benefits

- Cogeneration systems usually save users about one third of primary energy when compared to separate power and heat generation.
- Muddy Creek saves even more through the use of process gas and can even generate additional income streams by selling excess power to the local utility.
- Since its installation, the system has provided reliable heat and power while achieving the expected availability level.
- The new CHP system helps the plant reach environmental gas emission targets.

Key technical data

Installed engines	1 x J416
Electrical output	1,137 kW
Thermal output	805 kW
Energy source	Sewage gas
Year of commissioning	2020

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About INNIO Group

INNIO Group is a leading energy solution and service provider that empowers industries and communities to make sustainable energy work today. With its product brands Jenbacher and Waukesha and its digital platform myPlant, INNIO offers innovative solutions for the power generation and compression segments that help industries and communities generate and manage energy sustainably while navigating the fast-changing landscape of traditional and green energy sources. INNIO is individual in scope, but global in scale. With its flexible, scalable, and resilient energy solutions and services, INNIO enables its customers to manage the energy transition along the energy value chain wherever they are in their transition journey.

INNIO is headquartered in Jenbach (Austria), with other primary operations in Waukesha (Wisconsin, U.S.) and Welland (Ontario, Canada). A team of more than 4,000 experts provides life-cycle support to INNIO's more than 55,000 delivered engines globally through a service network in more than 100 countries.

In March 2023, INNIO's ESG rating ranked first out of more than 500 companies worldwide in the machinery industry assessed by Sustainalytics.

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