



Deutsche Gesellschaft für Sonnenenergie e.V.

GERMAN SOLAR ENERGY SOCIETY
<http://www.dgs.de>GREEN DRAGON ENERGY
<http://www.greendragonenergy.co.uk>

Renewable Energy in the Urban Environment – Berlin

7 – 11 September 2009

Renewable Energy in the Urban Environment, a seminar organised by the German Solar Energy Society and Green Dragon Energy, takes place in Berlin, a city in the forefront of renewable energy technology.

Photovoltaics

Solar thermal

Passive solar buildings

Heat pumps

Bio-energy

Low-energy Buildings

Visits to working systems

Solar boat tour



Seminar participants visiting a solar thermal system on a government building

Visits to a range of top-quality renewable energy systems and low-energy buildings with passive solar features are an integral component of this five-day event

The seminar will provide an information-rich introduction to renewable energy technology and its application in the urban and suburban environment. It is an ideal opportunity for business people wishing to get involved in this rapidly growing industry, for building engineers and architects and those working in the public and non-profit sectors to get an overview of renewable energy and see working examples of the best technology. The seminar is aimed at those who are relatively new to the field and no previous knowledge of renewable energy technologies is assumed on the part of participants. More specialist seminars and courses are also available.

THE VENUE The German Solar Energy Society's Solar School in Berlin

FOOD & ACCOMMODATION A buffet lunch will be served each day during the seminar. Berlin has an excellent selection of reasonably priced hotels. Participants will be provided with contact details.

FEES The seminar costs €1,400

A deposit of € 500 needs to be paid on registering for the course.

The seminar is aimed at an international audience and will be in English.

THE MAIN THEMES OF THE SEMINAR

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

Energy and CO₂ emissions - different energy technologies and CO₂ emissions, energy efficiency, low energy buildings and appliances, energy storage technologies.

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

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

Low-energy buildings - the principles of low-energy / passive solar design, new build and retro-fitting, integrating passive and active renewable energy technologies, energy efficiency, examples.

Bio-energy - types of bio-fuels (biomass, bio-gas, bio-liquid fuels), applications (building heating, transport), case studies.

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

Visits to working systems - a unique feature of this seminar will be the visits to a range of working renewable energy systems and buildings with low-energy features.

Computer simulations – introduction to sizing and designing renewable energy systems using computer simulation.

Project planning - the main issues involved in planning and implementing renewable energy in European urban and suburban environments.

Solar boat tour and diner - the seminar will include a solar boat tour and dinner on the Wednesday of the seminar.



PV system on the roof of a city water treatment plant



Low-energy Berlin apartment building – with wood pellet and solar-assisted heating system



BERLIN – INTELLIGENT ENERGY, the new guide to 37 renewable energy systems and energy efficient buildings in Berlin is available in English or German from sekretariat@dqs-berlin.de

*

SEMINAR SCHEDULE

Monday	16.00 – 17.00	Introduction to week's activities
	17.00 - 19.00	Renewable energy overview
		an introduction to the main renewable energy technology and their applications
Tuesday	9.30 - 10.00	Energy fundamentals: power, energy, electricity, CO ₂ emissions
	10.00 - 10.45	The solar resource: solar radiation, data sources, effect of angles and orientation
	11.00 - 12.00	Photovoltaics: PV fundamentals, module types, system types
	12.00 - 13.00	Photovoltaics: the German experience, case studies, future trends
		Lunch
	14.00 - 17.00	Visits to grid-tied PV systems
		<i>Residential domestic PV & large PV systems on commercial / public building</i>
Wednesday	9.30 - 10.30	Solar thermal technology: fundamentals, collector types, system types
	10.45 - 11.45	Solar thermal technology: large systems, solar-assisted heating, case studies
	12.00 - 13.00	Heat pumps: fundamentals, types of systems: ground-, air- and water-source
		Lunch
	14.00 - 17.00	Visits to solar thermal systems
		<i>Large solar thermal systems on commercial / public building</i>
		<i>Heat pumps system visit</i>
	18.30 - 21.30	SOLAR BOAT TOUR AND DINNER
Thursday	9.30 - 10.30	Bio-energy: fundamentals, fuel options and technologies
	10.45 - 11.45	Wood-based energy: wood-pellets & wood chips, experiences, case studies
	12.00 - 13.00	Low-energy building: detailed case study of low-energy Berlin apartment block
		Lunch
	14.00 - 17.00	<i>Pellet heating system in low-energy building with solar thermal</i>
		<i>Bio-fuel district heating systems</i>
Friday	9.30 - 10.30	Biogas: production and applications
	10.45 - 11.45	Design software for PV & solar thermal
	12.00 - 13.00	Marketing renewable energy: the German experience
		Lunch
	14.00 - 15.15	Project planning & design
	15.30 - 17.00	Questions & answers session

THOSE INTERESTED IN ATTENDING SHOULD CONTACT

Frank Jackson
 Green Dragon Energy
 Tel: + 49 (0) 30 486 249 98 (Office/Berlin)
 Email: info@greendragonenergy.co.uk
 Website: <http://www.greendragonenergy.co.uk>

* Details of schedule may change.