THE Green Tourism BUSINESS SCHEME

COMBINED HEAT AND POWER

CATEGORY: ENERGY **CASE STUDY YEAR:** 2007

Business Details:

Gisborough Hall Hotel,
Gisborough
North Yorkshire.

SILVER

http://www.macdonaldhotels.co.uk/gisborough

Description:

Gisborourgh hall is 4 stars country house hotel in North Yorkshire. They currently hold a SILVER award. Gisborough scored particularly well in the energy section. They have a building energy management system. There is a targeted program to upgrade all the lighting in the hotel to low energy bulbs. There is a mixture of secondary and double glazing and various other measures.
The hotel has a combined heat and power (CHP) system consisting of 4x60Kw Capstone C60 turbine units. In standard electrical generation a large amount of low grade heat is produced and, in general, wasted. In CHP systems the heat is not wasted, instead it is recycled into useable heat; this means the system is up to 85% efficient in the production of electricity. Standard electricity production is only 35-55%. CHP systems can run on a variety of fuels including biomass, biogas and electricity, at Gisborough Hall the turbines are fuelled with natural gas and in turn they operate generators which produce the electricity. CHP systems can be used from domestic applications all the way through to systems, which supply district heating for small towns. At Gisborough the systems provide electricity and heat for water and central heating.

£ Economic	▪ Using CHP can stabilise the risks associated with rapidly rising electricity prices in your business. ▪ Can reduce energy bills by up to 50%. ▪ CHP can produce a surplus of electricity, which can be sold back to the grid. ▪ Good quality CHP systems qualify for an exemption from the Climate Change Levy. ▪ Good quality systems qualify for Enhanced Capital Allowance payments. ▪ Systems are more reliable so maintenance costs are reduced.
Environmental	▪ The reduction in carbon dioxide emissions can be as much as 50%, depending on the fuel being replaced by CHP. ▪ Acid rain can also be reduced by the use of CHP, by cutting emissions of sulphur dioxide and nitrogen oxides.
Social	▪ CHP can supply district heating for small communities at a reduced cost for the consumer. ▪ Increased interest in CHP will help to create jobs in the industry and bring the cost of systems down over time.
WEB	Micro Combined Heat and Power: http://www.microchap.info Chpa, Heat & Power: http://www.chpa.co.uk Defra: http://www.defra.gov.uk/environment/energy/chp