

No. 59

September 2010

NEWSLETTER



*of the
Coal Research
Forum*

EDITOR'S COMMENTS:

Autumn approaches and the anguish of England's early departure from the World Cup is but a painful, but fortunately distant, memory. The 8th ECCRIA is upon us and may even have happened by the time this hits the streets.

I am sure you will have noticed a change to the format of the newsletter. Instead of providing you with the full stories as in the past I am now intending to supply you with a short summary of the article which, if you are sufficiently interested, you will then be able to follow up from the original source. The fact that the newsletter is now exclusively circulated to our members electronically means that you should all be able to access the articles if you wish to do so.

I would also like to invite our readers to submit any articles news items that they would wish to be included as we will be able to accommodate them in the new format.

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Underwater 'kite' captures tidal energy

10 May 2010, Emily Laut, Science on MSNBC.com

A novel use to capture energy from tidal flows involves the use of small kite-like devices. Its Swedish developer explained that once the device is anchored to the seabed it can be made to describe a figure of eight which, it is claimed, is much more efficient at extracting energy from the tidal flow. For full story see:

http://www.msnbc.msn.com/id/37068455/ns/technology_and_science-science

Solar power could generate up to 25% of global electricity by 2050

14 May 2010, Renewable Energy World

At a conference this week held in Valencia, Spain, the IEA presented data which suggested that up to 25% of the world's electricity supply could be generated from a combination of solar PV and CSP sources by the year 2050. The two technologies will be used in different but complementary ways. PV will find favour in distributed generation whilst CSP is best suited for large scale generation in very sunny clear locations. For full story see:

<http://www.renewableenergyworld.com/rea/news/article/2010/05/iea-solar-could-make-up-25-of-worldwide-energy-production-by-2050>

EDF to press ahead with nuclear plans after assurances from Chris Huhne

27 May 2010, Guardian

The manifesto commitment of the Liberal Democrats regarding a new generation of nuclear power plants had caused some concern within utilities such as EDF. However, these fears appeared to have been allayed by the receipt of assurances from the Government and the planning process will continue. For full story see:

<http://www.guardian.co.uk/business/2010/may/27/edf-nuclear-huhne>

Britain to export fuel made from household waste

28 May 2010, Daily Telegraph

The high and increasing cost of landfill in the UK has prompted councils to explore alternatives to this method of disposing of municipal waste. One of these has been the export to more recycling-conscious countries, such as the Netherlands, of pelletised household waste. Although legal, this approach has attracted criticism from environmentalists who claim that it is a waste of money and increases climate change and that more effort should be made to recycle this material. For full story see:

<http://www.telegraph.co.uk/earth/earthnews/7778378/Britain-to-export-fuel-made-from-household-waste.html>

Green energy levy would add £20 to bills

31 May 2010, Business Times On-Line

The UK Government is understood to be considering a levy on power suppliers that would result in an increase of around £20 to £30 per household on electricity bill. The view is that the levy could be used to drive the Government's clean energy scenario forward as the utilities are seen to be dragging their feet on these new projects. For full story see:

http://business.timesonline.co.uk/tol/business/industry_sectors/utilities/article7140715.ece

Hunterston coal power station plan due to be submitted

1 June 2010, BBC News

A Scottish-based power company has submitted a planning application for a £3 billion coal-fired power station to be located at Hunterston. The company, known as Ayrshire Power, is

owned by Peel Energy Ltd. and the plant if built would be fitted with experimental carbon capture and storage capability. However, there is local opposition to the construction of a fossil-fired power plant in this location. For full story see:
http://news.bbc.co.uk/1/hi/scotland/glasgow_and_west/10208275.stm

New approach to finding and removing defects in graphene

7 June 2010, Science Daily

Graphene is a revolutionary new material which is expected to have many novel applications now and in the future. The material is made up of a flat sheet of single carbon atoms bonded together in hexagons. To be able to exploit the special properties of graphene it has first to be available in large quantities and secondly to be pure.

This article describes new methods by which the purity of grapheme sheets may be improved. One of the unwanted impurities is oxygen atoms which are chemically bound into the graphene structure and therefore difficult to remove. The use of heat and hydrogen was found to be effective at removing impurities. For more see:

<http://www.sciencedaily.com/releases/2010/06/100606162131.htm>

Pumping up the heat for a climate-friendly future

11 June 2010, Science Daily

The idea of exploiting 'free' energy has never been more attractive but the economics of using geothermal energy on a small scale have, so far, been anything but attractive. However, the energy in the waste hot water from a district heating system in Lendava, Slovenia has been investigated to see if further use can be extracted from this natural source of energy. The outcome has been the development of a high temperature heat pump which is used to re-heat geothermal heat source water up to 80°C for use in space heating. For full story see:

<http://www.sciencedaily.com/releases/2010/06/100611085354.htm>

Nuclear reactors could see closure deferred to help bridge funding gap

14 June, Tim Webb, Guardian

In recognition of the need to reduce early clean up costs for decommissioning old Magnox nuclear generators, not to mention the contribution to filling the potential energy gap, plans have been drawn up to extend the operational life of Wylfa and Oldbury stations. The life extension plans are being reviewed by the Nuclear Installations Inspectorate. The Nuclear Decommissioning Authority, which owns the stations, estimates the cost of decommissioning of the old nuclear plants to be around £73 billion. These costs are supposed to be met equally by the commercial revenues of the NDA and the taxpayer. For full story see:

<http://www.guardian.co.uk/business/2010/jun/14/nuclear-plant-life-extension-savings>

Water CO₂ calculator for UK homes goes online

16 June 2010, BBC News

It is now possible for people in the UK to determine how much CO₂ is emitted when they heat water in their homes. A website has been created by the Energy Saving Trust which helps people not only to measure CO₂ but also can offer help in reducing water and energy. After space heating (47%), water heating (22%) is the next largest category of CO₂ emissions in UK homes and accounts for 5% of the nation's total CO₂ emissions.

http://news.bbc.co.uk/1/hi/science_and_environment/10310883.stm

Giant wind turbines 'the future of UK green energy'

20 June 2010, BBC News

A new generation of wind turbines is being designed which will dwarf even the London Eye. Scheduled for completion in 2012 and named Britannia the first giant offshore turbine will

tower 175m above the North Sea. This turbine will be rated at 10MW compared to the more usual 2.5MW or 5MW currently being installed. Lead engineer for the project, Bill Grainger, does not, however, see this as the largest turbine possible although there are other factors to consider on scale up. For full story see:

<http://news.bbc.co.uk/1/hi/uk/10359529.stm>

UK time change 'would save CO₂ emissions'

20 June 2010, BBC News

A study conducted by workers at Cambridge University claims that by not putting the clocks back in Autumn the country would save around 500,000 tonnes of carbon dioxide emissions. Furthermore, it also believes that people would be happier, healthier and if the evenings stay lighter longer. [I would support this! - Editor]. For full story see:

<http://news.bbc.co.uk/1/hi/uk/10362295.stm>

China set to become largest importer of thermal coal

23 June 2010, Javier Blas and Leslie Hook, FT

It has been revealed by coal traders and mining companies that the present largest importer of thermal coal, Japan, is shortly to be overtaken by China. The rate at which imports have risen in China has proved to be surprising to experts who did not expect this to occur before 2015. Until 2007 China was a net importer of coal but is reckoned to be in the market for around 105 to 110 million tonnes of imported coal in 2010. China is still the largest producer of coal but its domestic production cannot cope with the demand. For the full story see:

<http://www.ft.com/cms/s/0/43cc3c94-7eec-11df-8398-00144feabdc0.html>

Green energy plant 'not carbon neutral for 40 years'

23 June 2010, Ian Swanson, The Scotsman

Serious doubts have been expressed about the green credentials of a £360 million biomass plant planned to be built in Leith. The claim is made in a report which suggests that the burning of wood for the generation of power, which in theory is 'carbon neutral', would in fact create a 'carbon debt' which would last for decades due to the slow growth of the replacement trees. Another downside is the carbon emissions which would result from the transportation of the wood fuel, mostly by sea from North America, Scandinavia and Eastern Europe. For the full story see:

<http://news.scotsman.com/politics/Green-energy-plant-39not-carbon.6378553.jp>

Carbon Sequestration: Boon or Burden?

27 June 2010, Science Direct

One of the key technologies upon which the continuing use of fossil fuels depends is the ability to collect and securely trap the CO₂ which is produced. A recent paper from the Nils Bohr Institute has looked into the viability of the process and what are the possible consequences of long term CO₂ sequestration. Undersea storage is regarded unfavourably due to its effect on the characteristics of the oceans and the ease with which the CO₂ might escape. Geological storage is viewed more positively but the author of the paper feels that sequestration should not signal the green light for continued unfettered fossil fuel usage. For more information view the following:

<http://www.sciencedaily.com/releases/2010/06/100627155110.htm>

Advisors urge new UK climate policies

29 June 2010, Richard Black, BBC News

In its second annual report to parliament the UK Government's Committee on Climate Change (CCC) has called for major changes in policy to bring about the step changes it claims are needed to meet climate targets. The CCC's chairman Lord Adair Turner said that

although greenhouse gas emissions had fallen by 8.6% in the UK over the year 2008-2009 this was primarily due to the recession and higher fossil fuel prices. These figures had given the false impression that progress to cut emissions was being achieved which was not the case. The committee has selected four target areas where so-called step-changes are needed, namely, electricity generation, a greater uptake in home insulation, more challenging targets for electric vehicles and encouraging the better use of agricultural fertilisers. For the full story see:

http://news.bbc.co.uk/1/hi/science_and_environment/10456314.stm

Switching off your lights has a bigger impact than you might think, says new study

1 July 2010, Science Daily

By turning off appliances and generally economising our use of electricity could result in a larger than expected reduction in carbon dioxide emissions, according to a new study in the journal Energy Policy. It seems that government advisors use a simple estimate of carbon emissions which does not take account of the differing energy sources used to produce electricity. This has, apparently, resulted in an underestimation of the carbon saving that reducing electricity consumption has brought. The reports author utilised 60 million data points to derive what is a much more accurate estimation of carbon dioxide produced per kilowatt hour of electricity. For the full story see:

<http://www.sciencedaily.com/releases/2010/06/100630101022.htm>

Is large-scale biomass threatening 8,700 UK jobs?

5 July 2010, Bioenergy

A study by the Wood Panel Industries Federations (WPIF) has highlighted what it sees as an unfair advantage that power generators who burn wood have over their own industry. Each of the industries purchase both virgin and reclaimed wood but the generators have the subsidy of the Renewables Obligation to help them defray some of the cost of the wood. A WPIF spokesman said that the federation is not anti-biomass but there are real fears that UK jobs could be lost unless the playing field is made level for both. For the full story see:

<http://www.renewableenergyfocus.com/view/10650/is-largescale-biomass-threatening-8700-uk-jobs/>

Curry for sheep could curb global warming

8 July 2010, Daily Telegraph

Researchers in the University of Newcastle, New South Wales found that by feeding sheep with certain spices methane emissions from the animals was reduced by up to 40%. It is claimed that the spices turmeric and coriander act within the digestive systems of sheep to reduce the amount of methane-forming bacteria. Not only does this treatment reduce the emission of this very powerful greenhouse gas but it also reduces the energy loss of the sheep resulting in higher meat and milk yields. The research is published in the Asian-Australasian Journal of Animal Sciences 2010. For the full story go to:

<http://www.telegraph.co.uk/earth/environment/globalwarming/7873998/Curry-for-sheep-could-curb-global-warming.html>

EU gives power stations until 2020 to meet emissions rules

8 July 2010, Sarah Arnott, The Independent

The next phase of EU rules on pollution from fossil-fuelled power plant will kick in on June 2020 according to the latest pronouncements of the Industrial Emissions Directive passed by the European Parliament on 7th July. These new rules will replace the Large Combustion Plant Directive (LCPD) in 2016 and will impose even tougher limits for nitrogen and sulphur oxides and particulate matter. Although more stringent, these regulations allow the UK power plant operators the flexibility to continue to operate beyond 2016 with further

investment. This will help to bridge the potential energy gap that a forced closure in 2016 might bring about. For more details see:

<http://www.independent.co.uk/news/business/news/eu-gives-power-stations-until-2020-to-meet-emissions-rules-2021093.html>

Climategate scientists cleared of manipulating data on global warming

8 July, David, Adam, The Guardian

Academics at the Climate Research Unit (CRU) of the University of East Anglia who were accused of manipulating data in a series of leaked e-mails were cleared yesterday by inquiry leader and senior civil servant, Sir Muir Russell. Although not guilty of dishonesty the scientists were accused of a lack of transparency and had been unhelpful and defensive when reasonable requests for information had been made to them. At a cost of £200,000 this is the third and final inquiry into this affair which now, in effect, clears the senior staff at CRU of the most damaging charges. For more details see:

<http://www.guardian.co.uk/environment/2010/jul/08/muir-russell-climategate-climate-science>

Scrubbing CO₂ from atmosphere could be a long-term commitment

9 July 2010, Science Daily

It is feared that even if carbon dioxide emissions were halted completely it would not prevent serious climate change from occurring, according to researchers at the Carnegie Mellon Institute. Studies have shown that even though removing atmospheric carbon dioxide would lower the temperature of the planet, the long term effects might require a long term commitment of decades or centuries to maintain this cooler regime. This is said to be due to the complexities of the carbon cycle where interaction between the atmosphere and the oceans affects atmospheric carbon dioxide levels.

A similar effect is seen in the uptake and subsequent release of carbon dioxide from the soil. The reports authors are quoted as saying "If we do someday decide that we need to remove carbon dioxide from the atmosphere to avoid a climate crisis, we might find ourselves committed to carbon dioxide removal for a long, long time. A more prudent plan might involve preventing carbon dioxide emissions now rather than trying to clean up the atmosphere later. For more details see:

http://www.sciencedaily.com/releases/2010/07/100701183601.htm?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+sciencedaily+%28ScienceDaily%3A+Latest+Science+News%29&utm_content=Bloglines

Government plans for micro-generation boost published

12 July 2010, New Energy Focus

An announcement was made today by the UK Government's Climate Change Minister, Greg Barker that it was launching a Microgeneration Strategy for consultation document. It proposes looking into such areas as the trialing of new technologies and the development of its supply chain which should allow the development of local microgeneration schemes in the UK.

The document will focus on four areas for development, quality, technology, skills and advice. The focus of the strategy, which is for England only, is on electricity generation technologies of less than 50kW in size and heat generating technologies of less than 300kW in size, and include solar PV, solar thermal water heating, biomass boilers, micro-CHP, micro wind turbines, fuel cells, micro hydro schemes and passive flue gas recovery devices. For more information see:

http://newenergyfocus.com/do/ecco/view_item?listid=1&listcatid=32&listitemid=4151§ion=On-site%20%26%20Micro

World's first hybrid solar-coal power plant operating in Colorado, USA

13 July 2010, Power-Gen Worldwide

Xcel Energy in conjunction with Abengoa Solar have developed the worlds first ever hybrid solar-coal power plant, which has opened in Colorado USA. The system works through a series of parabolic trough solar collectors made of glass mirrors, on sunny days the mirrors concentrate the solar radiation onto a line of receiver tubes filled with mineral oil, which is heated to around 300°C. The heated oil is then fed to a heat exchanger where the heat is transferred to water to heat it to around 200°C before it enters the boiler. The project hopes to cut coal use at the power plant by around two or three percent. For more see:

http://www.powergenworldwide.com/index/display/articledisplay/3677310625/articles/powergenworldwide/coal-generation/new-projects/2010/07/world_s-first_hybrid.html

UK's first brewery waste-to-biogas plant completed

13 July 2010, Bioenergy News

Adnams the Suffolk brewer of renown have embarked on a new venture to dispose of their brewery waste and generate electricity at the same time. They are doing this by using the process of anaerobic digestion. In conjunction with British Gas Adnams Bio Energy has completed the construction of the plant which is expected to produce over 4 million kWh per year from the 12,500 tonnes of organic waste from the brewing process. Three digesters will produce biomethane and an organic fertiliser from brewery and food waste. The intention is to be energy self sufficient and ultimately re-sell electricity to the grid. For more information see:

http://www.bioenergy-news.com/index.php?/Industry-News?item_id=2335

Rocket science to cut smokestack CO2 for 13 US cents per KWh coal

13 July 2010, Susan Kraemer, Cleantechnica

Yet another technology has been successful in securing funding for its development of CO2 removal from flue gas streams. The award, from the US's Advanced Research Projects Agency, was described by its director Arun Majumdar as being radically different. The recipients of the \$1 million funding award are the academic energy consulting organisation, ACENT Laboratories of New York.

The basis for the new technology is that by applying a high aerodynamic force to a flue gas stream, rapid expansion and cooling will occur which will solidify any CO2. The next key step is to remove the solid CO2 from the other gases. The belief is that this new technology would be significantly cheaper than other carbon capture options. For more information visit: <http://cleantechnica.com/2010/07/14/rocket-science-to-cut-smokestack-co2-for-13-cents-per-kwh-coal/>

DECC reveals £34m cuts to low-carbon tech programme

16 July 2010, The Guardian

Details emerged today of the savings planned by Department of Energy and Climate Change (DECC) as part of £6.2 billion cut in expenditure across Whitehall. Cuts included £12.6 million from the budget of the Carbon Trust, a halving of the funding for deep geothermal energy (now £1 million), £3 million from the offshore wind capital grants scheme, £2.9 from central governments low carbon technology programme and the cancellation of the final round of schemes to support bio-energy saving £2.9 million. For more depressing news go to:

<http://www.guardian.co.uk/environment/2010/jul/16/decc-carbon-tech-budget-cut>

KPMG says nuclear power 'won't happen'

17 July 2010, Rowena Mason, Daily Telegraph

A study by KPMG, which was commissioned by utility RWEpower, reveals that it would be uneconomic for generators to spend billions of pounds in new nuclear capacity. Although the UK Government has agreed to make nuclear generated electricity more attractive by imposing a minimum price on carbon permits, it has not agreed to offer any direct subsidies. The KPMG report claims that this is insufficient incentive for utilities to commit significant capital investment into the nuclear sector. KPMG suggests the Government should consider the introduction of a variable premium tariff for all low-carbon technologies to allow for the necessary new generation plant to be constructed before power shortages develop. For more see:

<http://www.telegraph.co.uk/finance/newsbysector/energy/7896510/KPMG-says-nuclear-power-wont-happen.html>

New solar-powered process removes CO₂ from the air and stores it as solid carbon

17 July, Michael Berger, Nanowerk & Spotlight

Researchers have now produced the first experimental evidence of a new solar conversion process, combining electronic and chemical pathways, for carbon dioxide capture in what could become a revolutionary approach to remove and recycle CO₂ from the atmosphere on a large scale. For more see:

<http://www.nanowerk.com/spotlight/spotid=17198.php>

DECC cuts are 'bad news' for renewables sector

20 July 2010, New Energy Focus

The Department of Energy and Climate Change (DECC) has come under fire from several directions for its plans to cut £85 million from renewables energy initiatives. Renewable energy trade organisations and campaigning groups such as Friends of the Earth all maintain that renewables technology is not an optional extra and that the cut would be very harmful to the industry. This backlash came after detailed plans for the savings were announced last week by the DECC.

The cuts were demanded by the Treasury to address the budget deficit. The Renewable Energy Association (REA) maintains its concerns are for both the effects of the cuts and because an "opportunity has been missed to provide industry with some limited comfort". Renewable UK accepts that making cuts is necessary but feels it is important that renewables are considered as a contributor to the economy and not as a liability. For more details see:

http://newenergyfocus.com/do/ecco/view_item?listid=1&listcatid=32&listitemid=4177§ion=

Ban on new coal-fired power plants without CCS

27 July 2010, Fiona Harvey, Financial Times

The UK Government announced today that new coal-fired power plant built in the United Kingdom must be fitted with carbon capture and storage technology. It proposes the launch of a consultation in November on an 'emissions performance standard' which would effectively penalise plants which operate below a specified efficiency level. This having been said the Energy Minister Charles Hendry indicated that any coal plant without CCS technology would not be acceptable.

Further delay to the selection and implementation of large scale demonstration plant in the UK is a further cause for disappointment and frustration for UK power generators. For more information see:

<http://uk.finance.yahoo.com/news/ban-on-new-coal-fired-power-plants-without-ccs-ftimes-65667cdb4c54.html?x=0>

UK to fix biomass energy support for 20 years

July 27 2010, Daniel Fineren, Reuters

It was with a sense of relief that the news of the continuing Government support for the Renewables Obligation (RO) was greeted today. Users and developers of biomass-based projects can look forward to another 20 years of the RO being in force. The chief executive of The Renewables Association was quoted as saying that "Today's announcement should ensure that financial support is now guaranteed for 20 years and that around £13 billion of investment from the private sector should now be released". For more information see:

<http://af.reuters.com/article/energyOilNews/idAFLDE66Q1HA20100727?pageNumber=3&virtualBrandChannel=0>

Waste fat from frying fuels hydrogen economy

28 July 2010, Science Daily

Another way to make use the old fat from frying your chips has emerged from the University of Leeds. Dr Valerie Dupont, who is leading the project, has reported that her team has found an energy-efficient way to produce hydrogen from this waste material. The benefits of using clean hydrogen as a fuel are well known but the economics have proved to be a stumbling block. Now a process has been created which is carbon-neutral and also provides some of the fuel for the process. For more details see:

<http://www.sciencedaily.com/releases/2010/07/100727094820.htm>

Power industry faces skills gap

2 August 2010, Lydia Benatia, The Independent

The National Skills Academy for Power (NSAP) warned today of a serious skills shortage in the UK power industry. There is a projected need for 65,000 new workers by 2024 as the expected loss by retirement over the next fifteen years amounts to four out of every five employees. The engineering and construction industries alone will be looking to recruit between 17,000 and 35,000 skilled staff.

Steve Davise the chief executive of NSAP said, "The extent and size of this skills gap raises serious questions about the capability of the UK power sector to be able to maintain supply over the coming years" For more information visit:

<http://www.independent.co.uk/news/business/news/power-industry-faces-skills-gap-2041252.html>

Energy storage system deals with sudden draws on the grid

11 August 2010

Research workers at the University of Leeds and the Chinese Academy of Sciences have developed a quick response system to address sudden electricity demands on the grid. Not only is the new system more environmentally friendly than those currently in use but it will also be cheaper. It involves the production of 'cryogen' – liquid nitrogen and oxygen from air from off-peak electricity. The cryogen is stored and used at periods of peak demand. The nitrogen is evaporated and the heated gas turns a generator to produce electricity and the oxygen is used as part of the combustion gas in an Oxy-fuel type system. For more details go to:

<http://www.sciencedaily.com/releases/2010/08/100811130017.htm>

Charcoal takes some of the heat off global warming

12 August 2010

Anthropogenic greenhouse gas emissions could be sustainably offset by as much as 12% by producing biochar according to a recent study published in the journal Nature Communications. "Our calculations show that biochar can play a significant role in the solution for the planet's climate change challenge," said study co-author Jim Amonette, a soil chemist at the Department of Energy's Pacific Northwest National Laboratory. "Biochar offers one of the few ways we can create power while decreasing carbon dioxide levels in the atmosphere. And it improves food production in the world's poorest regions by increasing soil fertility. It's an amazing tool." The study is the most comprehensive yet carried out on the global potential for biochar. For a fuller description visit:

<http://www.sciencedaily.com/releases/2010/08/100810122030.htm>

Paving 'slabs' that clean the air

18 August 2010.

An innovative approach to the reduction of atmospheric pollution has been developed and is being tested in Germany. Nitrogen oxide concentrations in German cities frequently exceed the maximum permitted level. To help reduce these levels a new form of paving slab has been developed which has a coating of titanium dioxide nano-particles. Titanium dioxide is a photo catalyst which uses sunlight to degrade the nitrogen oxides and tests showed a 20% to 30% reduction in the pollutant. For more see:

<http://www.sciencedaily.com/releases/2010/08/100818090016.htm>

Can the world be powered mainly by solar and wind energy?

25th August 2010

"Can the world be powered mainly by solar and wind energy? This was the question posed and then answered by eminent Nobel laureate Walter Kohn of the University of California Santa Barbara at the American Chemical Society's 240th National Meeting on August 24 in Boston. The driver for this outcome was said to be the expected fall in oil production and the increasing incidence of global warming. Kohn indicated that these challenges require a variety of responses. "The most obvious is continuing scientific and technical progress providing abundant and affordable alternative energies, safe, clean and carbon-free," he said. Because the challenges are global in nature, the scientific and technical work should enjoy a maximum of international cooperation, which fortunately is beginning to evolve, he said. Furthermore there is a need for a reduction in the per capita energy use in the more developed countries. For more details of this story visit the American Chemical Society web site

<http://portal.acs.org/portal/acs/corg/content> or the following:

<http://www.sciencedaily.com/releases/2010/08/100824161424.htm>

Turbo Power Systems wins £6m for solar idea

25th August 2010.

An innovative UK business has just won over £6M in funding to investigate the prospects for using photovoltaic power to re-charge electric car batteries. Turbo Power Systems (TBS), based in Gateshead, won the award from TAO Sustainable Power, part of a Brazilian energy company, £72K from One North East and support from the Tyne and Wear Development Company. Tony Lakin, head of R & D at TPS, said: "The electric vehicle market is a rapidly growing sector. This is an exciting project that will explore the potential for charging electric vehicles from a renewable energy source and we have the expertise and technology to achieve this. "It's great we're doing it in the North East, which has real potential to be a leader and pioneer in the electric and battery-powered vehicles sector. Being based in the North East means we have access to hugely talented workforce from our universities". For more information visit:

<http://www.nebusiness.co.uk/business-news/latest-business-news/2010/08/25/turbo-power-systems-wins-6m-for-solar-idea-51140-27129747/>

Electricity collected from the air could become the newest alternative energy source

26th August 2010

Studies at the University of Campinas in Brazil are looking into the possibility of harnessing electricity from the air and using it as energy in the same way that solar energy is collected from sunlight. Dr Fernando Galembeck recently reported his team's early findings to the 240th National Meeting of the American Society of Chemistry.

Galembeck stated "Our research could pave the way for turning electricity from the atmosphere into an alternative energy source for the future." His findings could help to explain how electricity is produced and discharged in the atmosphere. "Just as solar energy could free some households from paying electric bills, this promising new energy source could have a similar effect," he maintained. "If we know how electricity builds up and spreads in the atmosphere, we can also prevent death and damage caused by lightning strikes," Galembeck said, noting that lightning causes thousands of deaths and injuries worldwide and millions of dollars in property damage.

<http://www.sciencedaily.com/releases/2010/08/100825185121.htm>

Update on new Research Fund for Coal & Steel (RFCS) Projects

The annual feature on new RFCS projects continues to be absent from this edition of the newsletter as information on newly funded projects has not yet been released to the general public.

Student Bursaries for 2010-2011

Up to 6 travel and subsistence bursaries for up to £300 are on offer to bona-fide full-time students wishing to attend appropriate National and International coal-related conferences, such as the "8th European Conference on Coal Research and its Applications" to be held at University of Leeds in September 2010, (please see the Calendar of Coal Research Events for details of both this and other events at the end of this Newsletter). To apply, please send the abstract submitted to the conference with a brief supporting letter from your supervisor to:

Prof. J.W. Patrick
School of Chemical & Environmental Engineering
The University of Nottingham
University Park
Nottingham NG7 2RD

The bursaries come with no obligations to the recipient other than to supply a short essay about his or her impressions of the conference to the Newsletter for inclusion in the next edition.

CALENDAR OF COAL RESEARCH MEETINGS AND EVENTS

Date	Title	Location	Contact
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September 5-8 2010	8th European Conference on Coal Research & Its Applications	University of Leeds	See conference website Conference website (www.eccria.org)
September 9-18 2010	China-UK Summer School on Carbon Capture and Storage	Beijing , China	For further details, contact Professor Y. Yan, y.yan@kent.ac.uk
Monday 11th October 2010	59 th BCURA Robens Coal Science Lecture to be given by Dr Will Gibb, formerly Head of Power Technology at E.ON Engineering, Ratcliffe-on-Soar, Nottinghamshire "The Importance of Coal Science in Powering the World"	The Institute of Physics, 76, Portland Place, London, W1B 1NT	Mr J D Gardner, BCURA Company Secretary, Gardner Brown Ltd., Calderwood House, 7 Montpellier Parade, Cheltenham, GLOS, GL50 1UA Tel : 01242-224886 Fax : 01242-577116 E-mail : john@gardnerbrown
October 14-15 2010	"Who will keep the lights on?" Coal Research Forum (Coal Preparation Division) joint with the Mineral Engineering Society Southern Group and the South Midlands Institute of Materials, Minerals and Mining	University of Nottingham	Mr Andrew Howells E-mail: hon.sec.mes@lineone.net
November 10 2010	"Technical and Economic Aspects of Co-combustion of Biomass" Coal Research Forum (Combustion Division) joint with the Royal Society of Chemistry (Energy Sector)	University of Leeds	Professor Jon Gibbins University of Edinburgh E-mail: jon.gibbins@ed.ac.uk Tel: 0131 650 4867
Provisionally 2011	The European Industrial Emissions Directive (IED) Coal Research Forum (Environment Division) joint with the Combustion Engineering Association and the Royal Society of Chemistry Energy Sector and Environmental Chemistry Group	Venue in London to be announced	Dr Trevor Drage E-mail: trevor.drage@nottingham.ac.uk Tel: 0115 951 4099