

the magazine for all that is **Green!**



cleantech businessnews

in this edition . . .

government's green intentions

noteworthy items of green developments in the sector

- **green company editorials**
- **green deal measures**
- **Isle of Man TT Zero**
- **new developments**

June 2013 **£3.00**

green
deal
UK

Featuring up to date
Editorials/Advertorials
within the Renewable Sector



in this edition . . . ■ EDITORIALS ■ ARTICLES ■ SHELL AWARDS ■ DEVELOPMENTS

Cleantech Business News delivers interesting stories and enterprising features, with our feature articles, editorials and world exclusives. It is a magazine born of and for a time when the public's acceptance of renewable energy technology is growing in the wake of depleting fossil fuels and the quest for more sustainability. We hope you will take inspiration from the subjects and products in this issue. Both in print and online.



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The Green Deal

A great deal for consumers and businesses



The Green Deal is an ambitious and long term programme aimed at improving the energy efficiency of the nation's buildings. Launched at the end of January this year, it has been making encouraging progress ever since. Over 18,000 Green Deal Assessments were carried out by the end of April and the number of businesses offering Green Deal services also continues to rise - over 1,200 individuals are now registered to carry out assessments and nearly another 1,000 organisations are signed up to undertake installations.

These early signs show there is a real appetite for consumers to make their homes more energy efficient, and for businesses to take advantage of this growing new market.

Accounting for 38 per cent of total emissions, UK buildings are among the least efficient in Europe and millions of our homes lack decent double-glazing, proper insulation or even an efficient boiler. So we need to act - to help cut our emissions and to help people make their homes more efficient and cushion themselves against rising energy bills.

The Green Deal offers millions of people an array of home improving energy efficiency products and it provides a new financing model, removing some or all of the expensive upfront costs that so often put people off.

Unlike previous insulation programmes, the Green Deal goes much further than just simple loft lagging. There are currently 45 different energy efficient improvements available and this means greater choice for consumers and more opportunities for business.

We are seeing a whole range of new entrants coming into this market. This could unleash billions of pounds of new private sector investment over the coming years and decades, providing numerous new business opportunities.

The Green Deal means new green jobs and is expected to support up to 60,000 jobs in the insulation sector alone by 2015 - up from 26,000 in 2011. And with eight million households able to benefit from solid wall insulation and another four million from cavity insulation, the size of the market is clear.

The Green Deal is empowering businesses, enabling them to compete for opportunities in new and innovative ways. Businesses of any size can install, manufacture or provide advice to customers about the type of products available under the Green Deal like insulation, heating and glazing. There are several different business models available as well, from manufacturing products to assessing properties or even providing finance for the work and arranging installation.

Consumer protection is right at the heart of the Green Deal, so businesses need to become authorised in order to operate in this market, although many firms will be able to using their existing skills to do this.

The Green Deal is providing fantastic new opportunities and is very much here to stay for the long term. It will help cut our emissions, give consumers the chance to make their homes warmer and save money on their bills, and provide businesses with a new market in which to operate.



Department
of Energy &
Climate Change

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and Member of Parliament for Kingston and Surbiton*

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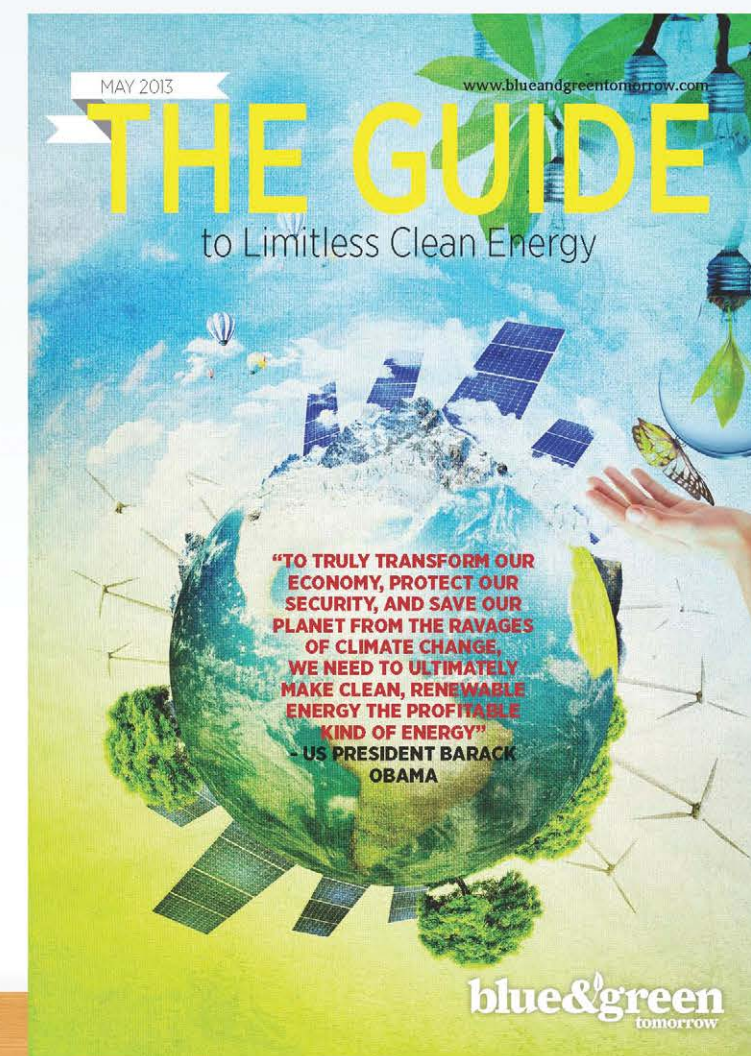
Green Deal measures

The following measures will all be eligible for the Green Deal (both domestic and non domestic)



- Air source heat pumps
- Biomass boilers
- Biomass room heaters
- Cavity wall insulation
- Chillers
- Cylinder thermostats
- District heating
- Draught proofing
- Duct insulation
- Hot water showers (efficient)
- Hot water systems (efficient)
- Hot water taps (efficient)
- External wall insulation systems
- Fan assisted replacement storage heaters
- Flue gas heat recovery
- Gas-fired condensing boilers
- Ground source heat pumps
- Heating controls (for wet central heating systems and warm air systems)
- Heating ventilation and air conditioning controls (inc. zoning controls)
- High performance external doors
- Hot water controls (inc. timers and temperature control)
- Hot water cylinder insulation
- Internal wall insulation (of external walls) systems
- Lighting systems, fittings and controls (inc. roof lights, lamps and luminaries) - non domestic only
- Loft or rafter insulation
- Mechanical ventilation with heat recovery
- Micro CHP
- Micro wind generation
- Oil-fired condensing boilers
- Pipework insulation
- Photovoltaics
- Replacement glazing
- Radiant heating
- Roof insulation
- Room in roof insulation
- Sealing improvements (inc. duct sealing)
- Secondary glazing
- Solar water heating
- Solar blinds, shutters and shading devices
- Transpired solar collectors
- Underfloor heating
- Underfloor insulation
- Variable speed drives for fans and pumps
- Warm-air units
- Waste water heat recovery devices attached to showers
- Water source heat pumps

Please go to www.GreenDealAdvisor.co.uk to register your interest in having a Green Deal Assessment to see if your property is eligible for any of the above



The future of energy is limitless and clean...

Download the 2013 free report at blueandgreentomorrow.com

blue&green
tomorrow





From here to Hydrogen

March 20th - 21st marked the 9th Fuel Cell & Hydrogen, international conference partnering & exhibition. Climate Change Solutions Ltd provided delegates with a full and comprehensive showcase from materials research to ramping up production.

The EU has set a target of reducing CO2 emission levels by 2050 and has set an intermediate target of 15% reduction by 2020. The UK has not only accepted this but has set out to meet it by generating 30% of its electric power from renewables, in practice mainly from wind. Achieving this requires dramatic changes in all energy sectors and involves not only greatly increased energy efficiency and increased use of carbon-free energy sources, but also very low levels of carbon in different fuel chains. No single approach can deliver the kind of change required and many options must be pursued to see which will be the most fruitful and cost-effective, both near and long term. It aims to reduce gas consumption by electrical heating by heat pumps, better home insulation, e.g. 'Green Deal' and encouraging the take up of electric cars. The underlying idea is an 'All Electric' future with energy produced from wind, nuclear and fossil (coal and gas) fitted with carbon capture and sequestration (CCS), plus smaller contributions from sun, sea and co-firing with biomass. The motivations are security, risk avoidance and meeting 2020 targets. The decarbonisation of the heating and transport sectors by using energy vectors such as hydrogen and electricity is necessary, the demand and generation profiles will therefore change and balancing the energy system will be a key objective.

Power to Gas is a hybrid solution, which integrates renewable generation by converting or shifting surplus power to hydrogen using electrolysis. The hydrogen produced can either be used for fuelling electric vehicles or stored and transported in the existing natural gas system. Optionally, the hydrogen can be used to produce synthetic natural gas. While traditional energy storage technologies

such as batteries typically work well in smaller scale applications capturing, storing and discharging electricity at a single location. Power to Gas represents a new energy storage paradigm. It is a scalable technology which provides virtually unlimited energy storage capacity - grid scale TWh. It allows the energy to be stored for a day or seasonally and be discharged any place on the gas or electric system where it is needed most using the natural gas infrastructure, which is already in place.

Hydrogen is the most common denominator to a cleaner energy future.

Climate Change Solutions Ltd with partners will build on the successful Climate Change Conferences delivering climate change (mitigation and adaptation) related initiatives.

CCS objectives:

- To develop and promote sustainable local and global climate change solutions.
- To generate and support initiatives contributing towards achieving a low carbon economy and clean technology future
- To develop a broad based public, private and community partnership with a view to maximising engagement and participation of the mainstream in local and global climate change solutions.
- To organise an annual Climate Change Solutions Expo.

For up to date information about forthcoming events please go to: www.cleantechbusinessnews.co.uk/CTBN/Events.html



CIR strategy Smart Grids and Clean Power Conference



CIR Strategy, formerly known as Cambridge Investment Research, CIR founded a cleantech conference series in 2007, starting with HEAT & SHIFT, adding Smart Grids, Cleanpower and iWATER later.

Many different aspects of cleantech were discussed. Each speaker divulged the pros and the cons, in particular Professor Kevin Hesketh National Nuclear Lab. The professor described his role within the nuclear power sector, he has spent the last few years working with Thorium. The professor explained that his results so far are unclear as no real proven test has actually occurred. The reason being that it would take 10 - 15 years to see

results as Nuclear Power stations would need to be altered to accommodate the Thorium process. At this time he feels that Nuclear was maybe not the best way to go, and that natural energy would need to come from renewable sources.



Other hot topics of discussion were - Fracking an alternative Nuclear pathway, capacities of the Power Grid, Smart Meters, the overall 2020 challenge, also highlighting the risks and rewards to Gas and Oil usage. Energy efficiency and storage also covering the outlook for Biomass electricity in the UK.

"As we progress in deploying Renewable energy that is controlled by the weather, such as wind and Photovoltaic power generation, we also expected to see new growth in power demand for applications such as the widespread use of electric vehicles. With a Smart Grid, these sources and demands can be controlled by information technology, enabling us to make deft use of natural energy alongside nuclear power and other conventional power sources, which will help to reduce CO2 emissions." Hatachi

www.cir-strategy.com/

Do You Suffer Anxiety Range?

Evalu8 - EV Conference

Anxiety Range fear of EV (Electric Vehicles) symptoms - lack of knowledge and understanding . . . The only known cure is to take the opportunity where available to test drive, which Vauxhall offer a 3 day test drive of their Ampera EV.

A thought provoking conference was held which offered a range of information a chance to meet with experts in the technology of electric vehicles, the actual deployment of vehicles also explaining in depth the policies around sustainable transport and above all a strong case for driving one yourself.

With speakers including Norman Baker, Parliamentary Under-Secretary of State for Transport, opening speaker Keith Bevis Managing Director of Evalu8 Transport Innovations Ltd and Ian Allen Vauxhall Motors and current Chairman of the SMMT Electric Vehicle Committee to name just a few.

Having developed out of the University of Hertfordshire, Evalu8 have a proven track record of managing and delivering projects from complex government and EU funded programmes, to smaller scale business and strategy advice for individual organisations.



Their strength lies in low carbon transport, and with skills drawn from engineering, transport planning, marketing and project management, Evalu8 have the expertise and dynamism.

What are we waiting for?

- Fiscal incentives
- Low Carbon Emissions (40 less CO2 using UK Grid Supply)
- Over 30 types of EV available by end of 2013
- FREE Dedicated Charging points
- 1.4 electric motor equal to a V6 (petrol) engine torque.

Look out for more EV events on our website: www.evalu8-ti.org.uk



ecoConnect's Scottish Launch

IMPOSSIBLE

We asked the coalition to listen
and look what happened . . .

Sometimes, it seems, you really do get what you wish for. At ecoConnect, we have often voiced a frustration with the lack of engagement we have seen from Government ministers. That rather changed, or began to change, in May.

The launch of ecoConnect's Scottish forum at Anderson Strathern in Edinburgh was always going to be a great event, not least because of the keynote address from John Ireland. When we were told, therefore, that Dr Cable was considering attending, we were pretty flattered - when he came and personally engaged with us and our audience, we were delighted, not just because of the resulting press interest but because his attendance was a very positive endorsement of the importance of the sector.

So what messages did the panel and the audience deliver? The topic was innovation so there were positives and negatives in the room. There was acknowledgement of the seriousness with which the Scottish Government is taking the decarbonisation of the economy and the recognition of the moral imperative behind this. There was

acknowledgement that a routemap to 2020 is increasingly in place through initiatives such as Resource Efficient Scotland and Heat Vision. There was a sense of optimism about the

opportunities to build confidence in the sector through the GIB if it can help capital flow, releasing investment at the smaller end of the project scale. And there was a real appreciation of the great research and development work in Scotland and the key role played by the Scottish universities.

But there were concerns and they were very familiar. Policy uncertainty. The lack of confidence and patience from investors. Poor communication between technologies, academia, government and finance which still characterises too much of the sector. The failure of innovators to recognise the importance of showing consistent commercial viability and in building the type of teams investors expect. All important issues, all needing debate but what really focussed the discussion was something that no one could determine an answer to: how to create the behavioural change which is essential to resource efficiency.

We certainly had a range of solutions proposed, from market transformation through legislation to increasing energy prices to improved communication of benefits. What everyone did agree on was that there is no easy answer to this and that any politician who tried the more punitive measures (or measures that might increase the horrors of fuel poverty) was either very brave or very foolish. What they also agreed on was that behavioural change has to be tackled if a decarbonised resource-efficient future is to be guaranteed.

Perhaps that is the point where we bring Mr Cable back in . . .

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Light engine Lumens	3500	4600
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Lumens per watt	100	92
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Vf	64	64
Colour temperature	4000k	4000k
Delivered lumens 4000K @ 25°C	2,600	3,400
CRI @ 4000K	86	86
Chromaticity tolerance (initial MacAdam)	2	2
Lifetime hours L70	65,000	65,000

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P&A Lighting



Green Deal will force landlords towards energy efficiency



IMServ to host webinar offering advice to landlords on how to turn the burden of legislation in to a bonus for profits

XX April 2013, Milton Keynes, UK: Commercial tenants could soon be driving landlords and their investors to be energy savvy, believes Michelle Giles, Head of Carbon & Energy at IMServ, one of the UK's largest independent energy management providers.

"The last couple of years has not been a good time for commercial property renting or investment and the latest UK Commercial Market Survey shows that tenant demand has deteriorated alongside rising supply," explains Michelle.

So how can landlords increase the attractiveness of their property to a small supply base in a competitive market? According to Michelle, the tide has changed and the tenant is now in the driving seat: *"With little chance of energy costs decreasing and an abundance of available commercial properties on the market, the energy efficiency of a commercial rental is becoming increasingly important to prospective tenants."*

"The tenant can not only choose the location and on-going service but also compare the reduced rates and on-going costs, including gas and electric."

The government is supporting businesses (and householders) to make energy improvements with the Green Deal, launched in January 2013. The Green Deal

Plan (GDP) is a financing mechanism to provide the up-front capital investment needed to retrofit existing buildings to make them energy efficient. Using upfront capital provided by grants, landlords can pay for the investment over time through the building's energy bills.

The Green Deal is currently optional, but by 2016 tenants can request energy efficiency improvements which landlords cannot unreasonably refuse and can result in a fine for non-compliance.

There are a few hurdles that commercial properties will need to address warns Michelle, namely "The Golden Rule" and all-party consent. The Golden Rule is that the expected financial savings must be at least equal to the investment over the length of the payment period and cannot exceed the expected life of the measure.

"This can be a big challenge particularly in all but the worse performing buildings. The other key requirement is the all-party consent. This is relatively straight-forward for domestic landlords and tenants but for commercial properties with multiple parties and the complexities of numerous contracts this could be a show stopper."

Michelle continues, *"There does need to be a shift in attitude amongst landlords. In the current economic climate, would-be tenants will naturally be drawn to an alternative rental if the landlord has proactively refurbished their commercial property to address energy efficiency."*



Overheads, including energy costs, are important to tenants especially when the economic market is impacting profits. However, there are other ways of achieving energy savings and reducing energy wastage before any expensive physical upgrades are considered.

"Significant wastage can be eliminated by installing remote thermostats and lighting controls. Also, programmable monitoring and control devices such as IMServ's Control 10 designed specifically for building energy management of smaller premises can also make significant reductions in energy use and CO2 emissions. With the correct behavioural changes, we are seeing energy reductions of between 10-30 with relatively minimal investment."

"Energy savvy landlords are not just those that look into the Green Deal, but look for a solution that is right for them, their building stock, their clients and, their return on investment. In just three years' time, tenants can request energy efficiency improvements and landlords will have to oblige, therefore it's imperative to start working towards this goal."

IMServ will be hosting a free one hour webinar on June 11th in which Michelle Giles will be offering advice on how to turn the burden of legislation into a bonus for landlords profits. [Click here to register.](#)

For help, support or advice on your organisation's energy management please contact: sales.support@imserv.com

To find out more about IMServ's Control 10, a stand-alone, programmable monitoring and control device designed specifically for building energy management of smaller premises visit: <http://www.imserv.com/solutions/control/control10/>

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IMServ

IMServ Europe Ltd is one of the UK's largest independent energy data management providers. The company offers carbon and energy management solutions, helping organisations across all sectors to save energy, reduce costs and control carbon emissions.

IMServ offers an all-inclusive portfolio that covers data collection, analysis, reporting and carbon management. To date over 180,000 sites in England, Scotland and Wales are benefiting from its solutions.
www.imserv.com



Securing the Future conferences are focused on providing our audience of senior public sector decision makers with the latest information on policy and best practice around the low carbon economy, incorporating the Environmental, Sustainable and Energy sectors.

If you would like more information on any of the conferences please visit www.securingthefuture.co.uk

Fully funded tickets available to the public sector, if you would like to attend or are interested in sponsorship opportunities, please contact **0161 979 0013** or email: energy@govtoday.co.uk quoting CleanTechnology

2013 Conferences

GREENING GOVERNMENT 2013 CONFERENCE AND EXHIBITION:

Delivering change, promoting excellence

10th September 2013

Brewery Conference Centre, London - In Association with B&ES



Speakers include:

Martin Townsend, Director, BREEAM, BRE
Nigel Atkinson, Head of Sustainable Development, Department for Environment, Food and Rural Affairs

NHS Sustainable Development 2013

Defining the priorities

11th September 2013

Brewery Conference Centre, London



Speakers include:

Professor Hugh Montgomery, Director of Human Health and Performance, University College London
Kathryn Dapr , Energy & Climate Change Manager, NHS National Services Scotland

Sustainable Transport 2013

Unlocking the door-to-door journey

3rd October 2013

Brewery Conference Centre, London - An Association with Sustrans, Passenger Focus and the British Parking Association



Speakers include:

Joe Williams, Policy and Media Advisor, Sustrans
David Sidebottom, Passenger Director, Passenger Focus
Kelvin Reynolds, Director of Policy and Public Affairs, British Parking Association

Carbon Reduction 2013

Investing in a low carbon society

21st November 2013

Brewery Conference Centre, London



Speakers include:

Connie Hedegaard, European Union Commissioner for Climate Action, European Commission
David Kennedy, Chief Executive, Committee on Climate Change

Securing the Future



Albatern brings you Wavenet Wave Energy Array Converters



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Albatern's Wavenet coupled array converters offer sustainable low carbon energy in off grid applications where diesel generation is presently used.

Delivered through:

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- Easy maintenance operations
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- Yield improvement from array interaction
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- Low loss of availability during maintenance
- High levels of redundancy
- Survivability built in

Product development continues to scale the modules up to 750kW each, and deliver Wavenet arrays of up to 100MW, producing clean, low carbon electricity to the grid from sustainable and abundant ocean wave resources.



Wavenet arrays have a low visual impact - particularly important for sensitive areas reliant on tourism - with most parts sitting just below the surface where the energy is strongest.

If you are interested in producing your power from wave energy, or would simply like to know more, please contact:

email: info@albatern.co.uk
 tel: +44 (0) 131 440 9025
 web: www.albatern.co.uk



cleantech business news calendar

List of events throughout the UK where you can meet members of our team

16th July 2013 The Solar Future UK 2013

Press: Central Hall, Westminster
www.thesolarfuture.co.uk

17th July 2013 The Energy Storage Uk 2013

Press: Central Hall, Westminster
www.energystorageuk.com

10th - 11th September 2013 The Renewables Event 2013

Press: NEC Birmingham
www.renewablesevent.com

28th - 29th September 2013 Sustainable Motor Expo

Press: Cheltenham
www.cheltenhammotorexpo.com

8th - 10th October 2013 SolarPower UK

Press: NEC Birmingham
www.solarpowerukevents.org

5th November 2013 Renewable UK Annual Conference

Press: NEC Birmingham
www.renewableuk.com

21st November 2013 Carbon Reduction

Press: Brewery Conference Centre, London
www.securingthefuture.co.uk



Facing Up to the Challenges of the Smart Grid



Worldwide our cities are home to around 50 per cent of the population and it is estimated that by 2050 this will rise to around 70 per cent. As our cities grow, we are faced with a number of unique challenges, not least in congestion and urban transportation issues but also in clean and reliable energy supplies.

We at Schneider Electric understand that we must continue to develop solutions across a broad range of areas such as transportation, energy management, efficient buildings and public services as well as water conservation.

Energy matters in the continuing development of our cities as we strive to make it both safe and reliable. Not only do we need to become smarter in the way we generate and manage energy sources but also in the way we distribute and use it. We need innovative solutions that reflect the real energy needs of consumers as well as the strengths and limitations of our existing grid infrastructure.

The Smart Grid is part of the solution, an electricity network that is equipped with the information, communications technology and control mechanisms to integrate the actions of all users connected to it. The Smart Grid is an intelligent platform that will help to automate, measure and manage energy generation and consumption.

Balancing supply and demand has been the task of distribution network operators for many years, but this has now been made more complex by the introduction of intermittent energy generation such as wind farms

and solar power and the continued uptake of electrical vehicles, which causes variable loads on the network. These challenges, when combined with the smart demand side tools like demand response and dynamic line rating, are turned into opportunity for the electricity supply companies to create a flexible, optimised and cost effective smart grid. EcoStruxure, supported by StruxureWare™ solution, from Schneider Electric is one example of the type of technology that can enable this dynamic model for grids around the World.

Software is at the heart of managing the smart-grid effectively and StruxureWare™ is Schneider Electric's platform of integrated software applications and suites that helps customers maximise business performance while conserving enterprise resources. StruxureWare™ software covers three levels and seven functions that a business must master in order to maximise enterprise efficiency, and at the same time that the electrical grid has to master to deliver a smarter grid.

What seems to be clear is that Smart Cities are no longer simply a concept; they are becoming a reality around the world. The truth is, globally we are facing a number of challenges within our city walls, challenges we must solve if our cities hope to survive. What's crucial now is that we work together, in partnership, to implement sustainable solutions and cities that are both liveable, efficient and sustainable.

For more information about Schneider Electric please visit www.schneider-electric.com/uk or call 0870 608 8608

ENERGY STORAGE UK 2013

www.energystorageuk.com

17 JULY
LONDON
16 JULY

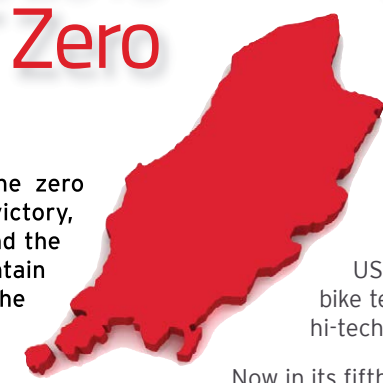
www.thesolarfuture.co.uk

THE SOLAR FUTURE UK '13

SOLAR PLAZA

Team MotoCzysz make it four in a row at the 2013 Isle of Man TT Zero

Electric bike set a new TT Course record:
109.675 mph



In the 2013 Isle of Man SES TT Zero, the zero emissions race saw Michael Rutter clinch victory, riding the brand new MotoCzysz E1pc around the 37 mile course. Rutter also set a new Mountain Course record for electric bikes completing the race with a 109.67mph average lap time - just short of the 110 mph barrier.

This year's race featured a global entry list, with eleven teams competing from Japan, UK, Belgium, the Isle of Man, Italy and the USA. The race saw well-known clean emissions bike teams as well as universities, corporations and hi-tech institutions participate.

Team Mugen's John McGuinness, finished in second place, trailing by just 1.672 seconds. McGuinness was riding the brand new 'Shinden Ni' which has been designed specifically to tackle the Island's iconic course.

Now in its fifth year, the zero-emissions race has proved yet again a further step forward for innovation in clean emission motorcycles, with entrants demonstrating more power, improved aerodynamics and better weight distribution. Speeds have increased every year and the 109.7 mph electric lap record created by Rutter in this year's race is 22.37 mph faster than the average lap in the first-ever TT zero back in 2009.

Rob Barber riding for the Ohio State University's Buckeye Current team completed the podium finishing third with an impressive 90.4 mph lap, a significant achievement for the team of students.

In addition to 3rd placed US team, Buckeye Current, there were a number of other University teams taking part.

The Isle of Man Government uses the event as a showcase for the Island's Clean Tech capabilities, as well as encouraging enterprise and innovation.

Luke Foreman, part of the Imperial College team, was delighted with their team's 7th place finish with a lap time of 71.983mph. He commented: "We're all just over the moon to have proven the technology on such a testing course and on such a small budget. Now we've proven the technology we're looking forward to try and get some more funding and become more competitive next year."

Minister for Economic Development John Shimmin MHK commented: "The TT Zero event has continued to go from strength to strength since it launched in 2009. Each year we see teams showcase their clean emissions technology in one of the most testing racing environments in the world."

"There's something addictive about coming here and competing in such a varied field of bikes. The aim this year was just to prove we were capable of completing the lap and we've done that. Now it's time to really start putting some time and money into the project."

"Running the electric bike race as part of the TT Races has also given us an excellent platform to demonstrate the Isle of Man's clean tech capabilities. The Island is home to an increasing number of clean tech businesses and is an excellent location to trial and develop cutting edge products and services."

"As today's race has shown, electric bike manufacturers are making big leaps in the development of electric powertrain technology. If advances in power and efficiency continue to progress at the current rate, we are likely to see the performance gap between clean emission bikes and petrol fuelled machines closing, and events like the TT Zero proving that 'green' motor-racing can be a viable alternative."



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TT ZERO WINNERS LIST			
YEAR	RIDER	BIKE	AVERAGE MPH
2009	Rob Barber	AGNI	87.4
2010	Mark Miller	MotoCzysz	96.8
2011	Michael Rutter	MotoCzysz	99.6
2012	Michael Rutter	MotoCzysz	104.1
2013	Michael Rutter	MotoCzysz	109.765



2013 Isle of Man Zero TT

After last year's record breaking average with not one but two different teams breaking the 100mph speed barrier around the TT Mountain Course in 2012. Left us all wondering what 2013 had in store. With the same two teams of 'Motoczysz' and 'Mugen' back after having twelve months to hone their bikes and with new teams joining like the 'Buckeye Current'.

During the practice session TT legends Michael Rutter and John McGuinness showed all cynics how the technology has moved further towards their fossil fuel brethren. Practice laps recorded unofficial (classed unofficial due to not set during a race) speeds of 105.6mph and 104.6mph.



5 Spectacular Locations...

- 1. TT GRANDSTAND** (Seats: 1,050)
The TT Grandstand is found on Glenorchery Road, 1.5 miles north west of Douglas town centre.
- 2. CROSBY** (Seats: 200)
Crosby can be found 4.5 miles west of Douglas and the TT Grandstand on the A1 Douglas to Port road.
- 3. RHENCULLEN** (Viewing Platform)
Rhencullen can be found just north of Kirk Michael on the A3 Ballacraine to Ramsey Road.
- 4. BALLACRYE** (Seats: 200)
Ballacrye can be found just north of Ballagh Village on the A3 Ballacraine to Ramsey Road.
- 5. CREG NY BAA** (Seats: 400)
Creg Ny Baa can be found 3 miles north of Douglas and the TT Grandstand on the A18 Mountain Road.

Komatti-MiraiRacing team sadly lost their Japanese rider Yoshinari Matsushita's who was killed earlier during practice week riding hid Supersport bike. Thankfully for Komatti-mirai Ian Lougher rode for them in a tribute to Yoshinari Matsushita's.

After the close run practice the race did not disappoint.

Michael Rutter once again won on the MotoCzysz bike. Although John McGuinness on the Mugen Shinden bike, he was only 1.672 seconds behind Rutter.

Michael Rutter's overall lap average speed was 109.675 mph, over five miles an hour up on his 2012 lap record. McGuinness on the Mugen Shinden Ni was also over the 109mph mark at 109.527.



"The team is elated! We came with the goal to success fully get around the mountain, and instead completed a total of 4 laps at great speeds, won the university prize as well as winning the third annual Motul Technical Award for excellence in engineering It's the most demanding, gruelling and exciting motorcycle race course in the world. If electric vehicles can succeed here, then there's no reason they can't work on city streets and between city to city through the countryside."

The Isle of Man TT is sacred ground for motorcycle enthusiasts. It's one of the last of the great races from the glory days of motorsports and has remained relatively unchanged. Think about it, a college student team on a shoestring budget is able to field a bike that can compete in a race comparable in difficulty to anything in Le Mans or Formula 1. Apart from Bonneville, that doesn't happen anywhere else in the world."
Julia Cline, Administrative Team Leader, Buckeye Current, The Ohio State University.

"The opportunity to compete in an event of the highest calibre and possibly add to our company history."
Colin Whittamore, General Manager, MUGEN EURO Co. Limited.

Rutter's American teammate Mark Miller looked set for a solid top-three finish but was forced to retire after damaging his gearbox at Ballaugh.

Third place was taken by the newest team; 'Buckeye Current' Ohio State University team. Their rider Rob Barber's average lap of the Mountain Course was an amazing 90.403mph, especially due to the lack of time any of the teams have.

Riding in his final meeting Ian Lougher, rode the Komatti-Mirai entry from Yoshinari Matsushita who lost his life earlier in the week finished with a very respectable lap of 81.515mph.



**Isle of Man
Government**
Reilrys Ellan Vannin



ISLE OF MAN. WHERE YOU CAN ADD NEW ENERGY TO YOUR CLEAN TECH BUSINESS

The Isle of Man offers a stable political environment, within a European time zone and is internationally regarded as a well-regulated jurisdiction. It has a responsible and flexible regulatory approach and a specific aim to develop its Clean Tech sector.

The Clean Tech Sector enjoys a number of benefits in the Isle of Man:

- International IP Treaties
- Established precision manufacturing sector
- Proven experience of trialling new technology
- Existing Clean Tech cluster
- Area for development of land and offshore
- 0% corporate tax
- 0% capital gains tax
- 0% inheritance tax
- Established infrastructure
- Access to EU for manufactured goods
- Clean Tech funds domiciled on the Island
- Established private/public Clean Tech forum, chaired by Isle of Man Government
- Location for opportunities in offshore renewable energy including wind and tidal
- Supportive Government policies
- Government grants



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Enphase is a renewable energy company that through combining the power of solar energy and the proven advantages of communications technology, Enphase Energy products make solar power systems productive, reliable, smart and safe.



Cleantech Business News had the pleasure of attending a media day to be shown Enphase Microinverter.

Enphase Microinverters use advanced power electronics and innovative parallel wiring to avoid common performance problems seen in traditional solar systems. As a result, the system significantly increases the output of solar systems. Solar systems are constantly affected by environmental factors, such as shade, dust and debris.

Using a traditional inverter means that everything is wired in series and the lowest performing module determines the performance of the entire series.

Each solar panel operates independently and controls the power from each with 99.6 accuracy. This results in a significant increase in the performance of the entire system. Providing the highest reliability solar installations by removing failure-prone central inverters and any single point of system failure.

Every new design is subjected to the harshest possible testing conditions, and every unit is tested at the factory and tracked in the field. As a result of Enphase's rigorous quality standards, third party evaluations have confirmed that they deliver greater than 99.7% reliability.

With an unmatched level of information about the health and performance of their solar energy system. The **Enlighten website** provides information about energy production, electrical conditions and module performance.

- 24/7 monitoring and management
- Automatically identifies and diagnoses issues with module or inverter
- Remote troubleshooting capabilities and rapid replacement process
- Solar-integrated Smart Energy Devices
- In addition to its monitoring capabilities, Enlighten enables additional smart energy devices to integrate with your solar installation. Designated smart energy devices wirelessly connect with the Envoy Communications Gateway and are controlled through the **Enlighten website**.

Enphase Microinverters eliminate all high-voltage DC wiring from the solar array and are connected together using standard AC wiring. This significantly reduces the risks of fire and injury.

<http://enphase.com/uk/>

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Solid State **Heat** **Energy** Recovery

The Clean Development Projects Limited scientific team have designed, built and successfully tested a proprietary and revolutionary patent pending prototype solid state energy device named project TC3. The system generated more than 4 watts of electrical power from one normal sized cup of coffee. The company will now develop commercially viable megawatt scale devices to generate electricity initially from waste industrial heat, solar and geothermal heat sources.

Clean Development Projects Limited (CDP) of London, England, has successfully tested prototype TC3 of their solid state heat energy recovery device (SSE), achieving more than 4 watts from a cup of hot coffee (~550ml at <90°C). The device has been designed as a competitor and/or complement to Organic Rankine Cycle systems (ORC).

The TC3 employs well known thermoelectric effects to generate a current from heat ranging from 20°C through to 300°C or more. In the above mentioned tests the 4W was generated from hot water cooling from 90°C down to 20°C. In other tests, power has been generated directly from solar energy.

The Solid State Heat Energy system (SSE) has been designed to supersede ORC devices in several ways. Viz:

- A significant commercial increase in thermal efficiency;
- With a typical cost currently projected in line with typical power production equipment;
- Lack of moving parts improves service demands and life expectancy whilst reducing maintenance costs.

The potential applications of the SSE development are manifold. The device can efficiently utilize heat from:

- Power plant cooling systems;
- Currently lost in industrial processes (e.g. ceramics, metals, data centers, glass manufacturing, and the food industry);
- Supplementary electrical generation in vehicles from exhaust and cooling systems;
- Geothermal and solar energy;
- In fact from almost all heat sources as currently vented to the atmosphere.

As well as the production of power, the SSE also performs cooling services, extracting thermal energy from fluids in the generation of electrical energy.

CDP Managing Director, Parvez Hamid, says:

"We are excited by this development and anticipate developing some of the greenest, cleanest power plants around the world. The goal is ultimate sustainability, efficient use of energy sources and recovering those currently not utilized by industry."

CDP expects to construct a commercial scale (>1kW) demonstrator in the first half of 2013 subsequently marketing and deploying the new SSE technology globally and within a number of Company and Group projects.

Those with interest in this development should contact the CDP team.

clean development
projects

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CYGNUS HYBRID POWER GENERATOR 12 TO 24 KVA THE NEW STANDARD IN HYBRID POWER



www.fireflysolar.net

The NEW CYGNUS HPG connects to diesel generators to reduce fuel consumption by up to 30%.

Similar to hybrid car technology, HPG's built-in intelligent load management switches between internal battery storage and an external diesel generator automatically. HPG reduces carbon emissions, eliminates noise and exhaust fumes in an IP44 rated rental specification canopy.

This is our most versatile power solution yet, for applications such as primary, standby and emergency power in a wide range of industries including live events, broadcast, construction, facilities management and disaster response.

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- 110V/60Hz Inverter

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JAMES CAAN. DRAGON'S DEN & BERTI ACCELERATOR





Shell Springboard is a section of Shell which has an aim to find, showcase and support the next big idea in low carbon enterprise and innovation by small businesses. It is now in its eighth year, the programme has awarded over £2.5 million in funding to innovative low carbon businesses that are developing new ways of reducing CO2 emissions.

Each SME company that reaches the regional finals does so by seeing off 120 other SME's. The awards have regional finals which take place in Edinburgh, Newcastle and the final takes place in London. To attend the final in London each innovative business had to be a winner at their respective regional final. Each winner of the regional finals each received £40,000.

Edinburgh Regional Award Winner



Albatern is a company which designs WaveNET wave energy array devices that capture energy from ocean waves and convert it into sustainable low-carbon electricity, aims to address this challenge. Wave power has the potential of becoming a major contributor to the energy mix, but currently struggles to be economically competitive with other generation sources.

By using road transportable base modules that are interconnected mechanically, hydraulically and electrically providing a scalable method of capturing wave energy. Modular assemblies and multiple components decrease both manufacturing and deployment costs, and ease maintenance as servicing doesn't require powering down the entire system. Yields are also improved by putting the array to work, and the combination of lower costs and higher yield will make these devices commercially competitive sooner.

Through entering the Shell Springboard Awards Albatern was looking for finance through prize money and investors but also endorsement and credibility from a knowledgeable Judging panel.

Winning the regional awards was a big boost to the entire development team. (Please see page 13)

www.albatern.co.uk



Joint winner at the Edinburgh awards. Firefly Solar Generators is a company which has a mission "to make sustainable power generation accessible to all". To achieve this Firefly Solar has become the European leader in the design and manufacturer of off-grid, portable and permanent solar-powered generators. Having products ranging from hand held portable Pyxis 0.35kVa unit to the 5kVa ISO20; housed in a shipping container that could be used as a class room or doctor's surgery in a remote location.

"The Springboard Programme is about helping Cleantech companies realise their potential. We are poised and ready to live up to this. Already winning a regional final is a massive endorsement of this." said Andy Mead, Firefly's CEO.

A further key goal for Firefly is the development of localised mini-grid solutions in Africa. Initial pilots, using Firefly products are now being developed in Kenya. These will be working with poor communities in remote areas of the country, where main stream grid connection is unlikely to happen. The development of a mini-grid will in many cases provide pay-as-you-go access to green electricity for people who have never benefited from it before.

Using a firefly generator would save the consumption of 762L of fuel and save 1.766 tonnes of CO2 emissions in just a fortnight. (Please see page 25)

www.fireflysolar.net

Newcastle Regional Awards



Joint winner of the Newcastle awards. Antaco has pioneered and patented the commercial development of a procedure known as Hydro-thermal Carbonization (HTC) for the industrial production of biocoal. HTC is a highly efficient process which replicates the natural process of coal generation. It simply treats biowaste using heat and pressure to chemically transform it into a carbon dense material similar to fossil coal. To date the process has not been commercially viable due to technical limitations. Antaco have developed a cost effective engineering solution to commercialise the production of biocoal on an industrial scale. Antaco entered the Shell Springboard awards with the aim of boosting recognition of its game-changing technology to the waste and energy sectors, and crucially in the hope of securing the £40,000 prize money which will assist in bringing the benefits of its Hydrothermal Carbonization (HTC) technology to the UK.

In winning the Shell Springboard award regional final means that Antaco, can building on many years of dedicated research and investment, the money will help to unlock further funding streams in addition to a grant from DECC for building a prototype.

The prototype will take Antaco another step closer to building their first commercial plant. The biocoal produced by the prototype will help coal fired power stations to verify what has already been proven by a German utility - that Antaco's carbon neutral biocoal qualifies as a direct substitute for fossil coal.

Antaco's plan for the future is a simple and robust HTC engineering solution able to make best use of all organic wastes including garden and food waste, agricultural biowaste, sewage sludge, slaughter house remains etc we expect to scale up rapidly with partners from the waste sector. Antaco's biocoal provides baseload energy, is easy to store and can be used in boilers for domestic, municipal and industrial space.



Kiwi Power helps commercialise demand side response (DSR) which, if implemented on a global scale, can save millions of tons of emissions per year, save the public millions of pounds and create a more efficient electricity system. Around 300-700 tons of carbon emissions are saved for every MW of demand response. The participation of demand response resources in the energy markets means the grid does not have to run as many part-loaded power

stations. This improves the efficiency and reduces emissions of the system as a whole. Providing operating reserve to the National Grid via DSR means that there are fewer older and more polluting peaking power stations providing that reserve.

KiWi Power would have use the National award funds, together with the recognition achieved, to continue expanding demand response in the UK, particularly to local communities. Allow them to focus their efforts in particular on engaging with end users to carry out community energy assessments and target viable opportunities.

KiWi Power believes that over the next few years, demand response will become a lot more prevalent in the UK energy markets, creating a much larger opportunity for KiWi Power and our customers.

www.kiwipowered.com

Oxford Regional Winners



Ventive Limited, joint winners of this region have developed a Passive Heat Recovery Ventilation Unit capable of mimicking nature and reducing domestic heat loss by up to 97%. At Ventive they noticed that within a building they could use natural air buoyancy and wind, along with a patented heat exchanger and roof cowl to direct a temperate flow of air around the building - reducing damp, cutting fuel bills and improving the air quality of our indoor environment.

www.ventive.co.uk



VANTAGE POWER



Joint winners of the Oxford regional award. Vantage Power (VP) is an award-winning company that is commercializing an innovative hybrid powertrain, the B320 System that can be retrofitted into existing buses. Within a matter of hours, a double-decker bus aged 5-12 years old can be retrofitted with the B320 System, and the resulting benefits are immediate

- diesel costs are reduced by £20,000 per year, and emissions of CO₂, carbon monoxide, nitrous oxides and particulate matter cut by over 40.

The system results in upfront savings of up to 77%, and through-life savings of up to 49%. This high level of affordability will help increase the uptake of hybrid vehicles in the bus and heavy-duty vehicle market, and will go a long way to making cities around the world a cleaner, quieter, and greener place to live.

"On a wider note, I hope it will inspire others, especially younger people, to put their ideas to the test and to try and create new and innovative business concepts. The UK needs a new wave of entrepreneurs to spearhead creative solutions to the challenges of today and tomorrow, and I hope this competition can be the catalyst for many more businesses to come." Statement from Alexander Schey.

In 5 years, our initial proposition will have been expanded into a solid platform product. Vantage Power will be selling hybrid systems to bus OEMs as well as into the retrofit market, and the types of vehicles supported will be greatly enhanced to include a variety of heavy-duty vehicles.

We also see a trend towards greater vehicle electrification, and the use of alternative fuels including natural gas and hydrogen. The B320 System will be able to take advantage of each type of these solutions as they gain popularity in the market, giving VP a stable of products to appeal to the broadest range of customers in the heavy-duty vehicle market.

www.vantage-power.com

big ideas
on climate change

Shell Springboard 2013 National Winner

On the 14th May the Shell Springboard final took place in London highlighting that the UK has no shortage of entrepreneurial talent.

London-based business, Vantage Power, beat off tough competition from more than 120 companies to be crowned this year's national winner and impressed judges with its B320 system technology: a diesel electric hybrid powertrain which can be retrofitted to double-decker buses across the UK. The technology can help bus operators to save £20,000 per bus, per year in fuel costs as well as reduce noise pollution and maintenance costs.

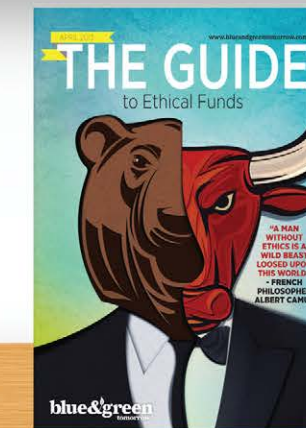
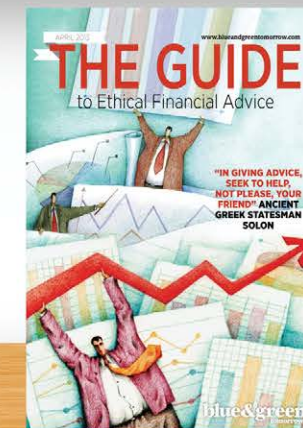


VANTAGE POWER

"As a growing company, winning the Shell Springboard Award gives us opportunities that we wouldn't have had otherwise. The first and most immediate impact to the business is the publicity. Shell provided us with a PR agency to help us get into key publications, and this is something we couldn't have afforded or dedicated the personnel resources to without this award. As a result, our business has become better well known earlier than we ever would have thought, and we are already finding this helpful when dealing with potential customers and investors.

The second benefit is to our reputation. For any company, building up a solid reputation is key to being able to win customers' confidence, and having the Springboard Award as an accolade really helps validate our business concept and market potential, giving customers more of a reason to place their trust in us.

Lastly, and perhaps most importantly in the short term, is the £40,000 prize money. This allows us to do far more work in the same amount of time, and this has a direct impact on the quality of our product. The prize money will therefore be spent on more and better testing of our innovative hybrid retrofit system." Statement from Alexander Schey.



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Green Deal for Businesses

Your business could increase energy efficiency and reduce operating costs with nothing to pay upfront, thanks to the Green Deal.



It's not just homes that the Government wants to make more energy-efficient - it's businesses as well. Which means that as a business, you too can apply for the Green Deal to make your premises more energy-efficient, and pay back the cost of improvements through savings on your company's energy bill.

What benefits does the Green Deal offer businesses?

Reduced operating costs: Lower energy consumption and less waste mean long-term cost savings.

Better working environment: Warmer, drier, energy-efficient workplaces are healthier for staff.

Cut carbon emissions: Your company can play a vital part in helping to save our planet.

What can businesses get from the Green Deal?

While the energy-saving improvements available to businesses under the Green Deal are the same as those available to homeowners, the value of those improvements may be much higher for businesses than for individuals.

The improvements recommended will depend on the size of your business premises, and your level of energy consumption, and could include things like:

- Insulation - wall and loft
- Heating
- Draught proofing
- Double glazing for windows
- Renewable energy technologies like solar panels and wind turbines

The next step for your business is to apply for a Green Deal assessment, which will tell you what improvements your business can get, and how much you'll save in energy costs as a result. Green Deal assessments are free, and with no obligation, so apply today to see how your business could benefit.

Green Deal for Businesses

The Coalition Government is going to help businesses be included in the forthcoming Green Deal. Businesses will be able to apply for funding to help improve the energy efficiency of their current building. After an assessment has been carried out outlining which technologies will be the most effective a business owner can apply for funding to have the installation made. The funding that will be available will be of a high value than is offered to home owners, although exact details have yet to be finalized.

The difference between domestic Green Deal and Businesses who apply for the Green Deal

Businesses will have no upper cap in what they can apply for through the Green Deal. The limit will be set between the business and the provider. This means that businesses that are looking for large scale installations should use the Green Deal as a way to invest in Green Technologies to help them save money in the longer term.

The businesses building will be effectively responsible for the costs of all the improvements and these costs will be repaid through the energy bill related to the property. There will be no up front costs for the business to incur at the outset. The only cost will be the assessment, this might be waived or enveloped by the provider depending on the deal struck between the provider and the business applying.

The golden rule of the Green Deal also applies here it states that:

The expected financial savings must be equal to or greater than the costs attached to the energy bill.

There are already existing schemes that some business might already be signed up to and the Green Deal will have to be worked into these obligations. Because of the layered complexity that is involved with the business sector there will be differences from the domestic market although the fundamental principals will remain the same.

Currently there are schemes, such as the *Climate Change Agreements* and the *Carbon Reduction Commitment Energy Efficiency Scheme*, which some businesses will be aware of. The government is currently looking at how these will all be aligned to make clear choices available to the business community.

Businesses will have the same measures available to them as domestic customers but some will not adhere to the *Golden Rule* of the Green Deal due to the size of some business premises. For example if a business is in a large warehouse it may not be cost effective to fit Solar panels to the building due to the high initial costs. It might however be cost effective to fit lighting controls and low energy lights which will give a much faster return on investment and fit into the *Green Deals Golden Rule*.

GreenbuildEXPO

Greenbuild Expo 2013 Greg Barker visited the event on Thursday 9th May, to see the Green Deal and ECO arena.

The energy and climate change minister was at the event at 8:30am, for a meeting with Greater Manchester's Green Deal team. He then had a tour of the exhibition area, focusing on the Green Deal area and the coalition's flagship green policy. The minister's visit was followed by a panel discussion on whether the Green Deal can help to tackle fuel poverty and a session from UK-GBC on the right incentives to drive consumer demand for low-carbon retrofit.



16-18 APRIL 2013 NEC, BIRMINGHAM, UK

Sustainability Live 2013 free event for sustainable business management, provided a comprehensive showcase of the latest products and services across the energy, water and energy from waste sectors.

With three shows under one roof, NEMEX energy Live, IWEX water Live and the new EfW Expo energy from waste Live worked alongside each other to provide a focused world class environment in which to do business. With the latest solutions, like minded individuals had the chance to network and a comprehensive seminar programme highlighting the latest industry challenges and opportunities.

Sustainability Live is renowned for its unrivalled seminar programme which spanned across 6 theatres and offered over 300 hours of content from more than 200 speakers, with up to date news and developments from across a range of sectors.



H2FC-FA!R Hannover Messe 2013



140 exhibitors from 23 countries participated this time at the Group Exhibit Hydrogen + Fuel Cells at Hannover Messe 2013, among them several companies active in the battery industry. Adding the stationary batteries to the topic range of the Group Exhibit is therefore a

logical step for its organizer Tobias Renz: "More and more of our exhibitors present both the fuel cell and battery technologies at the Group Exhibit. These two topics have become almost inseparable."

Politicians showed high interest in the future energy storage. High ranking representatives of the EU attended the Group Exhibit: Antonio Tajani, Vice-President of the European Commission, Günther Oettinger, Commissioner for Energy and Maire Geoghegan-Quinn, Commissioner for Research, Innovation and Science. Over 30 Berlin based ambassadors of such countries as Japan, Mexico and Turkey visited the Group Exhibit as well.

Central point of the Group Exhibit was the storage of renewable energy in form of hydrogen. 15 exhibitors demonstrated electrolyzers - devices to convert electricity into an easily transportable and storable fuel: Hydrogen. Both forums of the Group Exhibit proved to be real visitor magnets. They offered a broad platform for presenting and discussing the latest developments of the hydrogen and fuel cell industry.

A highlight for the visitors were also the fuel cell cars of Daimler, GM/Opel, Toyota and Honda available for a test drive at the outdoor Ride & Drive area. Unlike the battery-powered electric vehicles, in the hydrogen powered cars the traction current is generated directly in the fuel cells integrated into these cars. Linde demonstrated how these vehicles are refueled with hydrogen. ITM Power presented the same for a hydrogen powered bus. The hydrogen for the refueling was produced directly on the spot through a process of electrolysis.

Group Exhibit Hydrogen + Fuel Cells + Batteries will take place at Hannover Messe 2014, April 7th - 11th.

latest developments in renewable energy sources

UK

Towering biomass silo is a beacon for renewable energy 01.06.2013

WHEN completed, it will rise to 49m (160ft) - almost as high as Hull Royal Infirmary and one of the tallest structures on the city's skyline. The new silo tower being built in Scunthorpe is not yet finished but can already be seen for miles around. The structure will form part of a facility to load biomass on to rail wagons, which will be transported to Drax Power Station near Selby. The tower, which is being built by Spencer Group, went up in just two weeks, with concrete being poured into a 9m steel shell, which moved progressively up the structure.

USA

First US Offshore Wind Turbine Launches in Maine 31.05.2013

Today marks a milestone for offshore wind energy in the U.S. with the official launch of a prototype floating turbine off the Maine coast, the first grid-connected offshore wind turbine deployed off the coast of North America. The 1/8-scale prototype VoltturnUS, a 65-foot-high 20-kW turbine, will spend the summer being "de-risked" off the coast near Castine. Once proven out, this 1:8 pilot-scale turbine will be scaled up to 6-MW turbine with 423-ft-diameter rotors and deployed in 300-500 foot depths 12 nautical miles offshore near the island of Monhegan. Maine has an estimated 156 GW of potential offshore wind capacity and a target of 5 GW of offshore wind deployments by 2030.

UK

Green light for Galloper offshore wind farm 29.05.2013

Galloper Wind Farm Limited said it has been granted permission by the UK government to construct a 504MW wind farm off the coast of Suffolk. It is also reported that related infrastructure at Sizewell will connect the wind farm to the electricity grid system. The developer estimates that the 140-turbine development will provide

enough electricity to power the equivalent of as many as 500,000 homes a year when completed in 2017.

UK

Energy-from-waste facilities get green light across UK 28.05.2013

In south London, Viridor has finally got the go-ahead to build an energy recovery facility next to its landfill site in Beddington. The incinerator will provide South London Waste Partnership and businesses with a cost-effective alternative to landfill and also bring forward the completion and restoration of the existing landfill into green spaces and wildlife habitats.

Japan

Japanese rooftop PV-system to provide clean energy for 300 households 23.05.2013

Joint venture juwi Shizen Energy has connected its first rooftop PV-system to the grid in Japan. Consisting of 4,088 solar modules, the rooftop photovoltaic system in Kumamoto on the Japanese island of Kyushu took around four weeks of construction work to realise. The photovoltaic plant, now in operation, was developed and constructed jointly by the juwi group and Shizen Energy with a total capacity of around one megawatt. Per year, the rooftop system produces approximately 1mn kWh of clean electricity - enough to power around 300 Japanese households.

World wide

WWEA: 100 countries now using wind power 16.05.2013

The 2012 report by the World Wind Energy Association shows 100 countries are using electricity generated by wind turbines, with Iceland recently becoming the 100th nation to deploy wind power. However, the market's overall growth rate of 19.2% is the lowest rate in more than a decade, despite an annual turnover of €60bn, according to the report.



The association's World Wind Energy Report 2012 says global wind capacity has now reached over 282GW - 44.6GW was added in 2012 alone, the most ever added in a single year. By end 2012, the total worldwide wind turbines installed can provide 580TWh per annum, more than 3% of global electricity demand. The share of offshore wind in the overall capacity increased to 1.9%, from 1.5% in 2011, the report adds.

Finland

Weltec Biopower constructs 1.8MW biogas plant in Finland 14.05.2013

The German biogas plant construction company is currently building the biogas plant in Jeppo, Finland in a joint project with its Finnish partner, Doranova. The new plant is due to begin producing biomethane as early as autumn 2013 - the modular design of the plant allows for the realisation of the project within a short period of time. The biomethane will then be refined to natural gas quality making it suitable for all consumption paths including as fuel for the growing network of Finnish natural gas stations, Weltec Biopower said.

Scotland

Scotland Well On Track To Reach 500 MW Community Renewable Energy Goal 02.05.2013

Scotland's goal of having 500 MW of community-owned renewable energy projects installed by 2020 is well on track, according to new figures released by the Energy Savings Trust (EST). As of right now, there are more than 200 MW of community, or locally owned, renewable energy generating capacity installed in the country. The figures were released to precede the unveiling, in the next few weeks, of a variety of different incentives designed to spur community ownership of clean energy projects. According to the EST, there were around 204 MW of

community and locally owned renewable energy projects installed by the end of June 2012, the majority of which are on farms or estates.

Ireland

Bombardier plugs in to renewable energy 24.04.2013

Airplane manufacturer Bombardier has revealed it has lodged a planning application to build a renewable energy plant next to its premises in east Belfast. A spokeswoman said the plant would occupy land belonging to the Belfast Harbour Commission next to the Bombardier factory and offices on Airport Road. She said the proposed plant would be built, owned and operated by an energy consortium, and more than half of the energy generated would be classified as renewable. Bombardier's desire to generate its own energy is a response to soaring energy costs, with crude oil holding above \$100 a barrel for the last two years and feeding into higher electricity and fuel costs.

Hamburg

Vestas receives 72 plus 12 MW order in Romania 12.04.2013

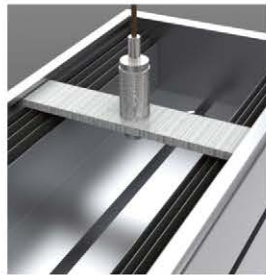
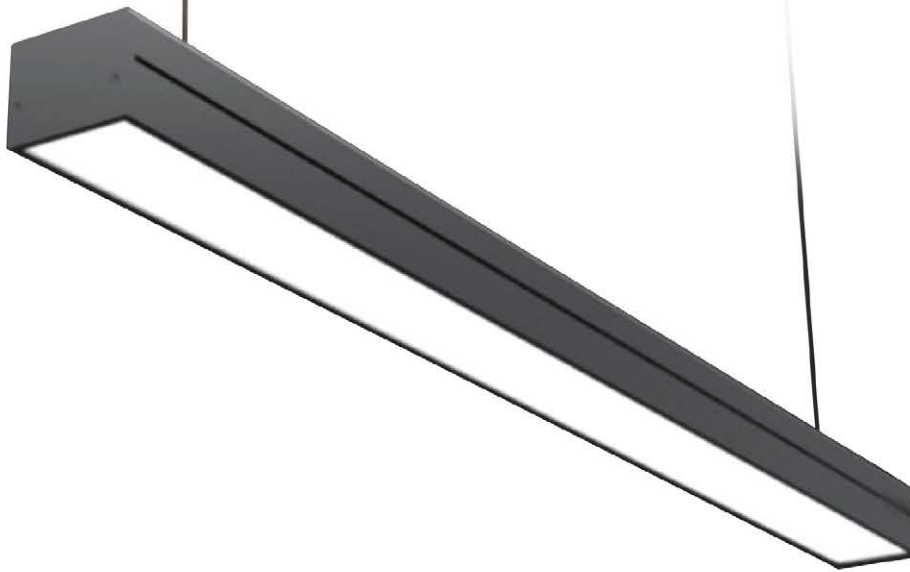
Vestas has received a firm and unconditional order for 72 MW with an option for another 12 MW for Romania. The 36-turbine order constitutes the first part of a project consisting of a total of 42 V90-2.0 MW wind turbines to be installed in Tulcea County in Romania. Delivery of the first 36 turbines is planned for the second half of 2013. The order has been placed by Lukerg Renew, a joint venture between ERG Renew and Lukoil. ERG Renew is Italy's largest wind energy producer, with an installed capacity of 1,232 MW throughout Europe. Lukoil is a major international vertically-integrated oil and gas company, accounting for 2.2 per cent of global output of crude oil.





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