

# CASE STUDY 10 - RENEWABLE CENTRE

## West Wales Eco Centre, Newport

The West Wales Eco Centre is a charity-based centre focused on the advancement of education to the public regarding energy conservation and energy use.



The centre's primary goal is to reduce society's impact on the environment, in particular its contribution to global warming and unnecessary climate change.

The ECO Centre was established in 1980 as the West Wales Energy Group and has a Visitor Centre in Newport with an information centre.



The Information Centre provides the most up-to-date exemplar of low energy living using working examples of current technologies, whilst providing access to a wide range of resources from free energy efficiency and renewable energy advice to research facilities. It provides a high quality point of access to the ECO Centre's work; it is stimulating, informative and free to all.

Within the ECO Centre there is an [Energy Efficiency Advice Centre](#) and an Eco House which includes the Visitor Centre and offices. Free energy advice is available to all.

The Eco House was renovated to maximise its energy efficiency and a demonstration PV system was installed in 1995 to power computer equipment and lighting. Since the majority of visitors to the ECO Centre would be grid connected, it was felt that a grid linked system would demonstrate the feasibility of such a system.

## RENEWABLE INSTALLATIONS

- ↪ On-Grid system: 6 x 75W (Siemens M-75) PV modules to the roof, wired in series, connected to a SWR-700 450W Sunnyboy inverter.
- ↪ Off-Grid system: 1 x Uni-Solar 32W PV module mounted to a wall, connected to a Xantrex 150W 12V DC to 230V AC inverter used for demonstration purposes.
- ↪ 1 x Filsol pressurized glycol solar collector to the roof plumbed into a demonstration hot water cylinder – hot water produced is used only as a Visitor Centre demonstration.
- ↪ 3 x pellet stoves: 1 in Visitor Centre, 1 in office, 1 in function room, using around half a tonne of wood pellets per year to assist with space heating.

## COST OF THE PV ARRAY

The cost of the PV system was around £4000 with the costs of negotiation and testing donated kindly by Wind & Sun and Econnect. SWALEC kindly donated the extra metering needed. The system was funded by Preseli Pembrokeshire District Council and the Welsh Office.

Since commissioning, the PV array has generated 4942 kWh, offsetting the emission of up to 2.5 tonnes of carbon dioxide.

Because the Eco House acts as office space for the ECO Centre there is a large electricity demand from computers, printers etc, so the PV array actually only satisfies about 40% of the centre's needs on a sunny day.

Over the course of a year the system should generate around 15 - 20% of the Centre's needs with export only occurring during sunny weekend days when the centre is closed.



## USEFUL CONTACTS

West Wales ECO Centre..	Tel: 01239 820235	Fax: 01239 820801
Wind & Sun .....	Tel: 01491 613859	Fax: 01491 614164
Econnect .....	Tel: 01434 601545	Fax: 01434 609080
Sundog .....	Tel: 01768 482282	Fax: 01768 482600
PVUK .....	Tel: 01734 730073	Fax: 01734 730820
Free Energy Advice .....	Tel: 0800 954 0657	

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