Renewable ENERGY INSTALLER

THE BUSINESS OF MICROGENERATION

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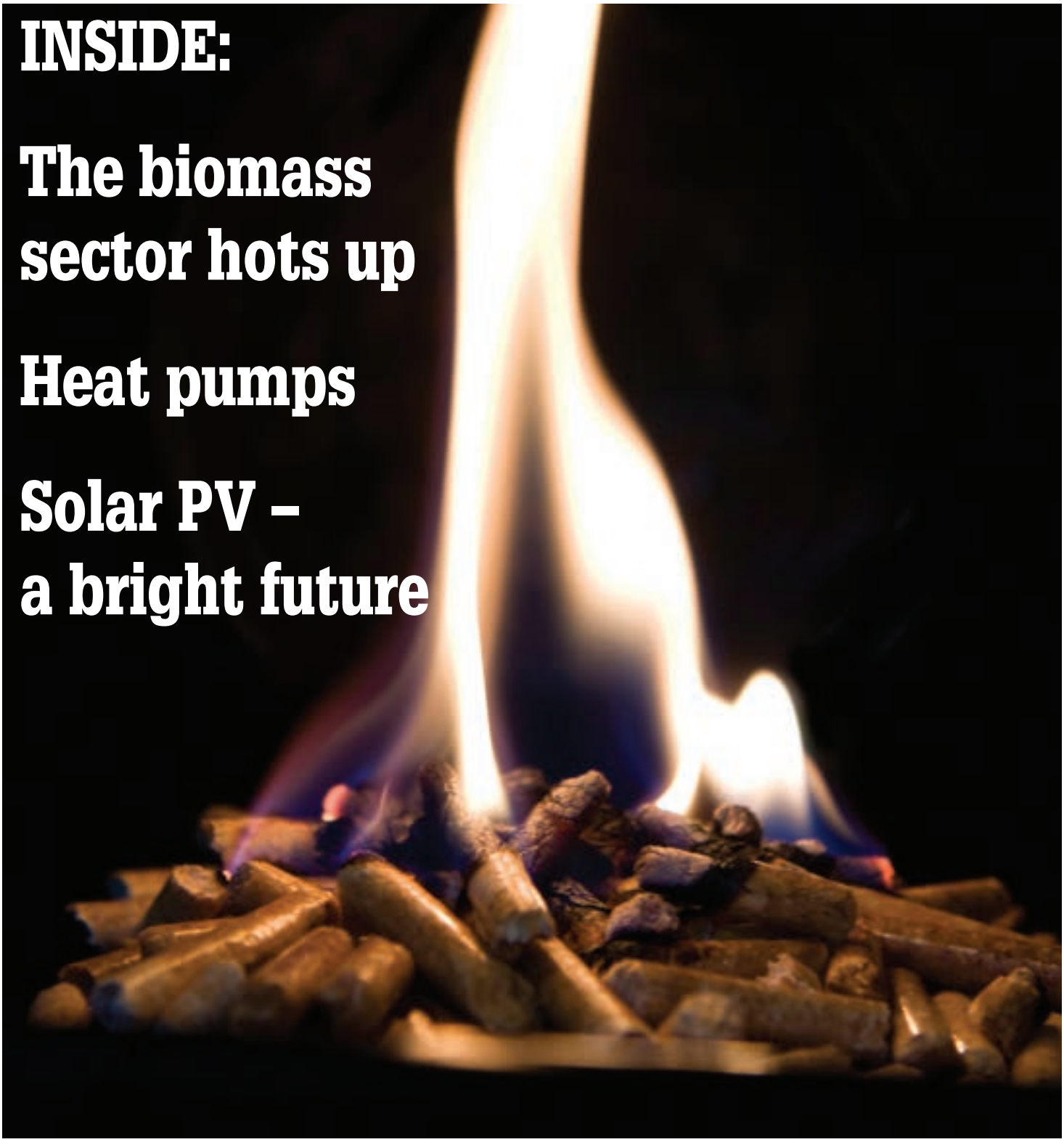

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Big isn't better

This really is a sector that doesn't sit still. After the Ecobuild build up it was good to get to the show and see the array of expertise on offer within the industry. Despite the show being smaller in stature this year, the majority of exhibitors were pleased with the turn out and quality of visitors. This is good news and shows that the industry's serious players are the ones with longevity. Looking back two years, Ecobuild was of course much larger. But that doesn't necessarily mean it was better. It's interesting to see how many of those companies exhibiting two years ago have now gone. And it's a testament to the ones that are still there, the ones offering true expertise and vision, that they have been able to demonstrate staying power and solid growth plans. There is no denying that Ecobuild is a major event for the sector, the meeting place for innovation and technology development, so it was good to return from the show having experienced a positive event. And of course, pulling in significant figures such as Ed Davey, Greg Barker and George Clarke, confirms its status as a must-visit event in the renewable and energy efficiency arenas.

Of course, while a major event such as Ecobuild is taking place, the industry doesn't stop. As news began to grow of EU member states approving a European Commission plan to register solar panels from China, many key players voiced their concern with fears that consumers may be priced out of the sector. There is no doubt that it has been a turbulent ride for the PV industry and it doesn't look like slowing down any time soon . . .

As we close the doors on Ecobuild, it's time to look ahead to the remaining industry events throughout the year. What was the Renewables Roadshow, now the Energy Efficiency Exhibitions incorporating Renewables Roadshow, kicks off in on 10 September in the South West. Nominations are now open for awards entries (see page 11) which have become renowned for highlighting the industry's expertise.

Contents

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'Visit numbers to solar PV are down to a third of last year's figures, while overall visits to YouGen have increased from 28,500 visits last February to 38,000 this year" Cathy Debenham p15

PV sector criticizes China import registry

The European Commission's recent decision to register all PV products imported from China has been widely condemned by the industry.

Since 5 March, importers of modules, cells and solar wafers have been forced to register these products at customs in EU member states. Importers may have to pay duties on these products if the Commission decides in June to impose tariffs, as a result of the ongoing trade dispute between European and Chinese manufacturers.

Europe's governing body is currently investigating allegations of dumping panels in Europe at below cost price by firms in the Far East.

Installers and PV supplier, Myriad Solar, has spoken out against the registration of imports which it says it pushing up the wholesale price of panels.

"The impact on stock can also be seen with wholesalers, who are no longer bringing Chinese panels into the UK," said Lee Baxter, general manager of Myriad Solar PV.

"This in turn affects all pricing levels across the whole industry, meaning PV price increases and further stock depletion industry-wide.

"We are already seeing an increase in the price of solar panels, which our suppliers indicate may continue."

PV manufacturer REC, which says its Singapore-sourced products will not be affected by any future tariff, agreed that any attempt to restrict global trade would be harmful to the solar industry.

Luc Graré, senior vice president solar sales and marketing, added: "We strongly believe in open and fair competition, and a trade war is not in the interest of the European solar industry.

"We see that the latest decision on the solar import registry unsettles distributors and installers and causes turmoil in the solar markets."

Trade war: Moves in Europe to restrict imports of Chinese PV products will only drive up prices, says Lee Baxter, general manager of Myriad Solar PV

Electrical contractor fined for misuse of NICEIC logo

An electrical contractor has been fined for fraudulently claiming to be registered with NICEIC. Newport-based Lyndon Saunders, who trades under the name of Cain Solar Energy Division, pleaded guilty to eight counts of unauthorised use of a trade logo, including misuse of the NICEIC logo. He was fined £1,200 and ordered to pay a contribution towards prosecution costs somewhere in the region of £1,500 following action taken by Trading Standards.

Saunders used the NICEIC logo on company stationery presented to a customer.

NICEIC's ceo, Emma Clancy said: "We take misuse of our logo very seriously and we welcome this latest prosecution. The NICEIC name is associated with quality and we must protect those contractors who are legitimately registered with us and have the quality of their work assessed on a regular basis.

"We must also send out the message that anyone thinking about misusing our logo will be caught and dealt with appropriately by the courts."

NICEIC stepped up its fight against firms incorrectly using its logo by setting up a wall of shame. Contractors caught falsely claiming to be members will be named and shamed on the NICEIC website and their details passed to Trading Standards.

SBS says Green Deal is a sprint, not a marathon

Paul Joyner, managing director of Sustainable Building Solutions (SBS) and speaker at this year's Ecobuild, reminded installers, contractors and industry peers that the Green Deal will take time to reach its full potential whilst celebrating some early signs of success.

The sustainable division of the Travis Perkins Group was overwhelmed with the number of Green Deal based enquiries received during the 2013 show, indicating that awareness and interest has grown since the January launch. SBS also announced that it had already trained 1,000 assessors alongside official partner PPL, which supports its claim that the Green Deal is slowly but surely gaining traction.

Joyner stated: "The construction industry is used to a sprint with CERT, FiT and the boiler scrappage scheme as the perfect example. However, the Green Deal is not government legislation and deeper issues around homeowner buy in and ageing housing stock mean it could take up to ten years to reach its full potential. Leading companies such as Travis Perkins Group need to continue waving the flag for the Green Deal and similarly for ECO when it arrives.

"Ecobuild has again been a fantastic opportunity to do just that and visitors have reacted with a hunger for more information on how these incentives can benefit them and their business. SBS' job now is to continue closing the skills gap, to keep supplying the best solutions possible through the group whilst encouraging manufacturers to develop the innovative products that are needed to apply efficiency measures to a wider range of housing types."

Time to grow: According to Paul Joyner, SBS, the Green Deal will take time to reach its full potential

SBS provides a unique 'end to end' solution which utilises strengths from across the Travis Perkins Group. Created in 2010, SBS provides builders, architects and specifiers with energy efficient and compliant solutions which are applicable for new-build, retrofit and repair and maintenance markets.

Lawyer warns developers of legal pitfalls

Boxing clever: Elayna Smith, legal specialist, says renewables developers should tick every box as schemes progress

A lawyer has urged the UK's renewable developers to 'tick every box' when it comes to the legal documents surrounding schemes and partnerships with landowners. The warning comes from renewable legal specialist Elayna Smith as figures reveal the number of wind farms and hydro schemes across the UK are at their highest ever.

Statistics rank the UK as number six globally for installed wind power – with a total of 8.5GW. The UK generates around 1.5 per cent of its electricity from large and small-scale hydroelectric schemes.

Smith, assistant solicitor, MFG Solicitors, said: "More and more specialist firms, landowners and farmers are now involved in potential schemes – whether it's selling or purchasing parcels of land. However, these land transactions can be tricky and there are many considerations surrounding each case. Over recent months there have been cases where documents such as sales particulars, lease agreements or title deeds for land have been overlooked – or even worse, landowners finding they don't have the necessary rights to enter into a renewable scheme.

"These are basic oversights which have resulted in complications with sales or purchases which not only delays schemes, but results in lost revenue and unnecessary costs for those involved."

Smith said too few landowners take legal advice and is concerned the legalities surrounding land ownership rights for multi-acre wind and hydro schemes aren't being clearly established.

Krannich Solar UK named as a 'top PV supplier'

In an independent survey of installers carried out by the market and opinion research institute EuPD Research, installers gave Krannich Solar UK top marks for customer loyalty, satisfaction and for the distribution of solar modules and inverters.

The seal was developed in 2010 by EuPD Research as a way of independently evaluating solar wholesalers and facilitating more transparency in the supplier market. The branch seal is awarded after the completion of a complex market analysis, based on qualified statements from installers and primary data from installer surveys. The seal 'Top PV Supplier' provides an independent benchmark for installers and only a few leading photovoltaic wholesalers – who have previously undergone a rigorous quality check – are allowed to carry this status.

Kim Mann, chief operating officer at Krannich Solar UK, said: "We are honoured and delighted to receive the EuPD "Top PV Supplier" seal, as it is particularly rewarding for an independent institute to recognise and commend the high customer service standards which we work so hard to deliver. We pride ourselves on offering a truly value-added approach to PV distribution and the EuPD award is great recognition for each and every one of the Krannich Solar UK team, whose individual and collective hard work is undoubtedly behind our success. The fact that the EuPD seal is awarded according to installer feedback makes the achievement even more significant for us."

Events

Sustainability Live
16-18 April NEC, Birmingham
http://www.sustainabilitylive.com/

Nemex Energy Live
16-18 April NEC, Birmingham
http://www.sustainabilitylive.com/Content/NEMEX-Energy-Live-the-No1-Event-for-energy-in-all-its-forms/3/

Better Building
24 April Croke Park, Dublin
http://betterbuilding.ie/

The Homebuilding and Renovating Show
18-19 May SECC, Glasgow
29-30 June Sandown Park, Surrey
http://www.homebuildingshow.co.uk/

The Eco Technology Show 2013
14-15 June The Brighton Centre
www.ecotechnologyshow.co.uk

Intersolar Europe
19-21 June Munich, Germany
http://www.intersolar.de/en/intersolar.html

The Energy Efficiency Exhibitions
10 September, Westpoint Arena, Exeter
12 September, Ricoh Arena, Coventry
17 September, Metro Arena, Newcastle
19 September, Highland Center, Edinburgh
24 September, Sandown Park, Surrey
26 September, Event City. Manchester
www.energyefficiencyexhibitions.co.uk

The Renewables Event
10-11 September NEC, Birmingham
www.therenewablesevent.com/

The Energy Event
10-11 September NEC, Birmingham
www.theenergyevent.com/

Solar Power UK
8-10 October NEC, Birmingham
http://www.solarpowerukevents.org/

Energy Solutions
9-10 October London Olympia
www.energysolutionsexpo.co.uk

HETAS launches new guide

The new HETAS Guide is being launched for 2013. The annual publication is an essential reference tool for anyone in the solid fuel and biomass industry, with a comprehensive listing of approved equipment, training centres, installers, fuels and technical information. HETAS registered installers receive a free copy, or the guide can be ordered direct from HETAS.

With new colour coded sections, the guide contains efficiency figures for appliances, helping specifiers to determine whether a particular appliance can be installed in accordance with building regulations. With the current drive for low and zero carbon homes, the guide is an essential reference source for solid fuel and carbon neutral biomass.

Guiding light: The HETAS Guide for 2013 is a useful tool for installers

REA publishes maiden industry survey

The Renewable Energy Association (REA) has conducted its first survey into industry confidence. Senior managers from 68 companies responded to the survey which found the Energy Bill to be the leading cause for concern. 51 per cent believed the Contracts for Difference element of the bill, will not stimulate enough investment for new renewable power capacity.

69 per cent believed that the lack of a legally-binding emissions target sends a poor signal to investors and only four per cent thought the UK would meet its 2020 renewable energy target. The survey also found that just under a half of companies had kept stable employment levels and almost as many firms had employed extra staff as had made redundancies.

Speaking about the findings, REA chief executive Gaynor Hartnell said: "We will repeat this survey every six months in order to build up a comprehensive picture showing trends in confidence levels. Billions of pounds of investment needs to flow into renewables infrastructure. Our aim is to provide government and stakeholders with a tool to gauge how policies are being received. The UK has to achieve a higher growth rate than any other EU member state in order to reach its 2020 renewables target. Mixed messages remain a problem and industry needs policy certainty and political consistency. The prize is up to 400,000 jobs by 2020, economic growth and greatly improved energy security."

PV revenues stall as industry grows

Global income for the renewable energy sector flat lined in 2012 despite a growth in deployment during 2012, according to a new report. The 'Clean Energy Trends 2013' report, released last month by research firm Clean Edge, concluded that a renewable energy's market share of new energy investments across the globe surged to 19 per cent in 2012, driven on by the plummeting price of PV modules. Despite new solar installations standing at 31GW in 2012, the report's authors say that revenue decreased by $12bn as PV costs fell from $7.50 per watt in 2001 to less than $2.50.

Kerry Burns, Solarsense, said: "Rapidly falling prices for PV have allowed both the UK and global PV industry to grow, and we expect that solar PV will be a key future technology. Many commentators believe polycrystalline module prices have now reached their lowest point, given current manufacturing methods. But at the price point we have now reached for installed solar PV in the UK, coupled with increasing fossil fuel costs, we are in good form for this predictable and safe energy source to provide an increasingly significant proportion of the UK's electrical demand in the coming years."

Great Scot

Scotland's energy minister, Fergus Ewing, has welcomed UFW's decision to expand its presence north of the border. **Paul Stephen** reports

The MSP officially opened the Leicester-based distributor's new premises in Livingston, West Lothian, which houses offices, permanent exhibition space, training facilities and a distribution warehouse.

Ewing, who was joined by more than 100 guests for the opening ceremony on 10 January, praised UFW for opting to invest in the Scottish economy and increasing the availability of renewable energy technologies in the area.

"The Scottish government is passionate about promoting renewable energy for homes and businesses across the country," he said.

"Members of the public will be able to come into the exhibition centre and training rooms, see the technology for themselves and have all the benefits explained by UFW's renewable energy experts. UFW can then design a bespoke system and work with an accredited plumber or engineer to complete the installation.

"Whether it be heat pumps, solar or biomass, we want people to take up renewable energy, which is why businesses such as UFW are vital.

"This is a great time for enterprise in Scotland and we always like to welcome new companies such as UFW, and are grateful that they have chosen to invest in the country and its economy. This is a long-term commitment for UFW and they have selected an excellent location for their eco-hub," he added.

The Eco-Hub, which cost £1.5m and is set to create 15 jobs, is only the first stage of a much larger UK-wide expansion plan which will see UFW open similar centres in the South East and South West of England.

Nigel Parkes, UFW managing director, says that geographical expansion will not only allow the company to reach new customers, but significantly increase the number of installers who pass through its training schemes.

Branching out: Fergus Ewing MSP (centre) with the UFW Livingston Eco-Hub team

"The plan was always to be based in Leicester, Scotland and then the South East and South West. Serving the south is possible from Leicester but we had to invest in Scotland (to achieve nationwide coverage).

"Our training academy offers a range of both BPEC and Logic accredited courses in areas such as heat pumps, solar thermal, water regulations and working at height. I would like to have the other two sites open ideally by the end of the year.

"There is no reason why each of these facilities should not be making £2.5-£3m turnover annually. We would like to train 700 installers each year, per facility, at a rate of 10-15 per week."

UFW was set up in 2006 and acquired by oil and LPG distributor, the DCC Group, in November 2011.

Nigel Parkes said this was a critical factor in UFW's decision to embark on an ambitious growth strategy in the difficult current economic climate.

He added: "It is a high risk strategy. Margins are being hit but if you are going to position yourself as an expert and leading provider in this sector you need to do this.

"We are very fortunate to have The DCC Group with £10.6bn turnover behind us, but they have done this for the right reasons and see renewable energy as the future.

"You have got to be different in a difficult time and not another has-been."

Cash converter

Darren Riva, head of green financing, Energy Efficiency Financing Scheme, discusses the role of renewable energy in creating a low carbon economy and boosting the use of renewable energy with financing solutions

In the government's pursuit of decarbonising the nation's economy and promoting green growth, renewable energy has an indispensable role. Committed to delivering 15 per cent of the UK's energy demand from renewable sources by 2020[1], the government has already introduced a number of incentives such as the Feed-in Tariff (FiT) and the Renewable Heat Incentive (RHI), which have contributed to the vibrant growth in renewable energy. According to the Renewable Energy Roadmap, by the Department of Energy and Climate Change, in the year July 2011 to June 2012, the total electricity generation from renewables increased by 27 per cent, reaching 37.9TWh from a total of 14.4GW installed capacity.[2]

Nevertheless, despite governmental subsidies many companies, especially SMEs, are still hesitant about making investments into renewable energy due to a general lack of access to affordable financing. Reports from the Bank of England show that the annual rate of growth in the stock of lending to UK businesses was negative in the three months to November 2012. The stock of lending to small and medium-sized enterprises and large businesses also contracted over this period.[3] So bearing in mind business' financial restraints, what can renewable energy suppliers and installers do to boost the industry?

Quids in: Darren Riva, Energy Efficiency Financing Scheme, looks at financing solutions for renewable energy to boost uptake

Energy Efficiency Financing Scheme

The answer lies in the provision of an affordable integrated solution encompassing technology and financing – made possible through a specialist financing facility in the market such as the Energy Efficiency Financing (EEF) scheme. A joint initiative between the Carbon Trust and Siemens Financial Services Limited (SFS), the EEF scheme provides finance for organisations acquiring energy-efficient equipment, with affordable monthly payments designed to match – and be offset by – the average monthly savings on energy bills. In some cases, the value of the energy savings can be greater than the monthly finance payments, allowing the end customer to be cash positive from day one.

Renewable energy suppliers can apply to become a recognised supplier of the scheme, which will allow them to integrate the financing offer into their overall sales proposition. In other words, their business customers will no longer have to seek external funding sources for equipment acquisitions and can instead enjoy a one-stop-shop approach. As the scheme provides customers with an affordable alternative to outright cash purchase, suppliers can focus their efforts on providing the best solutions without customers' capital budget restrictions.

With the aid of the EEF scheme, many suppliers of renewable energy technology have been able to help businesses go green and reap efficiency benefits. Nailcote Hall Hotel, Golf & Country Club, located in Solihull Warwickshire, for example, has successfully reduced its heating costs with the installation of a 100kW biomass boiler. It runs on a combination of wood pellets and the by-product of a biodigestor. The hotel has also undertaken a further project to install a food digester to reduce food wastage costs, in addition to delivering a supplementary supply of burnable fertiliser. The combination of biofuel production and biomass boiler represents a £50,000 investment but delivers savings in the region of £20,000 a year.

Supporting adoption of renewables

The Carbon Trust estimates that UK companies require £9 billion of investment in energy-efficient equipment in order to replace old, inefficient systems with modern, low-energy, cost-saving alternatives. In a tight credit climate, businesses wanting to invest in renewable energy sources are often in need of financial support in addition to expert advice about the running and maintenance of the technology. Therefore, suppliers who are capable of introducing a financing solution, such as the EEF scheme, alongside their products and installation services will undoubtedly find themselves in a more competitive position with their ability to offer customers a complete turn-key solution.

[1] UK Renewable Energy Roadmap Update 2012 – DECC
[2] IBID
[3] Bank of England. Trends in Lending, January 2013

The real deal

The Green Deal energy efficiency initiative is officially rolling out across the country and Preston and Wirral-based **Inteb**, one of the first two accredited Green Deal Providers for the commercial real estate sector, believes the opportunities for installers are numerous

Inteb, which is handling domestic Green Deal business across the northwest and non-domestic enquiries nationwide, has been officially allowed to draw up Green Deal Plans as from January 28, along with the other Green Deal Providers now accredited. It believes Green Deal will progress fairly slowly in the first quarter of 2013 and then pick up in quarters two and three, providing opportunities for installers to enjoy valuable work in what is currently a depressed sector.

Inteb predicts exciting times for the whole supply chain as Green Deal begins to make its mark. Those with experience of renewable technologies will not be shut out, as renewables are some of the approved measures that can be specified as part of a Green Deal Advice Report (GDAR).

Career progression is another element of Green Deal that will apply to many installers. There is every opportunity for an installer to up skill and become a Green Deal Assessor. Here, they can use their knowledge to prepare a Green Deal Advice Report and offer the customer impartial advice when on site. They can then tie in with a Green Deal Provider like Inteb, to access the finance package that the customer requires. What is needed is an ability to interact well with a wide range of customers and a willingness to help bring about behavioural change when it comes to energy use.

Opportunities are particularly rich within the non-domestic sector, in which Inteb has a wealth of knowledge and experience. Any appropriately qualified and experienced installer wanting commercial work, should find Green Deal a real asset.

Up-skilling is available at various training establishments, but installers are urged to be cautious. Much Green Deal training is of a very low standard and is not in the best interests of anyone seeking positions as Green Deal Installers or Advisers. Inteb's own training division has written bespoke courses that ensure the right skills are delivered to delegates and Inteb is the NSaET's training provider– an endorsement of its proficient training programme.

Inteb has also set up its own Installer Panel, open to anyone with the right skills and with relevant PAS 2030 accreditation. This panel will handle work that Inteb generates thanks to its central position within Green Deal.

Inteb's CEO Philip Hargreaves says: "Green Deal will not be the only panacea for this country's lack of energy efficiency, but it is driving awareness, technological advancement and behavioural change. It is still only one solution to financing energy efficiency at home or at work but, as no money has to be paid up front, it is likely to prove popular with customers wanting enhanced levels of comfort and lower bills. Our advice to installers would be to at least explore the opportunities it may hold."

Green Deal still has a way to go, with teething issues based around the financing of improvements and the Energy Company Obligation (ECO). Given the scale of its ambitions and the climate change targets it seeks to meet, this is hardly surprising. These will be ironed out, but in the meantime, installers could be training for new roles and actually getting involved with Green Deal at a practical level as Green Deal Advisers. Green Deal is already on our streets, so best advice is to get ahead of the queue.Team

Team effort: Amy Field and Philip Hargreaves, Inteb. The company is a Green Deal Provider

Be in it, to win it

If you are serious about staking your claim in the future of the fast-growing energy efficiency market, make sure you nominate your business today, says the organiser of the **Energy Efficiency & Renewables Awards**

As thousands of businesses compete for a share of the Energy Company Obligation (ECO), Green Deal and the Renewable Heat Incentive, what better way to demonstrate your credentials to customers, than by winning at the Energy Efficiency & Renewables Awards?

While the value of winning an award is priceless, the value of being shortlisted should not be underestimated either, as it provides your business with an outstanding opportunity to stand out from your competitors. So whether you are a larger contractor or a smaller installer, there are an excellent array of awards for both businesses themselves and projects undertaken.

As well as firm favourites, there are a host of new energy efficient categories to choose from:

- Boiler Installer
- Glazing Installer
- Insulation Installer
- Lighting Installer
- Energy Efficient Installer

Designed to inspire industry to greater heights, the Energy Efficiency & Renewables Awards are returning to the Ricoh Arena this September. Previously known as the Renewables Awards, this year's show – which will be introduced by the minister of state for climate change, Greg Barker – will spotlight the brightest businesses in the energy efficiency & renewables sector.

On the evening, guests numbering into the high hundreds, are guaranteed a genuinely exceptional evening at an event which has boasted high-quality entertainment from Michael Mcintyre & Gabby Logan in recent years. Event organiser, Dan Caesar, promises a first class line-up again this autumn: "We pride ourselves on our investment in high-profile hosts for our awards, which is just one of the reasons why in two short years, our awards are already recognised as the ones worth winning and as the best evening in the sector, bar none."

Winning ways: One of last year's winners picks up an award from Gabby Logan. Enter now for your chance to win in 2013

Nomination packs are now available and the deadline for submissions will be Friday 31 May:

- Contribution to Energy Efficiency
- Commercial Project
- Residential New Build Project
- Residential Retrofit Project
- Energy Efficient Client
- Energy Efficient Initiative
- Training Initiative
- Rising Star
- Green Innovation
- Glazing Installer NEW!
- Insulation Installer NEW!
- Low-Energy Lighting Installer NEW!
- High Efficiency Boiler Installer NEW!
- Water Efficient Installer
- Biomass Installer
- Solar PV Installer
- Solar Thermal Installer
- Air Source Installer
- Ground Source Installer
- Commercial Installer
- Energy Efficient Installer

Shortlisted submissions will be confirmed by 1 July thanks to this year's judging panel:

- Head of sustainability, B&ES (Building & Engineering Services Association)
- Principal consultant, BRE (Building Research Establishment)
- Editor, REI (Renewable Energy Installer Magazine)
- Head of sustainability, Wolseley
- Marketing director, BEAMA (British Electrotechnical & Allied Manufacturers Association)
- Managing director, Green Heat
- Director, HHIC (Heating & Hot Water Industry Council)

The Energy Efficiency & Renewables Awards take place in the Midlands on 12 September.

For more information, visit **www.energyefficiencyexhibitions.co.uk/awards**

This month, in its regular column, MCS discusses MCS 023 Certification and the Green Deal

Joined up approach

On 28 January 2013, MCS published the document MCS 023 (Additional Requirements for MCS Installers to become Green Deal Authorised). This document outlines the criteria, which all MCS installation companies who are assessed and certified against, in order to become registered for the microgen measures under Green Deal. MCS 023 was developed by MCS, working closely with both DECC and the relevant MCS committees.

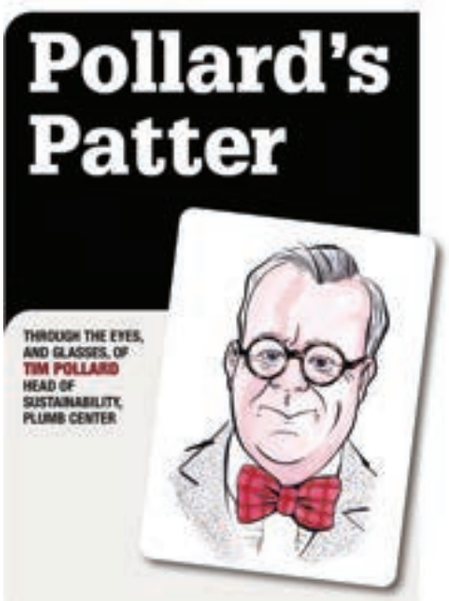
MCS 023, which acts as a bridging document, identifies the additional requirements for Green Deal on the quality management side and which are currently not covered by MCS certification. Therefore, by identifying the differences between MCS and Green Deal, an installation company already registered for MCS is able to develop their quality management in line with criteria specified in MCS 023 to obtain Green Deal certification through their Certification Body.

This key document has become crucial following the release of the new version of PAS 2030 which now no longer includes the microgen measures. This followed the decision by DECC to state that microgen measures under Green Deal must be installed by MCS certified installation companies only, and hence the need for a method for installation companies to show they meet all of the requirements of Green Deal. The release of MCS 023 removes much of the technical justification for becoming Green Deal registered, and simplifies the process for MCS approved companies.

In addition to the release of the document, MCS has also been working with the United Kingdom Accreditation Service (UKAS) and DECC to set up a transitional arrangement for all MCS Certification Bodies to assess installation companies against MCS 023 straight away. This will enable installation companies under MCS to become Green Deal registered for the installation of microgen measures as soon as they have been assessed against MCS 023 by their Certification Body.

This work is a clear example of a joined up approach between MCS, DECC and Green Deal in ensuring the installation market is not impacted by new requirements, and instead can begin work in earnest to support the roll out of Green Deal across the sector.

Opinion



Make an exhibition of yourself

I spent my customary three days at Ecobuild, running between Practical Installer and our Plumb Center stand. Of course, I can only reflect on our own experience but this year we enjoyed record visitor numbers on both stands and the people I talked with were well versed on all the matters in hand.

At times we were almost overwhelmed with people wanting to find out about product developments, the RHI and the Green Deal. Our programme of live demonstrations in the Practical Installer arena was well received as was the opportunity to try our Green Deal software.

Ecobuild is still the place to see and be seen if you are interested in energy efficiency and sustainable construction. During the week, I ran into a number of friends, old and new. The story doesn't end when the doors close. We attended events from the evening before the show opened through to the final day, including the excellent REI reception!

Plumb Center was also lucky to receive visits from Ed Davey and Greg Barker during the show. George Clarke opened our Practical Installer programme on the Tuesday and talked about practical issues to develop more energy efficient homes, including the concept of an 'MOT for houses' which sounds very sensible to me. Needless to say, we shall not be drawing any firm conclusions on our results until we can follow up all the leads generated during the show but initial reactions are encouraging. Note to self: If we attend next year, remember how much my feet hurt on the last day!

What's in store?

BRE's **Steve Pester**, looks at the growing importance of energy storage in renewables

There's another renewables revolution about to happen. It will initially affect the electrical technologies (PV and wind mostly), but will also catch up with heat technologies at some point. What is this big thing that's a-coming? A new wonder material? Energy from anti-matter? Methane capture from cows (perish the thought)?

Changes ahead: Steve Pester, BRE, says energy storage is a renewables revolution

No, I am referring to energy storage technologies. The main objection we tend to hear about renewable energy, aside from initial cost, which, it is now evident to everyone, can fall rapidly, is intermittency. The sun and the wind cannot be switched on and off to order. Hydro power is a little more predictable, but that is also dependent on rainfall. The only way to smooth out the peaks and troughs of renewable generation is by using some sort of energy storage technology.

Why is this so important? Surely the national grid can be used for storage when there's no wind or sunshine? The grid already has to cope with wide swings in demand on a daily and seasonal cycle. Add to that unusual episodes such as surges due to national events (world cup penalty shoot-outs come to mind – millions of kettles and ovens go on when it's all over). Then intermittent generators (that's us in the renewables business) come along and start injecting power onto the grid sporadically – you start to see the problem?

Energy storage has been around for a long time – for example, off-grid battery systems for PV and wind are well-established, albeit not very common in the UK. So what's new here? Well, there are many possible storage solutions, in various states of development because the financial returns for any successful technologies will be very large. What's coming along in the short term, thanks largely to electric vehicle manufacturers, are some exciting new battery technologies, designed not to power buildings for days at a time (as is the case for off-grid storage), but to work with the grid, smoothing out the demand peaks and crucially, allowing individual customers to use more of their home-generated energy.

The traditional lead-acid batteries will be around for a while yet because they are relatively cheap and recycling facilities are well-established. These may continue to improve a little, but the rising stars are batteries based on lithium-ion, sodium-sulphur and redox reactions. Domestic scale lithium-ion grid-connected battery solutions are already available for the early adopters – we are just waiting for the initial push (perhaps an extension to the Feed-in Tariff?) to get the market moving and bring down the costs. It will happen – it has to for grid stability, security of supply and because end users have an increasing desire to protect themselves from grid energy price rises.

BRE's new National Solar Centre will be working to help this happen – details of the centre, which opens in April, can be found at: **www.bre.co.uk/nsc .**

Q&A

Manhal Allos

iVolt

REI: What have you got planned for 2013?

MA: iVolt is part of the global Sollatek group and in the two years since its launch we've set out to revolutionise the way voltage optimisation (VO) works. In 2013 we'll be building on our advanced technology with the launch of new products including one specifically for new-builds., which offers even greater savings. We're also developing plans to offer a gain-share solution and developing an international network of re-sellers/introducers.

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

MA: The VO market has huge potential because it's a simple, cost-effective way of reducing energy consumption and lowering CO2 emissions, with a fast payback time. We estimate 400,000 British businesses would benefit from VO.

REI: How is your company cutting its carbon footprint?

MA: We're in the business of energy-saving technology so naturally it's important that our production processes have minimal environmental impact. Transformers and associated components are shipped by sea to our HQ near Heathrow in recyclable containers. The manufacturing teams follow Sollatek environmental policy standards to minimise waste and our testing procedures involve testing the units on full voltage and full current independently, which minimises energy use.

Manhal Allos is founder and managing director of British voltage optimisation manufacturer iVolt

"I do feel as though I've had the wool pulled over my eyes" Liz MacFarlane, Zenex Solar, P16

Talking Ten to the Dozen

Leading renewable experts reveal their opinions

Who is your hero in renewable energy?

Daniel Silcock, operations manager, Renewable Solutions UK

"I'd nominate Vincent Kirkman, my former tutor at Bolton College. I was an apprentice there between 1998 and 2002 and I learned a huge amount from Vinnie. We're now friends and I saw him again recently whilst installing solar PV, heat pumps, underfloor heating and rainwater harvesting at the college."

Robert Burke, technical director, HETAS

"As one of the founders of HETAS, Bill Kaye re-defined the organisation in 2005 when he focused on educating the solid fuel industry on how to use biomass in a safe, clean and efficient way. Now in his 80s, he is still travelling across Europe championing safe and efficient biomass product standards."

John Wade, director, A Shade Greener

"I'd say that it would have to be Gerard Morgan-Grenville who founded The Centre for Alternative Technology (CAT) in 1973. From the early 70s they were demonstrating ideas such as insulation, heat stores and wind and water power. In the 80s they were using wood gas burners, solar collectors and electric vehicles."

Steve Barrett, managing director, Solarsense

"My hero is Bristol's new independent mayor George Ferguson who is working to make Bristol the UK's Solar City and European Green Capital 2015. He has installed solar PV on a former tobacco warehouse which he converted into a theatre and cafe, and charges his electric car from it."

Will Richardson, director, Rural Development Initiatives

"The Forestry Commission England has been fairly bold in supporting the development of the biomass sector. Its publication of the Woodland Fuel Strategy for England and the development of the Biomass Energy Centre have both provided critically needed support to the development of the supply chain."

Watson Carlill, director, Future Renewable Energy

"In 2006 I met a local installer who had huge insight, knowledge and passion for renewables. He has won five national awards, latterly 'Most Significant Contributor to Renewables'. I have been fortunate to co-present seminars, nationwide, with him in recent years. Andy Buchan is a true renewable hero."

Alistair Smit, managing director, Magic Thermodynamic Box

"Our group chairman, Martino Basile, has vision, mental agility and deal making skills in abundance and has pulled together two revolutionary products that are going to change the way we heat hot water and our homes."

Terry Nash, director, UK Rainwater Harvesting Association

"Steff Wright of the Gusto Group has a well-deserved reputation as a leading innovator in the world of sustainable construction. His flagship development, of high-performance dwellings at Millennium Green in Nottinghamshire, signposted the way for subsequent publication of the Code for Sustainable Homes."

Babak Daemi, managing director, Everlasting Marketing and PR

"My hero is Julian Wiley, chief investor in Evoco Energy, who stuck by his investment during tough times and deserves lots of credit. He has also invested in improving solar panel logistics around the UK through Zenex Solar."

Jodi Huggett, director, 4Eco immerSUN

"Ed Webb, managing director of Metgen, has been instrumental in championing green technologies across the UK, helping homeowners and businesses reduce bills and minimise carbon emissions. Ed has helped to drive forward sustainability, introducing environmentally friendly ideas for the future."

Shift patterns

Cathy Debenham, YouGen, offers an insight into consumer interest in renewables over the last year

Although we run a renewable energy website, you wouldn't have thought it in February last year. Virtually all the questions we were asked were about solar PV (or the Feed-in Tariff for solar PV). After the home page, solar PV was easily the most visited section of YouGen, with nearly double the monthly traffic of the next most popular section (biomass boilers).

Now we see a different picture. If we get asked about solar PV it's generally a troubleshooting enquiry from someone who has already installed a system. The biomass and heat pump sections have both overtaken solar PV in the popularity stakes, and it only just squeezes in to the top 10 most visited pages. Visit numbers to solar PV are down to a third of last year's figures, while overall visits to YouGen have increased from 28,500 visits last February to 38,000 this year.

What went wrong? And what can we do to turn things round?
I'm not going to rehash all the trials and tribulations of the past year, because we need to look forward. However, neither am I going to accept the passing of all blame to the government. Yes, the Feed-in Tariffs (FiTs) readjustments were thoroughly badly managed, but so was the communication surrounding it, much of which came from industry and installers.

I've lost count of the number of intelligent, educated people who were interested in installing early last year, but for one reason or another didn't get in before the end of March, and now think that solar PV isn't a good investment. This is a major own goal. While selling to a deadline is a great way to sharpen minds and encourage a decision, it makes sense to do it in a way that doesn't close the door to those who don't make it through on time. In some cases the door seems to not only have been closed, but locked and bolted.

Given that the mainstream media is less likely to report good news stories, we have to be more creative about getting the continuing attractiveness of solar PV to potential customers. Most of the coverage so far has been on the money pages, and has focused on solar PV as an investment, with emphasis on return on investment and payback as the key benefits. We need to be imaginative about getting people's stories into local papers, property magazines, onto radio and TV in ways that demonstrate a range of different benefits.

While focusing on return on investment was effective in the boom time, it doesn't seem to be working so well now. Recent research by Delta Energy and Environment found that most British customers are not yet thinking in terms of investment, and prioritise fuel bill savings over payback. It also tested what people say their motivations are against what actually prompts action and found that savings on fuel bills plus a long warranty is the most compelling combination.

Another way of looking at it, suggested by Ray Noble of the Solar Trade Association, is to look at the benefit in terms of pre-buying a proportion of your electricity – thus insulating yourself against future price rises. The more electricity used on site, the more attractive this proposition is.

Research by the Energy Saving Trust (EST) published in Keeping FiT in 2011 found that 37 per cent of owner occupiers would consider installing some form of microgeneration. Delta's research found that 60 per cent find solar appealing. The key barriers are upfront cost, insufficient fuel bill savings and the lack of grant or subsidy.

Since the EST research the prices have fallen significantly, energy prices have continued their way-above-inflation rise, and the Green Deal can help with part payment of a solar installation. The challenge to installers is to go in to each sale with an enquiring mind, find out which benefits fit the customer they are talking to, and reignite the enthusiasm for solar PV.

Search history: According to Cathy Debenham, YouGen, has seen a shift in consumer interest for renewables over the last year

Two minutes with . . .

Who are you?
Anthony Mayall, managing director of NIFES Consulting Group

What do you do?
I head up a design, project management and consultancy business. NIFES Consulting specialises in renewable and sustainable energy services.

Where are you?
I am based in our new London office near Euston railway station

How's business at the moment?
Business is good at the present moment, we have got a good mix of projects including small-scale biomass, building-scale PV, district heating, CHP and LED street lighting.

How could it be better?
Business will be better when the confidence to invest is restored. Most businesses are looking for a payback of less than three years at the moment. The press can help by banging on about economic doom and gloom a bit less. We need some steely Industrial Revolution thinking. I note that the USA has a lot more support from government on renewable and sustainable technologies.

Who do you admire in renewables?
I rather admire the Cooperative Bank. It has funded a huge number of renewable projects.

What's the best business advice you have received?
Without good people you are nothing. It's simple but true

How are you going green?
LEDs in the house, low emissions car, lots of insulation, my children have taught me to recycle and I'm saving up for PV!

Talking point

Well, where do I begin this month? From the high of Ecobuild to the low of the Chinese anti-dumping threat, it's been an interesting time, says **Liz MacFarlane**

I'll begin with Ecobuild. thousands of visitors empowered with one goal, to discover cost-effective technologies which will make a difference to today's construction; make a difference to future generations.

Question time: Liz MacFarlane, Zenex Solar, asks why it feels like the politicians keep pulling the rug from under our feet?

Yes, Ecobuild may have been smaller than previous years but it felt bigger. Those who were briefly in the market for a fast buck have taken their dividends; they've taken their leave and closed their doors. Those remaining are steadfast and agile, having diversified and re-evaluated. We are a force to be reckoned with.

For me, Ecobuild 2013 was the most productive to date. I didn't have much time to leave our exhibition stand but when I did, I chatted with competitors, looked at different avenues, and thrilled in seeing dozens of new entrants starting their journey on the Wolseley Practical Installer exhibition. This circular show piece was a real credit to the industry.

And yet, behind the exhaustive professionalism, I defy one solar pv importer not to have been quaking at the prospect of a potential retrospective Chinese anti-dumping duty. So there we are, the gigantean elephant planted slap bang in the middle of the solar PV exhibition hall.

I do feel as though I've had the wool pulled over my eyes. When I joined this industry I thought we were all contributing towards helping achieve UK carbon reduction targets. Why then does it feel like the politicians keep pulling the rug from under our feet?

But just as I start to falter, I look at where we have all been and how we worked together to get through it and I remember what force we are.

Sounding off

Rebecca Hogg, acoustic consultant, BSRIA, looks at acoustic testing and its importance in noise impact assessments in relation to heat pumps

Noise is an important issue to consider when manufacturing or installing a product. Noise measurements, either in a laboratory or on site, allow a manufacturer to accurately declare the noise level produced by a product.

When installing a product in a real-life situation these declared noise levels can be utilised to carry out a noise impact assessment to determine if the new product is likely to cause a negative noise impact on people living or working in the proposed vicinity of the product.

Noise – what is actually measured?

In our experience one of the most common misunderstandings when declaring or interpreting noise levels produced by a product is the difference between sound pressure level and sound power level. A basic analogy for explaining sound is heat. An electric heater emits a certain amount of heat, similar to the sound power emitted by a sound source. In order to quantify the effect of the heater in the room, temperature measurements may be taken around the room. The measured temperatures vary around the room and are dependent on the thermal characteristics of the room, much like sound pressure levels being dependent on the acoustic characteristics of a room.

Heat pumps located in residential areas, pumps in plant rooms, air conditioning units in office buildings, and kitchen extract systems in commercial premises, are just a few examples of situations where noise issues can occur

A sound source, such as an operational heat pump, located in a room emits sound power, expressed in Watts. The sound power emitted radiates away from the source, causing small fluctuations in the air pressure throughout the room, much like ripples across a pond.

Sound power cannot be measured directly and therefore the pressure fluctuations are measured. The sound pressure levels will vary around the room, due to the specific acoustic characteristics of the room even if the sound power level emitted by the heat pump remains constant.

The sound power levels and sound pressure levels are stated using the decibel (dB) unit. The decibel can be confusing as it is often assumed to be an absolute unit, such as meters or grams. The decibel is actually a logarithm of a ratio of two different values. Because the absolute values for sound power and pressure cover a huge range, the decibel unit therefore provides a more convenient range of values.

Why is acoustic testing important?

With more awareness of noise issues and many developments occurring in already built-up areas it is essential to provide an accurate specification of the noise produced by a product.

Heat pumps located in residential areas, pumps in plant rooms, air conditioning units in office buildings, and kitchen extract systems in commercial premises, are just a few examples of situations where noise issues can occur. This can result in failed planning applications or noise nuisance complaints once the products and systems have been installed.

Acoustic testing is an important first stage of the noise impact assessment process. It is important to manufacturers as it enables them to provide their clients with useful information about the sound power level of their product.

Saying it loud: Rebecca Hogg, BSRIA, says noise is an important issue to consider when manufacturing or installing a product

This information enables specifiers and consultants to carry out a noise impact assessment for real-life situations prior to the installation of a new product or system. For example, noise impact assessment in accordance with the BS 4142 standard compares noise levels from a product against existing background noise levels. This is particularly important in mixed residential and industrial areas.

Every council has their own planning policies relating to noise, but the overall aim is the same. Councils want to protect the existing or potential inhabitants of an area and will require justification that a new product will not produce noise levels that could cause a negative noise impact. Without an accurate specification of the noise produced by a product errors can occur, resulting in unrealistic noise assessments, under or over specifying noise mitigation, wasted time and greater costs.

Social network

Simon Lomax, managing director of Kensa Engineering, provides an insight into heat pump use in social housing, identifying both a problem and a solution

Newly built social houses are often equipped with air source heat pumps as contract builders are understandably motivated to meet the required Code for Sustainable Homes level at the lowest cost. In many cases, more durable and efficient ground source heat pumps have been ignored due to their higher capital costs. However, there is increasing evidence that social landlords are starting to recognise that their interests, and those of their tenants, may not be best served with the continued specification of exhaust air or air source heat pumps.

Higher maintenance costs, higher running costs and the obvious potential for issues whenever air source heat pump installations cannot comply with the requirements of the MCS 020 planning document have prompted an increasing number of specifiers to re-think their approach. And Kensa is providing an attractive alternative with the launch of ground source heat pump designs which can benefit from existing Phase One Renewable Heat Incentive (RHI) funding.

Gaining ground: Kensa has pioneered a novel system architecture with individual heat pumps being served by a communal ground array. Photo shows borehole pipes to connect to the unit

Right now, it is still uncertain whether either social housing or new build schemes will be supported by the domestic phase of the RHI, now scheduled for launch later in 2013. That said, new build schemes, deemed by Ofgem to be district heating systems, already benefit from Phase One, currently paying 4.7p (index-linked) per kilowatt hour for twenty years.

Of course, many social landlords, and private developers, are reluctant to embrace traditional district heating installations which feature plant-room scale appliances. Space and billing issues always discourage their adoption plus householders usually prefer to retain responsibility for their own heating system.

The solution

As a response, Kensa has pioneered a novel system architecture with individual heat pumps being served by a communal ground array, an ideal arrangement for social schemes or, indeed, apartment developments where the management company can receive the RHI payments.

Putting theory into practice

The first significant example of Kensa's communal ground array is a 53-unit social housing development being built for New Linx Housing Trust at Louth in Lincolnshire. Having previously installed over 350 Kensa heat pumps for existing properties, New Linx wanted to extend their specification to new build schemes provided there was a compelling financial case. Eligibility for the RHI was a considerable inducement as was the reduced installation cost characteristic of communal arrays.

Working closely with design specialists, Loopmaster Europe, Kensa's drilling contractor, GDC, installed a series of communal ground arrays, each typically serving the entire space heating and hot water requirements for up to eight houses to keep pace with the build schedule. Whilst Kensa has traditionally designed individual boreholes to withstand hot water consumption in excess of MCS requirements, the use of a communal array allowed for some design diversity as it was reasonable to presume not every dwelling would impose the peak demand. Further cost was saved by drilling a reduced number of deeper boreholes, which allowed the drilling contractor to be more productive.

A Kensa Compact High Temperature heat pump, capable of providing water at 65oC, has been installed outside the rear of each property within a purpose-built shelter. Each Kensa Compact features integral ground and load-side circulation pumps to simplify installation and eliminate the need for any separate circulators. Although somewhat counter-intuitive, these small, energy-efficient pumps are quite capable of circulating the anti-freeze fluid around an extensive ground array simply because the flow rate required to serve a single property is so modest.

Great line-up: Brackenborough Rd, a Kensa installation

Evaluation

The overall cost for the design, supply and installation of the ground array, heat pump, shelter, cylinder and RHI metering equipment averaged around £8,000 per property. Since the typical space heating and hot water energy consumption will be 6000kW/h, New Linx should receive an annual payment of almost £15,000. For the tenants, the specification of low temperature radiators should ensure a seasonal performance factor of up to 400 per cent which means significantly lower running costs compared to air source or exhaust air appliances.

Sense and Sensibility

Renewable heat is the new cool, says **Erich Scherer**, assistant director within the Renewable Energy Finance team, BDO

A familiar theme in books and films is who gets the girl – the playboy with the good looks and flashy car, or the stay-at-home guy who does the ironing and has a pension plan.

The typical answer is about growing up. I think that's what we're seeing in the onsite renewables market. We've had some exciting times with solar PV: shiny and cool, it's the Apple of the energy sector.

Then came the hangover of the solar tariff cuts. Who's to blame is a separate debate: the government for providing the equivalent of unlimited pub opening hours in the initial Feed-in Tariffs (FiTs), or the market for binge drinking? Either way, those in the sector that came out the other side and survived are keeping a low profile.

Enter renewable heat. Renewable heat knows all about not attracting much attention. It's the Mr Cellophane of renewables – you can see right through it, walk right by it and never know it's there.

PV has become more sensible; renewable heat is becoming more exciting. For the onsite renewables sector the future looks both stable and sexy.

That's not good in terms of getting the girl. When I was a renewable energy policy maker, the focus was always on renewable electricity. In meetings someone would invariably say, "let's not forget about renewable heat", which would draw emphatic affirmations of support from around the table, after which the discussion would happily return to wind turbines and solar panels. It took parental intervention (from the European Commission in the form of the Renewables Directive) to get the UK to notice that renewable heat was an eligible bachelor with good prospects.

Ultimately the merits of renewable heat are a no-brainer: it can deliver a lot more at lower costs. On the basis of DECC's latest (2012) Renewables Roadmap, PV is expected to contribute around 4 per cent of the UK's legally binding 2020 renewables target. Renewable heat under the RHI needs to deliver almost a third of the target. Even after the PV tariff cuts, the Renewable Heat Incentive (RHI) tariffs per unit of energy are an order of magnitude lower.

Don't get me wrong – I love solar. As an energy civil servant I was arguing in favour of FiTs for PV back in 2005, when this was still quite close to a sackable offence. But it's also a bit like saying I love the iPad my wife got me for Christmas; when my heating broke down a few weeks ago I had to admit that I probably needed the latter more.

Even after the start of the RHI, it's still been hard work to get people excited about renewable heat though. The sector has spent much of the past year and a half explaining to heat users what biomass boilers and heat pumps are, never mind what the RHI is or why it makes sense to switch to renewable heat. There hasn't been anything close to the kind of PV boom that followed the start of FiTs.

But we're turning a corner. The government's RHI uptake statistics are showing a steady upward trend that is at the same time reassuringly conservative (almost 900 accredited installs covering 175 MW by January this year, vs over 200,000 PV arrays totalling 1 GW during the first two years of the FiTs). So far uptake has been limited mostly to biomass, but DECC has been dropping heavy hints that it intends to raise the ground source heat pump tariffs. A month ago the latest government publication on the RHI showed the same nice combination of (mostly) welcome and at the same time unsurprising news.

Plenty of policy fixes remain on my wish list. To name but a few: the budget control mechanism leaves questions about the rigidity of tariff-specific degression triggers, as well as the absence of tariff pre-accreditation; an issue that's less well-known outside the finance community is the spanner HMRC is throwing in the works through its reluctance to approve the use of tax-efficient (VCT/EIS) finance for renewable heat. But there's no longer a question of principle; it's now a question of implementation.

Hot stuff: Renewable heat is becoming more exciting and sexy, says Erich Scherer, BDO

Most importantly, those who make the final decision about success or failure of the sector – heat users – are catching on. Whether it's Sainsbury's proceeding with heat pumps, the Scottish government and the NHS putting in place tender frameworks to roll out biomass heat, or the first financed ESCO deals (offering the equivalent of PV "rent-a-roof") coming on-stream – momentum is building.

Why should the girl have to choose? PV has become more sensible; renewable heat is becoming more exciting. For the onsite renewables sector the future looks both stable and sexy.

Registering interest

The importance of MCS accreditation cannot be under-estimated. This month, **HETAS** looks at the significance of really understanding the scheme

Biomass forms a key part of the government's drive towards renewables, with funding support available from the non-domestic Renewable Heat Incentive. Just over 400 installations were accredited under the scheme in the last quarter of 2012, with 90 per cent of the £1.3 million funding going to biomass. This is a great stimulus for the biomass industry, encouraging the development of new biomass products, fuels and training for biomass installers. When the domestic RHI is introduced later this year we can expect similar impetus for smaller scale biomass.

To access grants from Feed-In Tariff (FiTs), Renewable Heat Incentive (RHI), or the Renewable Heat Premium Payment (RHPP), both the installed product and the installation company must be MCS certified. MCS is an internationally recognised quality assurance scheme supported by the government, designed to ensure high quality installations which will deliver real carbon savings. Launched in 2008, MCS covers electricity generating technologies with a capacity of up to 50kW, and heat generating technologies with a capacity of up to 45kW. In addition to biomass, MCS covers heat pumps, solar and wind turbines.

MCS gives installers a mark of quality and competency, giving consumers confidence and reassurance. Installers and products that have the MCS logo are likely to be differentiated as quality suppliers in the marketplace. Becoming an MCS registered installer means you can offer customers a route to grant funding, and promote the financial appeal of generating their own energy supply. It also means you can diversify into the fast moving environmental market to capture new business opportunities.

HETAS is one of the only organisations to offer both installer and product certification, and is unique in specialising in biomass. In addition, HETAS is the first organisation to successfully map biomass assessments against National Occupational Standards (NOS). This means that biomass installer training will be available through HETAS' nationwide network of approved training centers, some of which are approved with the National Skills Academy for Environmental Technologies. Skilled heating engineers who might be working on gas or oil can easily add biomass to their qualifications.

The HETAS H005 biomass installer course covers appliances up to around 70kW and enables installers to carry out feasibility studies, professionally advise customers on fuel types, storage options, system design and installation specification. Successful completion of the course can be used as part of the criteria for approval with HETAS as an approved Microgeneration Certification Scheme (MCS) installer for biomass and as a competent persons scheme registrant enabling self-certification of work under Building Regulations. This reduces bureaucracy and cost for your customers.

Double up: Robert Burke, HETAS, says HETAS is one of the only organisations to offer both installer and product certification.

There are three options for getting involved with MCS as an installer: become a fully certificated MCS company, work full time for an MCS company, or become a sub contractor to an MCS certified company (rules apply). HETAS can provide installer MCS approval for biomass and solar thermal technologies as well as competent persons scheme registration. Combining the two can be cost effective and can reduce inspection time on site. Many heating engineers will already have the necessary skills for becoming and MCS installer, and HETAS can help advise and provide support through the registration process. Combined registration with MCS and the HETAS competent persons scheme is also available.

www.hetas.co.uk.

Steady steps

Rising gas and electricity bills combined with the introduction of the Renewable Heat Incentive for homeowners could see the biomass market bloom over the next 12 months, according to Organic Energy's **Andy Boroughs**. But the industry needs to do all it can to avoid a boom and bust....

Taking care: Andy Boroughs, Organic Energy, says that the industry needs to ensure the reputation of the sector is maintained, with the coming biomass boom

The biomass market is growing rapidly. More and more suppliers are entering the marketplace, consumers faced with high household bills are demanding renewable energy alternatives and the government is fuelling the fire, offering incentives to those who make the big green switch.

Although this all sounds positive, I do have to sound a warning bell. Some of these suppliers may have little or no experience in providing and installing biomass systems. If you combine lack of experience, with lack of skills and potential quality issues – we could be seeing the same 'cowboy' claims which became commonly associated with solar PV in 2011.

When you look at the current economic conditions, government policy decisions and global energy markets, there are clear signs that 2013 will be the coming of age for biomass.

The industry will expand massively, responding to customer demand, regardless of whether the infrastructure is in place to ensure the consumer (and indeed the industry's reputation) is protected.

Now, as the domestic Renewable Heat Incentive (RHI) is about to dawn on the horizon, there is a rising awareness among the population that we are heading, possibly careering, towards some very uncomfortable energy truths. In particular, the price of gas looks likely to rise further as the UK attempts to source more and more to replace the electricity generating capacity lost by the closure of power stations.

With that insecurity surrounding traditional energy such as gas and oil, the cashback available from the Renewable Heat Incentive for installing biomass makes the green choice the financially sound choice, not only for non-domestic premises but also the householder in the latter part of the year.

We've found customers who have installed our ÖkoFEN wood pellet boiler systems are often securing more in incentive than the annual cost of the fuel. When you can actually make energy cost savings by switching to biomass – many people who already considering a switch to renewable energy probably won't take much more convincing.

But it is not just a matter of selling – equipment suppliers will need to offer all the long term support that goes with any product, if they don't, we will all get a bad name. Sales, survey, installation, commissioning, handover, long term support to the end customer – all this needs to come together in a quality offering.

That's the way Organic Energy has always done it, that's why we're still here after a decade and saw sales of our wood pellet boiler systems up significantly in 2012.

We recently launched our Ambassadors programme to recognise the leading faces of our brand, promoting those trusted installers which share our ethos and passion. It is our way of demonstrating the reliability and efficiency not only of our products, but also the high-quality of customer-service which lies behind every installation.

It will be companies which ensure they are building the foundations for the future, offering education, skills and training to the next generation of installers, which will survive the initial biomass boom.

Those coming late to the party will no doubt leave early, and hopefully won't take the reputation of this budding industry with them.

World class: The Evoco 10kW turbine. The company is upgrading this turbine, with what it says will be world leading advancements in small wind turbine technology

Blades of glory

British R&D makes wind turbines more efficient than ever, says Yorkshire-based **Evoco Energy**

Evoco Energy, the British-based wind turbine manufacturer is upgrading its 10kW Evoco 10 wind turbine, with world leading advancements in small wind turbine technology. Evoco Energy has invested all profits back into research and development for its full five years of trading and is proud of this achievement in the development programme.

Ryan Gill, Evoco Energy, managing director, comments: "It is only when you have a sizeable fleet out there that you find out how a turbine reacts and behaves. The knowledge that we've gained with our fleet of 200 turbines over the past three years has been invaluable and has allowed us to make huge technological strides including our latest two upgrades the Monitor and Control system and the Synchro Pitch. We feel it is only right that we repay the faith that customers put in us by upgrading the specification of their machines with the latest developments for free."

Gill adds: "Renewable energy is an emerging market in the UK. Of all the accessible renewable technologies, wind is by far the most sophisticated and is therefore, an R&D-led industry. Evoco Energy's business model has a clear, long term focus and we feel the technology upgrades demonstrate our 100 per cent commitment to our customers, to our technology and to our brand. This next series of enhancements will bring our total R&D and upgrade spend to over £2million."

Two pioneering advancements will not only benefit customers but, says Gill, eventually the industry as a whole: "Firstly, the M&C upgrade will allow users to track turbine performance by the second and control their turbine globally from their mobile phone. The micro-controller system will also feed fine-grained data which surpasses government testing levels, back to Evoco's head office and to a password safe web portal. Turbine owners can visit the portal for real time data on how much energy their turbine is producing. The data also feeds in to an early warning system notifying of potential issues, rather than leaving them to be discovered at servicing.

"The M&C is also capable of autonomous assistive control without any human intervention. The fundamental design of the Evoco 10 features passive, mechanical regulation, pitching the blades to control excess kinetic energy entering the system, which could cause severe stress to mechanical components and overpower electrical circuits. The passive system works well, in fact better than ever since we launched the Synchro Pitch, but with the M&C we can now go one step further, if needed, to protect the turbine from stress and wear. Several key parameters are monitored every single second, including turbine rpm, voltages etc. If there's any sign of incipient malfunction, any sign that the standard passive controls are not doing a 100 per cent effective job, the M&C can step in to actively assist in turbine regulation. This can range from pulse width modulated application of high resistance braking, to automatic protective shutdown through blade stalling. Either way, our engineers know about it sooner than the turbine's owner and will arrange speedy investigation and service."

Gill likens the Evoco 10's Monitor and Control functionality to the engine management systems which are ubiquitous in modern automotive designs: "When your car needs its oil changing, it tells you. Everyone expects this in their car. You don't even think about it – it's just a standard feature in every vehicle, industry-wide. But in the small wind industry, where a turbine project has a price ticket like a luxury car's, this kind of alert has until now been unavailable."

With this "early warning" system, Evoco report they are delivering an industry first. "Of course at the megawatt scale, those guys will be monitoring every aspect of a turbine. If your turbine is planted out in the sea, you'll want to know about any maintenance issues without the helicopter ride," jokes Gill. "But at our end of the wind industry, this is brand new. I'm sure given time, other small turbines will follow suit, but right now, if you want this level of technological advancement in a small wind turbine, it's Evoco that can deliver it."

It is expected that this system will bring the average wind turbine running time to above 98 per cent. This is higher than large-scale wind technology which has been around a lot longer. The second part of the upgrade programme is a modification to the pitch system, the Synchro Pitch.

"When coupled with the M&C upgrade this puts Evoco Energy squarely at the forefront of small-scale wind turbine technology", Gill says.

Hot prospects?

Simon Allan, Plumb Center's renewables director looks at solar PV's ongoing potential and asks, is the future bright for solar PV?

With the recent launch of the Green Deal and current focus on the forthcoming Renewable Heat Incentive (RHI), it's easy to overlook the ongoing potential of the first renewable technology to take off in the UK – solar PV.

The 'gold rush' days of 2010 and 2011 seem a distant memory. Few will mourn the demise of cold calling of potential customers that occurred at the height of the boom, which caused considerable damage to the sector's reputation. And, the negative publicity surrounding the reduction of Feed-in Tariff rates last year have left many householders with the impression that subsidy is no longer available for solar PV installations, or at best that this is no longer an economic proposition.

Globally, solar PV is still on an upward curve. Worldwide generation capacity recently reached 100GW, with the UK's contribution less than two per cent of that figure. Certainly, many other countries have more abundant direct sunlight than is enjoyed by the UK, but the government's ambition for up to 20GW to be generated by 2020 means a steep increase from the current 1.89GW level.

So what are the immediate prospects for the technology at the domestic level in the UK? While the levels of feed-in tariff have reduced, and will reduce further, so has the capital cost of equipment. Between summer 2011 and March 2012 DECC estimates that installed costs fell by up to 50 per cent. This means that the returns possible are still attractive – some estimate between eight and 11 per cent – certainly a lot better than those available from leaving the money in a bank.

Following the rapid expansion of the market brought about by the initial feed-in tariff rates, the good news is the sector now has firm foundations. With subsidy now at a more sustainable level, factors such as innovation, quality, longevity of systems, training and due diligence are coming to the fore. And DECC now appears to believe that solar PV has the potential to form a significant part of the UK's renewable energy generation mix, by including it as a key technology in its Renewables Roadmap. Further confidence will be given to investors when DECC publishes a Solar Strategy document later this year, to complement the updated Roadmap.

Solar PV is included in the Green Deal scheme, although future subsidy receipts cannot be included in the Green Deal 'savings' calculator, limiting the level of funding available to this technology. However, the government hopes the Green Deal will bring together the energy efficiency and domestic micro-generation markets. To qualify for the standard Feed-in Tariff rates, homeowners' properties must be energy efficiency level D or higher – a lower rating means a lower FiT rate. This is expected to drive investment in improving energy efficiency, with companies specialising in solar installation showing an interest in becoming accredited Green Deal installers.

But perhaps the biggest factor supporting the future growth of domestic solar PV in the UK is the daunting prospect of continually rising electricity prices. Rather than passively waiting for this tidal wave of higher prices to hit, installing solar PV is a real alternative, helping consumers insulate themselves from the impact of the UK's growing reliance on electricity generated using expensive foreign gas.

Solar PV is an established technology in the UK, with 3,900 MCS approved solar PV installers. Indeed, there were 40 new MCS approvals for solar PV installers in the month of January alone – more than twice as many as for any other technology

Still shining: Simon Allan, Plumb Center, provides an insight into the future of PV

Solar PV is an established technology in the UK, with 3,900 MCS approved solar PV installers. Indeed, there were 40 new MCS approvals for solar PV installers in the month of January alone – more than twice as many as for any other technology. And Plumb Center's training partner Sevenoaks Energy Academy reports continuing strong interest in installers gaining MCS accreditation for solar PV.

Certainly, the number of solar PV equipment manufacturers and suppliers exhibiting at Ecobuild this year did not indicate a sector in decline. The solar PV demonstrations in the Practical Installer arena were as popular as ever, and developments on view such as roof-integrated panels, power storage and generation from atriums and conservatories gave a glimpse of the future for the industry.

Taking a view

Liz MacFarlane, Zenex Solar, looks at the issues surrounding EU plans to register Chinese solar panels

UK solar panel merchants are said to be worried by the news that EU member states have approved a European Commission plan to register solar panels from China. EU diplomats confirmed the latest step toward duties on the 21 billion euro ($28.08 billion) import market. The decision, due on 6 June (although this could be delayed until 6 December), means many UK trade suppliers are considering a change in strategy. What's more worrying, is that any decision could be retrospectively enforced. European solar installers said that 60 per cent duties on Chinese panels could cost up to 242,000 jobs over three years (Reuters).

My main concern is one which the PV industry thought was over. The biggest problem is the uncertainty….what level of duty and how likely is it to be retrospectively applied? As an importer and wholesale supplier, Zenex and others like us, are in an impossible position. How do we mitigate the risk while continuing to keep our installer customers in supply? Unfortunately, like so many other EU legislations, this move will protect other territories at a potential cost to the UK market. Zenex is continuing to import JA Solar and other Chinese panels, as well as Korean LG Electronics, so that our customers can meet their obligations.

The industry must stay positive about the technology

The news has created quite a stir in the UK. However, in China, there is even more concern for the latest political intervention. Head of UK, JA Solar, Alastair Mounsey, says: "Higher cost non-Chinese modules certainly have a customer base and market but it is quite separate to the market of Chinese made modules that has made such high installation volumes in the UK possible since they can be produced in larger volumes and at cost that has matched the requirement of ever falling subsidies. The threat of tariff is purely disruptive for the industry and shall afford only small short-term gains to the EU manufacturers that have made the complaint. In time the manufactures, developers and financers will develop new systems to cope with any tariff level but we do now enter a new period of uncertainty."

According to an article on the Photon website, "registration of imports allows for retroactive application of anti-dumping duties for a maximum of 90 days before the imposition of provisional duties, if any. In the case of the anti-dumping investigation into Chinese solar imports, the deadline for the decision to impose provisional anti-dumping duties is June 6, 2013. The Commission expects to conclude the antidumping investigation in December 2013."

Although no one wants to see cheap inferior products in the any market, the solar industry also does not want to have UK homeowners and SMEs priced out of this wonderful technology. How is it going to convince consumers to buy into solar and other renewables if these political changes keep coming? The industry must stay positive about the technology and ensure that a clear distinction between renewables, energy efficiency and politics is drawn. Similar industry errors regarding the solar FiT cuts in November 2011 cannot be made.

Cause for concern: Liz MacFarlane, Zenex Solar, outlines her concern surrounding EU plans to register Chinese solar panels

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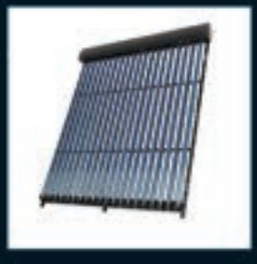

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Joining forces

Viessmann's sales manager, renewable energy systems, **Colin Bland**, looks at hybrid installations enhanced by new controls and discusses why optimising solar PV systems for greater heat pump efficiency is the next opportunity for controls

With the UK government aiming to cut carbon emissions by 80 per cent by 2050, renewable technologies have a significant part to play in the future of home heating. Dual-technology installations of solar PV and renewable heating technologies are already on the increase as homeowners get to grips with grant schemes and enjoy significant efficiency savings. But these savings can be made greater still by making these renewable energy systems work better together as a Hybrid system, and the control technology to help reach this goal is almost here.

The perfect match

Heat pumps are currently receiving a lot of attention for their future potential in the domestic market. Tariff levels under the domestic Renewable Heat Incentive (RHI) will soon be announced, whilst renewable heat premium payments for installations this year are expected to be between £850 for air source and £1,250 for ground source heat pumps. Meanwhile, with reduced but still financially advantageous feed-in-tariffs solar PV sales continue to be popular. We are a long way behind established countries such as Germany, but the UK has the potential to be the biggest growth market for PV over the next few years, despite the fall in tariff levels, the equipment and costs of installation have reduced and it still represents a substantial investment opportunity for the financially motivated.

However, a stigma still surrounds the level of electricity consumed by heat pumps. Although this has been created unfairly as a result of poorly specified and installed systems as reported by the EST, fitting an air source heat pump in a home currently paying £3,000 on oil for heating, would be expected to increase the electricity bill by an extra £1,000*. At the same time, homeowners using solar PV share a common complaint of their own. Electricity which is generated by solar PV and not used is sent back to the grid. An inconvenience considering many homeowners are out at work during the day and unable to use the generated electricity when the sun's energy is at its peak. The future for heating controls is surely the ability to address this dichotomy.

Strength in numbers

According to British Gas, solar PV alone can generate electricity savings of up to £230 per year, whilst heat pumps' enviable coefficient of performance means they are able to generate around 4 kW of energy for every 1 kW put in. We have developed a new feature on our Vitotronic 200 control system, which uniquely allows the heat pump and solar PV systems to work as a hybrid system. The heat pump monitors the electricity generated by the solar PV and with sufficient generation over a consistent period of time, the controls bring on the heat pump and utilise the free energy rather than returning it to the grid. This means that during these periods, the heat pump is able to operate at no cost to the homeowner, running solely on energy generated by the solar PV.

Testimonial.

Chris Flaherty, proprietor, Vietec Heating:
"Integration of different renewable energies is essential in my opinion to allow the most to be gained from them. This new control from Viessmann will be an excellent and vital piece of equipment to allow the end user to get the best performance from their heat pump system. We'd definitely look to install these products wherever appropriate, and I believe it'll make a real difference to how we use solar PV energy in the UK."

Warm words: Chris Flaherty, proprietor of Vietec Heating speaks highly of Viessmann's new control

Controlling assets: Colin Bland, sales manager; renewable energy systems at Viessmann reveals the next opportunity for controls

By smartly monitoring when to utilise solar energy, the controls make the homeowners' energy, and money, stretch further. The heat pump decides how best to utilise the free solar energy, assessing its' functions for raising the set point of the DHW cylinder, running an anti legionella cycle, or raising the temperature in a buffer vessel, for example. We estimate that this use of solar PV generated energy will save end users around £100 per year.

With the Green Deal and domestic RHI both set to come into their own this year, it is an opportune time for renewable solutions to benefit from the awareness created by the solar PV wave, offering end-users further savings on energy bills by adding or optimising smart renewable heating choices. This updated Vitotronic 200 is the first integrated system of its kind, and will be rolled out across our ground source and split heat pump ranges this year, starting with the Vitocal 200-S split air/water heat pump.

Figures taken from Carbon Commentary: **http://www.carboncommentary.com/2012/02/08/2268**

You're just a click away from winning one of four superb Siemens' programmers

Sometimes old ideas are the best ones and shrewd installers should use the latest technology not just to meet the demands of energy-efficiency legislation, but to boost their incomes by offering people easy-to-use controls.

Clearly they want a product that has a large back-lit display but is also easy to programme, this is where slider controls really come into their own.

Siemens is a market leader. The RWB1001, RWB1007, RWB2001 and the RWB2007, known as the Retro range is really easy to use and offers the homeowner an option for every lifestyle. And all the models are smart enough to tell them when a service is due.

As the replacement market grows Siemens has enabled the units to not only be installed on existing back plates but replace competitor's products with little or no rewiring.

To be in with a chance of winning one of these programmers, simply answer the following question:

What's the RWB range called?

(A) nice 'n' easy B) Retro C) slider

Email your answer, together with your name and full contact details to: plumbcentermarketing@wolseley.co.uk
The four winners will be selected at random.
Closing date 22nd April 2013.

SIEMENS

RWB2007

RWB2001

RWB1007

RWB1001

Figure it out

Generation tariffs for non PV technologies

Technology	Band (kW)	Tariffs from 01 April 2013 (p/kWh)
Hydro	≤15	21.65
	>15-≤100	20.21
	>100-≤500	15.98
	>500-≤2000	12.48
	>2000-≤5000	3.23
Wind	≤1.5	21.65
	>1.5-≤15	21.65
	>15-≤100	21.65
	>100-≤500	18.04
	>500-≤1500	9.79
	>1500-≤5000	4.15

(Source: OFGEM)

Number of MCS registered installers per technology

Technology type	Cumulative number	Registered Feb13
Solar PV	3832	36
Biomass	248	05
Air source heat pump	891	23
Ground source heat pump	757	23
Solar thermal	1206	22
Small Wind	141	0
Total	4545	130

(Figures supplied by Gemserv)

Number of Green Deal assessments

Month	Assessments
January	74
February	1,729
Total	1,803

(Source: DECC)

Generation tariffs for Solar PV

Tariff band	FiT rate (p/kWh)
<4kW	15.44
>4-10kW	13.99
>10-50kW	13.03
>50-100kW	11.5
>100-150kW	11.5
>150-250kW	11.0
>250kW-5MW	7.1
Standalone	7.1
Export Tariff	4.64

Proposed tariff ranges for the domestic RHI

Technology	Proposed tariff rate (p/kWh)
ASHP	6.9-11.5
Biomass boilers	5.2-8.7
GSHP	12.5-17.3
Solar thermal	17.3

Domestic RHI is expected to be introduced in summer 2013 and will apply to all eligible installations installed since July 2009

Carbon Emissions of different heating fuels

Fuel Source	Carbon emitted (kg)	Carbon dioxide emitted (kg)
Heating oil	1721	6307
Wood pellets	272	997
Natural gas	1280	4692
LPG	1496	5487
Electricity	3291	12066
ASHP	1135	4161
GSHP	866	3175

Based on 23,000kWh needed to meet a household's annual heating and hot water needs.
Conversion factors obtained from The Carbon Trust

Cost comparison of heating fuels

Fuel source	kWh provided per unit of fuel	Efficiency of system (%)	Units consumed by house (kWh)	Price per unit of fuel (£)	Units consumed per annum	Cost per annum
Heating oil (kerosene)	10 per litre	90	25300	0.68 per litre	2530 litres	£1,720
Wood pellets	4800 per tonne	94	24300	250 per tonne	5 tonnes	£1,250
Natural gas	1 per kWh	90	25300	0.048 per kWh	25300 kWh	£1,214
LPG	6.6 per litre	90	25300	0.49 per litre	3833 litres	£1,878
Electricity	1 per kWh	100	23000	0.144 per kWh	23000 kWh	£3,312
*Air source heat pump	1 per kWh	290	7931	0.144 per kWh	7931kWh	£1,142
*Ground source heat pump	1 per kWh	360	6389	0.144 per kWh	6389kWh	£920
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.68 per litre	759 litres	£516
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.144 per kWh	5552 kWh	£799
Dual mode system 2						
Gas boiler (30% of heat load)	1 per kWh	90	7590	0.048 per kWh	7590 kWh	£364
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.144 per kWh	5552 kWh	£799

Based on 23,000kWh needed to meet typical household's heating and hot water needs per annum. Prices and costs are indicative only and may vary.
*Calculations based on continuous operation at maximum efficiency. Fuel costs taken from Nottingham Energy Partnership.

RHI non-domestic rates

Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/kWh)	Tariff duration
Small biomass	Solid biomass: Municipal solid waste (inc CHP)	Less than 200 kWth	Tier 1: 8.3 Tier 2: 2.1	20
Medium biomass	Solid biomass: Municipal solid waste (inc CHP)	200 kWth and above, less than 100 kWth	Tier 1: 5.1 Tier 2: 2.1	20
Large biomass	Solid biomass: Municipal solid waste (inc CHP)	1000 kWth and above	1	20
Small ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	Less than 100 kWth	4.7	20
Large ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	100 kWth and above	3.4	20
Solar thermal	Solar thermal	Less than 200 kWth	8.9	20
Biomethane	Biomethane injection and biogas combustion, except from landfill	Biomethane all scales, biogas combustion less than 200 kWth	7.1	20

(Source: OFGEM)

Green Deal Cashback Scheme example rate

Energy Saving Measure	Cashback level
Loft insulation	£100
Cavity wall insulation	£250
Solid wall insulation	£650
Draught proofing	£50
Heating controls	£70
Condensing oil boiler	£310
Condensing gas boiler	£270
Double/triple glazing	£20 per m² (up to £320)

A full list and further details can be found online at: http://bit.ly/RKmr50

What data would you like to see on this page?

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Knowledge: Case studies

SOLAR PV

What: 145kW PV system over performs

How: 620 Renesola modules plus six Eltek string inverters

Result: 130MWh estimated annual yield

In December last year, Greenearth Energy installed and commissioned a 145kW roof-mounted PV system for one of its agricultural clients in the Herefordshire area.

Mounted on the roof of one of the main buildings, the new solar array consists of 620 Renesola JC235M polycrystalline modules connected to six Eltek THEIA 22000TL string inverters. Each inverter runs at a peak 98 per cent efficiency and live monitoring data (via the Eltek Webmaster unit connected to the client's LAN) shows that they are already performing very well in changeable weather conditions. This recent 145kWp of Solar PV is in addition to an existing 430kWp of roof-mounted panels already present at the end-customer's site.

Utilising its own supply-chain for the modules and mounting kit, Greenearth Energy worked closely with Sibert Solar to ascertain the optimum system configuration and resultant supply of inverters required.

Energy harvest: An agricultural client in Hertfordshire reports a strong performance from its 145kW roof mounted PV system, according to installers Greenearth Energy

SOLAR PV

What: Homeowner reduces visual impact of PV array

How: Tritec's Tri-Stand mounting system

Result: Customer satisfied with appearance of 4 kWp PV system

The owner of a rural retreat in Sussex who was particularly concerned about the visual impression of his solar project has opted for Tritec's Tri-Stand mounting system.

At the Steeple Bumpstead home, a 4kWp PV system was installed on the garage to allow the owner to benefit from the Feed-in Tariff using 26m of the Tri-Stand's black insertion profile and 16m of its universal profile. Using an aluminium frame, the modules are held in place by their own weight and friction. For increased safety, roof hooks and SafeClick connectors were used to secure the installation.

High praise: One Suffolk householder is bold over by the sleek appearance of his PV array achieved by the Tri-Stand mounting system

"Our client was very keen to improve the energy efficiency of his home, while benefiting from the government's Feed-In Tariff subsidy," said Robert Flynn, managing director of the project's installers Solarbarn.

"We've found that Tritec systems are popular with customers that are keen for the solar array on their roof to look as pleasing to the eye. as possible."

In addition to the visual appeal, the system is designed to produce 3,496 kWh of clean electricity per year, equating to an annual C02 saving of 3,085 kg. The homeowner is also expecting to earn £923 per year under the Feed-in Tariff.

"Small-scale solar arrays are increasingly popular with homeowners," said Steve Griffiths, sales and marketing director at Tritec.

"The cost of solar panels is dropping, while the cost of electricity from the grid is rising. However, along with their concerns about energy efficiency, customers are also demanding good-quality, aesthetically-pleasing mounting equipment. Solar installations can last more than twenty years, making them a lasting addition to the exterior of any home. Therefore, making the right call at the design stage about mounting systems will make a big difference to the future appearance of a property."

BIOMASS

What: 17th century school building saves on energy bills

How: Two Windhager 60kW biomass boilers

Result: Improved heating and extra income stream from the RHI

A residential education centre in Dorset is set to save a considerable amount on its energy bills after transferring to biomass heating. Hooke Court, Beaminster, has installed two Windhager wood pellet boilers to provide the heating and hot water for the school.

The building complex, which is believed to date from the mid 1600s, was unused and in need of repair when it was bought by Peter and Mandy Cooper in 1994. It has been converted into a residential study centre that provides both education and accommodation to school and college groups. The Windhager boilers contribute to the experience of visitors at Hooke Court by maintaining a constant and comfortable temperature throughout the building.

To fulfil the heating demand of the school, AP Chant Renewables was contracted to install the biomass heating system. The company provided a detailed quotation and scheme design utilising a Windhager wood pellet cascade boiler system. Two of Windhager's Biowin Excel 60kW wood pellet boilers were installed in a newly constructed external plant room, as a 120kW cascade system with eight suction pellet probes with a change over unit and bulk pellet hopper.

Mr Dylan Cooper of Hooke Court said: "Before we installed biomass, it was a struggle to get the buildings up to temperature. The Windhager products are superb; they do their job efficiently and effectively and the children have really noticed the difference."

Hot property: Hooke Court, Beaminster, has installed two Windhager wood pellet boilers to provide the heating and hot water for the school

The new biomass system is also significantly contributing to energy savings at Hooke Court, and Mr Cooper says he looks forward to the benefits of the government's Renewable Heat Incentive (RHI) scheme. This helps to off-set the capital cost of the boiler and provides an income to the business in the long term based on the level of heat energy produced.

During the winter period both boilers will be in use whereas in the spring and summer the boilers will alternate, ensuring that not just one boiler is doing all the work. Wood pellets were chosen as the fuel that would provide the greatest efficiency, reduced running costs and carbon savings.

HEAT PUMPS

What: 19th century property becomes more energy efficient

How: Two Samsung ASHP units

Result: A 28 per cent cost saving compared with oil

A property built in the 1860s is now more energy efficient and comfortable following the installation of an air source heat pump, reports its Scottish owners.

The customer's search for increased energy efficiency began in 2008 with the installation of a GSHP. In 2010 as a next level fit, the emitter circuit within the property was replaced with radiators sized for a much lower flow temperature than the boiler the GSHP replaced.

In late 2012, the decision was taken to isolate the ground source heat pump from the heating system and replace it with a suitably designed air source heat pump system. Ross Gourlay, service and projects manager at Enviko, oversaw the installation.

Ross said: "The equipment was installed in a bitterly cold, second week in January. The adverse weather conditions only cemented our confidence that the Samsung air source heat pumps, supplied by Solfex Energy Systems, are perfect for the job, even up here in Aberdeenshire".

Chris Higgs, national heat pump sales and technical manager at Solfex Energy Systems, added: "This installation really highlights the fact that air source heat pumps are more than suitable for the UK climate. A below freezing MCS compliant installation will ensure that the homeowners benefit greatly for years to come."

Cold cure: Freezing weather in Aberdeenshire is being kept at bay by a Samsung air source heat pump, says supplier, Solfex Energy Systems

My working week

Who: Ian Murray, technical director, Clear Focus
What: Based in Gloucestershire, Clear Focus installs domestic and commercial PV systems and energy storage solutions

Sounding off: Clear Focus has been developing strong sales leads for its new Plus PV storage system via word of mouth alone, says Ian Murrey, technical director

Through the grapevine

Monday
Today we met a previous commercial customer who wanted to discuss our new PV Plus storage system, having heard about it on the local grapevine. Being a dairy farm, constant power is important. They were impressed by the system we'd previously installed and approached us to discuss their fears of future power shortages. Happily, I could provide reassurance with our PV Plus back up system which detects any flaws in the grid and immediately changes the power source to the PV Plus battery. They were thrilled with the opportunity to gain energy independence so I headed back to the office to design the scheme and put a quote together.

Tuesday
We had an early rise this morning, with a scheduled visit to a large residential home. The customer approached us a couple of weeks ago so we have a meeting today to discuss their requirements, aiming to provide them with more detailed information about solar PV. After surveying the roof, aspect and shading conditions, as well as electrical and earthing systems, we recommended a 4kW system. I explained how this will optimise the Feed-in-Tariff return on investment due to the maximised power generation. They asked for a quote and design, so I head back to the office to get started, making a note to apply for a G59 connection permission from Western Power.

Wednesday
This day was dedicated to progressing our research and development. I especially enjoy this kind of work and it keeps Clear Focus at the cutting edge. We're currently working across a couple of different projects, some of them at the request of specific customers and some because we recognise an opportunity to provide a solution, like our automatic switch technology to be implemented with the PV Plus system and the use of lithium phosphate battery technology for solar energy storage. I'm particularly pleased with the progress we're making on the design of a new energy saving product planned for release in June 2013.

Thursday
We spent most of today with a government agency, which is one of our largest projects at the moment. We are working with them to provide off-grid solar systems for very specific applications. This is demanding, but something we love to do as it gives us a great opportunity to develop existing technology in a new, exciting way. Although mainly applied in developing countries far from our usual geographical remit, I can envisage remote technology becoming a growing market in renewable energy,

Friday
This morning, we visited one of our commercial prospects, to discuss the opportunity solar power could offer them. We are very strict in terms of our operation and aim to provide knowledge and advice – never a sales pitch. This was warmly received and the return on investment really impressed them. As a business decision, it was a no-brainer. Friday afternoon tends to focus on the admin, ensuring everything is ticking along smoothly. The day ends in a meeting with our purchasing manager about upcoming contracts and a selection of new products which we are considering. As an MCS registered PV company, we run and maintain our quality management system, which requires regular updating and re-designing. After all the boxes are ticked, I head home to recharge my own batteries before another busy week begins.

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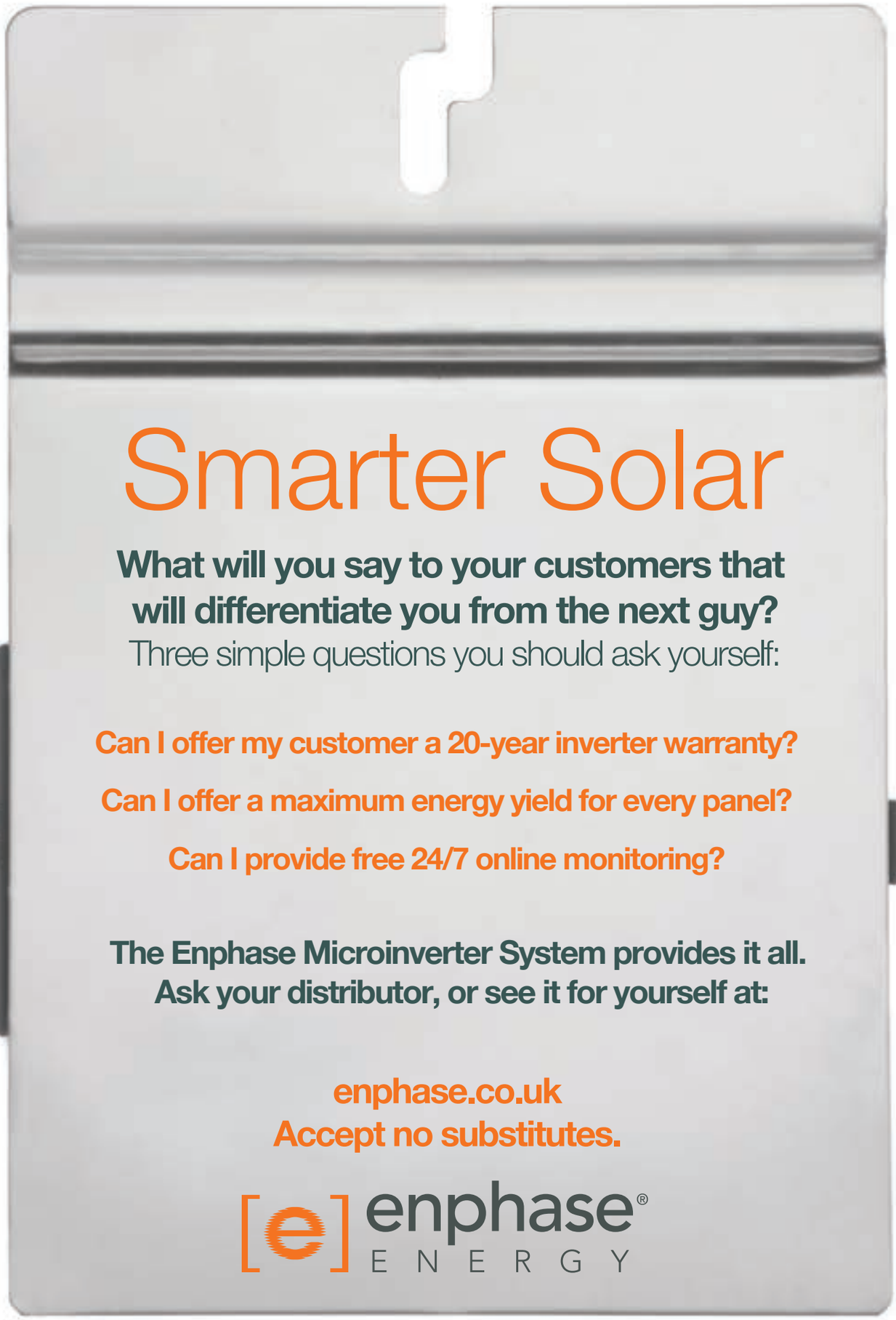
This offer is open to PV installers within the UK and is provided by Green Energy Options Ltd, 3 St. Mary's Court, Hardwick, Cambridge CB23 7QS.
The closing date for this offer is 15/05/2013 and is limited to one trial Solo PV display per business. Visit the website above for more details about this offer.



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Can I offer a maximum energy yield for every panel?

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