

Case Study - School



A £5.4 million new build school and leisure Centre in Carmarthen will cut energy costs by approximately £10,000 per year, thanks to advanced combined heat and power (CHP) Technology.



Queen Elizabeth High School, Carmarthen

The CHP system, installed by ENER-G, will enable Queen Elizabeth High School and leisure centre to generate its own electricity, potentially cutting CO₂ emissions by 127 tonnes annually – the equivalent of a forest of almost 12700 trees.

Queen Elizabeth High School in Johnstown, Carmarthen, is a mixed community comprehensive school of 1,600 pupils, catering for all abilities between the ages of 11 and 18.

The campus, operated by Carmarthenshire County Council, has undergone a multi-million pound redevelopment which includes a new school building and leisure facility incorporating a competition standard swimming pool and new external sporting facilities.

The ENER-G 70 CHP system was commissioned in June 2008 following the development of the new school building and leisure centre by Whitehead Building Services.

As part of the package, ENER-G 's specialist CHP engineers will maintain the system for the county council.

ENER-G's experience in the cogeneration market dates back to 1984 when we began designing, manufacturing, installing and maintaining cogeneration systems. We have manufactured over 1400 CHP units from 4kW to 2MW and currently operate and maintain over 500 units around Europe.



Queen Elizabeth school ENER-G 70kW CHP Unit

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

ENER-G delivers small-scale 4kW to 10MW CHP solutions to customers around the world. We offer the broadest product range on the market, with more than 1,400 installed cogeneration systems across the globe – powered by natural gas, biogas, diesel, propane or biodiesel.

The applied CHP technology enables the organisation to generate its own electricity, radically reducing carbon emissions. This method is

highly energy efficient (85 per cent) as it recovers heat created in the electricity generation process and avoids transmission losses because the energy is used locally.

In conventional power stations, this heat is wasted because it disappears into the atmosphere. Instead, hotels and leisure centres can use it to provide heating and hot water.

Available funding

Building Schools for the Future is the biggest single government investment in improving school buildings for over 50 years. Funding is available for efficient energy technologies such as CHP. It is a the low carbon energy technology which helps reduce the building carbon footprint and also achieves significant savings on energy bills.

The benefits of CHP in the education sector:

Offers financial savings over conventional energy supply:

- Avoids Climate Change Levy
- Primary energy savings deliver lower energy bills
- Higher efficiency offers reduces greenhouse gas emissions offsetting the impact of the proposed Carbon Reduction Commitment.
- Greater security of supply and plentiful hot water
- Flexible procurement options
- Zero CAPEX required
- VAT savings
- Incorporate Enhanced Capital Allowances otherwise denied to the public sector
- Possible grant funding

About ENER-G

ENER-G Group is a leading distributed power generation and energy management company, providing clean energy initiatives with visible benefits to the environment.

As well as ENER-G Combined Power, the Group's international business activities include renewable power generation from landfill gas, energy from waste, and energy management.

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