Cambridge Cleantech

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# Cleantech en-vision

The quarterly newsletter of Cambridge Cleantech

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## UK presses ahead with power market reform

**On 15 December the energy department issued an update to its Electricity Market Reform (EMR) White Paper.**

The reforms are aimed at paving the way to a low-carbon energy mix while securing energy supplies for the future. In his statement energy and climate change secretary Chris Huhne said the "current electricity market has served us well", but he noted a number of challenges going forward.

### Confirmed intentions

The government verified that it will introduce a capacity mechanism, which is designed to guarantee sufficient generating capacity is available when needed. This will be introduced in the form of a capacity market, to be managed by the electricity system operator National Grid. In a capacity market all providers willing to offer capacity, whether generation or non-generation technologies, can sell that capacity through a central auction. The total volume of capacity required on the system is then purchased. In addition the capacity market will provide incentives to: extend the life of current generation; invest in new generation; and encourage the use of demand-side response.

National Grid will also be the delivery agent of the government's new programme of feed-in tariffs with contracts-for-difference (FiT CfDs) for low-carbon generation above 5MW. This arrangement will offer nuclear power stations and renewable energy sources a fixed price for their electricity generation. Under the scheme generators will enter into long-term contracts and receive variable payments to ensure they receive the agreed tariff (assuming they sell their electricity at the average market price). As the scheme administrator National Grid will have the ability to offer low-carbon and capacity contracts and will advise the government on key rules and parameters.

More details on the criteria and process for projects seeking a Final Investment Decision during the transitional period were also unveiled. Details on the future arrangements for the Renewables Obligation from 2027 were issued too.

### Next steps

More documents are to be published next year including: technical details on FiT CfD and the proposed emissions performance standard; an update on enabling investment decisions for early projects; and an Electricity System Policy. Legislation is to come into effect in 2013, with the new arrangements coming into effect from 2014.

Government

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# Grey skies ahead for solar power

**In October the Government published its long-awaited consultation on new levels for subsidies paid to small-scale solar generators, but the news did not stop there.**

The Feed-in Tariff (FiT) scheme aims to incentivise investment in a range of renewables technologies by providing generators less than 5MW with guaranteed payments for electricity produced. The scheme to-date has been dominated by solar photovoltaic (PV) installations because of the generous subsidy available and the falling cost of installing a solar PV system.

This trend has resulted in some projects delivering returns of more than 12%, which is considerably more than the 6%-8% return that was anticipated at the launch of the scheme back in April 2010. The government's revised tariffs aim to offer "a more responsible" rate of return of 4%-5%.

## Gloomy outlook

The headline proposal was to reduce tariffs for new PV projects up to 4kW from 37p/kWh to 21p/kWh and from 43p/kWh to 21p/kWh for retrofit installations. Reduced rates were also proposed for schemes 4kW-10kW, which dropped down to 16.8p/kWh. Rates for 10kW up to 50kW projects are also to be lowered to 15.2p/kWh, while those for 50kW to 250kW schemes are to be reduced to 12.9p/kWh.

Given economies of scale the government also proposed to introduce multi-installation tariff rates at 80% of the standard tariff for aggregated solar PV projects. But in a surprise move ministers also proposed that after 1 April 2012 any new solar PV station providing electricity to a building should only receive FiT payments if the generator can demonstrate the building has an energy performance certificate grade of C or above.

Responses were requested by 23 December, but the tariff changes applied to installations commissioned from 12 December.

## Eye of the storm

The announcement has received much criticism. Most notably campaign group Friends of the Earth has called for a judicial review over the decision—backed by two solar PV developers (SolarCentury and HomeSun). On 15 December a high court judge granted the trio a judicial review into the government's proposals. A full hearing took place late December, and the court upheld the challenge. The Government has confirmed that it will contest this ruling. An appeal session was held on 13 January.

Two influential parliamentary committees recently issued a joint call for evidence for information concerning the proposed reductions. The main focus of the inquiry is on what factors the government should consider when setting FiT rates in the future and on the way in which ministers have managed the solar PV FiT setting process to-date. The first oral evidence sessions took place at the end of November.

In mid-December the Renewable Energy Association (REA) delivered a letter signed by over 200 prominent organisations to Downing Street urging ministers to intervene to ensure a future for solar power beyond 1 April 2012.

The REA's letter was supported by Consumer Focus' *Keeping FiT* report. The advocate echoed concerns at the speed of the proposed cuts. It also claimed that some consumers are finding it difficult to register for the FiT in time, even if the installation is complete. The organisation called on the government to apply changes to the tariff on the basis of contract date, not registration date, which it argued would help prevent consumers losing out.

Government Parliament Friends of the Earth Consumer Focus

# RHI (finally) gets green light

**The government's much anticipated Renewables Heat Incentive (RHI) was opened to business participants at the end of November.**

Initially the scheme of industrial grants was due to launch late September. But it faced a last-minute setback and was delayed after the European Commission expressed concerns over the rate payable to large-scale projects.

## To recap…

The RHI is a government-funded scheme designed to provide financial support to non-domestic renewable heat generators and producers of biomethane. It should help significantly increase the level of renewable heat in the UK. The government considers this is vital if the country is to meet its 2020 renewable energy target, reduce carbon emissions, ensure energy security and help build a low-carbon economy.

The scheme will be introduced in two phases: in the first phase, long-term tariff support will be targeted at big heat users in the industrial, business and public sectors—which account for nearly 40% of the UK's carbon emissions. Under this phase there will also be support of around £15mn for households through the Renewable Heat Premium Payment. In the second phase expected in 2012 the scheme will be expanded to include more technologies and additional support for households.

## Troubled past

The Commission said the original rate proposed for large-scale biomass over 1MW (originally set at 2.7p/kWh) amounted to State Aid, and as such it insisted the rate would have to be dropped to 1p/kWh if the scheme was going to be allowed to launch. This change was accepted by ministers, who subsequently re-submitted the proposals for parliamentary approval shortly after. A government spokesperson said the change was "frustrating", but without it the scheme would not have been able to proceed.

The majority of users planning to install a biomass heating scheme are unlikely to be unaffected as they will come under the 1MW threshold. The revised rate is likely to leave the largest heat users, such as hospitals and prisons, most likely to feel the pinch.

## The regulator's position

Separately in early November the energy regulator Ofgem published responses to an earlier consultation on guidance for potential participants in the scheme.

The biggest change was the change to the definition of a biomethane producer; a producer is now the party that bears the final cost of the conversion process. Ofgem's position on re-using existing installations in the scheme has not changed, and the installation must be new to qualify for the scheme. It took the opportunity to publish a further version of the guidance document, which was designed to aid prospective RHI participants in the non-domestic sector.

The document also set out how Ofgem intends to administer the scheme. And the regulator published a further fuel measurement and sampling questionnaire and a template pack following an independent report on metering arrangements.

## First past the post

According to Ofgem in December 2011 two companies using heat pumps became the first approved sites under the scheme. According to its online project database a 24kW peak capacity water-source heat pump and a 4kW ground-source heat pump have both been accredited to receive payments. But Ofgem would not say who the companies are for data protection reasons.

Government Ofgem

## Green Investment Bank sets out its priorities

Speaking at an electricity industry event on 12 December business secretary Vince Cable set out the "next steps" for the government's flagship Green Investment Bank. He reiterated that the bank will be a "critical component in the UK's transition to a green economy", but said that it will work to "catalyse private investment—not replace it."

The Bank is intended to bridge the gap between venture capital and the green economy by providing finance for low-carbon infrastructure and laying the foundation for long-term, balanced growth. Initially it will receive £3bn of government funds, but ministers hope this start-up finance will attract significant levels of funding from businesses and stakeholders.

### The winners

Giving the keynote speech Cable also confirmed that the first priorities for the institution would include: offshore wind; energy-from-waste; non-domestic energy efficiency; support to business users for the Green Deal; and industrial waste processing and recycling. In addition he hinted that up to 80% of the Bank's initial £3bn is being set aside up to 2015 to invest in these priority areas. Cable also revealed the government was looking at up to 20 possible locations where the Bank could be based. The criteria that will be used to decide the Bank's location on a fair and transparent basis were also outlined. A decision on its location is expected to be made by March next year.

### Issues to address

While the project waits to secure State Aid approval from Europe, the business secretary announced that a new team within his department will be created, UK Green Investments (UKGI). The remit of this new team will be to drive investments in UK green infrastructure projects on a commercial basis until the Bank itself is fully functional.

UKGI will have access to £100mn, made available by the government, to invest in smaller waste infrastructure projects. A further £100mn has been provided for investment in the non-domestic energy efficiency sector for the next financial year. In addition the team will have the ability to co-invest in offshore wind projects.

Government

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## Think-tank advocates demand reduction measures

On 6 December think-tank the Green Alliance published a report that made the case for "rebalancing" the UK energy system to focus as much on demand reduction as on energy supply.

### Less is more

The *Demanding Less: Why We Need a New Politics of Energy* report examined the current politics of energy and the "myth" that fossil fuels can easily be replaced by low-carbon alternatives. "Governments know that the era of cheap, plentiful energy is over", it claimed. But politicians have yet to grapple with the fundamental question of how to break the habit of generations and incentivise people to use less energy not more.

The think-tank suggested a number of practical steps that could be taken to move towards more "honest and workable" energy policies. It said: "we need a new approach to thinking about energy, one that starts from how and why energy is used rather than assuming that progress is intrinsically linked forever to rising energy demand."

### Remedies

Refocusing policy towards energy demand is critical, and the current approach for enhancing energy efficiency is not enough, the report said. Instead energy demand should be considered more broadly and must consider the real drivers for energy demand, not just in policies for buildings, industry and transport but also in those for food, planning and trade.

Green Alliance

# CleanTech members can clean up with Travel for Work

## Here to help business get there!

### About us

Travelling to work or to that important business meeting are necessary evils in our modern business lives. But many companies involved in the clean tech arena are concerned about the impact of this travel on the environment – and also on increasing local road congestion.

Several of the early members of Cambridge Cleantech have already discovered the help available to them from the Cambridgeshire Travel for Work Partnership (TfW), whose mission is to make as much business related travel and commuting as sustainable and healthy as possible.

"TfW offers expert advice, services and tools that help encourage as many people as possible to leave the car in the garage. These include discounts at many cycle shops, discount on train tickets, online travel surveys and mapping services," said Mark Webb, at Travel for Work. "We will be delighted to welcome Cambridge Cleantech companies to the TfW network of over 100 employment sites, including most of the county's Science and Business Parks, employing over 65,000 commuters."

### Get involved

January 2012 members of Cambridge Cleantech will be encouraged to join the TfW to gain access to those benefits. "In a very short time we can help you get your people using more car sharing, public transport, cycling and walking," said Mark. "And we can also advise on working from home and video/audio conferencing initiatives, good for your staff and good for your business"

Martin Garratt CEO at Cambridge Cleantech said: "We see a strong affinity between what Travel for Work does and what Cambridge Cleantech is aiming to do - bringing people together for a common cause. We are delighted to introduce our new members to the benefits on offer from Travel for Work.

### Benefits

The internationally respected Cambridgeshire Travel for Work Partnership provides expert advice, and support services such as online car share scheme, online travel surveys and mapping services, as well as commuter benefits such as discounts at over 25 cycle shops, discounts on train tickets and discounts on adult cycle training.

Please visit the website for more information or call 01223 715696

## In related news…

The International Association of Public Transport (UITP) took part in the recent UN climate change conference in Durban, South Africa (28 November-9 December).

During the conference the organisation launched a study, which was carried out conducted in conjunction with the International Energy Agency. On average public transport consumes 3.4 times less energy per passenger km than cars. This ratio is even more favourable during peak hours. In addition it suggested that in cities where the modal share of public transport, car-sharing, walking and cycling is high, each person saves 500 to 600 litres of petrol per year.

At the event UITP argued if average global temperatures are to be stabilised at the levels required to avoid the worst aspects of climate change, a strong modal shift away from cars and towards sustainable modes of transport is needed.

UITP

# Reboot—the charitable way of recycling computers

## Recycle – Reuse – Refurbish

### About us

Reboot is a not-for-profit social enterprise based in Waterbeach, Cambridgeshire, looking for businesses, organisations and community groups and individuals to donate unused or broken computers, laptops and printers for recycling.

Reboot began in Cambridge in 2006 as a small-scale recycling charity. Since 2010 the company has been carrying out industrial scale computer component stripping for re-use and recycling to EU *Waste Electrical and Electronic Equipment (WEEE) Directive* and Environment Agency standards.

The company also provide volunteer placements and employment to unemployed people and has facilities and staff to support people with learning difficulties and other special needs who are looking for a secure and safe environment to gain work experience and new skills.

### What happens to my donated computer?

Firstly, all hard drives are completely wiped before Reboot does any work on the machine. If they meet with the company's specifications Reboot may be able to reuse them. If not they are securely recycled. Reboot is regularly inspected by Dell and HP to ensure that its processes meet the highest security standards.

In some cases, the components from the donated machine may be recycled and used in another machine and sold to generate profits for the company's social enterprise. Some computers may also be donated to charities in the UK and abroad. Any profits are applied to charitable activities including training, supervising and paying out of pocket expenses to Reboot volunteers.

In cases where computers or parts do not meet Reboot's specifications, they will be separated into components. Nothing goes to landfill and all material is sold in bulk. These processes are carefully tracked to ensure equipment is treated responsibly after it has left Reboot's hands.

### Get involved

Reboot is always keen to build fresh stocks of equipment. If you are looking to replace your computer or are having a New Year clear-out, it is a perfect time to donate your old or surplus computers. Reboot welcomes donations small and large. Offices are open during the week for individuals and businesses to drop off equipment. However, Reboot can also offer a collection service, for a small fee, if you are a business and are looking to dispose of your computer equipment.

Please visit the website for more information on donating your equipment or call 01223 203016

### In related news…

A recent report by waste reduction advisor and campaign group WRAP has found that more than £220mn could be generated from almost a quarter of all waste electrical and electronic equipment (WEEE) thrown out each year, based on the potential reuse value for WEEE items disposed of by consumers at household waste recycling centres and through local authority-run bulky waste collections. The research concluded that 23% of WEEE could be recycled and sold. As such the organisation claimed there is a huge potential to create high resale value from repair, refurbishment and open market resale and wants more action to be taken to promote the reuse of WEEE.

Business secretary Vince Cable has also said that he will take a "long, hard look" at how a system for greater individual producer responsibility for WEEE might be introduced in the UK.

WRAP

### Government unveils Green Deal blue-print

The Green Deal consultation published on 23 November provides an insight into the government's thinking on how the flagship energy efficiency scheme will operate in practice. The aim of the initiative is to enable as many households and businesses as possible to benefit from cost-effective energy efficiency improvements. The consultation specifically seeks views on the details of the Green Deal and Energy Company Obligation policies that are to be implemented next autumn. It is particularly interested in participants' views on aspects of the Green Deal framework, including a government-backed remote information and advice service, the accreditation system, the proposed financing arrangements and measures to protect consumers. It also seeks views on proposed changes to the electricity supply licence, as the supplier in effect must administer the scheme. The close out date is 18 January.

Government

### Carbon Plan sets high sights for emissions reductions

The government recently updated its strategy for achieving an 80% reduction in annual carbon emissions by 2050, as legislated for by the *Climate Change Act 2008*. Published on 1 December the *Carbon Plan* sets out how the UK will re-design its energy policy framework in a bid to reduce its dependence on fossil fuels and become a "more efficient, low-carbon and sustainable economy". The focus for the UK over the next decade must be to complete the installation of proven and cost-effective technologies, particularly focusing on improving energy efficiency. Following this the UK will need to focus on a mass roll-out of a portfolio of low-carbon technologies. In 2030 and beyond, emissions from hard-to-treat sectors such as heavy industry, aviation, shipping and agriculture, will need to be tackled. The Plan acknowledged this will require a range of solutions to be tested and proven during the next decade, including new energy efficiency technologies, bioenergy and biofuels and carbon capture and storage for industrial processes.

Government

### Plans for smarter networks get £58mn boost

Energy regulator Ofgem recently confirmed that six projects are to share nearly £60mn of funding to help local power networks become "smarter". The money comes from the regulator's £500mn Low-carbon Networks Fund (LCN Fund). It is the second round of awards to major developments, and a total of £64mn was available. One of the project involves trialling electricity storage batteries in a community to see whether consumers could be encouraged to use stored electricity at times of peak demand. It is envisaged that this would help to reduce pressure on the electricity network and ultimately lead to lower bills for customers. Another project focuses on making better use of the existing capacity within the grid. Stretching the parameters of how much power can be squeezed onto the electricity distribution network could help more renewables technologies connect without impacting on security of supply. In particular network operators are looking to reduce congestion so that more low-carbon generation can be absorbed by the grid without the need to build new infrastructure.

Ofgem

### Hendry promotes smarter energy markets

Speaking at the Smart Metering Forum in London on 30 November energy minister Charles Hendry assessed the progress that the UK has made over the past year on the Smart Metering Implementation Programme, and presented plans for the coming year. The minister highlighted the benefits that smart meters offer consumers but said the roll-out of an estimated 53mn electric and gas smart meters to all domestic properties by 2019 was "a huge and challenging project".

Hendry emphasised that safeguarding energy user interests was a key consideration at every stage of the programme. He argued this would build consumer confidence and ensure that the right rules and protections were in place from the off. The government will consult early next year on a customer engagement strategy in an effort to dispel any consumer concerns. Other issues that will need to be considered included: a code of practice covering installation visits; developing a policy framework covering data access and privacy; and an enduring regulatory framework covering obligations on suppliers.

Government

### Cable announces £125mn initiative to spur green growth

Business secretary Vince Cable unveiled on 6 December a £125mn initiative to strengthen and grow manufacturing supply chains. He urged businesses, including renewables developers and other low-carbon sector companies, to apply for the finance, which has been made available from the Advanced Manufacturing Supply Chain Initiative. The scheme aims to strengthen and grow existing supply chains and attract new suppliers to the UK. It will open for applications in the new year.

Government

### DONG Energy acquires third of Hornsea offshore wind projects

On Friday 16 December renewables developer DONG Energy announced it has acquired a 33.3% stake in the first two offshore wind turbine projects in the Hornsea zone from SMart Wind for £15mn. The wind projects owned by SMart Wind, a joint venture between Mainstream Renewable Power and Siemens Project Ventures, will have a potential capacity of up to 1GW. Hornsea is one of the nine zones being developed as part of the Crown Estate's Round 3 programme.

DONG Energy

### Public backs renewable energy

On 13 December trade association Renewable UK welcomed the most recent in a string of polls that have demonstrated public support for the expansion of renewable energy capacity in the UK. The poll carried out by YouGov found 56% of the public think Britain should use more wind power, compared to 19% who opposed. Director of policy Gordon Edge said the new poll demonstrates that, even in difficult economic times, the public understands why more wind power is important. A step-up in low-carbon investment will "secure jobs, enhance energy security and reduce our reliance on expensive fossil fuels".

Renewable UK

### Durban climate change conference ends with breakthrough

The latest round of international talks on climate change ended with the participants claiming success on 10 December. Talks ran nearly 36 hours beyond their scheduled close, and had seemed set for failure. But a late deal, that South Africa's president Jacob Zuma said had "saved tomorrow, today", was agreed. The new text, dubbed the *Durban Platform for Enhanced Action*, promises to extend the Kyoto Protocol and deliver a new "legal" treaty covering all nations. The Treaty is to be agreed by 2015 and enacted by 2020. This agreement should enable the formation of the promised $100bn Green Climate Fund to support climate adaptation and cleantech and renewables projects in the developing world. It will also permit the continuation of emission reduction measures enabled by the Kyoto Protocol, including the Clean Development Mechanism.

UNFCCC

### Greenhouse gas emissions reach record heights

At the end of November the World Meteorological Organisation (WMO) published a report that found the amount of greenhouse gases (GHG) in the atmosphere reached a record high level in 2010 since pre-industrial times and that the rate of the increase has accelerated. The WMO's latest *Greenhouse Gas Bulletin* found that between 1990 and 2010 there was a 29% increase in radiative forcing from GHGs, with carbon dioxide accounting for 80% of the observed increase.

WMO