Case Study - Pharmaceutical

Pharmaceutical giant GSK achieves multiple savings thanks to advanced technology from ENER-G

PPharmaceutical giant GlaxoSmithCline (GSK) will achieve multiple savings on energy and reduce carbon emissions thanks to an efficient cogeneration scheme provided by sustainable energy company ENER-G Combined power.

GSK have set ambitious environmental sustainability goals to reduce the impact of their own operations. They have set demanding targets for reducing their carbon footprint by 25% and water use by 20% by 2020. Combined Heat and Power (CHP) systems are helping GSK to reduce carbon emissions dramatically while allowing the company to make financial savings through operating a more efficient power generation system.

Through the partnership between GSK and ENER-G, turnkey CHP systems at eight GSK sites in the UK and Europe have already been installed. These systems have been specifically designed with GSK's business principles in mind, allowing them to make critical business decisions without worrying about where the energy is coming from.

ENER-G has been contracted to deliver 20MWe of cogeneration to 8 sites across the UK and Europe which equates to a total contract value of £15M. The first energy efficient Combined Heat and Power (CHP) plant situated at the Worthing site in West Sussex became operational in June 2009, with the most recent site at Ware GMS in Hertfordshire becoming operational in September 2011. These projects are a major part in the Climate change and energy reduction programme launched by GSK in 2007.

As part of the package, GSK has 24 hour support from a team of ENER-G engineers and a stock of spares are kept on site to ensure high availability is maintained which gives us peace of mind in our power generation.

Each year, across the sites, GSK will achieve a 25% reduction on their energy bills and save over 62,915 tonnes of carbon, equivalent to the environmental benefit of 20,972 cars off the road each year, reducing the site's CO2 output by 15%.

The benefits of cogeneration:

- Offers financial savings over conventional energy supply
- Primary energy savings deliver lower energy bills
- Higher efficiency offers reduced greenhouse gas emissions offsetting the carbon impact
- Greater security of supply and plentiful hot water
- Addition of chillers can provide efficient cooling
- Flexible procurement options
- Zero CAPEX required
- VAT savings
- Potential Government funding for energy efficient schemes
- Possible grant funding

The overall involved the installation of 6 ENER-G 2MWe cogeneration units, 5 ENER-G 1150kWe units, 1 ENER-G 1600kWe unit and 2 x ENER-G 1MWe units which will provide electricity, hot water and steam supply to the production facility. The system is powered by natural gas, which fuels the power generation. The exhaust fumes from the engine, at almost 600 degrees centigrade, pass through a boiler transferring the heat to the water and producing steam. Cumulatively the sites can produce 120400 MWh of electricity each year.

"The projects we have undertaken with ENER-G have strengthened our commitment to our strategy to reduce the consumption of primary resources and to further our research into productive and sustainable energy solutions."

Combined heat and power (CHP) – the simultaneous generation of electricity and useful heat – is almost twice as efficient as conventional power generation as the majority of heat is recovered and used on site, rather than wasted into the atmosphere. There is also no transmission lost through transporting electricity along many miles of electrical distribution cables.

The Typical payback period on CHP technology varies between two to four years.

ENER-G delivers small-scale 10kW to 10MW CHP solutions to customers around the world and it offers the broadest product range on the market, incorporating more than 1,400 installed cogeneration systems across the globe – powered by natural gas, biogas, diesel, biogas, propane or biodiesel.

Its UK-designed and manufactured systems are used in hospitals, hotels, leisure centres, supermarkets and factories worldwide, and among its high-profile customers is the British Royal family at Buckingham Palace and Windsor Castle. In the range up to 2MWe capacity; units can be delivered and packaged as a single unit with the controls, heat recovery units and engine within neat, compact, acoustically insulated enclosures suitable for either internal of external installation. Above 1MWe, every ENER-G cogeneration unit is bespoke, with the engine and system carefully designed to meet each specific application.

About ENER-G

ENER-G develops, delivers and finances sustainable energy solutions and technologies on a business to business basis worldwide.

We offer a "one-stop-shop" for all commercial and industrial energy requirements, from combined heat and power (CHP), renewable electricity generation from biogas, heat pump technologies, efficient lighting, controls, metering and data solutions and energy from waste.

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