TRIOGEN

Gas Engine
Application
Case Study

ANAEROBIC DIGESTER BIOGAS SITE

OAK GROVE RENEWABLES, SCOTTOW, NORFOLK, ENGLAND

AD Site, with ORC

The Oak Grove Renewables site is a 2 MWe biogas power plant in Scottow, Norfolk, commissioned in 2013. Future Biogas was set up in 2009 to develop, construct and operate biogas plants across the UK. Supplied by German turnkey biogas technology providers, Agraferm Technologies AG, the Oak Grove plant utilises around 35,000 tonnes per annum of maize and grass silage. This is sourced locally within a 12 km radius of the plant. The digestate is put through a press screw from German supplier FAN Separator GmbH before being used as a bio-fertiliser. Future Biogas currently has eight biogas plants including 6 bio-methane-to-grid facilities in operation and has another project under construction. The plants use a range of biomass feedstock sourced in partnership with local farmers.

RESIDUAL HEAT TO POWER

Philipp Lukas, CEO of Future Biogas, the developer of Scottow: "We see that more can be done to optimize performance of the biogas plants. We are pleased to work with Triogen as they offer a mature solution with a long track record. This allows us to build an attractive business case while reducing the overall cost of generating power from this site."

Applying the Triogen organic rankine cycle (ORC) technology, the residual heat from the engine is converted into electricity. The plant is expected to increase its electrical output by up to 9% without any additional input material.

"The Triogen team is very approachable and they work relentlessly to find a solution to whatever challenges come their way. I would recommend them wholeheartedly!"

Philipp Lukas,
CEO Future Biogas

CEO Future Biogas, Philipp Lukas, with Ms Margriet Leemhuis, Dutch Deputy Ambassador to the UK

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Fully commissioned ORC installation

SITE SETUP:	
Site type	Biogas Site
Feedstock	Energy Crops, Primarily Corn
Designed Heat Source	1x Jenbacher JMS612
Operating Engine Power	1.458kW

"Converting the excess heat available from a biogas plant into electricity increases the power output by 9 percent. Thus, we offer a key technology to making biogas more cost effective."

Henning von Barsewisch, CEO, Triogen

ORC FACTS	
Completion of Commissioning	November 2015
Flue gas temp into evaporator	467°C
Flue gas temp out of evaporator	180°C
Heat intake ORC	754 kWth

ORC BENEFITS	
Electricity provided to the grid	
Power	132 kWe
Guaranteed Power to Grid	127 kWe
Increase in power revenue	9%

Inaugural Event

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