



GREEN DRAGON ENERGY
www.greendragonenergy.co.uk



University of Wales

INTRODUCTION TO RENEWABLE ENERGY COURSE

, University of Wales, Aberystwyth

Three-day Introduction to Renewable Energy Weekend Courses at the Centre of Continuing Education, University of Wales, Aberystwyth, in Mid-Wales.

The Introduction to Renewable Energy Weekend courses give an overview of renewable energy technology and outline the basic principles of solar electricity, solar water heating, wind power, micro-hydro, biomass and heat pumps and their application in urban and rural environments. The courses are aimed at those in the business, non-profit, public and academic sectors who wish to get a comprehensive introduction to renewable energy technologies, as well as those wishing to installing renewable energy systems in both urban or rural settings. The emphasis is on how things work and what it is practicable to do, and participants have the opportunity to discuss their own projects. At the end of the course participants should be able to do initial designs for renewable energy systems. No previous knowledge of energy technologies is required.

DATES: Friday 26, Saturday 27 & Sunday 28 September 2008
Friday 3, Saturday 4 & Sunday 5 October 2008

TIMES: 10.00 - 16.00 every day.

COURSE THEMES: Overview of Renewable Technologies, Electricity, Power & Energy, Solar Electricity, Solar Water Heating, Wind Power, Micro-hydro, Biomass, Heatpumps, System Design and Sizing.

COST: £180 (accommodation not included)
VENUE: The Old College, University of Wales, Aberystwyth

REGISTRATION: To register for this course contact:
Beth Freeman,
University of Wales
Email: bff@aber.ac.uk
Tel: 01970 622 677
An on-line enrolment form can be found
at <http://www.aber.ac.uk/addysg/geninfo/enrol/index.html>



The Old College, Aberystwyth

COURSE CONTENTS: for information regarding course contents contact:
Frank Jackson
Tel: + 49 (0) 30 486 249 98 (currently in Berlin)
Email: info@greendragonenergy.co.uk

ACCOMMODATION: a range of accommodation, from hotels to guest houses to hostels, is available in Aberystwyth. The Tourist office can be found at http://www.aberystwyth-online.co.uk/tourist_information.shtml. Aberystwyth is a small university town.



GREEN DRAGON ENERGY
www.greendragonenergy.co.uk



University of Wales

INTRODUCTION TO RENEWABLE ENERGY COURSE

, University of Wales, Aberystwyth

SCHEDULE / TIME TABLE OUTLINE*

VENUE: The Old College, University of Wales, Aberystwyth

FRIDAY

10.00 - 13.00 Renewable Energy Overview
Power, Energy & Electricity

14.00 - 16.00 Energy and Climate Change
The Solar Resource

SATURDAY

10.00 - 13.00 Photovoltaic Technology
Solar Water Heating

14.00 - 16.00 The Wind Energy Resource
Wind Energy Technology

SUNDAY

10.00 - 13.00 Hydro-energy
Bio-energy
Heat Pumps

14.00 - 16.00 Review, Q & A

* Schedule can vary from course to course.

The course is designed to give participants an overview of the main renewable energy technologies and how they work. On completion of the course participants should be able to assess how appropriate a particular technology is in a given situation and do initial sizing. No previous technical knowledge is required.

The Centre of Alternative Technology (<http://www.cat.org.uk>) is about 16 miles away and well worth a visit.



PV roof at the Centre for Alternative Technology, 16 miles from Aberystwyth



GREEN DRAGON ENERGY
www.greendragonenergy.co.uk



University of Wales

COURSE THEMES

Renewable energy overview - the range of renewable energy technologies suitable for use in urban and rural environments environments.

Energy and electricity – quantifying energy, electricity and power.

Energy and CO₂ emissions - different energy technologies and their relationship to CO₂ emissions, energy efficiency and low energy appliances.

The solar resource - the solar resource and quantifying solar energy available.

Photovoltaics - PV modules, grid-tied PV systems, Building Integrated PV (BIPV), stand-alone PV systems, system design and sizing.

Solar thermal - solar water heating, flat plate collectors, evacuated tubes, solar-assisted central heating, solar cooling, system design and sizing.

The wind resource - the wind resource, wind speeds and wind energy principles.

Wind energy - types of wind turbines, large/small, grid-tied/stand-alone, limitations on harnessing wind energy in built-up environments.

Bio-energy - types of bio-fuels (biomass, bio-gas, bio-liquid fuels), applications (building heating, transport), effective heat distribution in buildings, case studies, wider environmental issues.

Heat pumps - types of heat pumps (ground-, water- and air-source), heating (and cooling) buildings with heat pumps,

Hydro – principles of hydro-power, types of hydro systems, sizing hydro systems.

Project assessment – over view of main issues involved in planning and renewable energy projects, possibilities and limitations.

Information on other courses is available at
<http://www.greendragonenergy.co.uk/courses>

A selection of books and videos related to this course can be viewed at
<http://www.greendragonenergy.co.uk/technologies>

Enquiries: info@greendragonenergy.co.uk