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MAY/JUNE 2012

A close-up photograph of a hand dropping a stream of wood pellets into a large pile of the same pellets. The background is a dark, textured surface.

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Editor's comment

Join our club



It appears that Marks & Spencer's Lochmuir smoked salmon comes from a place that doesn't exist, that its Oakham chickens haven't been anywhere near their lovely little namesake in Rutland and that Tesco's Willow Farm is equally as elusive a place to pin down on a map.

Before you think you've opened a copy of The Grocer magazine or make a mental note never to eat M&S chicken again, these shenanigans of the supermarkets have actually provided a little literal food for thought. Creating idyllic-sounding names and places creates an image. We want to believe we are eating wholesome, natural food, reared in beautiful surroundings - a concept kick-started by the marketing teams at well-known supermarkets.

While we have all been bogged down in Feed-in Tariff rates, delays to the RHI and what the Green Deal is all about, have we lost our creativity? So focussed on the rates of return for PV and how to couch the drop in tariffs to consumers, has the opportunity been lost to create our own

vision for the consumer? Isn't it time to divert the householder from looking for endless pound signs and start seeing the benefits renewables as a technology? Not only do they provide a way of countering the endless rise in the cost of gas and oil, they of course provide environmental benefits. But the biggest fact we have overlooked is that we live in a consumer-driven, materialistic society. Joe Public is chomping at the bit for the biggest and best TVs, for the cars packed to the gills with gadgets, for smart phones, i-Pads and tablets. Why then aren't we making them desire the technology we have on offer? Isn't it time to make the consumer want to be part of our community as much as the fictional one created in Scotland by M&S? We don't look for payback when we buy a packet of salmon or an i-Phone, we think about the benefits the products are bringing us. So where's the marketing campaign having a similar effect for renewables? Isn't it about time we produced one? And do you know what? Unlike, M&S and Tesco, we don't need to fabricate ours?



"I had already installed solar panels and made a small investment in a regional business but I was thinking about how to get involved in a bigger way," p13 Deborah Meaden

Industry reaction to drop in PV installation figures

The latest installation figures from DECC show a sharp drop in the total amount of PV installed since the latest cuts to the Feed-in Tariff (FiT) on 1 April, report **Lu Rahman** and **Paul Stephen**

Statistics compiled by the Department of Energy and Climate Change (DECC) show a weekly average of less than 2MW installed during the first half of April following the introduction of EPC requirements, a multi-installation tariff and lower FiT rates.

April's figures are a significant decrease on the 32MW weekly average experienced throughout March and, with a single exception, are the lowest rates seen since January 2011.

The pattern over the last 12 months shows a sharp spike in the rush to secure the higher 43.3p/kWh tariff prior to the government's planned deadline of December 12. A second spike occurs following the Supreme Court's ruling that the government acted illegally in setting its December cut off meaning that all installations registered before March 3 would qualify for the old tariff.

A third surge in activity is clearly shown in the run up to 1 April prior to the introduction of the multi-installation tariff which means that any installation containing more than 25 installations will now receive 20 per cent less than the stand alone rate.

There was also a rush to beat the new requirement for an energy performance rating of at least D which has resulted in a reduction in the number of properties which can

qualify for FiT without investment in energy efficiency technologies.

The current tariff for domestic installations rated 0-4kW stands at 21p/kWh.

STA chief executive Paul Barwell said: "Despite all the ups and downs for the solar industry in recent months we want to get the message across to householders solar is a good investment at current tariff rates."

The STA is concerned that some members are reporting drops in their order books. However, it adds that the 21p/kWh tariff is still producing sound returns on investment of up to 10 per cent. Industry is keen that the public understands that cost reductions in solar panels have been so marked the dramatic cuts in the Feed-In Tariff can be accommodated.

Paul Barwell continued: "Cutting the tariffs in half may look drastic, but the public need to understand this is not a problem for them because the costs of solar have fallen so fast. Solar is a great investment and spring is a great time to invest."

Both the industry and government are keen to put the solar sector on a stable footing and the STA is working closely with DECC. Government has aspirations of 22GW installed capacity by 2020 and according to the STA, the industry needs to focus on making sure a robust roadmap is developed to achieve

David Hunt, Eco Environments, said: "The drop in solar PV installations is a direct result not only of the reduction in Feed-in Tariff rates, but also of the uncertainty caused by the High



Hot property: Paul Barwell, STA, says that although PV tariffs have halved, it should not affect the public as it still provides a great investment

Court and Supreme Court cases and appeals involving DECC.

"If the government really does have the ambition to install over 22GW of solar PV by 2020, it needs to radically change its policy of FiT reductions. It has the opportunity to do this from this July, as the new FiT rates have yet to be decided (the proposed figures will only exacerbate the recent drops), but the government has made clear its intentions and support for the solar industry.

"The solar industry has been decimated by this government's recent actions. Only a complete review and change of the FiT tariff rates will increase the number of installations in the coming year."

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Team work for energy management

Energy experts Energeno and Better Generation have joined forces to develop a renewable energy management package for homes and businesses

Better Generation's Power Predictor LAN product allows people and organisations considering a renewable energy installation, such as solar panels or wind power, to accurately predict costs and benefits. Energeno's Wattson range enables them to monitor the energy generated and used once their installation is in place so that they can modify usage to obtain optimum return on investment.

Through a complete service package which will enable customers to make strategic decisions on renewable energy - from the viability of an installation to ensuring they obtain the best payback from their investment, this joint venture is set to add a new dimension to the installers' offering.

Mark Elliott, director of operations at Energeno, commented: "We're committed to providing installers, maintenance companies and end-users with the tools they need to ensure that installations are performing at their most efficient and that the very best return on investment is achieved. By working with Better Generation, we're able to further develop the technology resources available to do just that."

The companies will now be working to incorporate their technology to provide an integrated web-based application which



Joint efforts: Mark Elliott, Energeno, said the partnership with Better Generation will benefit installers, maintenance companies and end-users is achieved

installers and end-users will be able to access to help them source an energy generation and consumption solution.

Graham Brant, ceo at Better Generation, commented: "Our product unlocks the potential for sustainable energy production. By helping consumers to predict the performance of a wind power or solar solution, it enables them to make the right choice on installations. We now have a real opportunity to take our offering to the next level and bring a new and exclusive service to the market."

SMA's Life Shines Brighter launch

SMA Solar UK has identified that, when it comes to solar energy, most householders focus their attention on choosing the panels, however, it is the quality and efficiency of the inverter that determines how much energy is produced. That is why SMA Solar UK created Life Shines Brighter – a concept built on the premise that, with more electricity to use and sell, householders can enjoy the things in life that really matter.

Engaging the consumer

Paul Boylin, marketing manager, SMA Solar UK said: "We are delighted with Life Shines Brighter, a campaign that will influence householders to consider PV in an engaging, emotional and thought provoking way."

"The strategic positioning of Life Shines Brighter enables SMA to better support our distribution partners and our loyal installers by creating confidence and security amongst the end-user community by raising their understanding of investing in PV as a lifestyle choice and the impact that choosing the right inverter has on their return on investment," added Henry Dziuba, managing director, SMA Solar UK. "Whilst Life Shines Brighter is still very much in its infancy, the launch into end-user communication marks another milestone in SMA's commitment to maintaining and improving our support to customers from across the spectrum of PV to optimise the return on their investment."

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News in brief

Tim Yeo is to be the first ever president of the REA. He has held government posts in trade and industry, transport, the environment and agriculture, and is currently chair of the energy and climate change select committee.

Alan Aldridge is the new chairman of the STA. Managing director of Riomay, Aldridge joined the board of the STA two years ago.

Len Ratcliffe, contracts and project management expert, has joined Solar Electricity Systems as part of the company's drive into new markets. The company also recruited Scott Forbes as commercial director.

Suntech Power has announced its Pluto cell technology has achieved 20.3 per cent efficiency for a production cell using standard commercial-grade p-type silicon wafers. The company claims this is a world record.

ONG Energy has employed Benj Sykes in its London office as operations director and deputy country manager in DONG Energy's UK renewables business.

Jerry Stokes, president of Suntech Europe, has been elected as a director and vice president of the European Photovoltaic Industry Association's (EPIA) eight-member board of directors.

Energysure a community renewable energy platform has launched a competition for five community renewable energy projects to win match funding of up to £5,000 through Hugh Fearnley-Whittingstall's crowd-funding platform peoplefund.it

The first five projects which raise £5,000 via peoplefund.it will receive match funding of £5,000 to support their project www.energysure.com/community-fund

The Renewables Roadshow has won Best Launch Show at the Exhibition News Awards.

Hutchinson Engineering has won an international safety award from the British Safety Council after achieving a distinction and full marks of 60 out of 60. The company designs and manufactures steel structures for the telecoms and wind turbine sectors.

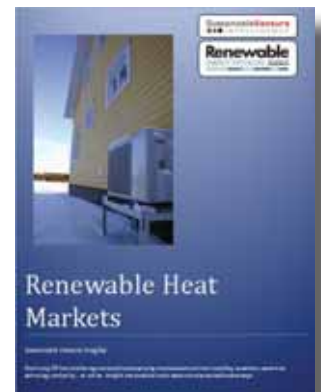
Plumbase has donated £1000 to Para-dressage rider Deborah Criddle, one of GB's 2012 Paralympic hopefuls.

Market analysis report – discount to REI readers

Renewable Energy Installer is offering readers a 15 per cent discount on the market analysis report from Sustainable Venture Intelligence (SVI). REI has partnered with SVI for the launch of the report which provides valuable reading for anyone involved in the renewable and microgeneration sectors and highlights future key areas of growth and opportunity.

SVI believes the renewable heat market has significant potential and could yield substantial returns. Its analysis has identified six key areas in which opportunities will arise. These include biomass; FiT-style asset ownerships; Energy Services Company (ESCO); the improvement of the quality and perception of heat pumps to provide developers and installers with advantages and biogas.

SVI expects to see the steady establishment of a Renewable Heat Market through to 2014. Later in the decade (2015-17), it expects improving



economies of scale and falling technology costs to coincide with government introducing additional incentives to drive uptake. SVI expects this over-incentivisation to trigger a 'gold rush' in medium-scale biomass, but also that ASHPs could potentially begin to fulfil current projections, similar to solar. The end of the decade (2018-20) should see consolidation as capex costs fall and adjustments are made to reflect a more mature market.

Orders can be placed at www.svionline.co.uk/store, where readers can also view the executive summary and download the table of contents. Subscribers to REI can also use the discount REI15 for a 15 per cent discount.

Green Deal business support

Businesses are being helped to make the most of the new Green Deal scheme. Green Deal Manager – www.greendealmanager.co.uk – will enable general contractors, plumbers, heating engineers, door and window installers, electricians and renewable energy installers to comply with requirements needed to take part in the scheme and help them become 'PAS2030 accredited'.

The Green Deal will allow homeowners and businesses to take out long term loans in order to implement energy efficiency measures.

According to industry experts, Green Deal installers are expected to increase their turnover by as much as 20 per cent. The government says the Green Deal will help to insulate 14 million homes by 2020 with 65,000 jobs being created as a result of the drive to make homes and businesses more energy efficient.

The Green Deal Manager website has been developed by eco-architect Graham Jack in conjunction with Green Deal industry expert Phyllis Boardman.

Jack said: "In order to become an installer of Green Deal energy efficiency measures, companies must provide a string of policy and procedure documents. Our online project management portal brings all of these together in one place, cutting through the red tape and streamlining the entire process.

"For a small investment, installers can both prepare for the launch of the Green Deal in October and continue to remain fully accredited going forward.

"Our unique system is the first of its kind and the feedback we have had already from small installers through to PLCs has been phenomenal."

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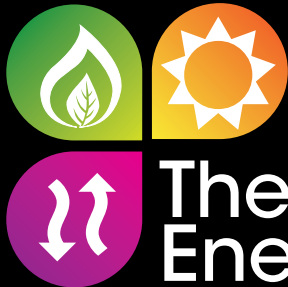
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“Although the cuts have been a significant blow to a thriving industry, it has not, however, sounded the death knell” P19 Rupert Higgin, The Green Electrician

Why the Emerald Isle is struggling to go green

Although synonymous with the colour green, Ireland is struggling to embrace renewable energy technologies – some in the industry have warned.

In a recent article in the Irish Times, a number of installers have bemoaned the lack of progress made in Eire’s renewable energy sector whilst glancing enviously at the current setup in the UK.

Much of the criticism is levelled squarely at the feet of the Irish government which, it is claimed, is not providing sufficient financial support to attract investment or unlock the renewable energy potential of Ireland.

John Reynolds wrote: “If we contrast our situation with Britain, the industry there is encouraged by a green investment bank with £3bn of financial muscle.

“No-one in the (Irish) government has painted a detailed, meaningful picture of what the nation might look like if we capitalised on our strengths and addressed our weaknesses in this sector.”

Joe O’Carroll, managing director of Maynooth and Cheshire-based Imperative Energy, does 90 per cent of his business in the

Slow going: Irish installers say there is a lack of progress made in the renewable sector in the country



UK and says the state could provide a €300m injection in one fell swoop by switching the way it heats all public buildings to biomass.

“We could offer fully financed solutions with no capital cost to the state,” he said. “We’re asking for a chance to tender for long term renewable energy-heating solution.

“They listen, but then somewhere in the

system the idea gets bogged down in inertia.”

Paul Carberry, of Wicklow firm RES, added: “The level of engagement and understanding from the Department of Energy seems very poor. I’m not sure civil servants give our industry the support it needs, which can in turn create jobs.”

Solfex partnership with JA Solar Holdings

Solfex Energy Systems has announced a strategic UK partnership with global player JA Solar Holdings Co, Shanghai, China and will be responsible for the distribution of JA Solar photovoltaic modules into the UK market.

Commenting on this new development managing director, Stuart Cooper, commented: “For the last three years we have focused purely on European supply partners, namely Kioto Photovoltaics, from Austria. This partnership has been successful and will continue to be so and we also want to replicate this with our new supply partner JA Solar serving the contract and more price sensitive market.

“We have been in dialogue with JA Solar since 2011 and the partnership has only just recently been signed at Ecobuild 2012. We have chosen JA Solar because of the build quality of the module with outstanding yield, price performance ratio, reliable supply

chain and warranty conditions. Also a major consideration was the strong financial stability of JA Solar Holdings Co and this has been demonstrated in recent financial reports.”

JA Solar UK country manager, Alastair Mounsey, commented: “Solfex Energy Systems is amongst the most experienced and stable companies in its field with a long established track record in renewables market and offers a professional and high value service to the their customers. We are very pleased Solfex Energy Systems has joined in our efforts to serve the UK solar market and we wish it every success.”



REI goes monthly

From September, **Renewable Energy Installer** will be available every month.

Lu Rahman, editor, explained why: “The renewables industry is constantly changing. Renewable Energy Installer has always been at the forefront of the renewable and microgeneration sectors and by producing a publication every month we are even better placed to serve the sector and our valuable readers. With our new website and email newsletters, Renewable Energy Installer is the only publication reaching the MCS accredited installer as well as those installers expressing an interest in renewables and becoming MCS-accredited. We have also partnered with SVI to offer a market report.

Preferred choice

“Since its launch three years ago, Renewable Energy Installer has become the preferred read for installers and manufacturers keen to keep up to date on the latest legislation, technology and opinion. Its value is its niche offering and we are now able to offer this on a monthly basis.”

Installers hit out at FiT proposals

A number of installers and industry representatives have used the Department of Energy and Climate Change's (DECC) recent consultation period to heavily criticise its proposed changes to the Feed-in Tariff (FiT).

Now closed, installers had until 3 April to formally submit comments and objections to the proposed changes to the solar tariff, and April 26 for changes to the tariffs in other technologies before they are passed as legislation by Parliament.

The proposals were keenly debated at a workshop jointly hosted by DECC and The Micropower Council at Broadway House, Westminster on Monday 26 March. Delegates attended from a range of companies and organisations including BPVA, Dimplex, E.ON, Mitsubishi, Sharp, SolarCentury, Eversheds LLP, Friends of the Earth, Gemserv and NAPIT.

The major concerns raised included the risk of surges in demand

occurring as all tariffs decrease at regular intervals plus the low tariff rate which will be applied to micro CHP.

Rebecca Teasdale, E.ON, said: "We accept changes have to be made and a smaller market is better than no market at all.

"We would like to see the micro CHP tariff increased more. It is a transitional technology and if increased to 15p per kilowatt hour, the market would take off more quickly and compete better with the gas boilers they are meant to replace."

Lee Summers, Spitfire Wholesale, added: "One thing which flies in the face of the clarity DECC is trying to achieve is contingency depression – which scares the hell out of my board.

"Some fear that what has happened in the last few months will happen again. We could see the issues of December 2012 running in cycle in perpetuity."

Events

Phex: Plumbing and Heating Exhibition
15-16 May Ricoh Arena, Coventry
10-11 October Old Trafford, Manchester
14-15 November Stamford Bridge, London
www.phexshow.co.uk/

Homebuilding & Renovating Show
19-20 May Scottish Show, SEC Scotland
30 June - 1 July Southern Show, Sandown Park, Surrey
2-4 Nov Northern Show, HIC Harrogate
17-18 Nov South West Show, Bath & West, Somerset
www.homebuildingshow.co.uk

Sustainability Live
22-24 May NEC, Birmingham
www.sustainabilitylive.com

Renewables Roadshow
13 September Ricoh Arena, Coventry
18 September Westpoint Arena, Exeter
20 September International Centre, Harrogate
26 September SECC, Glasgow
28 September Event City, Manchester
03 October Wembley Stadium, London
www.renewables-roadshow.co.uk/

Microgen 2012
10-11 October 2012 Stoneleigh Park, Warwickshire
www.microgen.thepowerof3.co.uk/

Oil & Renewable Energy Show
17-18 October Manchester Central
www.oilandrenewableenergyshow.co.uk

Renewable UK Annual Conference
30 October-1 November SECC, Glasgow
www.renewable-uk.com/events/annual-conference/



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When sustainable developer, Dove Jeffery Homes, was asked to build ultra-sustainable Code Level 6 Homes for Norwich-based Wherry Housing Association, director Chris Dove turned to Schueco UK to provide a complete PV package. Tenants of the 12 affordable homes – built on land donated by Broadland District Council – are now all benefitting from reduced energy bills thanks to the 61 kWp of solar energy generated by roof-mounted Schueco PV modules installed by local company C J Electrical. What persuaded Chris Dove to choose Schueco was the combination of a proven quality product, an affordable price, long-term guarantees and excellent service and technical support. It's another example of Schueco's Energy³ concept in action. www.schueco.co.uk

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Enter the dragon

With the dust finally settling on the government's vision for the Feed-in Tariff (FiT), **Paul Stephen** speaks to Dragons' Den star Deborah Meaden about the continued attractiveness of investing in PV

There are few people more qualified to pass judgment on the financial credentials of renewable energy than business woman and BBC TV's Dragons' Den investor Deborah Meaden.

Reportedly worth £40M, she has made her fortune whilst perfecting an impressive business acumen through seeking out shrewd investment opportunities since setting up her first business venture aged just 19. Meaden has also invested £120,000 in Ploughcroft last year alongside fellow dragon Theo Paphitis.

Fresh from getting her hands dirty in a live demonstration at the Yorkshire company's stand during The Homebuilding and Renovating Show at Birmingham's NEC, Meaden explains why Ploughcroft has been a good investment, looks ahead to what the future holds for renewables and outlines the continued business case for investing in PV.

First in her sights is how pleased she has been with the performance of Ploughcroft and the return she has had on her investment.

"I had already installed solar panels and made a small investment in a regional business but I was thinking about how to get involved in a bigger way," says Meaden.

"When Chris Hopkins (managing director) came into The Den, it was clear that he was knowledgeable and shared the same values as me. But sometimes, what you see isn't what you get. When I went up there (to Ploughcroft's Halifax headquarters), it was more than I was expecting and underwrote everything I heard in The Den.

"I am already happy with the return on my investment. Chris and his team have done everything that they said and more, so it's definitely a good one."

Ploughcroft is a family-run business which Meaden tips to continue growing and diversifying due to its commitment to honesty and trustworthiness.

"I think it is important in any business, whether family run or not, to take things personally. That is the mark of a successful



Wise words: Deborah Meaden and Chris Hopkins. Meaden is positive about the benefits of PV

business, when you treat customers as you would your family.

"Ploughcroft has been growing exponentially. Our plan, whether it be 12 months, 18 months or two years, is to be a name in people's heads or the word that comes out of people's mouths when they are recommending renewables.

She adds: "What I think will happen now in the industry is that the leaders will emerge - those who are committed to it long term. Then people will start learning who they can and can't trust - and they can trust Ploughcroft.

"If we make wild overstatements and claims, we will damage the industry. Words are cheap and the thing I value about Ploughcroft is that it presents the facts."

Finally, Meaden offers words of reassurance to those disheartened by the

government's changes to the Feed-in Tariff by insisting that investment in PV is still a sound choice for both wallet and conscience.

"I want to live in a wonderful world and we have to do it for two reasons," she says. "The first is emotional as we want to live in a nice environment and, secondly, financially, we are going to run out of fossil fuel. That's why it's important to me.

"The issues are really quite simple. It's fundamentally still a good proposition to install solar PV on your roof even under the new FiT tariff and will be for the foreseeable future. What the government has done is confuse people so our job is to unscramble that and clearly state why it is still the right thing to do. Good if you want to do the right thing and good if you want a healthy return on your investment."

Taking ownership

Plug into the Sun, the Penzance-based solar PV installations company, is proud to be involved with the Eden Project's Eden Solarfair – the first employee-owned renewables project



Triple shot: Matt Hastings, energy manager at the Eden Project, Phil Levermore, managing director of Ebico and Andrew Tanner, managing director of Plug into the Sun

Plug into the Sun installed the 49.5kW system in December last year which will provide the Eden Project with another form of renewable energy and also provide Eden staff with an investment opportunity.

Staff at the Eden Project have been able to buy shares at an entry level of £200 which will give them an attractive return on their investment through the Feed-in Tariff.

The renewable energy will also contribute towards the Eden Project's aims to cut carbon dioxide emissions by 25 per cent by 2013.

Andrew Tanner, managing director from Plug into the Sun said: "It was great to be involved with this project. We have worked with the Eden Project in the past and were delighted that they came to us for their installation."

The Eden Project joined forces with Ebico, a not-for-profit energy supplier, to offer its staff the opportunity to invest.

The project, the first of Ebico's Social Ventures in Energy subsidiary is the brainchild of the Eden Project's energy manager, Matt Hastings and Ebico's managing director, Phil Levermore.

This initiative seeks an equitable distribution of the benefits of the FiT scheme and came about as a result of thinking by Chris Goodall, the commentator on energy and environmental issues.

The project sits within the context of much of the Eden Project's existing work to promote sustainability and environmental issues, in particular its Big Green Hand initiative which helps to raise awareness among staff and encourage them to make energy savings at home.

Jess Ball, a member of Eden Project's retail team and early applicant for shares in Solarfair said: "I think it's a really fantastic idea. I just wish I could put more money in. It's something that I'm very happy to be part of. Solar panels were not suitable for my own

house so it's great to have an opportunity to invest in Solarfair at Eden."

Phil Levermore, managing director of Ebico, said: "Ebico and The Eden Project want to enable more people to access the investment returns available from a solar power project. Taken with the energy efficiency support that Eden offers its staff through The Big Green Hand project, Eden's employees will be able to reduce their fuel bills, help develop carbon-free generation and make an attractive rate of return – all of which ideally complements Ebico's central mission."

Tim Smit, chief executive and co-founder of the Eden Project, added: "At Eden, we are committed to exploring alternative sources of power that will enable us to be independent of fossil fuels. This innovative project we've developed with Ebico will enable us to produce our own renewable energy in a sustainable fashion, while offering our employees an opportunity to own a stake in the scheme and realise excellent returns."

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Hot under the collar

It would be fair to say that the recent announcement that the domestic Renewable Heat Incentive is to be put back until summer 2013, did not receive a rapturous applause from the industry. Hidden amid the Heat Strategy and up against the news that the Renewable Heat Premium Payment was to have a second phase, how is the industry viewing the delay? **Lu Rahman** reports

When the £860 Renewable Heat Incentive (RHI) opened in November 2011, its aim was to make the installation of heat pumps, biomass boilers and solar thermal systems, financially appealing. Companies such as Windhager UK have reported a significant upsurge in enquiries and orders for wood pellet appliances within the non-domestic sector since Phase 1 of the scheme launched and the company sees it as being a significant factor to increased business.

There have however, been suspicions amongst the renewable heat world that the scheme would not be going ahead as planned. However, for many, the confirmation was a bitter pill to swallow, increasing the general uncertainty the industry has been experiencing of late, arguably created by the myriad of events surrounding the Feed-in Tariff. The Department of Energy and Climate Change (DECC) has also launched a consultation on interim cost control for the RHI, giving the government the power to suspend the scheme if it looks set to exceed the annual budget.

Disappointment does seem to prevail. **Stuart Elmes**, chair of the STA's Solar Thermal Working Group, says: "While we were expecting some delays to the RHI, a whole year is very disappointing for our solar thermal members. DECC has put

a lot more energy into supporting renewable electricity than renewable heat – but heat is half the problem if we are to meet our carbon targets. This unbalanced approach represents a missed opportunity. Solar heating manufacturers, suppliers and installers in the UK stand ready to deliver with the right support structure. We call on DECC to accelerate the timeline for RHI2 and unleash the potential of solar heating."

There have however, been suspicions amongst the renewable heat world that the scheme would not be going ahead as planned

Commenting on the announcement, Windhager UK managing director, **Oliver Duckworth**, said: "The industry has been waiting with baited breath for clarification and further information of the proposed RHI phase 2 (domestic) scheme. The industry recently has been awash with rumours that the government were to once again delay the launch beyond the proposed date of October 2012. It was therefore of no surprise that the recent announcement from DECC at the end of March

confirmed industry fears that the scheme now would not be consulted upon until September 2012 with the proposal to eventually launch the scheme by summer 2013.

"Despite DECC's assurances that the domestic RHI scheme will be launched in 2013, this further delay will continue to delay the uptake of renewable heating in the domestic sector and prevent any short term growth in this important market; consumer confidence in the scheme is severely dented and concrete assurances are required to convince customers who are planning to invest in renewable heating systems."

Neil Schofield, head of government and external affairs, Worcester, Bosch Group, believes the delay to this second phase of the RHI is eroding confidence in the government's commitment to renewable technologies. He says: "The latest delay to the RHI is a disappointing but ultimately familiar story for the industry. All momentum is being lost by this succession of delays.

He continues: "Whilst the Premium Payment scheme has also been extended as a result, the big problem here is that the Premium Payment concept remains too hard for the installer to sell to a potential customer. How can an installer be expected to sell renewables when they don't know when the incentive will come into play, how long it will last for, or even how much



Eating away: Neil Schofield, Worcester, Bosch Group, says the delay to this second phase of the RHI is eroding confidence in the government's commitment to renewable technologies

funding will be on offer? My understanding is that fewer than 50 Premium Payments have been applied for in all of London.

"With the exception of solar thermal, the scheme is focused on those in off-mains gas areas, which already excludes some 90 per cent of the UK's installer base. To encourage mass uptake, the initiative has to be opened up to act as the game-changer it was originally intended.

"Whilst it comes as no great surprise to see the incentive delayed further, UK installers are continuing to suffer as a result of this prolonged uncertainty. I would urge DECC to act sooner

rather than later in bringing some clarity to an industry which is nowhere near reaching its potential."

Bruce Allen, chief executive of HETAS, agrees that the situation is far from satisfactory. He says: "The delay in implementing the RHI for domestic applications is frustrating for everyone in the industry. There are many installers and manufacturers who have already invested in training and product development in anticipation of the RHI. Whilst we support the government in developing a viable RHI, the uncertainty is undoubtedly making it difficult for businesses to plan ahead and make decisions for the future.

"It is however encouraging that there remains interim support for renewable technologies through Renewable Heat Premium Payments.

"We recognise the need for cost control if we are to have a viable RHI, and HETAS supports the government through schemes to promote sustainability such as quality assured fuels, approved installers and products."

As for the RHPP, **Simon Allan**, renewables director, Plumb Center, welcomes its extension. "I would however, have liked to see the government take RHPP further by increasing the financial tariff for each technology. Under the current scheme many homeowners requested vouchers but only a fraction more than 50 per cent redeemed them. This is definitely a missed opportunity, so incentive schemes must work harder to help independent installers, which are already investing in training, to win more work," says Allan, adding that the lack of clarity over domestic RHI could lead to homeowners putting off the decision to adopt renewables and RHPP might not be enough of an inducement.



Heated discussion: Bruce Allen, HETAS, believes the delay in implementing the RHI for domestic applications is frustrating for everyone in the industry

Stuart Elmes, STA, also sees a flaw in the RHPP. He says: "The previous incarnation of the RHPP was hopelessly undersubscribed. We are not convinced that this 'bigger and better' RHPP will be sufficient to spark increased uptake of solar heating technologies."

Duckworth, Windhager adds: "On the positive side the announcement that the RHPP, which was due to close on 31 March 2012, is to be extended with £25 million being set aside, is larger than the original sum allocated for this scheme. The RHPP rate for the installation of a biomass boiler is £950 per household. Of the £25 million, £8 million will be set aside for communities and community groups wishing to install renewable heating and there is also £10 million being made available for social landlords."

It appears the industry does see flaws in the implementation of the RHI and whilst there is general positivity regarding the RHPP, there is still concern about its uptake. One thing is certain, it's now up to the industry to work towards the advent of the scheme to ensure everything is in place when it does finally arrive.

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Sustaining the renewables industry

The cut to the Feed-in-Tariff (FiT) has rocked the renewables sector and questioned the very sustainability of a booming industry, says **Rupert Higgin**, The Green Electrician. He takes a look at the way ahead and whether now is the time to take a more holistic view of energy management

Over the last 18 months or so, the UK's solar capacity has grown by 900 per cent with more than 81,000 homes installing solar PV. But when the government abruptly slashed the Feed-in Tariff (FiT), it not only forced the industry to alter course but also saw many businesses in the sector having to scrutinise their operations in order to evaluate their long term sustainability.

Although the cuts have been a significant blow to a thriving industry, it has not, however, sounded the death knell. There is no doubt that renewables will become more mainstream in the coming years as people start to think about them as a sustainable form of energy production rather than solely for financial gain. In addition, as the industry matures, installation costs will decrease and yields increase making the proposition even more attractive.

But where is the industry at now and what opportunities exist going forward? Currently more than 16 per cent of global energy consumption comes from renewable sources (From 2011 Global Status Report from REN21) and this figure is set to grow as consumers become increasingly environmentally conscious and energy prices continue to rise.

The government's Green Deal initiative also provides a significant opportunity for the industry encouraging private firms to offer consumers energy efficiency improvements to their homes, community spaces and businesses at no upfront cost, recouping the costs through instalments on their energy bill.

The extent of success for renewables providers in the future is reliant upon approaching the industry from a consumer's perspective and perhaps taking a more rounded view of energy management. This is already being partially imposed on the industry by the government's decision to

offer the higher FiT rate to energy efficient buildings.

Taking a look at the complete energy management picture (including energy generation and energy use) should also help the industry gain traction outside the 'only for financial gain' mindset that has dominated consumer thinking during the boom years. After all, one of the best long term investment returns is from using less energy, so efficiency and good energy management should be as important as generation.

When taking a broader view there are so many areas to consider, from the efficiency of boilers and insulating pipes right through to thermostatic controls and the preferred temperature of a home or office space. Naturally, insulation plays a very important role in a home's energy efficiency but less obvious aspects such as voltage optimisation, lighting and the energy used by the electrical goods should also be considered.

Efficiency and good energy management should be as important as generation

Surprisingly, lighting comprises around 8 per cent of a typical household's energy bill (From the Energysavingtrust.org) and cutting this is one of the easiest ways to save energy and therefore money in the home. Changing lighting in a business generally saves around 20 per cent of electricity use. Fitting just one



Facing fact: Rupert Higgin, The Green Electrician, says recent FiT cuts have provided a blow, not the death knell, to the industry

energy-saving light bulb can save you on average £3 a year and, considering there are 650 million inefficient light bulbs in UK homes, there are some considerable savings to be made and opportunities for business.

The other key area is the electrical goods and the role they play in an energy efficient home. Admittedly, it may be uneconomical and environmentally wasteful to replace them all in favour of more energy efficient products but voltage optimisers that lower and regulate the incoming voltage to a constant 220V can bring a 10 per cent greater efficiency to electricity bills and should also be examined.

Although the gold rush that the solar PV market recently experienced is now in the past, what is emerging is perhaps a more complete and long-term approach to energy generation and management. With such a sustainable framework, we are more likely to benefit from a more sustainable industry.

EPC passes the test

The proposal to allow DIY firms' own assessors to conduct EPC assessments as part of Green Deal and then push their own products was always likely to raise concerns over putting profits before customer protection. But is this something that the industry can regulate? **Paul Stephen** reports

With Green Deal for domestic properties still on course for an October launch, the long-awaited details of the assessment process has the potential to become a banana-skin issue for the renewables sector

Integral to the whole scheme will be the assessment that all properties must undergo to produce an Energy Performance Certificate (EPC) – and thus determine the energy efficiency measures needed to qualify for Green Deal finance.

As things currently stand, energy assessors can be employed, and therefore paid, by any Green Deal provider. With securing consumer confidence a key player in the overall success of Green Deal, are safeguards needed to prevent businesses exaggerating the energy efficiency measures required by homeowners in order to maximise profits?

As things currently stand, energy assessors can be employed, and therefore paid, by any Green Deal provider

The Department of Energy and Climate Change (DECC) says that this situation should never arise as authorised Green Deal Advisors will need to be certified by an accredited certification body and signed up to a code of conduct on the Green Deal Register. But is this enough?

"The crucial factor is the implementation of clear regulation to ensure the assessment process is delivered to the highest standards,

and the advice given is consistent to earn the confidence of both the consumer and industry," said **Jim Moore**, Vaillant Group's UK, Ireland and Northern Europe managing director.

"There is sense in the government's proposal for the commercial market to take the lead in order to support a successful launch through an industry wide effort, as it is vital that the big player suppliers complete home assessments to drive mass participation in the Green Deal."

Tony Staniforth, specification sales director at Kingspan Renewables, added: "To help make the Green Deal a success, it is important that there are as many assessors as possible to meet customer demand. With this in mind, as long as they rigidly stick to current guidelines (including declaring affiliations and seeking consent from customers for any additional services offered before the



Commanding respect: Jim Moore, Vaillant Group, says that providing consistent advice and maintaining high standards will be the key to EPC assessors earning consumer confidence

"I always tell people to get three quotes anyway because the first one is unlikely to be the best deal."
Cathy Debenham, founder, YouGen

assessment), then being employed by a Green Deal supplier needn't be an issue."

Paul Smith, director of Gloucestershire-based installers 1st Call Renewables, also sees no cause to separate assessors from providers, adding: "Thousands of people were trained up for EPC assessment and then had no work when the government ditched the homebuyers pack. If it must be done then surely these are the people to do it; I can't see how they can be independent from the companies that would pay them."

The advice from YouGen, the renewable industry's consumer information website, is that consumers should continue to get a number of quotes and never assume that the first Green Deal advisor will always offer the best deal.

YouGen's founder, **Cathy Debenham**, said: "My feeling is that as long as the EPC system is properly policed, then it is ok. My understanding is that you would start the Green Deal process by getting an assessment that is independent and can be taken to any other provider. I would tell consumers to get informed. Use the information and go out to choose their preferred installers.

"I always tell people to get three quotes anyway because the first one is unlikely to be the best deal."



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Fair share

R-ECO says it is the UK's only co-operative installer of renewable energy systems. **Claire Martin** explains

As a worker-owned co-operative, R-ECO creates meaningful and sustainable employment with every employee owning an equal stake in the business and having a say into how the business is run. This model is unique in the market place and this resilient and progressive approach to business has given R-ECO three times the market share of the national average for solar energy

installation companies. (R-ECO has installed over 400kW of solar PV throughout the UK to date - 0.12 per cent of the national installed solar PV capacity.

As a co-operative, R-ECO ensures business objectives are not just focused upon "watering-down" customer interaction and pushy "double glazing" sales techniques. Instead time is invested in ensuring customers receive a personalised and thorough experience, taking into

account their short and long term needs. R-ECO acknowledges that every project and every customer is unique and our goal is to create a service our customers boast about.

Feed-in Tariffs have been subject to continuing cuts since the renewable energy 'boom' over the last couple of years but unlike many renewable energy companies, R-ECO has expanded and grown despite these significant government

challenges beyond its control. R-ECO now employs over 20 core full-time staff and has over 15 part-time or sub-contracted staff. This is a vast change from 2008 when R-ECO was born as a virtual 'office'.

For R-ECO, the last few years have seen a shift in the market demand for solar PV; from mainly private household installations eager to cash-in on FiTs, to large-scale commercial, agricultural and importantly

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Fair and share: R-Eco is a worker-owned co-operative, in which every employee has a say and stake in the company

community-orientated projects. This year will see a shift again into the diversification of renewable technologies to include solar thermal, wind and biomass and in line with the new government's requirements for buildings to meet a certain level of energy efficiency; the offering energy assessments and consultancy.

Community involvement has become an integral part of R-ECO's company ethos, not only from a co-operative point of view but also as method of offering advice, education and support to communities who wish to make their own decisions about independent energy sources.

R-ECO is actively involved in Transition Towns and community events, and has just completed a large solar PV installation on Gloucester Resource centre as part of Transition Cheltenham, fitting a 44kW roof arrays in under a week. The efficiency of R-ECO's installation has become renowned in the renewable energy market; completing a collective 147kW solar install over three of Cornwall

College's campuses in under two weeks. This project was also an example of R-ECO's desire to create sustainable business, as 20 additional PV panels were donated to the college after installation for students to learn more about renewable technologies. R-ECO continues to be involved in commercial community projects and is proud to be a part of Heartlands; a new 32 million pound community based development and World Heritage site in Cornwall where 64kW has been installed; contributing to its carbon neutral status.

R-ECO continues to be a part of the growing community renewable energy movement, at the forefront of renewable energy technologies and prepared for government curveballs. In addition this year will see R-ECO gearing up to offer the government instigated Energy Assessment, ensuring that buildings have to meet a suitable standard before renewable energy systems can be installed.

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Future looks bright

Thomas Farquhar, Easy MCS, on why he thinks the future is looking bright for renewables and the opportunities in store for installers

On March 26th, Greg Barker, the climate change minister, announced the delay we had been expecting on the introduction of the Renewable Heat Incentive (RHI) for domestic properties. Due to commence in October this year, it has now been delayed for a launch date in summer 2013. Although this could be seen as bad news, the announcement does bring clarity to the timeframe installers have in which to prepare for the scheme's launch. On a more positive note, the Renewable Heat Incentive Premium Payments which provide an upfront payment for householders who install a renewable heat technology have been extended from 2 April to fill the gap until the introduction of the RHI next summer. This means that renewable heat installers can continue to offer customers the upfront payment and then they can apply for the RHI when it commences next year.

The Green Deal is also due to commence in October this year. This will provide property owners with low interest financing to cover the costs of energy efficiency improvements. In conjunction with the Energy Company Obligation (ECO), it will provide a grant to enable a householder to reach the required energy efficiency levels to take advantage of the Green Deal. The ECO will cover energy improvement methods such as cavity wall insulation and double glazing with the running cost savings then covering the costs of servicing this finance.

Once a certain energy performance has been achieved the Green Deal will then cover renewable technologies such as solar PV. Installers interested in becoming Green Deal certified will need to operate to minimum quality standards similar and possibly related to MCS, to ensure not only quality installations but also consumer protection. Additional training will be required for installers looking to be able to provide the Energy Performance Certificates which will be the crucial element of the Green Deal. This will have some



Time to train: Thomas Farquhar, Easy MCS, says the changes to MCS and Green Deal highlight the need for quality training for new installers

crossover with the Feed-in Tariffs which now also have the EPC requirement, so solar PV installers would benefit greatly from a diversification into this area.

MCS

2012 has already seen some changes to standards from REAL & MCS, further solidifying the scheme's reputation as a mark of high quality which will lead to even higher consumer confidence in approved Installers. Changes include the structure and format of the clauses within MCS 001, and the introduction of the "Advance Deposit and Workmanship Warranty Scheme" with REAL and a number of changes to the MCS Heat Pump Standard, MIS 3005.

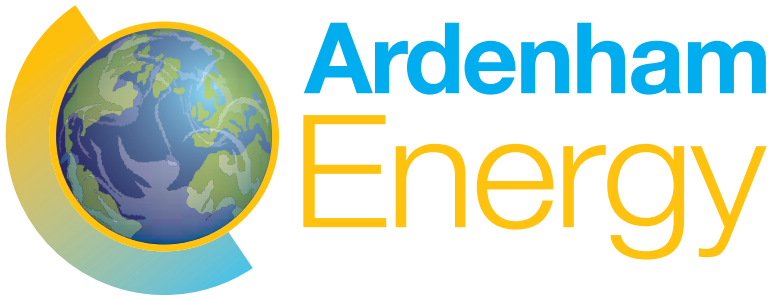
Training

The changes to MCS and proposals for Green Deal both highlight the need for high quality training for new installers. The latest National Occupational Standards, which renewable training courses now have to be mapped to,

have considerably increased the skills and knowledge that have to be instilled into each candidate.

For new installers this means a mapped training course in their chosen technology, is paramount along with associated qualifications such as; Part L Energy Efficiency. The key for new installers is to ensure their investment into training is money well spent, this means a certified course that is acceptable on your MCS or Green Deal assessment and not a non-certified course claiming to offer equivalent qualification. If in doubt it is always worth checking with your assessing body prior to assessment, alternatively Easy MCS can give advice.

Mapped courses on technologies such as solar PV and solar thermal are available from most reputable centres such as the Easy MCS Training Academy which offers training not only on new standards but also on equipment rarely seen in your average centre, ie. a full height, purpose built outdoor training roof to give a real world training experience.



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Driving forces

FiT's aside, **Steve Pester**, BRE, looks at some of the other elements that could help boost the uptake of PV

Everybody knows that since the start of the Feed-in tariff (FiT), the main driver for fitting PV has been profit - both for customers and installers. But with the on-going FiT reductions, perhaps some of the less obvious drivers will surface again:

- alleviation of fuel poverty
- reduction of carbon emissions
- reduced dependence on the big power and gas suppliers, UK and foreign
- personal lifestyle statements
- green credentials for organisations,

These drivers do not have the tsunami-like power of the FiT, but they

were nevertheless evident before the latter smashed into our market shores and retreated.

Building-Integrated Photovoltaics (BIPV) is a technology which did not seem to feature very highly in the many discussions on 'best bang for buck' we had with clients last year. Now that we are no longer all totally focussed on fast profits and FiT deadlines, perhaps there is room for reflection on some of the advantages BIPV has to offer in terms of enhancement of building aesthetics, solar gain control, thermal insulation, roof or facade material replacement, enhancement of passive ventilation; oh, and generating electricity! PV which is properly integrated and forms a natural part of the building has got to be the future – it's just that not many of us are thinking that way yet.



In the know: Steve Pester, BRE makes the case for BIPV

If you'd like to know more about BIPV, pick up a copy of "Building-integrated photovoltaic systems - challenges and opportunities for manufacturers and specifiers", ref IP11/12 from the BRE bookshop: www.bre.co.uk/bookshop, or come and listen to the experts at our annual BIPV conference on 17 October at the Royal Institute of British Architects, London.

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A hot issue

Guy Cashmore, Kensa looks at performance issues with domestic hot water and heat pumps



Performance issues with domestic hot water cause many technical calls, especially where 'off the shelf' indirect cylinders are combined with larger size heat pumps.

Many issues relate to size of the coil within the cylinder. These coils need to have sufficient surface area for heat transfer and be large enough in internal diameter to allow sufficient flow rate to meet the flow requirements of the heat pump - two distinct requirements.

When choosing a cylinder to go with a heat pump, follow the manufacturers' recommendations. A good check is to allow a minimum 0.2 m² surface area for each

kW of heat pump output. So a typical 10kW heat pump needs a minimum 2m² coil. A typical standard unvented cylinder will have a 1m² coil, so you can see how things go wrong.

Another issue is with finned or 'integron' coils in cylinders. These usually only have the claimed surface area on the outside of them, rather different from a true coil and they simply don't work as well.

Heat pumps work best with high flow rates going through them. Follow the manufacturers' recommendations, but aim for three litres of flow per minute, per kW of heat pump output. The installer needs to check the pressure drop caused by the

coil is not too great to get this flow rate and using a larger diameter coil is preferable to fitting a bigger pump!

Larger houses often use pumped loop DHW systems to provide instant hot water, typically the loop return goes to a mid point connection on the cylinder. These systems work fine with boilers but can cause a lot of issues where heat pumps are used. The through pumping stirs up the natural stratification within the cylinder, causing the incoming cold water to mix with the hot, so the delivered temperature drops off rapidly and because the water wasn't quite so hot to start with (compared with a boiler), it rapidly becomes too cold to use.

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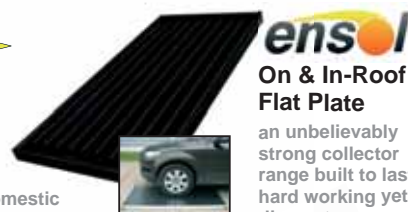
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Talking Ten to the Dozen

Leading renewable experts reveal their opinions

What do you predict will be the most significant development in renewables within the next two years?



Andy O'Leary, **Sibert**

"Change provides opportunities for new technologies to be implemented. We feel that one area of future focus will be Smart Energy Management. Enabling the consumer to monitor and manage energy generation and consumption in real-time is imperative to the continued integration of de-centralised energy generation within the domestic sector."



Simon Hollidge, **Vphase**

"Over the next two years, I predict that most innovations will be centred on the increased efficiency and subsequent reduction in size of existing technologies. This in turn, will lead to continued reductions in manufacturing costs which can be used to accelerate greater volumes within the sector. The efficient use of energy produced will continue to be key."



John Meadows, **SchottUK**

"The recent dramatic price drops in PV modules will reduce causing installers to focus on the full life performance of systems rather than just the initial price. This will give increasing importance to module properties like durability and build quality as well as making yield just as important a criterion as efficiency."



Harry Shepherd-Cross, **Ardenham Energy**

"Within two years, solar PV will achieve grid parity with the domestic retail price of electricity. If net metering was available it already would be. Currently the owners have to export their surplus power @ 3.1p/kwh even though their electricity supplier will sell it straight on to their neighbours for 12.5p/kwh - a 400 per cent profit for doing nothing."



Jan Jacobs, **REC Solar**

"The solar industry has witnessed rapid developments, which will continue over the next two years. With competitive advantages over other low-carbon alternatives, the potential is enormous. Key developments include bringing solar to new markets, looking to reduce energy consumption, and increased awareness for solar to become even more sustainable."



Paul Gribben, **Renewable Resources**

"Looking at solar PV, the key development will be decreasing module prices driven by reduced material costs and reflecting the growth in module production that resulted in overcapacity. Advances in cell technology and efficiency will bring the cost of solar energy closer to the cost of fossil fuel energy, pushing renewables quickly towards true grid parity."



Adrian Walker, **Hoval**

"The most significant impact on renewable energy will be the continuing rise in fossil fuel costs caused by Middle East instabilities, moving renewable energy from the carbon emissions reduction camp towards a mainstream, more secure energy choice. To assume the Middle East will quietly sort itself out seems like a pipe dream, if you'll pardon the pun."



Rupert Higgin, **The Green Electrician**

"Renewables will become much more mainstream in the coming years as people start to think about them as a genuine form of energy production rather than mainly for financial gain. As the industry matures, prices will decrease, yields increase and with viable battery backup, renewables will really come into their own."



Paul Stewart, **Air Source Hot Water**

"The biggest innovation I see over the next two years will be education and a focus on energy recycling. Financially motivated customers will learn how much money is wasted heating water and pouring it down the drain. Air source heat pumps will come inside to recycle the warm air we normally vent outside."



Mark Thompson, **Aceon**

"As an inventor and manufacturer of innovative products in the solar market, we expect to see exciting new products from other UK companies with eco-credentials like our partners the Green Roof Tile Company. The consumer will also grow increasingly aware of the social impact and cost saving achieved by using renewable products."

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Counting the cost

Inferior EPC surveys could prove costly warns **James Dodd**, the National EPC Company

Independent provider of Energy Performance Certificates (EPC) and energy surveys, the National EPC Company (NEPCCo), is warning PV installation firms about the risks of obtaining inferior EPCs.

New guidelines introduced from 1 April now require residential and commercial buildings to reach an EPC category D to be able to claim the higher rate Feed-in Tariff (FiT).

NEPCCo's business development director James Dodd said: "Customers run the risk of spending several thousands of pounds on solar installations only to find out they do not meet the minimum EPC requirements. For example, if, after we have carried out an EPC, an installer decides to change the specification of a job, the revised energy saving calculations may change the entire banding of an EPC. This would be of particular concern for those properties only reaching a marginal D rating with the initial design."

NEPCCo provides installers with two Feed-in Tariff (FiT) EPCs. The first one identifies a property's current EPC rating, then a second estimated banding is given for the same property with a proposed PV array installed. In both cases, if a banding fails to reach a D rating, NEPCCo will advise an installer of exactly what measures will be required to upgrade the banding. Problems may arise if recording systems are not managed correctly or if incorrect calculations are made, resulting in serious delays for installers.

Dodd continues: "It's important for EPC providers to then make recommendations and provide costs to installers for remedial work so that delays can be avoided."

Timing crucial

The time it takes to issue an EPC is crucial for installers. NEPCCo will deliver 'D' banded EPCs within 24 hours following an installation. If remedial works are required to upgrade a banding then an EPC will be issued within 24 hours following proof that the necessary work has been completed.

EPC companies are required to manage and store proof of upgraded work and make information freely available should accreditation bodies wish to inspect the validity of an EPC. Companies unable to produce evidence risk invalidating an EPC.

Chief operating officer, Justin Molloy from Solar Direct Savings, said: "The quality of solar PV surveys can vary tremendously. Since working with The National EPC Company we have noted a substantial improvement in our PV surveys. Our installers rely heavily on accurate and timely surveys being carried out so that each job can be completed efficiently without the need for re-design work. The National EPC Company's network of regional surveyors also allows us to turnaround installations within our 28-day schedule."

DECC estimates that almost 50 per cent of domestic properties in the UK currently fall below the EPC category D standard. With government funding initiatives such as the Green Deal, Renewable Heat Incentive (RHI) and existing FiTs, installers will have the opportunity to diversify and cross-sell their services.

Q&A

Mark Elliott

Energeno



REI: What have you got planned for this year?

ME: Already this year we've seen growth in demand. The rest of the year is set to get busier as we launch new products designed to ultimately, strengthen the installer offering. From 'free electricity' switches to inverter independent monitoring systems – these are products which enable installers to empower customers by helping them to get the most out of their installations.

REI: What do you see as the growth areas in renewables?

ME: I think it's in developing more solutions to enable consumers to get the returns on their investment they've been promised and achieving good returns on community solar projects too. It's been an unsteady time for the renewable sector of late with the debacle over FiTs. As an industry, we need to focus on raising consumer confidence.

REI: How is your own company cutting its carbon footprint?

ME: We continue to reduce packaging for our products and have also introduced a recycling programme for unwanted/spare parts. As individuals, the Energeno team is also taking extra steps to reduce our home energy consumption – we're each working towards a 10 per cent reduction as part of the 10:10 campaign.

Mark Elliott is director of operations, Energeno

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Business as usual?

With the news that German solar panel manufacturer Q-Cells filed for bankruptcy, it seems European solar manufacturers are in for tough times ahead. **Rob Denman**, TGC Renewables, discusses

The number of businesses that have recently shut up shop is concerning: Q-Cells, Solar Hybrid, Solon, Solar Millennium, and in the US, Solyndra.

The reasons for the demise have been documented. Austerity-hit European governments have been forced to roll back financial commitments to renewable energy technology, leading to a fall in projects and a drop in demand for solar panels.

This, coupled with Chinese exports that can be manufactured and exported for less than the cost of European and US products, means the market was always going to be tough.

The effect on the UK?

What does this mean for UK solar developers and installers? The cuts to the Feed-in-Tariff (FiT) made by the UK government were predicated on low solar panel prices, caused, it was said, by a glut in the market. With the exit from the market of a number of manufacturers, there will be a contraction in supply. How this reduction in supply affects the market will be key.

Keeping prices low

The amount of technology available in the market worldwide, should keep panel prices low. It's important to remember, however, that the Chinese intend to develop a large internal market, which could certainly take up much of the non-tier 1 product and maybe even some of the tier 1. This demand in China and other markets such as India could create a contraction in supply and cause the panel prices to rise rather than fall in the UK. China has stated its aim to drive towards grid parity and the government cannot assume that prices will continue to fall at the rates we have seen in the last 12 months.

Economically, the issue is probably one of market correction. Those firms least able to compete due to production inefficiencies, or who, like Solyndra, backed the wrong technology, will be forced to exit the market.

Whilst nobody welcomes the prospect of failed businesses and unemployment, it is a sign that the industry is maturing. Under times of financial austerity, the sector has to prove it is capable of providing a clean and affordable alternative.

For UK developers, in the short term it's likely to be business as usual. Manufacturers in the Far East will provide panels at affordable rates. As long as these supplies are backed by solid warranties and after-sales support, the UK industry should be able to set its sights on grid parity – the issue is whether government works with us to achieve that goal in a realistic time frame.

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A credit to you

There has been much criticism about the lack of credit available to small businesses and the banks have been bashed for not lending enough. However, **Jeremy Malindine** from renewable energy expert Puragen, paints a different picture

SMEs do face the challenge of obtaining credit – whether it's an established business that needs capital to help it expand or an entrepreneur that wants to start up. However, there are numerous pots of money that SMEs can tap into - it's just a case of knowing where to go and as some are not that well publicised, it can seem like there aren't many options available.

This year's Budget saw the government attempt to ease credit availability and move away from reliance on the banks. Young entrepreneurs will benefit from taxpayer-funded microfinance loans and the Department of Business is establishing a pilot Youth Enterprise Loan Scheme. Very small companies can enjoy a new relief since April with the Seed Investment Enterprise Scheme, which means individuals can claim up to 78 per cent tax relief on investments up to £100,000 into firms with net assets below £200,000.

In addition, a new £20bn credit easing scheme has been established to help small companies and make credit cheaper for SMEs that would already get funding from the banks. However, its downfall is that it doesn't fund new companies.

Starting up a company or expanding one can sometimes see like a daunting challenge. Franchising offers a secure way for an entrepreneur to enter a market,



Money matters: Malindine deals with high street banks to fund franchises

particularly one which may be competitive or just taking off such as is the case with renewables.

Renewable technologies are currently enjoying a boom with more homeowners and businesses switching onto the benefits they offer. So, now is a great time for anyone starting up a business or expanding an existing one, to consider entering the renewables market.

Operating as a franchise can help a business overcome some of the obstacles which prevent it from expanding such as lack of time, people, skills and finance. When it comes to funding a franchise, companies such as Puragen have deals with high street banks. For example, its franchisees can access the £100m dedicated franchise fund from Natwest and RBS.

So, the main message to SMEs is don't be afraid to start up that dream business or implement that expansion plan to grow your existing enterprise. There are plenty of financial options available to support your activity, whatever your situation.



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Pollard's Patter

THROUGH THE EYES,
AND GLASSES, OF
TIM POLLARD
HEAD OF
SUSTAINABILITY,
PLUMB CENTER



Spring is springing and with it, lots of activity in the renewables world. A significant step forward has seen the extension of the Renewable Heat Premium Payment (RHPP) scheme for another year with an increased budget of £25 million. In this second phase, greater emphasis will be given to both social landlords and communities. An interesting development is the introduction of a requirement to make heat pump installations 'ready' for heat meters. The government is keen to get wider evidence of in-situ performance of appliances in comparison with stated performance achieved in testing. Of course, there are many external issues which will have an effect on performance including building type, insulation, location and use.

However, I am very keen to see some wide-scale monitoring to help us to understand how effective heat pumps can be in providing really practical solutions in the UK. Whilst the RHPP is still limited to off-gas locations for everything except solar thermal installations, this still provides a potential market of around 3.6 million households, many of whom are struggling with the costs of alternative fuel costs.

We also now know the timeline for the introduction of the domestic Renewable Heat Incentive (RHI) which will enter consultation in September, for introduction in Summer 2013. The domestic RHI is much needed to encourage take-up and the gestation period has been disappointingly slow. However, it is crucial that we end up with a sensible scheme giving installers and householders the confidence to invest in a renewable future.

As I reflect on another fantastic Ecobuild for Plumb Center, a still credible PV market and very encouraging traffic at our training centres across the UK, I remain optimistic that our industry will continue to flourish as long as we adapt to changing circumstances. To quote Mr Spock - live long and prosper!

Two minutes with . . .

Who are you?

Richard Waxman

What do you do?

I'm the chairman of The Waxman Group.

Our companies Waxman Energy and

Waxman Renewables specialise in the distribution of a wide range of solar PV, biomass, solar thermal systems and air source heat pumps.

Where are you?

At our 40,000 sq ft office and warehouse complex in Elland, West Yorkshire.

How's business at the moment?

During the past 12 months we've experienced significant growth in our solar PV business. The recent drama surrounding the government's legal action, attempting to retrospectively reduce the feed-in tariff (FiT), added significant uncertainty to the sector, as have the latest FiT cuts. Following a relatively slow level of activity in March, we are now anticipating an increase in business prior to the forthcoming FiT cuts.

How could it be better?

Clearly the cut in the FiT was designed to reduce the upward surge in demand for PV. Theoretically it would be better with a higher FiT but we have to be realistic and work within what has been granted, which is still a significant help to the industry. More certainty about the future FiT levels, as well as more clarity about the government's long term renewables strategy, would be a great help for us and I guess all those involved in the solar PV industry.

Who do you admire in renewables?

On a company level I admire SMA Solar Technology, which has the most technologically advanced factory I've had the pleasure of visiting. In terms of individuals it has to be Thomas Wedde, SMA's former UK sales development manager. He gave us the confidence to believe the potential growth rate for renewables in the UK could be as significant as in other markets. His advice has always been appreciated and respected.

What's the best business advice you have received?

It was from my father actually. He said that you should always consider the downside risk rather than the upside potential. That is, what is the worst thing that can happen and are you able to accept the worst case scenario? As a result, we have diversified carefully, taking risks but never risks so great that they could jeopardise the company or the group.

How are you going green?

I'm very happy to have installed PV panels at my home, and we have also completed two installations at our head offices, the larger of the two being 200 panels. We are also installing biomass boilers to heat our new offices. It's exciting to be using some of the technologies we're selling, which makes us feel a part of the renewables industry.



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Departing Newman fires final salvo

Former Solarcentury chief executive, **Derry Newman**, has launched a parting shot at the UK's largest energy firms for their reluctance to embrace renewable electricity generation, says Paul Stephen

The 54-year-old, who stepped down in April to spend more time with his family, has been candid in his criticism of the UK's energy suppliers for 'fighting' the growing financial and moral case for renewable technology whilst maintaining the status quo of large scale fossil fuel consumption.

"They are not thinking forward but there will come a tipping point where energy companies will realise that renewables are not going away," said Newman. "They will eventually stop fighting it like the tobacco companies used to resist medical reports about the effects of smoking.

When we reach grid parity, renewable energy will be a no-brainer

"When we reach grid parity, renewable energy will be a no-brainer. Renewables will become a big part of the energy industry and will grow and grow. In sunnier climates they are already there such as in Italy where there is no subsidy at all. It will happen in the UK too, like a line of latitude that is steadily moving north across Europe – an unstoppable wave.

"Installers are still in pioneer territory as one of the few industries still subject to random government intervention. We are also still dealing with a public who is uncertain and an incumbent energy industry.

"Those battles for a small British industry

to take on are not trivial and my hat goes off to those who continue to weather those storms."

One of the most significant developments to occur during Newman's time at the helm of Solarcentury was the company's decision to take the government to court over its plans to halve Feed-in Tariff (FiT) payments before the end of the official consultation period in December. This protracted legal row has left him with a mixture of pride and regret, he said, when looking back at his five year tenure.

He said: "The court case was a sad episode. We did not oppose the new level of FiT, just the way it was being implemented. It was with great reluctance as renewable energy companies obviously don't want to spend money on lawyers when it should be spent on innovations and new products.

"I had a letter from a 77-year-old pensioner. His PV installation became MCS certified on December 14 and so he thought he had lost out on the higher tariff. Here was an example of somebody trying to do the right thing and being let down by the government, which is why we went to court.

My decision to retire was a very personal one

"I do think that the appeal was a sad waste of taxpayers' money. FiT will be here for a few more years yet and the industry will still develop but not grow like it might have done."

Looking ahead to the future, Newman



Continuous service: Solarcentury's former ceo Derry Newman will continue to serve the solar industry in a charitable capacity

added: "My decision to retire was a very personal one. My wife has a medical condition and looking after her is not compatible with the things a ceo has to do. I have to be active internationally and I cannot reconcile that with my family or my role at Solarcentury.

"As for my future plans, Solarcentury started up Solar Aid in 2006 with an ambitious goal to alleviate poverty in Africa by bringing renewable power to some of the world's poorest people.

I will continue to assist them as an advisor on a part-time basis."



Northern soul

Retrofitting has taken on a whole new meaning following **Sundog Energy's** conversion of an Edwardian mill to green technology

March of time: Old meets new as Oldham's industrial heritage is put to good use generating solar power

Built in 1908 when Manchester led the world in textile production, Oldham's Devon Mill has fully embraced 21st century technology with the completion of a 143.3 kWp PV rooftop installation.

Sundog Energy installed over 600 Trina Solar TSM-PC05 235W multicrystalline PV modules which should generate 110MWh of electricity per year whilst saving around 65 tonnes of CO₂.

The array will produce power to service the 220,000 sq. ft. mill building and provide an income under the Feed-in Tariff (FiT) for the next 25 years. Three 50kW SolarMax inverters from Swiss manufacturer Sputnik Engineering facilitate connection to the grid.

English Heritage restrictions precluded penetration of the roof so a ballasted system was used, carefully computed to be heavy enough to handle the significant wind-loading, and with a footprint designed to spread the weight and safeguard the roof membrane.

At Devon Mill's open day, Oldham's deputy mayor, Olwyn Chadderton, said: "As with other mills across the region, this mill is steeped in industrial heritage. This building originally contributed to national progress and 100 years later, it is now part of the future once again.

"This conversion will reduce carbon emissions in the local area, help limit our dependence on energy from overseas and contribute to a sustainable future.

"It is projects like this which will make sure that our descendants do not inherit a mess not of their own making."

Oldham West and Royton MP and former environment minister, Michael Meacher, added: "This development in Oldham is not only significant for Oldham and the surrounding area but also carries national significance.

"It is a wonder to behold and takes the prize for one of the largest solar arrays in North West England. It will make a major contribution to the reduction target we have set of 80 per cent by 2050 and using other rooftops on this scale will greatly quicken that process."

Get the measure

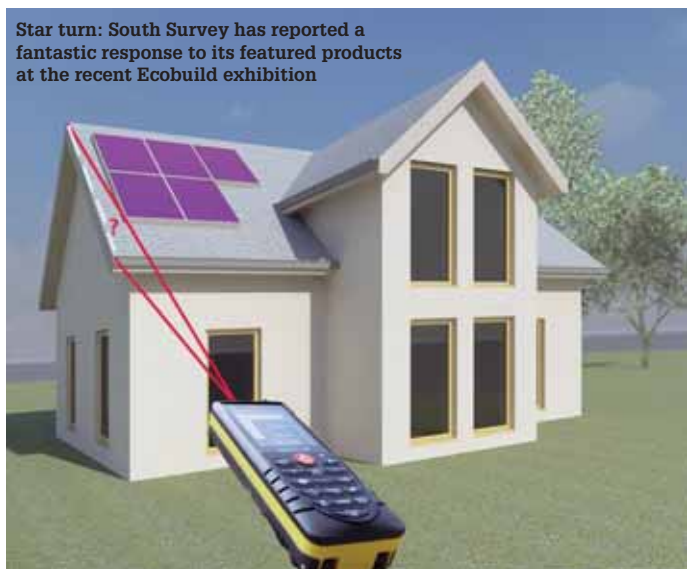
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South Survey is a web-based company established by surveyors with years of site experience. Since then the company has developed an extensive stock of equipment for any aspect of the building industry.

Star turn: South Survey has reported a fantastic response to its featured products at the recent Ecobuild exhibition



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Cheshire Fire and Rescue Service has installed solar panels using **Phoenix Renewable Technologies** to the flat roofs of its headquarters building in Winsford

Following an intense tender process and detailed design consultation Phoenix Renewable Technologies of Staffordshire were chosen to complete the project for the fire service.

The installed system consists of 192 x Suntech STP245S-20WD solar panels connected to 5 KACO Powador TL 10 inverters. The panels are mounted on K2 A-frames at a pitch of 15°. The first roof had 120 Suntech panels installed together with 3 KACO Powador TL 10 Inverters. The second roof installation consisted of 72 Suntech panels with 2 KACO Powador TL 10 inverters. The inverters convert the DC electricity generated by the PV systems into AC electricity that can be used to power systems within the headquarters.

It is estimated that the system will generate 41,549KWh per year and has a power output of 47.04KWp. With the successful completion of the system at Cheshire Fire and Rescue headquarters, Phoenix Renewable Technologies has been awarded two more installations at the Winsford and Runcorn fire stations.

The installation of the system onto the Winsford Fire Station consists of 40 LG

These installations demonstrate the strength of our commitment in reducing the impact the organisation has on the environment

250S1C panels with a Fronius IG Plus 120V-3 inverter secured to the flat roof using Avasco roof mounting equipment. The peak power output of the system is 10kWp with an estimated annual generation of 8,917.0kWh.

The Runcorn Fire Station installation is due to be completed in two phases. Richard Ost, assistant chief fire officer said: "These installations demonstrate the strength of our commitment in reducing the impact the organisation has on the environment."



Hot stuff: Cheshire Fire and Rescue Service is pleased with the PV panels on its Winsford and Runcorn stations

An Easy solution to FiTs

The EasyFITCo offers a service to installers helping them complete Feed-in Tariff paperwork for their customers. The company says it is primarily aimed at MCS approved installers who want to provide a complete service for customers yet reduce administrative effort. It is also happy to assist private individuals seeking help with registration.

Users of the website are able to submit the necessary information via a secure user area. EasyFITCo then takes control of the process, contacting end customers to gather and clarify information such as mpan numbers and proofs of ID in order to complete and file the FiT registration forms on behalf of busy installers. Often the process is completed within 48 hours and progress is viewable from the individual user area.

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Saving grace: Tim Reed, owner of Tredethick, is pleased with the savings from his biomass investment

Country file

With a PV system and a wind turbine already in place, **Tim Reed** opted for biomass to replace the costly oil boilers at his farm and holiday complex

Tredethick Farm is a traditional Cornish family farm which diversified into the holiday sector twenty years ago when the farm buildings were converted into cottages. The complex, which includes a swimming pool, farmhouse and eight holiday cottages, was, until recently, heated by ten oil boilers. As oil prices began to rise dramatically, owner Tim Reed decided that the annual cost of the heating system was becoming unmanageable.

50 per cent of the complex's electricity supply is achieved through a wind turbine and a solar PV system which was installed in time to qualify for the higher Feed-in Tariff payments. It made sense to look at another renewable option for the heating and hot water, so the owner researched the possibility of biomass using miscanthus, or elephant grass. Miscanthus is an ideal biomass fuel as it is a perennial energy crop that is harvested annually and produces very low carbon. It uses no artificial chemicals or fertilisers, increases bio-diversity of the land and also reduces the reliance on woodland for biomass heating.

There are various grants and funding available for growing miscanthus, and the site

has plenty of land available for this purpose. So the owner contacted Exeter-based renewable energy specialists Fair Energy. After carrying out a site survey, the company suggested replacing the 10 existing oil boilers with one 200kW biomass boiler which has no requirement for fossil fuel back-up. The system comes under the umbrella of district heating, where one boiler supplies many properties.

The installation was carried out in two phases. The first phase was the construction of the main plant room and fuel store which took approximately two weeks. The oil tanks were removed after any remaining oil had been drained and siphoned into one tank to be used up.

The second phase over three weeks comprised the digging of 350m of trenches into which pre-insulated pipework was placed at a depth of 900mm, where the ground temperature is around 15°C, keeping as much heat as possible within the pipe. The ten building connections were installed, along with pressure testing, internal building works, back-filling and the reinstatement of the concrete.

There were, on average, four workers on-site, all of them bar the digger driver, from Fair

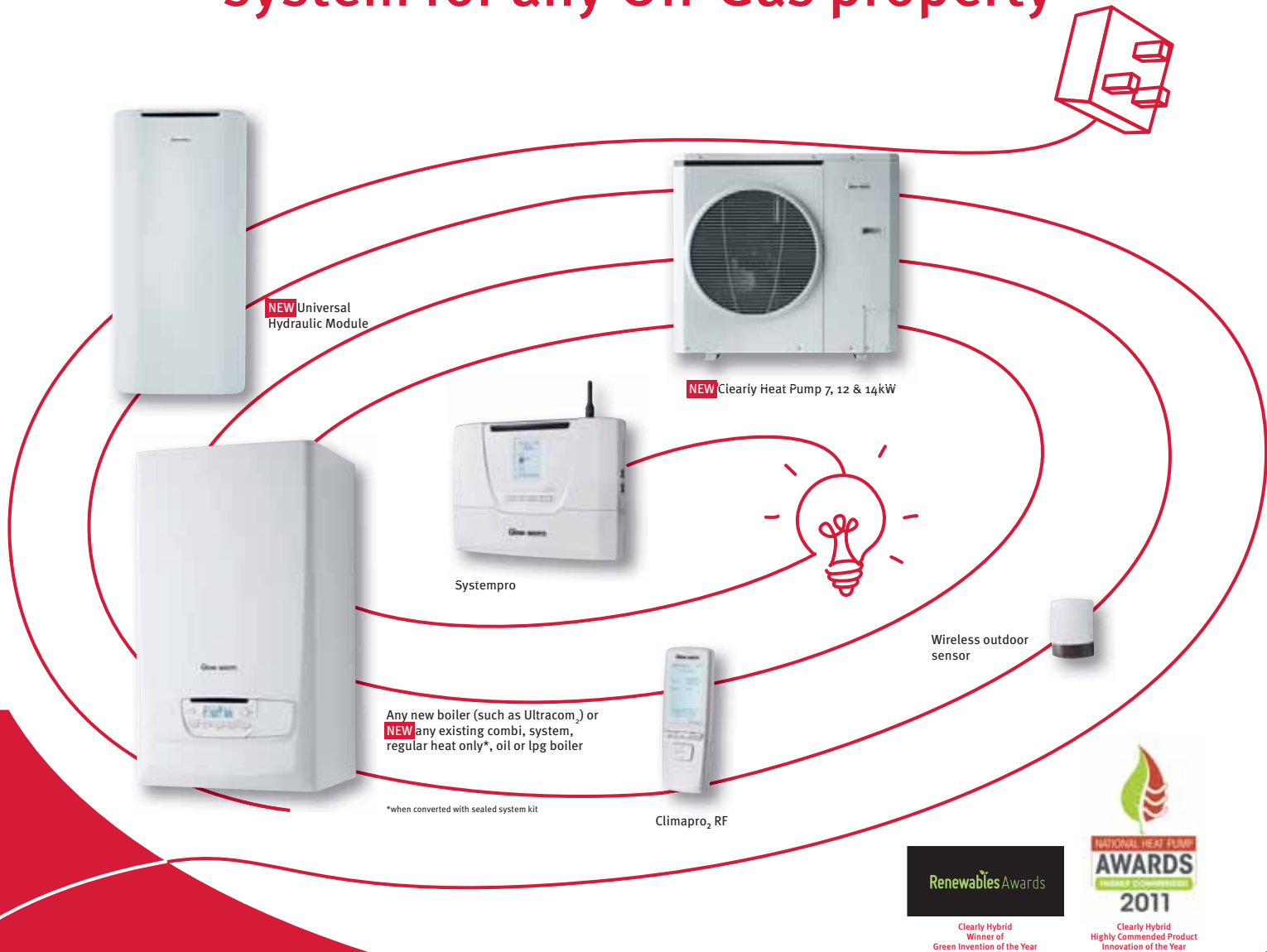
Energy. Lead engineer Chris Jarvis said the installation went without a hitch: "There was the pressure of time to get the boiler in, but we managed to stick to the timescales."

Although the miscanthus supply is currently being brought in, the first crop is being planted this year. In two years' time a 50/60 per cent harvest will be achieved, and in the third year this will rise to 100 per cent, making the heating and hot water system fully sustainable. The crop should last for between 20 to 25 years without any requirement for adding fertilizer.

The installation is being put forward for payments under the commercial Renewable Heat Incentive (RHI) scheme. When this goes through, the holiday business at Tredethick could not only earn from the RHI, but save on fuel costs by up to £7,000 through switching from oil to miscanthus.

Owner Reed says "20 years ago we started diversifying the family farming business by creating a holiday complex. With our wind turbine and solar PV providing 50 per cent of electricity and now our renewable energy system supplying all of our heating and hot water in what will be a sustainable manner, we are well on the way to realizing our goal to become self-sufficient."

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*When Clearly Hybrid system is used to replace a standard efficiency boiler

Broadcast news

The Radio Two and Radio Six music DJ, **Mark Radcliffe** has joined the green revolution to install a biomass boiler in his 200-year-old Cheshire farmhouse

The 53-year-old who lives with his family at Whitley, near Warrington, turned to North Wales-based Carbon Zero UK for his new biomass boiler system. Gareth Jones, managing director of Carbon Zero UK, said: "The Woodpecker 25 kilowatt boiler is the Gibson Les Paul of heating systems. It's 95 per cent efficient and works off wood pellets from virgin timber to provide cost-effective renewable heating."

Radcliffe joins an impressive list of clients for the St Asaph company who have installed renewable energy systems, ranging from solar power, biomass, air and ground-source heating to rainwater harvesting, for Glyndwr University at Wrexham, Calderstones Hospital, near Clitheroe, and even a Buddhist sanctuary on the Llyn Peninsula in Gwynedd.

Man City fan Mark, from Bolton, who is

married with three daughters, lives in a three-storey Grade Two-listed former farmhouse in open countryside near Warrington, an easy commute to the studios in Manchester from where he presents his daily show on Radio Six as well as his late show on Radio Two on Tuesday nights.

The Sony Award-winning DJ said: "After the last two very cold winters I wanted to do something about the ever-rising cost of oil.

"When we first moved in here 12 years ago it would cost £200 to fill the two big oil tanks but last winter it was £900 and they had to be filled more than three times a year.

"This does represent a big investment because the boiler is £10,000 but it has to heat a lot of house and I wanted to keep my old radiators because they fit in with the property.

"It could help me save up to £2,000 a year and in that case it will soon pay for itself.

"If I can do all that, save money and save the planet then it's a victimless crime and we're all happy."

Radcliffe gets a monthly delivery of wood pellets in 10kg bags from Carbon Zero Fuels who sources them from Verdo Renewables.

Jones said: "They are from UK forests and are virgin timber, not recycled, and the monthly delivery is just part of the service.

"For people like Mark, biomass makes sense especially as there was a £950 payment through the Renewable Heating Incentive and because it is easily fitted to existing heating systems so you don't have to have everything stripped out which means massive disruption and all sorts of redecorating issues.

"It's an ideal solution but biomass is also a good option for commercial properties such as farms and rural properties where heating options like gas don't exist."



Tune in: Radio Two DJ Mark Radcliffe, left, with Carbon Zero UK's Gareth Jones and his new biomass heating system.

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Knowledge: Biomass

Cabin crew

Windhager has launched the Windhager BioCABIN as a pre-packaged plant room for larger biomass heating installations

The new BioCABIN is an innovative turn-key solution designed to minimise construction time and installation costs on site. Constructed off-site by a highly skilled engineering team, the BioCABIN uses insulated steel profiled panels around the structural steel framework to house a Windhager BioWIN wood pellet boiler.

The BioCABIN is purpose-made to accommodate Windhager's BioWIN wood pellet boilers in a range of sizes with outputs from 52kW to 180kW, as single boilers or cascade systems. It's a complete package including a pellet boiler, buffer tank, pressure units, plate heat exchangers, expansion vessels and heat meters. Each is a bespoke system to meet the specification, site, project and RHI requirements.

The BioWIN pre-packaged plant rooms are ideal for a variety of applications from district heating to commercial premises, hotels, schools and nursing homes. All of these commercial applications qualify for the Renewable Heat Incentive (RHI) which came into effect in October 2011.

As the BioCABINs are constructed off-site, once delivered they take little time to install. They are simply craned into position for immediate connection to the on-site services of heating distribution pipes, water services and electrics prior to final commissioning. The BioCABIN can be clad in a range of exterior finishes from profiled composite panels to timber over-cladding so as to blend in with the local surroundings.



Room mate: Windhager's BioCABIN, a pre-packaged plant room for larger biomass heating installations

Burning ambition

An innovative business model has led Devon company **Forest Fuels** to establish itself as a leading player in the provision of wood fuels for small and medium scale boilers

Established in 2000, the Okehamptom-based company has grown rapidly and today supplies some 50,000m³ of wood fuel a year for 200 biomass boilers around the country. Among its clients are the NHS, the MoD, the Woodland Trust, the Eden Project, over 20 schools and most of the local authorities in the South West and South Yorkshire. The company was recognised as the Renewable Energy Supplier of the Year in last year's Green Energy Awards, as well as being runner up in the 2011 Renewable Energy Association Company of the Year award.



Fired up: Peter Solly, Forest Fuels, says the company's Devon location is ideal for its business offering renewable fuels

Forest Fuels provides consultancy services, biomass system design support and works closely with clients' architects, contractors and engineers from concept through to construction and commissioning.

The business model has proved so successful, says the company, that today it has 11 depots, strategically placed to keep supply lines short, from Cornwall to north London and this year purchased Silvapower, a small wood fuel supply company based in south Yorkshire. This is now being integrated into the Forest Fuels model, as part of a strategy to build a semi-national business.

Director and founder Sam Whatmore, is recognised as one of the industry's experts. He was appointed a Fellow of the Royal Society for his contribution to wood fuel development and won the Green Energy Award for renewable energy champion of the Year 2011. He says: "Specialist knowledge gained through being at the forefront of the developing wood fuel supply industry means we can help our clients achieve best practice and build on, rather than duplicate, the industry's development. Having addressed issues such as fuel storage, supply chains, heat load calculations and accurate fuel budgeting we can draw on this knowledge to provide an overarching consultancy package."

Managing director Peter Solly is in no doubt about the company's future prospects. He explains: "Our Devon base has proved an ideal location and today is the headquarters for our customer services and operations around the country. As the interest in renewable fuels grows, we believe we are now very well placed to expand our business and we are focused on the supply of small and medium-scale boilers where the quality of the fuel supplied is critical, with careful control of criteria such as moisture content and chip specification. We are poised for significant growth over the next one to two years, in spite of the challenging economic climate."

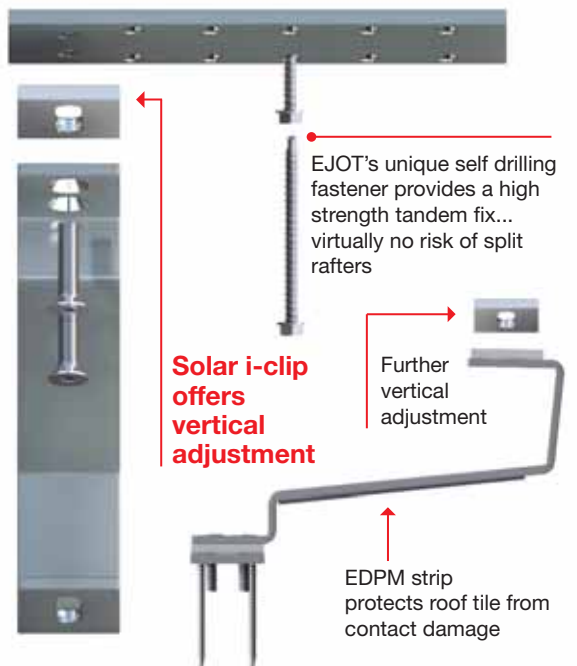
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Sweet smell of success

How **Sentinel** helped a Cornish ground source heat pump installer overcome a very smelly problem

Dave Ewins and Neil Orient, of Davanna Heating, Truro install renewable heating systems – solar thermal and air source heat pumps. Having installed these systems for a while, they had the opportunity recently to install their first ground source heat pump (GSHP). They turned to Sentinel – a company whose products they had used for years – to offer support.

The drillers had installed three 90 metre 40mm ground loops, and Ewins and Orient installed the headers to the property and the Nibe heat pump that drives the system. The ground loops had been installed six months prior to Sentinel's involvement. At the time the foundations had been dug for the property and left, whilst the building was built.

As you might expect from a system left that long, the first flush of the heat pump pipes resulted in a horrific 'bad eggs' smell that saw the plant room evacuated and left to ventilate for a couple of hours before it was possible to return to the job. It was immediately clear that there had been significant bacterial growth in the loops – exactly the kind of problem that has caused problems in ground source heat pump installations in the past. This is also the reason why Sentinel developed its renewables

range of water treatment products and its bespoke glycol-based heat pump fluids.

The smell highlighted the very real need to sanitise ground loops before filling them with glycol based fluid. Unless the bacteria and debris that has accumulated in the loops is flushed out and the system sanitised, the bacteria which 'eat', thrive and multiply rapidly on the glycol in the fluid, will rapidly degrade the glycol mix and at best reduce the energy efficiency of the system significantly and at worst cause the system to block, freeze and fail to deliver the energy efficient heat the system has been designed to deliver. In addition, it will be far more difficult to flush out the degraded glycol mix and clean the system at that stage – far better to start off with a squeaky clean system that only needs regular upkeep.

The Cornish GSHP installation was still not clean to go after flushing with clean mains water. High levels of bacteria were measured by Sentinel that showed that the six months of standing dormant had seen a major infestation of micro-bacterial growth and more attention was needed to return it to a state where the installation could safely be continued. Sentinel R700 – a sanitiser and biocide product that eliminates the problems

caused by bacteria and fungi in heat pump systems – was added to the system by Ewins, Orient and the Sentinel team and the bacterial activity reduced to very low levels over just an hour. Each of the three loops was dosed independently to clear the problems and ensure it was practical to continue the glycol based thermal fluid fill, using Sentinel R500C which gives freeze protection down to -15C and the bacteria level was again tested. Based on ATP Assay, the activity was now zero.

Ewins said: "It was really eye-opening and encouraging to see a supplier showing so much interest in training installers. Sentinel has been really helpful and I will certainly be using its products whenever we install GSHPs in the future. We witnessed quite graphically the problems associated with GSHP installations – and smelt them too! It's clear to me that the Sentinel renewables range has been designed with a very high understanding of the issues involved and with a product for every need in the installation process from flushing the system, sanitising it and filling it with a robust glycol based fluid that will deliver the high efficiency heating that people investing in heat pump technology expect. I've been very impressed with the whole process."



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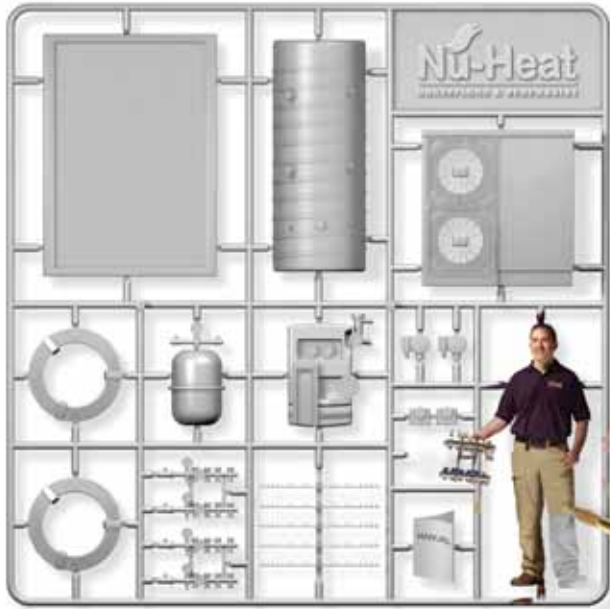
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A learning curve

With the Renewable Heat Incentive and the Green Deal on the horizon, the renewables industry is taking shape within the further education sector. **GroundTherm** discusses a recent project with the renewables training provider, the Manchester College



Team work: GroundTherm has recently carried out work at Manchester College, L-R Andy Major, technical advisor, Andy Louth and Bob Barlow, Star Centre

GroundTherm installs renewable technologies. It has worked closely with the Manchester College and is near completion of its second Renewable Technology Centre which will host ground and air source heat pumps, solar thermal, heat recovery, under floor heating, photovoltaic and rainwater harvesting.

The ground source heat pump / air source heat pump will provide the heating for the building, and the rainwater harvesting will supply the facilities. Also, when the PV is not being used for training it will be feed back

into the grid, making full use of the systems available. Also the college has agreed to put monitoring on all the equipment including the two boreholes for the ground source heat pump which will be monitored on a daily basis plus light and temperature monitoring for the solar thermal and PV. This will give a true indication of performance of all the systems. It will also have its own Google live page.

GroundTherm believes that in the future this kind of monitoring will help with design. It also believes there will be a design qualification in the future which will be a

part of the certified body's in the renewable industry.

The Manchester College is part of a regional hub through the National Skills Academy meeting the demand for trained and qualified specifiers and installers in renewables.

Andrew Louth, GroundTherm says: "There is no doubt that when the training starts for the Renewable Heat Incentive and the Green Deal, this college will be fully equipped to deal with the demand. The Centre will be named STAR Centre (Sustainable Technology and Research Centre).

Pumped up

Dimplex has expanded its range of heat pumps with the launch of the Air-Eau range of inverter-driven heat pumps, which it says offer market-leading energy efficiency and performance, low noise levels and easy installation.

With outputs from 6-16kW, the range covers domestic applications from small, well-insulated new build homes, to retrofits in existing homes which will have higher heat requirements.

The range achieves very high CoPs of up to 4.7 across a range of operating temperatures. Designed to work efficiently with underfloor heating, Dimplex Smartrad radiators or conventional radiators, Air-Eau heat pumps offer variable water flow temperatures between 35°C and 55°C for maximum space heating comfort, with weather compensated flow temperature control for improved efficiency.

At the heart of the Air-Eau heat pump is a

variable speed, inverter controlled compressor, which allows the heat levels delivered to be matched closely to the heating requirements of the building, as ambient temperatures change.

This means that in cold weather heat pump capacity is maintained, eliminating any need for supplementary back up heating, while at warmer air temperatures, heat pump output can be reduced, helping to improve efficiency.



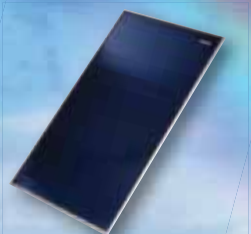
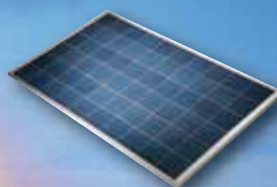
Growing demand: Dimplex has expanded its range of heat pumps with the launch of the Air-Eau range of inverter-driven heat pumps

A key feature for domestic use, Air-Eau heat pumps have been designed for very low noise emissions; sound pressure levels are typically as low as 50dB at 1m. Plus, the new range also features a 'quiet' mode, so noise is kept to an absolute minimum, making it ideal for overnight use.

The heat pumps are very straightforward to install thanks to the range's monobloc configuration, giving the ultimate 'plumb and go' solution. With all the system components contained in the outdoor heat pump itself, including heating system circulating pump, expansion vessel and back up flow boiler, only the hot water cylinder and control valve are located inside the building.

Additionally, an Air-Eau system uses water pipes rather than refrigerant lines to connect the heat pump to the building, meaning there's no need for refrigerant handling expertise.

The Air-Eau range is available in a choice of four outputs from 6-16kW to suit a range of applications and can be supplied together with a matched EC-Eau cylinder for easy specification, says Dimplex.

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Hot spot

With all the recent disappointment surrounding the RHI, **Alexander Pearson**, Navitas describes some recent projects the company has carried out – domestic and non-domestic – which highlight the company’s expertise in this field

The owner of a property in Somerset was renovating his house, had installed a temporary LPG system and was looking to install an appropriate renewable heating system. He contacted Navitas which was able to advise him that a wood pellet biomass boiler was the best solution for him. Having undertaken a heat load calculation Navitas specified a 12kw Windhager Vario WIN boiler. It was decided to go for a hand fed system due to the relatively small quantity of pellets required to meet the heating requirements. As a recognised MCS certified installer, Navitas was able to secure a £950 premium payment for the client, within a month of the final commissioning date.

Appliance of science

Flatholm Island in the Bristol Channel, is a site of special scientific interest and a local nature reserve. The island is frequented by scientists, volunteers, schools and visitors. With accommodation at a minimal level, the existing Listed building, Fog Horn Keepers Cottage, was converted into accommodation for long term visitors. Options for heating systems were severely limited due to the fact that all fuel to the island needed to be transported by boat. Cardiff Council contacted Windhager with an aim to find a suitable renewable heating system as part of the

Options for heating systems were severely limited due to the fact that all fuel to the island needed to be transported by boat



Loud and clear: Navitas installed a biomass system at Fog Horn Keepers Cottage, in the Bristol Channel

island’s sustainable management plan, to install the appropriate sustainable heating measures for Fog Horn Keepers Cottage as part of the island’s conservation project. Windhager recommended Navitas as an approved installer of a 12kw Vario WIN pellet boiler. It would be suitable for the domestic heating requirements and the installation of solar thermal panels would meet the domestic hot water requirements. Navitas was proud to have helped this community towards achieving its aim of minimizing its carbon footprint.

Country delight

A farmhouse in the heart of rural Somerset was owned by a man who wanted to lower his fuel bills and install a zero carbon heating system. He contacted Navitas who carried out a heat load calculation and determined that there was a 25kw heating and domestic hot water demand. Navitas specified a Windhager 26kw Bio WIN Excel wood pellet boiler. At 95 per cent efficiency, weather compensating controls, and exceptional reliability, this was the boiler that best met the customer

requirement. The boiler serves the farmhouse and an annex and is being installed by an MCS certified installer which makes the system eligible for the non-domestic RHI payment.



Go west: Having undertaken a heat load calculation Navitas specified a 12kw Windhager Vario WIN boiler for a property in Somerset

The hole story

Rocklift, subsidiary of J. Murphy & Sons, has completed its largest ground source heat pumps (GSHP) contract, overcoming a number of challenges

Appointed by Earth Renewable Consultants, Rocklift was awarded the £157,000 project to carry out drilling and installation of GSHP boreholes and external connecting pipework for Orkney Islands Council.

Rocklift installed new GSHP heat systems to 39 social housing properties within both the Kirkwall suburbs on the main Orkney Island and Longhope, a small remote community on the Isle of Hoy.

Lynsey Fairfull Smith, Rocklift geologist, said: "The contract presented some challenges because of its location and the logistics of getting plant and equipment to site. Longhope, for example, has only infrequent ferry sailings and a population of just 200

residents. Travel by road and ferry from the head office in Paisley takes nine hours whereas Kirkwall, the main town, is closer to Oslo than to London. We also had to overcome tight access restraints to the properties as they were situated on hilly streets with steep sloping terraced gardens and high walls.

"The Geawelltech WellDrill 3050 CR drilling rig was lifted into the majority of the properties in Kirkwall using a 40-tonne crane and the drilling and trench work was carried out whilst the properties were occupied."

The team has two Geawelltech WellDrill 3050 CR drilling rigs which can drill up to 300m depth below surface. They were specifically chosen for this contract because of their versatility and ability to keep ground



Northern light: Rocklift installing GSHP boreholes on the Orkney Islands

disturbance to minimum levels.

Fairfull Smith explains: "GSHP drilling has become an increasingly popular source of heating in recent years and Rocklift continues to expand in this field. This area of the business is set to develop further in the foreseeable future with the introduction of the government-funded Renewable Heat Incentive. This scheme is now in place for commercial development and the domestic tariff is due out later this year."

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A range of CO₂ commercial heat pumps, manufactured by Enex, has been launched exclusively by **ICS Heat Pump Technology**

The ICS Heat Pump Technology-Enex Airheat and Geoheat heat pumps (air/water and water/ground to water) have been designed specifically for providing commercial sanitary hot water and high volumes of stored thermal energy.

These ICS-Enex CO₂ units are able to deliver a Coefficient of Performance (COP) of between 3.5 to 4.0 on an annualised basis and operate with a temperature increase of up to 80°C in a single pass through the heat pump.

Garry Broadbent, ICS commented: "Both the ground source Geoheat and air source Airheat ranges use the BREEAM excellent 'zero environmental impact' natural refrigerant carbon dioxide CO₂ (R744). This is a natural fluid which is not harmful to the environment. It is non-flammable and its use is not restricted by environmental regulations or restrictions."

For the specific application of increasing water from a low to very high temperature (typically from 20°C to 80°C) carbon dioxide CO₂ has another important advantage.

The ICS-Enex CO₂ heat pumps operate using a 'supercritical' or 'transcritical' thermodynamic type of cycle which is a non-iso-thermal heat transfer process between the working fluid – CO₂, and the water to be heated.

This type of cycle provides an extremely high level of efficiency and provides maximum benefits when a high temperature increase is required, this is basically due to the heat transfer taking place without a change of state on the refrigerant side of the system.

Hence the most practical and efficient applications for these new heat pumps are those where water, initially at a temperature similar to that of the mains water supply is directly heated up to a storage tank temperature in the range from 60°C to 90°C.

Applications which call for a high daily volume of sanitary hot water are ideal for



Hot stuff:A 20kW unit. This is a demonstration site with the unit connected to a Ratiotherm cylinder providing energy for a district heating scheme

these units along with applications which will benefit from a high volume of stored thermal energy.

Sergio Giroto of Enex, the designer of this range noted: "A high flow temperature means that a large amount of thermal energy (kW) capacity can be stored converting low cost, low tariff electrical energy into higher value thermal energy. A typical application would operate overnight providing 3,000 litres of stored energy for use during the following day or the next demand period, this energy would be produced at a lower cost and a higher COP than by other comparable methods."

Examples of these typical applications would be hotels, apartments, student accommodation, hospitals and colleges .

The ICS-Enex Airheat and Geoheat CO₂ heat pumps are available in various sizes, from 15 to 50 kW. The two larger machines

are designed to be easily coupled, making it possible to configure compact single systems up to 150 kW.

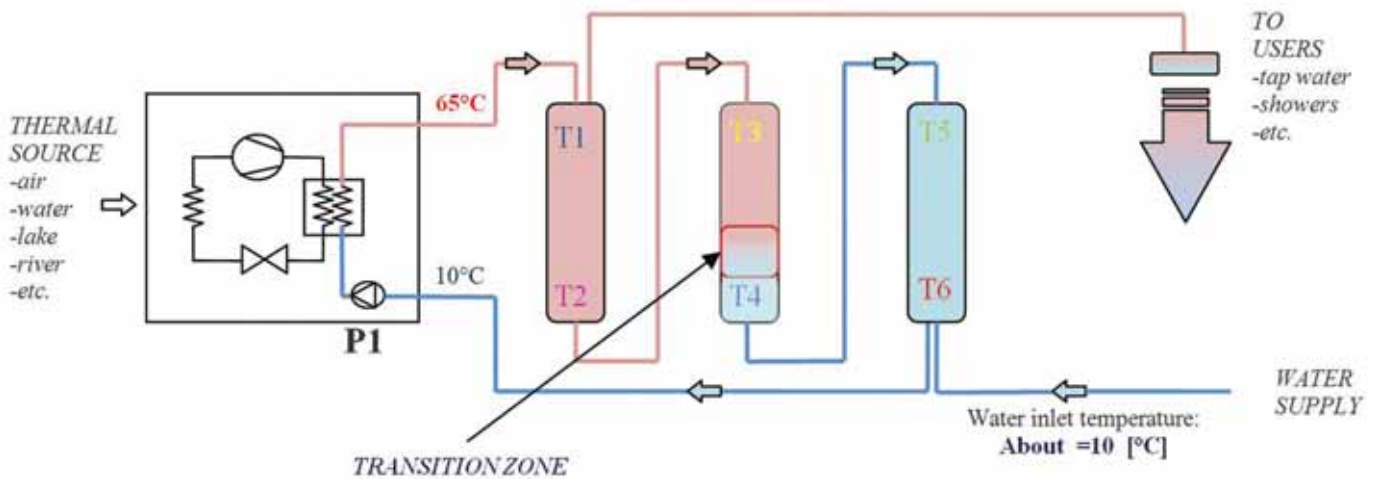
When operating on a low cost overnight electrical tariff these systems would provide around 1,500kWh of stored energy ie. 150kW x 10 hours etc with a very high COP.

The ICS-Enex CO₂ heat pump producing sanitary hot water

Unlike conventional heat pumps the CO₂ Airheat & Geoheat can increase the temperature of the water in a single pass very quickly by as much as 70°C -80°C when passing through the heat exchanger.

The water flow rate is controlled by varying the pump speed. By using this method the temperature of the outlet water from the heat pump to the storage tank is very closely controlled, a set point temperature can be selected between 50°C and 90°C. Continued

Knowledge: Heat pumps



A series connected system of tanks providing sanitary hot water illustrates the principle. Importantly a single storage vessel could also be used with an intelligent method of loading & unloading i.e. to maximize stratification and layering, an example of would be the Ratiotherm thermal storage system

From the above example it is clear that the combination of the Airheat/Geoheat CO₂ heat pump and a stratified tank brings several significant advantages when considering commercial sanitary hot water production or bulk thermal storage:

- The output temperature can be as high as 90°C
- Faster reaction times for sanitary hot water production on a stratified system
- A smaller volume of water storage is required at higher temperature
- The electrical installed capacity is lower due to the overnight/off peak production period
- It is possible to design the system in order to limit the operation of the heat pump to certain periods within a 24 hour period (eg. night or off peak for lower electricity tariffs).

There are also other additional advantages:

- Storage of water at temperatures above 65°C prevents the possible formation of legionella bacteria;
- CO₂ (R744) is a natural refrigerant which can provide application benefits when considering BREEAM or other legislation with high renewable, low carbon and environmental obligations.

The subject of CO₂ and use within the context of a commercial heat pump deserves a more extensive description, but this article will hopefully provide an overview and an

appreciation of CO₂ heat pump efficiency.

It is clear that efficiencies will be higher than standard heat pumps when considering this type of application which requires a wide increase in temperature i.e. for producing sanitary hot water or for providing energy for bulk thermal storage as shown below.

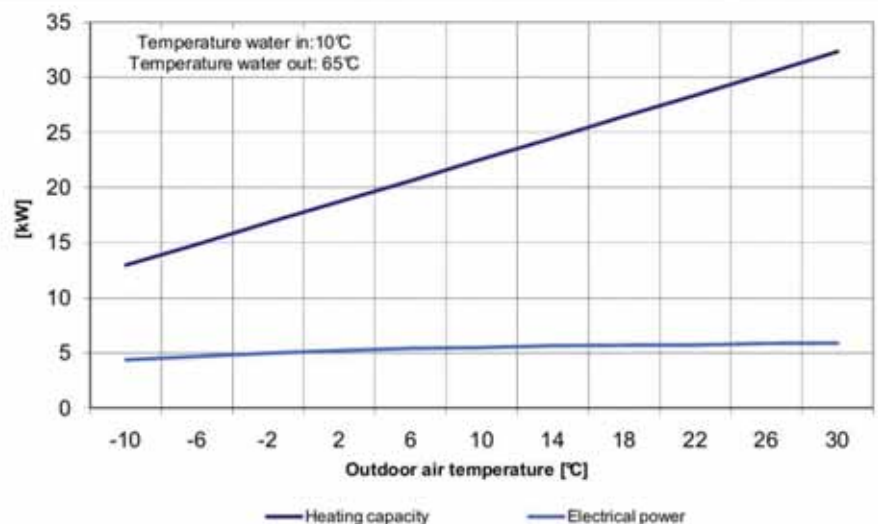
This range of CO₂ heat pumps has been severely field-tested over the past three years in all environmental conditions.

For example, three Enex heat pumps were installed at 4800m above sea level at Bumade railway station China – on the

Qinghai-Tibet railway – and are usually working during the winter period with an outside temperature as low as -30°C.

Within the UK the first units have already been applied and installed; a 20kW Airheat CO₂ unit has also been installed for testing and demonstration at an ICS Heat Pump Technology site in the North West and is available for specifier visits.

The Enex CO₂ range is currently going through the process of obtaining MCS certification which should be in place for 2012.



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The requirement for MCS accreditation and all that it involves is often a source of anxiety for installers and may have deterred some from entering the renewables market, says **Nu-Heat**

Although the domestic Renewable Heat Incentive (RHI) itself has been delayed until 2013 this is partly to ensure that the scheme, when it starts, is well thought through in terms of available funding and potential take-up. The extension of the Renewable Heat Premium Payment (RHPP) for another year and the allocation of an additional £25m (£7m of which is earmarked for domestic households) indicate that the government believes that the renewables market is set to grow. In March 2012, around 6,500 RHPP vouchers had been issued representing approximately £5m in grants awarded.

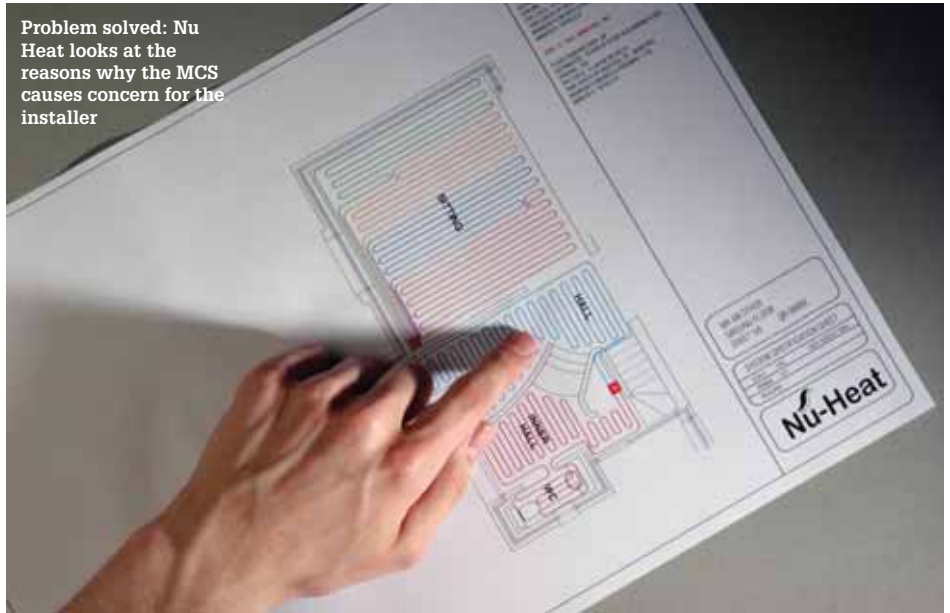
For installers who work in the commercial sector, the commercial RHI has been up and running since 28th November 2011. More than 20 applications are presently being received each week for this subsidy, proving that interest is high.

Why MCS?

Certification under MCS is confirmation for domestic customers that an installer is competent to carry out a renewables installation. For the RHPP, MCS certification is required for the product, along with evidence of energy efficiency methods having been put in place. When the domestic RHI begins, MCS certification will be required for both product and installer.

For any plumbing and heating engineer who is keen on adding a renewables service to his portfolio but is nervous of the MCS, there is help at hand. One solution is to sign up with an organisation that offers a scheme to take over the paperwork, and another is to join one that offers a full mentoring package. Easy

Problem solved: Nu-Heat looks at the reasons why the MCS causes concern for the installer



A new era for MCS support?

MCS, for example, provides a management system that gives support to the installer from application to inspection and guides installers through training and qualifications.

As a major supplier of renewables products air and ground source heat pumps and solar thermal, along with having four years' experience of renewables training and MCS support through its National Renewables Training Centre, Nu-Heat is well aware of what installers need to help them with MCS requirements. Nu-Heat provides its installer network with a comprehensive System Handover Pack detailing all the system specification, performance and user instruction information needed to comply with MCS requirements. The company also has a dedicated team available to support new MCS installers via its field sales managers and field sales engineers.

A dedicated designer is allocated to every member of Nu-Heat's installer network. Over time this means that the designer will learn how the installer prefers to work in terms of floor constructions and installation methods. Nu-Heat has unparalleled design expertise with its range of MCS certified renewables

products including designing fully integrated systems comprising heat pumps and solar thermal with under floor heating. Technical support is available for both technical and installation queries and for commissioning, if required.

Nu-Heat and Easy MCS have recently formed a partnership that offers installers financial assistance to help them to diversify into the renewables market, with Nu-Heat providing up to £500 discount on any Hitachi Yutaki-M air source heat pump purchased before 31st May 2012. This discount acts as an offset against the required training costs that an installer has to take on in order to qualify for MCS certification.

The partnership was launched at Ecobuild with great success, as installers moved between the stands of both Nu-Heat and Easy MCS to discover what the partnership has to offer them. It is hoped that this proactive partnership will help ensure that a wider cross-section of installers take the decision to enter the renewables market with confidence in their installation skills and full support to help them meet MCS requirements.

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Knowledge: Training



Train and gain: Kingspan Renewables is offering five-day fast-track courses for installers up-skilling in time for Green Deal

Train in the fast lane

Kingspan Renewables offers training courses to help installers make the most of the commercial opportunities which will follow the introduction of the Green Deal and domestic Renewable Heat Incentive (RHI).

The portfolio of LOGIC-certified courses at Kingspan Renewables' training centres includes product training on solar thermal hot water systems and air source heat pumps, as well as certification in line with changing industry regulations.

For a limited time only, a series of five-day fast-track courses is also available. Kingspan Renewables has designed these to allow solar thermal and heat pump installers to achieve the

certified level of competence that helps towards gaining Microgeneration Certification Scheme (MCS). Once MCS registered, installers are then eligible for Kingspan's accredited installer status, which provides the added benefit of extended warranties and training upgrades.

Kingspan Renewables' training manager, Darren Till, said: "With recent research showing that around half of installers do not have the basic skills required by the Green Deal scheme, industry professionals should be looking to 'green up' their knowledge and plug any skills gaps now to make the most of the increased demand come October."

www.kingspan-renewables.co.uk

Supporting role

QMSA provides support packages covering MCS and Green Deal. It specialises in quality management systems but also provides technical training for renewable technologies at locations around the UK.

The company is currently offering an all-inclusive MCS support package for just £995+vat which includes the cost of MCS approval with Benchmark Certification.

www.qmsaltd.com



Training for a green future

In anticipation of various government incentive schemes, Plumb Center has been developing a comprehensive training programme to support traditional heating engineers as they migrate to new, low carbon technologies.

PV installers also have the opportunity to diversify in to new areas, such as solar thermal or micro combined heat and power (mCHP), which draw on existing skills such as fitting panels on a roof.

The focus is on practical training that leads to sufficient product knowledge and completion of the pre-requisites for MCS accreditation. Schemes such as the Renewable Heat Incentive and Green Deal make MCS essential if householders want to make the most of financial incentives.

At the end of February, Plumb Center says it became one of only a handful of providers offering HETAS-approved biomass courses. Four-day options are available for those with an existing HETAS qualification, with a five-day version for those who totally are new to biomass.

Plumb Center is also due to launch a specific mCHP course, designed as a skills upgrade for existing Gas Safe registered engineers who want to work with the next generation of boiler technology. DECC recently increased the Feed-in Tariff (FiT) for mCHP from 10.5 to 12.5p/kWh, making this an increasingly attractive option for those who are looking to reduce both gas and electricity bills.

www.plumbcenter.co.uk/en/info/training



One of a kind: Plumb Center says it is one of the few providers offering HETAS-approved biomass courses



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School of thought

Simon Pattison, general manager of the Waxman Training, looks at the importance of training and how installers can diversify their business to stay on top of their game

Government incentives such as the Feed-in Tariff (FiT), the Renewable Heat Incentive (RHI) and the Green Deal present major opportunities for installers, with those bold enough to move with the times and diversify their business being best placed to capitalise on the increased demand the various schemes create.

Although there has been some reluctance among installers towards investing in training, largely because of the

uncertainty created by the way the government handled the solar PV issue and whether they could expect similar problems with the RHI, installers are now much more receptive to it. Most accept training will be beneficial by helping them diversify into other areas and keep up-to-speed with industry developments.

The Green Deal will be the main driver for diversification as PV installers, with the transferable skill of working on roofs, can make the natural progression into wet systems (solar thermal). The introduction of the Energy

Performance Certificate (EPC) Level D minimum for all households wishing to install solar PV systems will also bring opportunities. The obvious progression is for PV installers to move into solar thermal installation with the RHI and then into other areas such as biomass or heat pumps.

The future is certainly optimistic for PV installers who want to develop their business into fully-fledged renewable technology installation companies. And those installers not interested in moving into wet



Top of the class: Simon Pattison, Waxman Training, believes installers can diversify to stay one step ahead

installations can collaborate with a plumber, or even set up a new company to cater for this broader market.

Of course, training is of real benefit to the individual installer but to the industry as a whole. It creates jobs and apprenticeship opportunities, as well as maintaining a high level of standards and overall quality.

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On course with BPEC

With the recent changes in the solar PV Feed-in Tariff, the forthcoming introduction of both the RHI and the Green Deal and the ongoing evolution of the MCS scheme it is easy for the installer thinking of specialising in renewable technologies to become confused.

BPEC says that installers who undertake its renewable technology courses can be assured they have and will continue to be generic, industry-recognised and accepted by the various MCS bodies as evidence of training. This ensures that individuals who hold appropriate BPEC renewable certificates are able to apply for MCS registration and once the installer is successfully MCS-registered his customers are ultimately entitled to apply for incentive payments such as Feed-in Tariff, RHI and Green Deal.

To this end BPEC has mapped the solar thermal, solar PV and awareness of environmental technology systems (formerly renewable energy awareness) courses against

the National Occupational Standards and the QCF. Work is also well advanced to similarly map the BPEC heat pumps and the BPEC rainwater harvesting and greywater recycling courses.

BPEC's suite of courses also includes woody biomass, underfloor heating, energy efficiency and domestic ventilation systems and are delivered by a network of over 360 further education colleges and private training centres UK wide.

www.bpec.org.uk



Piping hot

Kent-based Piper Assessment sees itself as more than just a training centre, explains the company's marketing executive, Elaine Oake: "Courses are offered in both renewable and fossil fuel technologies plus many health and safety courses. From setting up employment law and health and safety policies to fire and first aider training, Piper can help."

To progress this agenda, Piper has embarked on a series of seminars which will also look at the future of the MCS scheme and Green Deal.

www.piperassessment.co.uk/



EPC?

Go to BRE

BRE is offering energy assessor courses to those needing to procure EPCs including those required for new PV installations. It is also extending its range of awareness courses on renewable energy technologies to include master-classes for designers and advisors. The new Green Deal Advisor qualification is expected to be available soon and BRE expects to be among the first to offer this.

BRE says it has a wealth of knowledge and expertise to bring to the energy assessment and advice programme both in training and in ongoing support and lifelong learning. The BRE training courses are developed to suit the needs, challenges and demands of the built environment bringing together our unique facilities and expert trainers into an unrivalled training experience. BRE is approved by City & Guilds and the Awarding Body for the Built Environment (ABBE) for the delivery of the energy assessor training and will also be similarly approved for Green Deal.

www.bre.co.uk/training



The advertisement features a yellow background. On the left is the BPEC logo. In the center is a photograph of a smiling man with his arms crossed. On the right is a vertical list of energy services. At the bottom left are contact details.

bpec

To find your local BPEC approved training centre visit:
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At DulasMHH we pride ourselves on the level of technical support and personal service that we provide. To support and extend our offering, this month sees the launch of our new solar PV e-commerce website. The new site is set to be the solar PV portal of choice for UK installers and is one of a number of initiatives planned for 2012. www.dulasmhh.co.uk or call 0845 201 6100.



 **dulasMHH**
solar systems

Expertise from SEA

Sevenoaks Energy Academy (SEA) provides plumbing, electrical, gas and renewable energy training. It offers courses that are accredited through City & Guilds, BPEC, LOGIC, NICEIC and HETAS. The company's main centre is in Sevenoaks, Kent but it also offers renewable and plumbing training courses via a network of Plumb Center and NAPIT locations throughout the country. Plumb Center account customers can pay for training with their 'extra' points.

SEA has been accredited for the full range of HETAS courses including biomass training. It offers the new BPEC 'OCF Mapped' solar thermal and solar PV course in addition to NICEIC PV training, BPEC heat pump installer courses, rainwater harvesting and woody biomass.

For installers or companies that employ apprentices, SEA says it is in a position to offer full funding for employed apprentices aged 16 – 19 to complete their level 2 and 3 plumbing & heating NVQs (City & Guilds 6189 NVQ diploma plumbing & heating).

www.sevenoaksenergy.com

Expanding news



Branching out: Trade Skills 4U says it will add new technology training to its existing PV and solar thermal courses

Electrical and renewable energy training provider, Trade Skills 4U plans to expand its range of renewable energy courses to include heat pumps and smart meter installation courses amongst others. With the roll-out of the Green Deal, Trade Skills 4U will be launching industry-specific courses aimed at those who wish become Green Deal assessors and Green Deal installers.

Marketing executive, Chloe Bennett, added: "Once demand for training becomes clearer we will adapt our single storey timber framed house accordingly to become the ideal training space for the full range of Green Deal related courses. We pride ourselves on our 'real life' scenario training and making sure students leave our centre with the skills required to support the growing demands for renewable energy technologies." www.tradeskills4u.co.uk



On the map: Sevenoaks Energy Academy has a national network of training locations



Keep it real: Easy MCS offers an indoor full height roof system to give installers a taste of the real thing

Easy MCS supports new installers

The Easy MCS academy offers a range of training courses to new and existing renewable installers looking to offer financial incentives such as the Renewable Heat Incentive, Feed-in Tariffs and Green Deal. Technologies covered include solar PV, solar thermal and heat pumps with additional courses ranging from G3 unvented, Part L energy efficiency and health & safety. The academy says that shortly it will be offering energy assessor courses to up skill individuals looking to be a part of the Green Deal. The technology courses on offer are mapped to the new National Occupational Standards.

The Easy MCS Academy is both BPEC & NICEIC Certified.

www.easy-mcs.com

SWAAT Training

SWAAT Training and Assessment offers renewable courses for all experience levels – whether you want to install solar thermal, solar photovoltaic or biomass, or even if you are an experienced engineer and require some guidance to enable you to become MCS-accredited.

The new BPEC renewable awareness course is designed for anyone taking their first step into understanding the renewable options available. This course may also be useful for architects, energy assessors and anyone who needs CPD training.

With regards to the Green Deal, SWAAT will cover the requirements for becoming a Green Deal assessor, what the legal duties of a Green Deal assessor are, carrying out a Green Deal assessment and providing the relevant advice to the customer.



Selection process: SWAAT offers a range of renewable course for a variety of levels

PASS with flying colours



In focus: PASS Training and Development is launching a host of new courses relevant to Green Deal

PASS Training and Development says that the Green Deal is a welcome way to create a mark of quality and ensure that rogue installers are eradicated.

The North East-based company offers renewable energy installer courses including:

- Solar PV installer course in London and Stockton-on-Tees.
- Solar panel roofing course in Stockton-on-Tees.
- Introduction to thermography in Stockton-on-Tees.
- Electrical thermography in Stockton-on-Tees.

Advanced thermography ITC Level 1 in Stockton-on-Tees, starting in November 2012. www.electricaltrainingcourse.co.uk



On course with BGas

BGas offers a two-day solar thermal hot water systems course and a three-day domestic heat pump installer course for an entry-level qualification for domestic heating installers or plumbers, wishing to work in renewable energy.

The company also offers a four-day solar PV installer course – an entry-level qualification for electricians with a knowledge of BS7671:17th Edition Wiring Regulations.

The awarding body for all certificates is Logic Certification.

www.bgasltd.co.uk

Selection box: BGas offers a range of courses for those looking to enter into renewables

Something for the weekend

With the Renewable Heat Incentive (RHI) ahead, OLCI Construction Training says engineers who train with the company are becoming qualified to help meet employers' and customers' new requirements.

OLCI is appealing to the many PV installers who have already been working with the Feed-in Tariff and are now preparing to take advantage of technologies such as solar thermal and heat pumps.

Current OLCI renewable energy courses include becoming a green engineer, domestic solar thermal, solar PV, heat pump installation, energy efficiency Part L, rainwater harvesting and heat recovery.

OLCI training is delivered over one to three days, including occasional weekends, so installers spend as little time away from jobs as possible. Training centres are nationwide to reduce the costs of travel and overnight accommodation.

www.olci.info



Flexible working: OLCI offers some weekend training to help reduce disruption to business hours



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Five star from Ploughcroft

With five accredited training centres nationally, Ploughcroft continues to set the standard for offering training and support to installers in the renewables market, with confirmation that it has achieved CSkills accreditation from the Construction Industry Training Board (CITB).

This is the first time, says the company, that a two-day solar PV installation course has achieved this independent industry recognition. The course is now delivered by Ploughcroft at five venues across the country – Huddersfield, Stoke, Nottingham, Ipswich and Bognor Regis.

All Ploughcroft training courses are relevant to most recent changes in the industry, as well as being accepted by the MCS. Courses on offer include NFRC solar panel installation, solar PV for electricians, solar thermal for plumbers, solar PV for roofers and solar surveying, amongst others.

www.ploughcroft.co.uk



Centre point: Ploughcroft offers training at five accredited centres

City & Guilds support package

City & Guilds is now offering a support package for the Green Deal and sustainability to help ensure businesses respond effectively to the government's proposals.

According to City & Guilds, it offers end-to-end support, from initial advice and guidance around renewable energy, through to awarding specific qualifications. The team includes experts from the sector who will work with installers to determine the most effective training programmes and qualifications.

Qualifications range from Green Deal advisor and energy efficiency awareness, to a number of installation qualifications. These cover aspects of renewable energy including insulation, plumbing, electrotechnical, environmental technologies and Smart metering. City & Guilds continually monitors developments from the Sector Skills Councils and ensure any new advances and funding options are included in its offer.

www.cityandguilds.com/uk-home.html



Thrills and skills: City & Guilds says it offers end-to-end support from a team of experts

Up skill at Skills Academy

The National Skills Academy for Environmental Technologies is a nationwide network delivering renewables and low carbon training, to meet the demand presented by initiatives such as the Renewable Heat Incentive (RHI), Feed in Tariffs (FiTs) and Green Deal. Training delivered by the Academy is aligned to the Minimum Technical Competence (MTC) and Qualification and Credit Framework (OCF) and so meets Competent Persons Schemes (CPS) requirements, including Microgeneration Certification Scheme (MCS) criteria.

Available through the Skills Academy is training in solar thermal, solar PV, heat pumps and rainwater harvesting, with micro-CHP, micro-wind, micro-hydro and bio-fuels introduced later in the year. Technical courses are open to experienced building services engineers with an NVQ 2 or equivalent in a related discipline. For candidates with some experience, full training is not always required – top-up courses and assessment only options are also available.

Dr Cathryn Hickey, executive director of Skills Academy, added: "Solar PV installers who wish to change into heat-based renewables will need the appropriate grounding in order to partake in installation training. The Skills Academy also provides an environmental awareness qualification designed for non-technical staff, or anyone interested in gaining a broad understanding of the different options available, which could be an ideal starting point for PV engineers looking to expand their skill-set." www.nsaet.org.uk

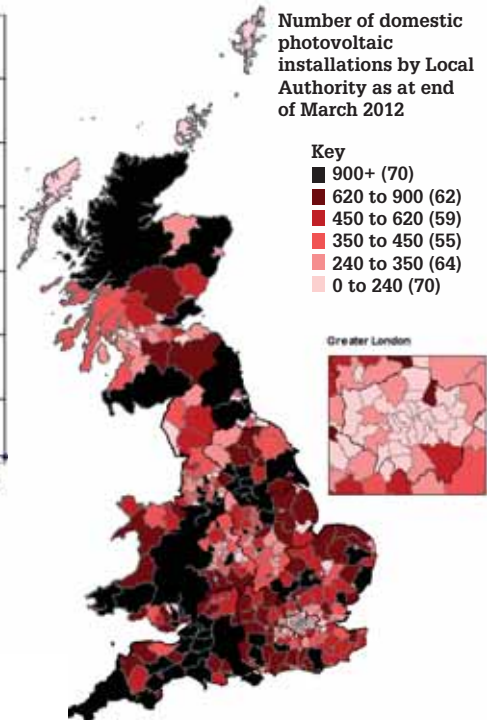
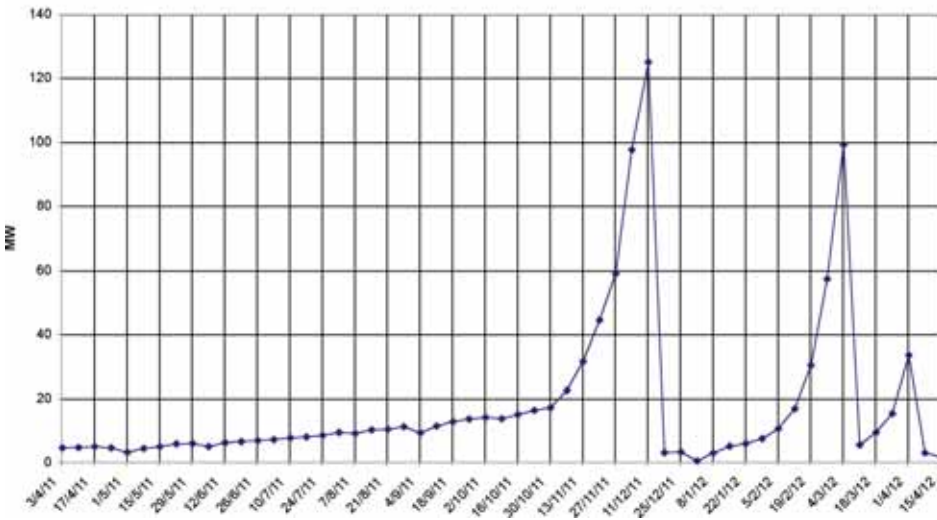


Reaching out: Cathryn Hickey, executive director of National Skills Academy, is reaching out to installers who wish to change to heat-based renewables

Figure it out

Each issue of REI brings you a range of interesting industry statistics. We highlight PV installation figures and proposed new Feed-in Tariff rates in this issue

Weekly installed capacity (PV) as of April 01 2012



Figures supplied by DECC

Notes:
 1. There are 3,580 domestic photovoltaic installations that have not been allocated to local authorities.
 2. For Scotland, areas are represented as council areas.

Proposed Feed in Tariff rates for PV

	To March 3rd	To June 30th	From July 1st (A)	From July 1st (B)	From July 1st (C)
4kW or less (newbuild)	37.8p	21.0p	13.6p	15.7p	16.5p
4kW or less (retrofit)	43.3p	21.0p	13.6p	15.7p	16.5p
4-10kW	37.8p	16.8p	10.9p	12.6p	13.2p
10-50kW	32.9p	15.2p	9.9p	11.4p	11.9p
50-100kW	19p	12.9p	7.7p	9.7p	10.1p
100-150kW	19p	12.9p	7.7p	9.7p	10.1p
150-250kW	15p	12.9p	5.8p	8.0p	10.1p
250-5MW	8.5p	8.9p	4.7p	6.8p	7.1p
Stand alone	8.5p	8.9p	4.7p	6.8p	7.1p

A - if 200MW PV capacity is installed in March and April 2012
 B - if between 150 - 200MW
 C - if less than 150MW

Figures supplied by DECC Consultation Document

Cumulative installed capacity (MW) 2009-2011

	2009	2010	2011
Onshore Wind	3,483	4,037	4,632
Offshore Wind	941	1,341	1,838
Shoreline wave/tidal	2	3	3
Solar PV	27	77	1014
Small scale Hydro	186	195	207
Large scale Hydro	1,459	1,453	1,453
Landfill gas	985	1,025	1,062
Sewage sludge digestion	157	189	203
Municipal solid waste combustion	392	435	504
Animal Biomass	119	139	161
Plant Biomass	279	309	1,074
TOTAL	8,030	9,202	12,152

Figures supplied by DECC

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Knowledge: Case studies

SOLAR THERMAL, PV AND HEAT PUMPS

What: A sustainable energy supply for a pavilion in Suffolk

How: Heat pump, PV and solar thermal installed by Ecoliving

Result: An estimated annual saving of £500 in electricity and over 3.5m tonnes of CO₂

This project involved a newly built replacement Pavilion for Rattlesden Community Council in Suffolk where Ecoliving provided a sustainable solution for the building's heating, hot water, ventilation and energy needs. With a primary focus on energy efficiency to keep running costs low, Ecoliving incorporated Solflex solar PV, a ground source heat pump, solar thermal and heat recovery ventilation.

The Solar PV system comprised 42 x 205W Kioto PE QCells modules designed to produce over 7000kWhs of electricity per annum.

A three-phase transformer-less Mastervolt inverter is central to using the power produced within the building. Whenever electricity is used it will always take it from the panels first, topping up from the electricity grid if required. Equally, if the power from the panels exceeds the building use at any time, the excess electricity is automatically fed back to the grid for use by other consumers.

A key requirement of the overall system was to maximise the on-site use of the solar generated electricity which was achieved in part by incorporating a ground source heating system. The solar PV and heat pump combination optimises the use of solar energy

generated and reduces the amount of electricity that needs to be purchased to run the heat pump – a double benefit.

It is estimated that the solar PV will save the charity over £500 in electricity and over 3.5 tonnes of CO₂ emissions per annum as well as providing an income with Feed-in Tariff payments.



Bowled over: Rattlesden's new pavilion incorporates a range of green technologies

INSULATION, HEAT PUMPS AND BIOMASS

What: Improved energy efficiency surveys

How: Using the Testo thermal imaging camera

Result: Saving time and money

Some 100 people a month visit The Cotswold Energy Efficiency Centre (CEEC) which serves as a showroom for every variation of sustainable energy. The team based there is also kept busy by home visits within a 50 mile carbon-friendly radius.

According to the CEEC team, the Testo thermal imaging camera – an 875 series – allows for a clear and detailed demonstration of heat flow and control across domestic applications including radiators, tracing heating/hot water pipework, roof lagging, windows, biomass systems and even under floor heating where the thermal image helps engineers to detect anomalies without causing any damage. The Testo camera features a large 3.5 high resolution display, <80mK temperature resolution, optional wide or telephoto lens, auto hot/cold spot recognition and the means to save up to 1000 images on an SD card.

Andy Buchan, managing director of CEEC,

said: "The Testo 875 is an essential aspect of our portfolio. It is smart and easy to operate and looks good, especially with the professional carrying case. We don't charge to use it and it guarantees a rapid and accurate view of what is happening with significant considerations for saving time and money and enhancing the decision process. Here at CEEC, we use the camera for all of our surveys to establish the property is insulated to a standard that will be suitable for a heat pump to operate, as they only work in well insulated buildings and otherwise it could be a disastrous situation.

"On a retro fit project the camera will give us this invaluable information as well as giving all concerned the confidence to proceed. We simply couldn't run the business without it and we are impressed to the extent that we have actually created a DVD for marketing and explanatory purposes."

SOLAR PV

What: Scottish roofing specialist, Forster, reduces carbon footprint

How: Using Redland PV systems

Result: A greener source of energy

A recent roof renewal of its own head office presented Scottish roofing specialists, Forster, with the perfect opportunity to install Redland's 'On Top' and 'Integrated' solar PV roof systems. By doing so on its own offices in Brechin, Scotland, Forster has gained MCS accreditation, which ensures that its customers are able to claim payments from the Feed-in Tariff scheme. The installation has also helped Forster to reduce its carbon footprint and benefit from electricity savings.

Forster installed three Redland roof PV systems at its head office. Part of the property was re-roofed in mini Stonewold slate grey tiles, incorporating nine Redland on-top PV panels and nine integrated mini Stonewold PV tiles. Another area of the roof was fitted with Redland Grovebury tiles incorporating nine integrated Grovebury PV tiles.

Forster managing director, Steve Scott, said: "We decided on Redland for this project based on the confidence we drew from having successfully worked with them for many years, benefitting from their understanding of traditional roof design and their track record for producing quality roofing products."

Scott added: "With the strong wind and rain we are all too familiar with here in Scotland, we

recognised the importance of the fixings and installation process in ensuring the long term security and weather tightness of our roof. Both the integrated and on-top systems proved incredibly easy to install and the whole job was completed within a week."

Redland sales director Andy Dennis commented: "We are delighted to see our integrated and 'On-Top' solar PV systems utilised by Forster. Having such an established and reputable contractor use our PV systems and tiles on their own premises demonstrates the confidence they have in our product design."



Leading by example: Brechin-based roofing specialists Forster has installed PV on the roof of its head office



Looking good: The Testo 875 is an 'essential' thermal imaging tool for The Cotswold Energy Efficiency Centre

My working week



Who: Kevin Collins, managing director, CB Renewables

What: Merseyside-based CB Renewables is a domestic and commercial installer working across a range of systems, including ground and air source heat pumps; solar PV; solar thermal; underfloor heating; rainwater harvesting as well as LED lighting

Branching out: Managing director Kevin Collins, launched CB Renewables last year as a division of a CB Transport Refrigeration

Lights, camera, action

Monday

I visit a property in which we recently rectified an air source heat pump that had been poorly installed. The property owner had real problems with a rogue firm, who made a total mess of the original installation last year. The home owner contacted us through Corgi and asked us to investigate the problem. We quickly found that the system had been piped up incorrectly and found a solution. Today's courtesy visit is part of our customer service package and we are delighted that the heating system is now working very well. Back to the office to spec up a couple of domestic PV jobs and work out quotations.

Tuesday

Today is the first day of the Ecobuild exhibition in London and so sales manager John Forrest and I decide to visit for the day. This is the first time we have been to the exhibition and it is a real eye-opener to see the huge amount of renewable technologies available – it is also great to see that the services we offer are the most prevalent.

There are plenty of international brands with excellent stands and John and I enjoy walking around, speaking to people in various roles in the industry and developing good contacts. It's great to see so much innovation and investment at a time when some people are questioning the industry's future.

Wednesday

I've got a site visit today at a customer who is trialling our LED lighting systems. LEDs have so many benefits and the customer we are visiting today, who works in the agricultural sector, is very pleased with how the trials have been running.

It is too early to reveal the details of the project, but we are delighted with the feedback and are now planning the next stage of the trials. Back at HQ we have spent the week fitting our own LED lights throughout the offices and warehouse, so I check that everything has run smoothly.

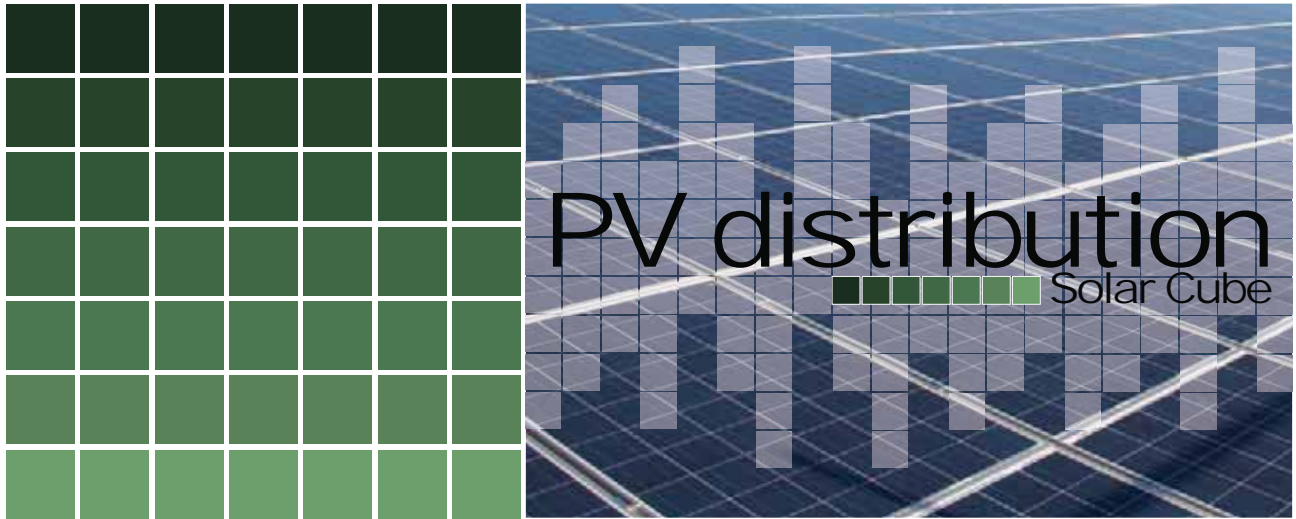
Thursday

Today I have paperwork to do to get a

customer's solar installation MCS certified. After that it's a meeting with a Liverpool Chamber of Commerce representative followed by an evening networking event – profile-raising has been key to launching CB Renewables; I'll admit that all the meetings and networking is tiring but definitely worthwhile.

Friday

We had a visit from the BBC today, who is filming for the North West Politics Show. It is discussing the future of green energy in the region, and wanted to speak to a business that had diversified from its core business into renewables. We actually launched CB Renewables last September as a division of our CB Transport Refrigeration business. The BBC got in touch after spotting the CB Renewables website through a Google search – good to see our investment in the site and SEO has got us noticed! They spend about three hours filming at our HQ in Knowsley, Merseyside, although I am told this will be condensed into about a minute.



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