

Troedyrhiw Home for the Elderly



Rhondda Cynon Taf County Borough Council Corporate Energy Team
RCT Invest to Save Project 2013-14

Installation of BlueGen Fuel Cell CHP unit
installed November 2013

Troedyrhiw Home for the Elderly is a 26 bed residential care home located in Rhondda Cynon Taf. Like most homes of this type, the energy costs have been substantial. To reduce the building running costs and also the carbon footprint, the Energy Team at Rhondda Cynon Taf CBC selected a BlueGen Fuel Cell CHP for installation.

In 2013/14, the Energy Team secured funding and installed solar photovoltaic panels and a BlueGen Fuel Cell Combined Heat and Power unit (CHP) in **Troedyrhiw Home for the Elderly**.



Combined Heating & Power (CHP)



The principal function of a CHP unit is to generate electricity and the heat it produces is captured and used on site as a further saving. The BlueGen Fuel Cell CHP produces a maximum of 2kWp of electricity and runs 24hrs a day producing a saving of approximately 13,140 kWh and is also eligible for the governments micro generation feed-in tariff incentive scheme (10 years) providing a payback period of only 6.8 years

Photovoltaic Panels (PV)



The solar panels convert the sun's energy to usable electricity and this energy is fed back into the building's electricity supply thus reducing the energy intake from the grid.

The 15 kWp solar array produces approximately 12,450 kWh and is also eligible for the governments solar feed-in tariff incentive scheme (20 years) providing a payback period of only 7.5 years

These energy saving initiatives have reduced annual energy costs by approximately £9K and has reduced the building's CO2 emissions by 48 tonnes. This is equivalent to a typical household's emissions for 3.5 years, or watching TV non-stop for 33 years.

Energy Data

The Gas and Electricity usage looked like this prior to installation:

Electricity			Gas		
New meter 11/08/2011					
Month	2013 - 14 kWh	2013 - 14 Cost(£)	Month	2013 - 14 kWh	2013 - 14 Cost(£)
Mar	9,209	1,014	Mar	65,315	1,929
Apr	8,802	967	Apr	49,837	1,693
May	9,199	1,017	May	35,755	1,159
Jun	7,005	780	Jun	24,565	888
Jul	8,355	929	Jul	39,990	1,299
Aug	8,748	978	Aug	11,177	519
Sep	8,303	923	Sep	23,229	825
Oct	8,845	1,053	Oct	33,495	1,100
Nov	9,030	1,073	Nov	42,217	1,320
Dec	9,484	1,123	Dec	42,234	1,328
Jan	9,517	1,124	Jan	46,446	1,437
Feb	7,743	911	Feb	44,379	1,362
Total	104,239	11,893	Total	458,639	14,860

Although gas consumption for the property has largely remained the same, this technology has dramatically reduced electricity consumption at the home, and we can clearly see this by comparing the year above with the year following the installation:

