



## **Bowman Power helps biogas plant reduce fuel consumption and greenhouse emissions**

**4<sup>th</sup> November 2019**

Bonnhoff Buchenhof Bioenergie (Bonnhoff) has reduced their fuel consumption by 5.7% and achieved an 18% reduction in greenhouse gas emissions (% CO<sub>2</sub>-equivalent) through the installation of [Bowman Power Group Ltd's](#) (Bowman) Electric Turbo Compounding (ETC) technology.

Bowman's ETC technology recovers otherwise wasted heat energy from an engine's exhaust and converts it into useful electrical power, in turn reducing emissions and fuel use. For this project, Bowman used their latest system, ETC 1000, which benefits from their 15 years of R&D into the technology, making it simpler to install, with a more compact footprint and a lower cost.

Bonnhoff operate two sites in Germany with over 440 hectares of agricultural land for growing crops, where a digester is used to turn any waste in to biogas. This biogas is used to generate power across four combined heat and power (CHP) plants, whilst the excess heat is used by a local school, gymnasium and fire station, along with the largest rose nursery in Europe.

Bowman's extensive experience with biogas engines, and track record from installing over 400 ETC systems in Germany, made them a natural choice to maximise the power generated by Bonnhoff.

### **INSTALLATION AND RESULTS**

The installation was conducted on Bonnhoff's Jenbacher J312 genset by Bowman and STORM-Group, who hold exclusive rights to sell and install ETC 1000 in Germany. Thanks to cooperation between all parties the work was conducted seamlessly, with testing and installation completed in just a few days and with minimal downtime.

By improving power density and fuel efficiency, fuel consumption was reduced by 5.7%, along with a reduction in associated CO<sub>2</sub> and NO<sub>x</sub> emissions. Volatile Organic Compound (VOC) emissions were also 30% lower as a result of reducing fuel short circuiting.

The combined CO<sub>2</sub> equivalent effect of these changes was an 18% reduction in greenhouses gas emissions. Over 12,000 kWh of power has been generated to date without any extra emissions being created.

### **QUOTES**

**Bjorn Bonnhoff, of Bonnhoff Buchenhof Bioenergie** commented "I have been very pleased with the results from the ETC 1000 system, with some highly promising initial gains in efficiency and reductions in emissions. Bowman and STORM-Group worked seamlessly together and have provided an excellent level of support from day one."

**Paul Dowman-Tucker, CEO of Bowman**, added "This project perfectly highlights our ability to work with partners, such as STORM-Group, to supply and install our ETC system wherever it is needed. By combining our track record for efficiency improvements in biogas engines, with STORM-Group's large network of over 160 service engineers, we are able to deliver strong levels of performance improvement in a very short time frame."

Bowman and STORM-Group have continued to strengthen their relationship, promoting the ETC 1000 technology at a customer event on the Bonnhoff site and through STORM-Group's Wulf Johannsen brand at the 3rd Norddeutscher Biogas-Branchentreff event in Germany.

A full case study with further analysis of the results [can be found here](#).



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**ABOUT BOWMAN POWER GROUP**

Bowman design, develop, install and maintain electrified turbomachinery products for improving internal combustion engines through reducing fuel consumption & greenhouse emissions and improving responsiveness.

Their innovative products help make the power generation and transport markets cleaner and more energy efficient. To date, they have generated in excess of 710GWh of free energy, saved over 350,000 tonnes of CO<sub>2</sub> and removed the need for over \$100 million of fuel to be burnt.

For 15 years, Bowman has developed products to make the use of fossil fuels greener where it is necessary to use them, whilst also easing the transition to clean energy through improving the performance of renewable fuel sources. From their flagship Electric Turbo Compounding technology, of which more than 800 have been installed worldwide, to other forthcoming electrified turbomachinery products, Bowman are committed to this vision.

Bowman is supported by a number of leading investment companies, including Ombu Group and Fjord Capital. The company is based in Southampton, UK, and employs around 50 staff.