

# Case study - Leisure Centre



## Affordable micro cogeneration technology reduces costs and improves environmental performance.

Leisure facility management company Leisure Connection delivers a first class local leisure service to the millions of people who enjoy sport and physical activity. Leisure Connection aims to reduce its carbon footprint and energy consumption at its 70 properties. Therefore they have introduced a common initiative that includes various actions from educating staff and clients on how to reduce energy consumption to the application of technical solutions such as metering, Building Energy Management System (BEMS) and Combined Heat and Power (CHP).

When the river Wansbeck in Northumberland burst its banks and flooded about 1,000 homes and businesses in September 2008, including the Riverside Leisure Centre, Leisure Connection turned to ENER-G to replace their damaged systems.

ENER-G were asked to supply, install and commission a highly efficient ENER-G 25Y micro CHP unit which provides 25kWe power to generate an energy efficient supply of electricity and hot water. Leisure Connection and ENER-G have worked together previously to provide energy efficient leisure facilities, with significant energy and carbon savings.

The modern, practically designed unit uses natural gas to generate power locally, displacing the need for carbon intensive grid-based electricity.

The ENER-G system is designed to integrate with the existing boiler plant to reduce its load. The heat captured from the micro CHP is used to generate heat at 38kWe per hour for the centre's domestic hot water and swimming pool requirements.



**The ENER-G 25Y unit at Leisure Connection**

The unit is connected to the site's electrical distribution and will generate up to 140,000 kWh electricity every year. With around 85% efficiency, which is some 50% higher than grid electricity, it guarantees 10,000 running hours between servicing.

Owing to its suitability for external installation the unit is located outside the existing plant room but is set to interface with the current services and pipe work connections.

The micro CHP unit has proven low noise levels so even though it is positioned externally it will not disturb any of the leisure centre users.

The projected carbon savings for the unit are 50 tonnes per year based on the unit running 17 hours per day, equivalent to planting 5000 trees.

The financial savings are predicted to be around £5,000 per year.

ENER-G worked closely with Leisure Connection throughout this project

and completed the installation and successful commissioning in April 2010.

As a result of a technology partnership with Japanese manufacturer Yanmar. ENER-G's micro-CHP range is available in a range of size from 4kWe to 25kWe.

The technology is more than twice as efficient as conventional power generating technology.

It is ideal for modestly sized buildings that need to sue electricity and heat for long periods, such as care homes, smaller medical centres, fast food restaurants, apartment blocks, office buildings, smaller hotels, leisure centres and compact supermarkets.

The micro CHP technology is designed to accommodate long service intervals reducing system downtime and increasing client savings.

ENER-G offers a range of service packages to ensure seamless operation and peace of mind.

#### Benefits of Micro CHP technology:

- Very low emissions
- Reduced building carbon footprint (lower CO<sub>2</sub> emissions)
- Reduced energy costs by up to 40%
- Reduced life cycle cost
- Minimal service requirements with long service intervals (10,000 hours)
- Low noise design:  
ENER-G 4Y: 53 dBA at 1m  
ENER-G 10Y: 56 dBA at 1m  
ENER-G 25Y: 64 dBA at 1m
- Can reduce the cost impact of the Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES)
- Good quality CHP can attract enhanced capital allowances for eligible organisations (ECA's)

#### 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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