

SOLAR NEWS

Winter 2003/4

www.thesolarline.com

Newsletter of the



SOLAR ENERGY SOCIETY

*UK Section of the
International Solar Energy
Society*

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30 YEARS OF UK-ISES

2004 is the 30th Anniversary of the UK National Section of the International Solar Energy Society. We plan some special events to mark this anniversary year!

*David Hall
Memorial
Lecture 2003
Kings College, The Strand,
London, 9 December 2003
Sponsored by Elsevier*

Dr Mary Archer delivered an excellent lecture to a diverse audience of academics, students, and members of the business community. A unique insight into the work of UK – ISES since its formation in 1974, and the work of its founder members was discussed. It was interesting to hear how the UK – ISES Renewable Energy (RE) policy recommendations to Eric Varley, the Energy minister at the time, have actually been implemented in subsequent years, including academic research into RE, a New Town being a showcase for RE (Milton Keynes), an assessment of the UK RE resource and a removal of some of the barriers to RE uptake.



Dr Archer was accompanied by her husband, Lord Archer



Prof Hutchins and Li Zhu, one of the delegates, with Lord Archer

The work of the founding and current members of UK-ISES was recognized including: Bernard McNelis & Tony Derrick (IT Power), Peter Fraenkel (Marine Current Turbines), B J Brinkworth (Domestic Solar Hot Water and implementation of BS 5981), Bill Gillett (European Officer involved with RE), Mick Hutchins (Chair, UK-ISES) and the other members of the current UK ISES Committee.



Dr Archer describes the work of the Cardiff Solar Energy Unit

Corporate Members of the Society: *IT Power Ltd, Chineham, Hants - Mackintosh School of Architecture, Glasgow - Napier University, Edinburgh - School of the Built Environment, University of Ulster - SEPCO sustainable energy products, London - Sustainable Energy Action, Southwark - The Energy Group, University of Reading - Westlea Housing Association, Chippenham, Wilts*

Dr Archer discussed her own involvement with the Society, from being the founding secretary to being its current President. In particular Dr Archer recounted her discussions with David Hall in relation to biomass, photosynthesis and her interest in the photo-conversion of solar energy and which of these would be the first to commercial breakthrough. Dr Archer congratulated the Society on its 30th birthday and wished it all the best for the next 30 years.



Mr Fred Treble during question time

On the question of whether the UK would see 20% of its energy (not just electricity) coming from renewables by 2020 Dr Archer replied that she hoped that the existing targets would be met and that the UK would see 20% of its energy coming from renewables.



Dr Archer with Prof Hutchins and Christiane Buckle after the lecture

There was a reception and a Christmas raffle following the lecture. Amazingly, Mrs Peta Hall, wife of the late David Hall, won a total of 5 prizes! Graciously, she would only accept the first one. Thank you, Peta! And, of course, thank you, Mary!



Hard-working committee member Lucy Aitchison

Dr Mary Archer visited the offices of the Solar Energy Society at Oxford Brookes University the week before the David Hall Memorial Lecture, to discuss the history of the Society.

Afterwards, Prof Hutchins showed Dr Archer the optical and thin film facilities of the Solar Energy Materials Research Laboratory.

Solar Trust

The Solar Trust for Education and Research was formed in 1976 and was successful in developing the Fact Sheets widely distributed by the Solar Energy Society to schools in the UK and overseas. For many years the Trust has remained dormant but in 2003 the Solar Trust elected new Directors and initiated a campaign to become the UK's leading charity for the promotion and implementation of research and activities leading to the widespread use of solar technologies and for the promotion of related educational activities. The Trust's vision is a world in which the harnessing of renewable energy sources with appropriate technologies enables humanity's basic needs for energy, food, water and habitat to be met in a sustainable and equitable manner without damaging the global and local

environments. The Trust is seeking to attract funding for a growing, purposeful and coordinated programme of work demonstrating practical solutions using solar energy. The Trust will promote actions aiming to minimise wasteful exploitation and consumption of resources, to reduce the output of CO₂ through increased use of renewable energy sources and more efficient use of energy.

The Directors of the Solar Trust are Jean Rosenfeld (Chair), John Thorp (Secretary), Mick Hutchins and Tony Day.

Persons seeking more information should contact John Thorp, ecsc, Tel: 020 7922 1660 or John.Thorp@ecsc.org.uk.

Solar Energy Society Members' forum:

Defending Your Sun

The announcement in the Summer issue of Solar News of the funding to facilitate Solar For London would have been greeted with a sense of hope and anticipation in most quarters of the membership. What may not have been obvious is that the creation of large numbers of solar panels in our largest urban centre is likely to set in motion the next phase of the Solar Energy Campaign. The issue in my opinion once solar energy in urban centres is a common reality will be the protection of the sun's energy once the installation of the panels is complete. In order for my point to be understood, it is necessary for me firstly to dispel two common misconceptions held within the solar community.

- Rights of Light - the common law easement known as the Right of Light is a limited legal concept applicable to window apertures that have existed for twenty years and under current case law does not apply

to flat areas at large (the panel) or to the sun element of natural light (solar). Currently one case relating to a greenhouse exists but nothing specifically dealing with solar panels.

- The Planning System - very limited consideration to sunlight as possible solar gain is given during a planning application. This is based on the Building Research Establishment publication Site Layout Planning for Daylight and Sunlight, A Guide to Good Practice published in 1991. This document gives no assistance in terms of solar panels and as such even to a well-meaning local planning committee the result is that they will be very restricted in how, in technical terms, they could reject a request for development which would hinder the energy efficiency of any solar panel system.

It is my view that the Society has a unique position to influence the necessary legal changes and having achieved the support of the Mayor of London a small part of the focus of the Society's efforts should be turned to the protection of solar efficient properties. The existing design recommendations encourage the adoption of solar panels and passive solar energy efficient buildings but once the time and investment is made by an owner there is little they can do within our current legal and planning framework to protect the energy efficiency measures so carefully created. The cross mix of academic and practitioner membership of the Society makes it ideally situated to influence and steer forward any future guidance. Is it not now the time with the funding and political support in place that the issue of

protection, in order that these measures can make a long term difference, should be debated? The Society has an established working party committee system and I would encourage a new grouping in this area.

Andrew Thompson, Email athompson@wilks-head.co.uk

New PV Production Plant in Wales

Sharp, the Japanese electronics group and the world's biggest maker of solar cells, will spend £2.5m in setting up a PV production line in an existing Sharp plant in Wrexham, North Wales. They will initially make large solar modules from silicon solar cells bought in from Japan, going on to produce the cells themselves in the UK. At this point, the investment could rise by several million pounds more, although Sharp is reluctant to specify how much.

By 2005, the existing investment is expected to add 90 jobs to the 500 who work at the plant producing microwave ovens. The Wrexham plant is scheduled in 2004 to make a volume of solar modules capable of producing 20MW of electricity. Total demand for solar products worldwide in 2003 is estimated at 600MW, of which roughly a quarter will be made in Europe.

Source: *Financial Times*, 31.10.03

DTI announces £1.8m for PV projects

Extra funding for 16 photovoltaic projects across the UK totalling £1.8m was announced on 12 December, 2003 by Energy Minister Stephen Timms.

The funding is part of the DTI's £20m Major Photovoltaic Demonstration Programme, which helps householders, public buildings, community projects

and commercial ventures convert to solar power. These are the sixth set of medium and large-scale proposals approved since the programme began in 2002.

The wide range of projects includes plans to power a new racecourse in Essex, a learning village in Croydon and an education and resource centre for children at the Eden Project, Cornwall. The 16 projects are expected to produce a total of 511kWp, enough to power more than 100 homes.

Scottish renewable energy grants

Funding of £2.3million is available under the Scottish Community and Householder Renewables Initiative (SCHRI) to help householders and community groups to install small-scale renewable energy schemes, such as hydro, wind, solar water heating, heat pumps and solar power.

Deputy Enterprise Minister Lewis Macdonald said that he had seen for himself the benefits of renewable energy when he visited a home in Arbroath, which has installed solar water heating, allowing the saving of up to 50% on hot water bills. The home is part of a £98,860 pilot scheme, including SCHRI funding of £62,680, which will cover a number of Angus council houses.

Households can get 30% of the capital costs of installing a system, up to £4000. Community groups are eligible for capital grants of up to £100,000 and up to £10,000 for a feasibility study.

Householders and community groups in the Highlands can access information on SCHRI from Highlands and Islands Enterprise and from the Energy Savings Trust in the rest of Scotland.

Source: Scottish Executive News Release, 22.12.03

UK production of PV modules for buildings

A County Durham company, Romag Holdings, based in Consett, is to work with BP Solar on the development and production of PV modules for buildings. The company, which employs about 150 people making specialised laminated glass, is planning a £2.5m extension to its factory to turn out the modules in various sizes for use as roof tiles, doors, windows and cladding on walls and balconies. Romag will supply the glass and BP the solar cells for a technology which will see buildings producing much of their own electricity. The deal was signed in the presence of Energy Minister Stephen Timms on 29 October, 2003.

Source: *The Journal*, 30.10.03

PV Façade for University of Ulster

An 11.5kWp solar PV façade has been installed by solarcentury at the University of Ulster Energy and Nano-engineering Research Facility. The façade is made up of 64 Sanyo 180Wp HIT modules and was installed in only 4½ days.



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IT POWER Expands Climate Change Team

IT Power has appointed **Christiaan Vrolijk** as a Senior Consultant in its Climate Change Strategies Unit to further strengthen its work on climate change and renewable energy issues. Mr Vrolijk will take on a leading role in the Unit's CDM consulting work, as well as manage several of the company's emission reduction projects. Christiaan joined IT Power from Natsource Tullett Europe, the emissions brokerage firm, where he carried out consulting work and provided advisory services for private and public sector clients and internally for the emissions and renewable energy certificates brokers. The work included market development analyses, corporate strategic assessments, and market strategies, as well as advice on market building and new policies. He has two books – "Climate Change and Power: Economic Instruments for European Electricity", and "The Kyoto Protocol: A Guide and Assessment" (with Michael Grubb and Duncan Brack).

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Insolvency Service Goes Solar

The Insolvency Service in London had its solar atrium opened by Patricia Hewitt, Secretary of State for Trade and Industry on 10 November 2003. The project, which replaced the existing glazed atrium roof with a 25 kWp solar photovoltaic (PV) glazing system, was managed by IT Power who prepared the PV performance specification for tendering supply and installation, and evaluated the tenders received. IT Power oversaw the

installation of the PV system, carried out commissioning, and will also carry out detailed performance monitoring of the system for two years. The building is the headquarters for the Insolvency Service and receives many visitors and, with the atrium roof being highly visible, it will serve as a showcase for PV technology. The PV system was part-funded under the DTI's Large-Scale PV Field Trial Programme and will



View of PV roof from below

operate in parallel with the distribution network. IT Power are international renewable energy consultants, based near Basingstoke in Hampshire, and have completed many PV projects in the UK under the DTI's solar funding programme.

For further information, please contact Rolf Oldach:
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Planning Must Work for the Environment

Long term environmental considerations should be taken into account by local planning authorities, Planning Minister Yvette Cooper announced on November 07. Launching consultation on a new planning statement on renewable energy (PPS 22), Yvette Cooper pointed to the damage traditional energy sources can have on the environment. The average family in the UK releases over 25 tonnes of carbon dioxide and 4 kg of sulphur dioxide into the

atmosphere every year, adding to the problems of global warming and acid rain. Renewable energy sources could significantly cut this amount. That is why the planning guidance forms part of the government's response to global warming and climate change.

Yvette Cooper said:

"Local planning authorities need to take account of the wider and long term environmental considerations as well as the immediate impact on the local environment. That is why this consultation is seeking views and comments on planning guidance which will cover renewable energy including solar power, wind farms and biofuel."

"In the past some local authorities have ruled out almost any development of this sort. We want to see a more considered approach, so the planning system is used positively rather than negatively."

Strict conditions will need to be satisfied before renewable energy developments can be permitted in areas of important landscape and environmental sensitivity.

The consultation also asks planning authorities to consider the visual impact of new developments such as wind farms. Siting, layout, landscape and design will all need to be considered, as will the cumulative impact of a number of turbines.

"The purpose of the consultation is to explore how local and central government can work together to deliver renewable energy without unnecessary blight to the countryside."

Consultation on the draft of PPS22 will run until 30 January 2004.

The Department of Trade and Industry (DTI) are making available for feedback draft policy guidance on renewables. The guidance complements PPS

22 and aims to assist those involved in local planning by clarifying national policy for delivering renewable energy. Source: <http://www.praseg.org.uk>

TRAVELLING CARBON NEUTRAL TO COP - 9

IT Power is offsetting greenhouse gas emissions from all its business travel. The company has long been a green electricity consumer and now the company has now decided to go one step further, and will offset all the emissions from the extensive air travel undertaken by its staff.

"Each year we travel the equivalent of going to the moon and back to support our partners around the world, so as a renewable energy company it is important that we set a good example by off-setting the emissions from our air travel", says Dr John Green, manager of the company's Climate Change Strategy Unit.

IT Power's emissions from travel are being offset by providing energy efficient lighting in rural Mongolia and China, where the company already has several ongoing projects. Compact fluorescent lights (CFLs) will be provided to households to replace standard light bulbs, thereby reducing emissions from diesel generators or from coal-based generation on the grid. The CFLs will be fully paid for by IT Power, and distributed by its local partners. The energy costs saved by the users are a little step towards alleviating poverty in these rural areas in Mongolia and China.

For further information please contact Naomi Davidge in the UK

on: 01256 392700 or via naomi.davidge@itpower.co.uk

In November 2003 ISES published a **WHITE PAPER** to provide a rationale for effective governmental renewable energy policies worldwide. The paper can be found at:

www.whitepaper.ises.org

DIARY OF EVENTS

January 22 2004

Invest Northern Ireland Energy Show 2004

www.investni.com/energyshow2004

March 3 – 4 2004

European Pellets Conference, World Sustainable Energy Days, Wels, Austria
www.esv.or.at

March 3 – 5 2004

World Sustainable Energy Days 2004
Wels, Austria

Contact: office@esv.or.at

April 17 – 18 2004

5th Osnabrücker Solar Fair, Osnabrück, Germany
info@solartreffen.de

May 2 – 7 2004

CIB 2004

5th international conference on indoor air quality, ventilation and energy conservation in buildings
Toronto, Canada
www.cib2004.ca

June 20 2004

SunDay

Contact:

ukises@brookes.ac.uk

June 21 – 24 2004

EuroSun 2004, Freiburg, Germany

Visit: www.eurosun2004.de

Aug 28 – Sept 3 2004

World Renewable Energy Congress VIII, Denver, Colorado, USA

Contact: www.nrel.gov/wrec

World Health Organisation

Find below data taken from the website of the WHO which we hope you will find useful. Our attention was drawn to it by world-leading radiation expert, Professor John Page, who is also a founding member of the Solar Energy Society.

UV Index

What is the UV Index (UVI)?

- The UVI is a measure of the level of UV radiation.
- The values of the index range from zero upward - the higher the UVI, the greater the potential for damage to the skin and eye, and the less time it takes for harm to occur.
- The UVI is an important vehicle to alert people about the need to use sun protection.

A marked increase in the incidence of skin cancer in fair-skinned populations worldwide is strongly associated with excessive UV radiation exposure from the sun and possibly artificial sources such as sunbeds. Current evidence indicates that personal habits in relation to sun exposure constitute the most important individual risk factor for UV radiation damage.

The UV Index is an important vehicle to raise public awareness of the risks of excessive exposure to UV radiation, and to alert people about the need to adopt protective measures. As part of an international effort, the UV index was developed by WHO, the United Nations Environment Programme, and the World Meteorological Organization. Encouraging people to reduce their sun exposure can decrease harmful health effects and significantly reduce health care costs.

The INTERSUN programme promotes the harmonized use of the UVI, and advises governments to employ this educational tool in their health promotion programmes. WHO encourages dissemination channels such as the media and tourism industry to publish the UVI forecast and promote sun protection messages.

For the public

What does the UV index mean?

The levels of UV radiation and therefore the values of the index vary throughout the day. In reporting the UVI, most emphasis is placed on the maximum UV level on a given day. This occurs during the four-hour period around solar noon. Depending on geographical location and whether daylight saving time is applied, solar noon takes place between noon and 2 p.m. The media usually present a forecast of the maximum UV level for the following day.

How can the UV index help me to protect myself?

Most people are used to adjusting their daily plans and choice of clothing to the weather forecast, especially to temperature predictions. Analogous to the temperature scale, the UVI gives an indication of the level of UV radiation and the potential danger of sun exposure. It can help individuals make healthy choices.

Step 1: Find out today's UV Index: http://www.who.int/uv/intersunprogramme/activities/uv_index/en/index3.html

Check out the recommended sun protection:

0 to 2	You can safely enjoy being outside!
3 to 7	Seek shade during midday hours! Slip on a shirt, slop on sunscreen and slap on hat!
8	Avoid being outside during midday hours! Make sure you seek shade! Shirt, sunscreen and hat are a must!

Even for very sensitive fair-skinned people, the risk of short-term and long-term UV damage below a UVI of 2 is limited, and under normal circumstances no protective measures are needed. If sun protection is required, this should include all protective means, i.e. clothing and sunglasses, shade and sunscreen.

Where is the UV index reported?

In many countries the UVI is reported along with the weather forecast in newspapers, on TV and on the radio; however, this is usually only done during the summer months.

[UV Index reporting](#) for a range of countries and in many different languages.

For meteorological offices, national authorities and media

The Global Solar UV Index is intended to be used by national and local authorities and non-governmental organizations active in the area of skin cancer prevention, as well as meteorological offices and media outlets involved with UVI reporting. The publication can serve as an entry point for the development and implementation of an integrated public health approach to sun protection and skin cancer prevention.

- [Global Solar UV Index](#)

Downloadable UV Index Graphics

A standard graphic presentation promotes consistency in UVI reporting on news and weather bulletins, and improves people's understanding of the concept. The INTERSUN programme has developed a graphics package including the UVI logo, an international colour code for different UVI values, and a choice of ready-made graphics for reporting the UVI and the sun protection message. The materials can be downloaded and used free of charge.

Three Formats are available:

[GIF](#) - web (very limited scalability)

[WMF](#) - office applications, document collaboration, laser printing (decent scalability within A4)

[EPS](#) - desktop publishing, lithographic print reproduction, banners, posters (highly scalable) - to come.

Should you have any difficulties with downloading or reproducing these files, please request a CD-Rom from UVinfo@who.int.

UV Measurements

UV radiation levels vary substantially with time and place. The increased risk of UV damage to the skin and eye during a holiday in a sunny location is often underestimated.

The table illustrates the changes in UV radiation levels with season and latitude. Maximal UV Index values are given for a range of cities in different countries, calculated for the 21st of each month.

The UV Index Worldwide

Country (City)	.	J	F	M	A	M	J	J	A	S	O	N	D
Argentina (Buenos Aires)	35°S	9	9	7	4	3	2	2	4	5	7	9	10
Australia (Darwin)	13°S	12	13	12	10	8	8	8	10	11	13	12	12
Australia (Melbourne)	37°S	8	8	6	4	2	2	2	3	5	6	8	9
Australia (Sydney)	34°S	9	9	7	5	3	2	3	4	6	7	9	10
Brazil (Rio de Janeiro)	23°S	12	11	9	7	5	5	5	7	9	10	12	12
Canada (Vancouver)	49°N	1	1	3	4	6	7	7	6	4	2	1	1
Cuba (Havana)	23°N	6	8	9	10	10	11	12	11	10	8	6	5
Falkland-Islands (Port Stanley)	58°S	5	4	2	1	0	0	0	1	2	3	5	5
France (Paris)	49°N	1	1	3	4	6	7	7	6	4	2	1	0
Germany (Berlin)	52°N	1	1	2	4	5	7	7	5	3	1	1	0
Greece (Iraklion)	35°N	3	4	5	8	9	9	10	9	7	4	3	2
Japan (Tokyo)	36°N	2	4	5	8	9	9	10	9	7	4	2	2
Kenya (Nairobi)	1°S	12	13	13	12	11	10	11	11	12	12	12	11
Madagascar (Tananarive)	19°S	12	12	11	9	7	6	6	8	11	11	12	12
Mozambique (Maputo)	26°S	11	11	9	7	5	4	4	6	8	10	11	11
Mongolia (Ulan Bator)	48°N	1	2	3	5	6	7	8	6	4	2	1	1
New Zealand (Wellington)	42°S	7	7	5	3	1	1	1	2	4	6	7	8
Panama (Panama)	9°N	9	11	12	12	11	11	12	12	12	11	9	9
Russia (St Petersburg)	60°N	0	0	1	3	4	5	5	4	2	1	0	0
Singapore (Singapore)	1°N	11	12	13	13	11	11	11	11	12	12	11	10
South Africa (Cape Town)	34°S	9	9	7	5	3	2	3	4	6	7	9	10
Spain (Palma de Mallorca)	39°N	2	3	4	6	8	9	9	8	6	4	2	1
Sri Lanka (Colombo)	13°N	8	10	12	12	11	11	12	12	12	10	8	8
Thailand (Bangkok)	14°N	8	10	12	12	11	12	12	12	11	10	8	8
USA (Los Angeles)	34°N	3	4	6	8	9	10	10	9	7	5	3	2
USA (New York)	41°N	2	3	4	6	7	8	9	8	6	3	2	1
Vietnam (Hanoi)	21°N	6	8	10	11	11	11	12	12	10	8	6	6