

# CASE STUDY 1

## PEMBROKESHIRE SCHOOLS

Pembrokeshire County Council have installed renewable technology and energy saving measures in most of their new schools in the last few years. The following show some examples:

### TAVERNSPITE

Tavernspite Primary School in Pembrokeshire has become the first in Wales to benefit from a scheme to install free solar photovoltaic panels at 100 schools around the UK. The panels worth £20,000 can produce 3,000 kWh of electricity per year. The Green Energy for Schools scheme is jointly funded by the UK Government and the Co-operative Group. The panels from Welsh firm, Sharp, were installed during the half-term break in February 2008. They will prevent two tonnes of carbon dioxide emissions from being produced each year.



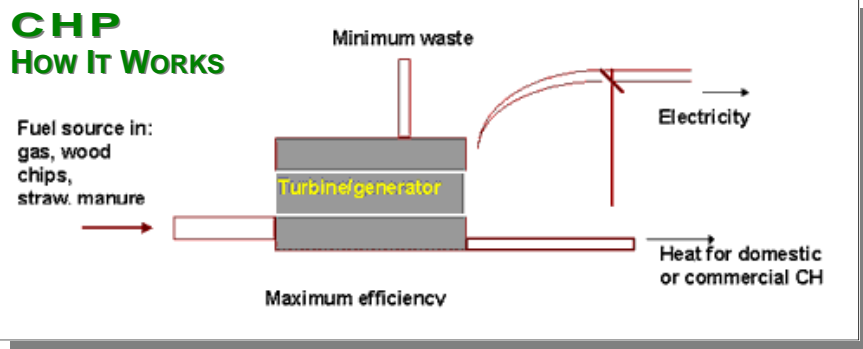
Tavernspite School

### PORTFIELD SPECIAL SCHOOL, HAVERFORDWEST

The new school is under construction. When complete the gas fired Combined Heat and Power unit (CHP) will generate electricity for use on site. The waste heat is recovered and used to heat hot water and the pool. Micro CHP - EC Power - Cost = £20k. This saves 61,000kWh and approx. 7,583kg CO<sub>2</sub>. A vertical well has also been drilled. The water will be

#### CHP HOW IT WORKS

Fuel source in:  
gas, wood  
chips,  
straw, manure



used to fill toilet cisterns and possibly the pool (depending on pH). Water Borehole - Penstar Pumps - Cost = £8k. This will save 1000m<sup>3</sup> water & 960kg CO<sub>2</sub>.

### CRYMYCH - Y FRENNI

Biomass Wood Pellet Heating - Uses wood pellets from Welsh Biofuels and a Passat Boiler. Other Suppliers are Dulas & Froling - Cost = £22k. Funding was obtained from Objective 1, SDF & New Opportunities Fund (NOF). The approximate saving is 168,000kWh or 42,000kg of CO<sub>2</sub>. Rainwater Harvesting - from Polypipe Civils - Cost = £8k. Funded by SDF. Rainwater is used to supply toilet cisterns. Saves 521m<sup>3</sup> water and 500kg CO<sub>2</sub>.

## GREENHILL SIXTH FORM BLOCK, TENBY



Solar Hot Water Heating - Filsol Solar Ltd. – Cost = £5k. Welsh Water gave a grant. Water solar hot water panels are used to provide hot water to the heating circuit. 4000kWh of energy will be saved and approx 760kg CO<sub>2</sub>. Rainwater Harvesting - from Polypipe Civils – Cost = £8k. Rainwater is used to supply the toilet cisterns, saving 521m<sup>3</sup> of water and 500kg of CO<sub>2</sub>

## CRYMYCH – YSGOL Y PRESELI

Biomass Wood Pellet Heating - Uses wood pellets from Welsh Biofuels and a Passat Boiler - Cost = £30k. Funding was obtained from Objective 1 and Pembrokeshire Coast National Park Sustainable Development Fund (SDF).

Wood Pellets are burnt as the main heating fuel. Biomass Fuel has a higher maintenance implication than mains gas or oil, but is considered carbon neutral. However the approximate annual saving is 172,800kWh or 43,200kg of CO<sub>2</sub>.

Water Borehole - from Penstar Pumps - Cost = £8k. The water borehole consists of a vertical water well drilled and the water is used to fill toilet cisterns. This saves approximately 750m<sup>3</sup> of water & 730kg of CO<sub>2</sub>.

## PRENDERGAST SCHOOL, HAVERFORDWEST

Solar hot water heating - Worcester Bosch Ltd. - Cost = £7.5k. Solar hot water panels are used to provide hot water to the kitchen and heating circuits. This will save approx. 8000kwh of energy or 1,520kg of CO<sub>2</sub>.

## SPITTAL NEW SCHOOL



Solar hot water heating - Filsol Solar Ltd. – Cost = £6k, PCNPA SDF & Clear Skies grant. Biomass Wood Pellet Heating - Uses wood pellets from Welsh Biofuels and a Passat Boiler - Cost = £20k Grants from SDF and Clear Skies. Rainwater Harvesting - from Polypipe Civils - Cost = £6k, SDF Grant. The new school was completed in 2004. Solar water heating will save approx. 4,290kWh energy or 815kg CO<sub>2</sub>. Biomass heating will save approx. 76,800kWh

energy & 19,200kg CO<sub>2</sub>. Rainwater harvesting will save 521m of water & 500kg of CO<sub>2</sub>.

## ST. ISHMAELS - COASTLANDS

Solar hot water heating - Viessmann Ltd. – Cost = £6k. Grant from Clear Skies. Provides hot water to the kitchen and heating circuits, and saves approx. 4,290kWh energy and 815kg of CO<sub>2</sub>.

For further information on any of the school systems contact Steve Keating at County Hall, Haverfordwest  
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