SOLAR NEWS

Spring 2004

www.thesolarline.com

30 YEARS OF UK-ISES

Newsletter of the

SOLAR ENERGY SOCIETY
UK Section of the
International Solar Energy Society

Editor: **Christiane Buckle**
President: **Mary Archer**
Chair: **Michael G Hutchins**
Vice-Chair: **Nicola Pearsall**
Secretary: **Fred Treble**
Treasurer: **John Thorp**
Meetings Secretary: **Tony Day**
Membership Secretary: **vacant**
Student Secretary: **May Lee**

UK-ISES Secretariat
School of Technology
Oxford Brookes University
Headington Campus, Gipsy Lane
Oxford OX3 0BP, UK
Tel: 01865 484 367
Fax: 01865 484 263
Email: *ukises@brookes.ac.uk*
www.thesolarline.com

In this issue:

Solar Schools

The kick-off meeting of the EU Altener Project, Solar Schools, took place in Freiburg, Germany, on 26th and 27th February 2004. The project which is coordinated by ISES Headquarters has participants from 10 countries. Three UK-ISES committee members attended the meeting.

The project aims to promote the design of schools as environmental teaching tools through compiling shining examples of solar schools throughout the world, encouraging and guiding other schools interested in implementing renewable energies. Educational materials on energy issues will be prepared and distributed to encourage teachers to integrate renewable energy and energy efficiency examples in their lessons.

It is planned to raise awareness among the children, their families and the general public for the importance of energetic sustainability and to positively influence behaviour in this respect. School competitions will be organised across Europe for primary and secondary pupils and national winners will be judged.

International winners will be selected from the national entries. An exhibition of entries will be held at the ISES-Europe EuroSun 2006 congress where prizes will be awarded to the winners.

Currently UK-ISES is undertaking an audit of renewable energy activities and installations in UK schools. Working contacts will be developed with interested schools and workshops for teachers and pupils organised.

Learning resources and suitable available information for education on energy supply and demand are being assessed. Questionnaires to obtain feedback from schools have been designed and are now being circulated.

Further information on the project may be obtained from the UK-ISES web site or by directly contacting the Secretariat.

Professor Mick Hutchins, UK-ISES Chair, giving a brief introduction to the work of The Solar Energy Society

The Project Group

The project participants visit a renewable energy comprehensive school (Staudinger Gymnasium) in Freiburg

Executive Director of ISES, Rian van Staden, and Project Co-ordinator, Maryke van Staden

Rolf Behringer, future project co-ordinator, demonstrates his mobile renewable energy unit

Solar Greenhouse in the Australian Outback

A plan to build the world's tallest tower on the edge of the Australian Outback moved a step closer on 3 February 2004 when experts ruled it commercially viable.

The projected tower, 1000m high, would be built near the fruit-growing town of Mildura on the border of Victoria and New South Wales. A solar greenhouse, 7.2km in circumference will be spread around the base of the tower and heat air so that it is about 30oC hotter than air at the top. The temperature difference will create a 30 mph up-draught, which will drive a bank of 32 turbines. At night, tubes filled with water heated during the day will allow the station to continue to produce power.

Designers hope that the station will generate enough electricity for 200,000 homes, but energy production will raise only 65% of the station's revenue. The remainder will be raised from tourists wanting to visit a lookout at the top of the tower, farmers growing crops under the canopy and telecommunications companies using the tower for transmissions. It will take 2.5 years for the plant to generate energy equivalent to that consumed in its construction.

The power tower's viability has been reinforced by the signing of a preliminary agreement with AFGL, Australia's biggest electricity retailer, which plans to feed the output into the national grid. A similar station, built as a prototype south of Madrid in 1982, delivered a steady stream of power for seven years.

Source: The Times

£5M Funding Boost for Solar Energy

Housing, educational and commercial buildings are among those set to benefit from £5 million new Government funding for solar energy projects.

The funding will apply to medium to large scale solar electric power installations and will enable a further three funding rounds under the first phase of the Major Photovoltaics Demonstration Programme in 2004/05. The previous rounds have seen some £11 million grants awarded to 94 different projects throughout the UK.

Energy Minister Stephen Timms said "We've already seen, thanks to the grant programme, the number of installers of solar power treble and significant investments made in manufacturing. The £5 million I'm announcing today will ensure the continued growth of the PV industry in the UK and is a further demonstration of our commitment to renewable energy. The programme has already seen significant reductions in the cost of PV and the projects proposed for 2004/05 are likely to decrease costs even further".

Further information about the Major PV Demonstration Programme can be found at: *www.solarpvgrants.co.uk* or on 0800 298 3978.

Source: DTI News Bulletin, Feb 2004.

Solar Future

1) For every ten gallons of oil used in the world only four new gallons are discovered.

2) World oil consumption is increasing by 2% a year, but production is forecast1 to peak in 2007 at only slightly above present levels and thereafter it will, at best, plateau for a few years before starting a gradual decline.

Does this sound like a recipe for continued smooth expansion of the world economy or a signal of a rough ride ahead?

Shell recently suffered the humiliation of having to downgrade its reserves by 20%, and forecast a fall in output for the coming year.

So it would appear that at some point in the reasonably near future the demand for oil will exceed supply, and as those present at the 2002 David Hall lecture learnt, the demand for oil is inelastic, in other words prices will rise rapidly when supplies become tighter, as has been seen in previous oil shocks. The big difference this time is that the problem will be permanent and the solutions must be both sustainable and available.

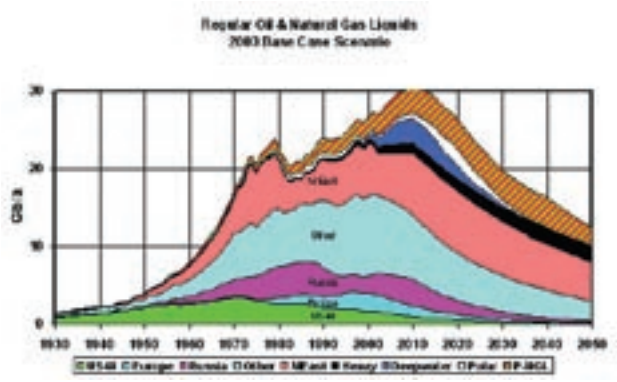
It is to be hoped that impending oil shortages will force the governments of the developed world to adopt a more positive approach to renewable energy and solar in particular, and in doing so meet the challenge of combating global warming.

The solar age may be approaching faster than expected, but fasten your seat belts as the journey to reach it may be bumpy.

The Association for the Study of Peak Oil and Gas (ASPO) is a group of concerned scientists and geologists studying the future of world oil and gas supplies.

The received wisdom on oil as a resource is that when around half of the world's endowment has been used, the maximum feasible rate of production will start to decline. The amount of oil used by the world so far is approaching 1000 Gigabarrels (Gb) out of a total that has been and will be available of around 2000 Gb.

The graph reproduced below is produced by ASPO and shows the historical and forecast annual production, in Gigabarrels per year, with a peak in 2007 of 31Gb a year, this year the International Energy Agency is forecasting world demand of 29.9Gb.



Sources:
ASPO web site: www.peakoil.net
The Oil Depletion Analysis Centre: www.odac-info.org
General background information: www.oildepletion.org
International Energy Agency: www.iea.org

Publication News: Renewable Energy

- A Guide to Successful Implementation

This handbook, published by SAREP, is available to all UK-ISES members via the members' area on the website www.thesolarline.com A username and password are required.

SAREP is a renewable energy promotional programme jointly initiated by the Commonwealth Science Council, UK, the School of Science & Mathematics, Sheffield Hallam University, UK, The British Council and in-country counterparts to increase the public awareness and accelerate the use of renewable energy technologies.

SAREP Aims & Objectives are:

- To train young scientists in renewable technology areas through postgraduate programmes.

- To enhance the awareness of renewable energy applications among entrepreneurs, policy makers, politicians and the general public.

- To facilitate entrepreneurs in Asia to develop trade & investment relations with partners in other parts of the world including Africa, Australia, Canada, Europe, Japan and the United States.

- To start CARES (Centres for Applications of Renewable Energy Sources) as large demonstration projects in rural areas needing development, contributing to reduction of poverty.

Solar Academy

'Integration of Solar Technologies in Building Design'

29 August - 4 September 2004, Freiburg, Germany

Join ISES for this exciting international training event! ISES invite professionals in the building industry - especially architects, engineers, building physicists, and senior students in these fields - to attend the intensive and practical 7-day Solar Academy. The programme (in English) will focus on the integration of solar technologies in building design in the context of residential buildings in a temperate to cold climate. It will take place in Freiburg im Breisgau, in the south of Germany (Black Forest). This city provides some excellent solar building examples.

Participate in this Academy and learn more about sustainable design.

Programme:

- Informative lectures by European energy and solar building experts on:
- Active and passive solar technologies - state-of-the-art
- Energy use in buildings and energy efficiency
- Integrated design of renewable energy technologies
- Practical design studio sessions - group work under guidance of experienced mentors
- Technical tour to selected solar buildings in Freiburg
- Technical exhibition of solar energy products / materials for buildings.

The Scientific Coordinator is Robert Hastings, Dipl. Arch. SIA (Architecture, Energy & Environment GmbH), a well-known solar architect and Task Leader of the IEA SHC Task 28 - Sustainable Solar Buildings.

Contact:
Project Coordinator: Maryke van Staden
International Solar Energy Society (ISES)
Wiesentalstr 50
79115 - Freiburg
Germany

Tel: +49 761 459 0693
Fax: +49 761 459 0699
www.ises.org/freiburg2004

Planned UK-ISES Meetings 2004

1. **UK-ISES Annual General Meeting,** Thursday 20th May, Oxford Brookes University – All members warmly invited!
2. UK-ISES Conference C81, Tuesday 21 September, **Towards Zero Carbon - Sustainability in Practice,** London – joint conference with the Energy Institute
3. C82, Wednesday 10 Nov (provisional), **Sustainable Energy Generation in Buildings,** Birmingham University
4. **David Hall Memorial Lecture,** Thursday 9 December, Keyworth Centre, London Southbank University. The speaker will be Dr William Gillett, Deputy Head of New and Renewable Energy Sources, European Commission, Brussels

Croissant Neuf Solar Powered Venue

Turning Sunshine into Music

Croissant Neuf, a performance venue that runs entirely on Solar Power has been created by GreenOvation Ltd, the company who have been running the Green Roadshow for 12 years. The Solar Venue has only been made possible by the efforts of a fantastic and dedicated team who have given much help and encouragement over the last 10 years. It has been difficult to create both for technical and cost reasons but finally the GreenOvation team have built a P.A and lighting rig to rival any 'normal' system in the business.

The sound is provided by a rack of 12 x (12volt) 1400 watt amplifiers fed from over 2 tonnes of batteries cabled to a huge bank of speakers either side of the 20ft square stage. The lighting rig is a custom made one that uses state of the art LED's to illuminate the stage in an endless wash of rainbow colours all controlled from a digital desk on the P.A tower out front. The lighting system is so efficient it uses less energy than 3 x 100 watt house light bulbs to illuminate up the entire performance area. The battery storage bank that runs this entire set up is charged by a 16 panel solar array mounted on the roof of the 'Solar System' generator truck and tracks the sun throughout the day to give optimum charging.

Contact: Andy Hope
Tel: 01749 343953
Website: *www.solarvenue.co.uk*

Drax goes green with willow

Drax, Europe's biggest coal-fired power station, is to test the use of thousands of tonnes of wood pulped into biomass as an alternative green fuel later this summer, making it the first wood-fuelled power station in the UK.

The managers of the plant, which burns 9.5m tonnes of coal every year, have joined forces with a Yorkshire-based producer of biomass in a 9 month trial of willow.

Renewable Fuels has agreed to supply Drax with an initial 14,100 tonnes of short-rotation coppice, harvested from 1,500 hectares of farmland at Eggborough.

The trial will displace some 10,000 tonnes of coal and 22,000 tonnes of carbon dioxide.

If the tests are successful, willow-based biomass could provide 5% of the power station's fuel by 2009 and cut out 700,000 tonnes of carbon dioxide emissions.

Source: The Guardian

SUNRISE

The Solar PV Project for West Yorkshire

The Sunrise project is a two-year Solar PV pilot for the West Yorkshire region. Funded by Yorkshire Forward, the Regional Development Agency, it was established to increase the uptake of the DTI Solar PV grant scheme, promote the technology and develop a competent installer base within the region. The project was also set up to test the impact of a dedicated officer, focussing on a single technology and delivering it from a 'non-partisan' platform. The response from end-users to working with a project seen as having no commercial interest has been very positive, particularly as the technology is still perceived as being very capital intensive.

The Solar Development Officer (SDO) works with a range of end-users: from helping householders through the installation and grants process to working with councils and housing associations, incorporating solar PV into existing buildings and new housing developments.

Sunrise just successfully facilitated it's first Stream 2 application, for a Pennine Housing 2000 'Very Sheltered' housing development in Hebden Bridge, with a further three major Stream 2 projects in the project portfolio. There have been a number of household installations, alongside schools, community groups and council buildings, all of which are going through Stream 1. The coming year will see an increasing amount of Stream 1 applications being facilitated by Sunrise, capitalising on the promotional work being undertaken in the West Yorkshire region.

When the project commenced, there were no accredited installers in the Yorkshire and Humberside region. The first West Yorkshire company has just received provisional accreditation status with the SDO working with a further two regional companies.

For further information on the Sunrise Project please contact the Solar Development Officer, Tanya Christensen on 01422 392585 or e-mail: *Tanya.Christensen@calderdale.gov.uk*

Envirenergy 2004

Envirenergy 2004
YORKSHIRE & THE HUMBER

Envirenergy 2004 is a free to attend annual conference and exhibition held annually in the North West, North East and in The Yorkshire and Humber areas for the region's energy and environmental practitioners. This year it takes place at The Royal Armouries Museum, Leeds, on 6th October. Focusing on energy and environmental management, it's a one-stop-shop for anyone active in energy and environmental management. *www.envirenergy.org.uk*

The aim of Envirenergy is to provide an annual opportunity for companies to update themselves on all the latest developments both within the respected regions and nationally in the energy and environmental management fields. People who will be exhibiting vary from electricity & gas utilities, energy saving specialists, wind and solar, power providers, water companies, waste management and environmental organisations complimenting the wide range of delegate attendance from all backgrounds such as manufacturers, universities, construction, NHS trusts, government bodies, consultants, work directors, operation managers and many others.

Claire Horsfield
Washingtondowling Associates Ltd (events organisers)
Chorley Business & Technology Centre,
Euxton Lane,
Chorley,
Lancashire, PR7 6TE
Tel: 01257 276176

Top solar technology expert to become CEO of concentrator developers Whitfield Solar

Dr Clive Weatherby, Head of Technology at London based *solarcentury* and long-standing member of UK-ISES, is seconded to become CEO of a spin-out company of the University of Reading UK, Department of Cybernetics

He makes the move with the full support of solarcentury and will still work with them as a consultant.

Jeremy Leggett, CEO, solarcentury said, *"Clive's knowledge has been extremely valuable to us over the past 5 years. Clive will still work with us as part of our advisory committee but this is an amazing opportunity for him and* **solarcentury** *look forward to having close links with Whitfield Solar."*

"This is a great opportunity coming at a time when optical and PV cell technologies for concentrators are at the point where large reductions in generated electricity costs are achievable.", said Dr Weatherby

He added, *"What is remarkable is the quality of the support infrastructure that will enable the small company to flourish. Such a commitment from the University and investor groups is unprecedented in my experience"*

Dr George Whitfield of the department lends his name to the enterprise following over 30 years of research and development in this area. Dr Roger Bentley who has worked closely with Dr Whitfield will assume the role of CTO. This will bring back together the team as Clive's PhD work was within the same group. The company will manufacture photovoltaic solar concentrating systems for low-cost utility scale applications, though smaller systems will be explored.

The University of Reading will have a stake in the company which was formed following seed capital investment from the Cascade fund. The fund, managed by Generics Asset Management Ltd., part of The Generics Group, was set up with government and university money to foster commercialisation of emerging technologies from within the university sector. The company will be initially located within the Reading Enterprise Hub, a business incubator based on Reading's campus and will receive support from the University Technology Transfer Unit. Industrial participation will be from Optical Products Ltd.

"The establishment of Whitfield Solar, with investment from the Cascade Fund, is excellent news for the founding scientists and the University of Reading. We are pleased to support the venture as part of our ongoing strategic approach to developing a culture of enterprise and commercial innovation. This company is a genuine example of how academic research can not only generate new commercial opportunities but through them, also contribute to new job creation and the development of the UK plc knowledge economy."
- Professor Tony Downes, Pro Vice Chancellor, University of Reading

http://www.cyber.reading.ac.uk/

RETScreen International Clean Energy Decision Support Centre

The RETScreen International Clean Energy Decision Support Centre promotes the deployment of renewable energy systems by building the capacity of planners, decision-makers and industry to implement more projects successfully. The Centre builds upon the success of the RETScreen International Clean Energy Project Analysis Software, which is now being used by more than 40,000 people in 196 countries.

The Centre develops tools that allow stakeholders to better analyze the technical and financial viability of possible renewable energy projects. These tools make it easier for people to consider renewable energy projects at the critically important initial planning stage while significantly reducing the costs of assessing potential projects. Some of the enabling tools include renewable energy project analysis software models and manuals; international product and weather databases; project case studies; and university textbooks. Given the broad aim of the Centre's partners, the Centre provides these tools free-of-charge to users around the globe via the Internet and CD-ROM.

The Centre also transfer the knowledge created on a sponsorship or non-commercial cost-recovery basis via the delivery of distance learning courses, professional-training seminars and training-of-trainers workshops; and via an international network of RETScreen trainers.

More information about RETScreen is available at: *http://www.retscreen.net*

The United Nations Environment Programme (UNEP) and National Resources Canada (NRCan) invite you to contribute to the RETScreen International internet-based Marketplace. Specifically, if you are a company in the renewable energy business, you are invited to add to the RETScreen database information on the renewable energy products and services you provide. This is an excellent opportunity to post a company profile and contact details that are available to a worldwide audience free of charge. Project developers are encouraged to view information on renewable energy technology suppliers and service providers. Both groups will benefit from the RETScreen project analysis software.

UNEP and NRCan encourage you to visit the RETScreen Marketplace web site - *www.retscreen.net/ang/13.php* - and explore its potential. If you are interested in posting information about your products and services, click on the “Add or Modify” button on the menu bar to the left of the page. As a user, simply use the drop down menus to search the database.

Any enquiries should be directed to RETScreen Customer Support at: *rets@nrcan.gc.ca*

Elsevier News: Encyclopedia of Energy

This encyclopaedia is an invaluable resource for all academics, researchers and students either working in or conducting research in the energy and related environmental fields.

The Encyclopedia of Energy will provide easily accessible information about all aspects of energy, with articles written by leading international authorities. It will not only be indispensable for students and researchers, but also for policy makers, energy and environmental consultants, and all those working in business corporations and non-governmental organisations whose activities relate to energy and the environment.

www.elsevier.com/locate/encycofenergy

DIARY OF EVENTS

May

May 2 – 7 2004
CIB 2004
5th international conference on indoor air quality, ventilation and energy conservation in buildings
Toronto, Canada
www.cib2004.ca

May 20 2004
UK-ISES Annual General Meeting, Oxford Brookes University
Contact: The Secretariat

June

June 21 – 24 2004
EuroSun 2004, Freiburg, Germany
Visit: *www.eurosun2004.de*

August

August 28 – Sept 3 2004
World Renewable Energy Congress VIII, Denver, Colorado, USA
Contact: *www.nrel.gov/wrec*

September

September 21 2004
Conference C81 - Towards Zero Carbon II: Sustainability in Practice,
Joint meeting of the Solar Energy Society and the Energy Institute, London
Contact: The Secretariat

November

November 10 2004
Conference C82: Sustainable Energy Generation in Buildings,
Birmingham University
Contact: The Secretariat

December

December 9 2004
David Hall Memorial Lecture, Keyworth Centre, London South Bank University
Contact: The Secretariat