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Valued opinions

Everything comes at a price. And if we have learnt anything from the recent horsemeat scandal, it's that the constant demand for cheap goods – appliances, clothes, food – comes at a cost.

It's clear that we need a re-think. Whether it's a £10 pair of jeans, a cut price washing machine or a £2 chicken, there are reasons why these items are cheap – because somewhere along the line, corners have been cut and quality reduced.

Here's where we are lucky - we work in an industry that can offer value for money, without compromising quality and introducing harm. Installing technology that lowers bills and increases energy efficiency and that doesn't damage our health or come about by exploiting others, is a major selling point. We should be proud of this fact and use it to our advantage. With Ecobuild upon us and the major players in the sector gathered under one roof, we need to use this as a starting point to celebrate green, clean energy because that's exactly what it is – clean and green, good honest energy.

Whilst there has been much said of this year's Ecobuild being smaller, let's stop focusing on this aspect and concentrate on the merits of our sector. As many other industries make their fortune at a cost to others, or through cutting corners, we can put our hands on our hearts and say that this industry is one which shares the good fortune with those that want to be part of it. With the Ofgem warning recently that energy bills are set to rise, there has never been a better time to increase the numbers of those joining our sector. Renewables provide a cost-effective, long term solution to inflating energy bills. That's the message pure and simple.

REI will be on stand **N2600** at Ecobuild. As a media partner for the event, we are very much looking forward to seeing you there and helping us spread the word.

Editorial panel members

Andy Buchan, CEEC, Future Renewable Energy

Andy Boroughs, Organic Energy

Garry Broadbent, heat pump specialist

Cathy Debenham, YouGen

Ryan Gill, Evoco Energy

Liz McFarlane, Zenex Solar

Steve Andrews, Ecoskies

Phyllis Boardman, Green Deal Consortia

Robert Burke, HETAS

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UGE suspends Gaia-Wind turbine sales

Universal Green Energy (UGE) has suspended sales of Gaia-Wind turbines.

The Yorkshire-based installers made the move in direct protest to Gaia-Wind’s decision to charge owners of its first generation models, no longer covered by warranty, for repairing faulty turbine mountings.

On January 18 a letter sent by Gaia-Wind warned that a number of its First Generation tube tower mounted turbines had shown signs of coming loose in their mountings.

Although the company stressed no injury or damage to property had yet occurred, and admitted no liability, it stipulated that should an upgrade be required, owners would have to reimburse Gaia-Wind an estimated labour cost of £3,000.

Terry Neesham, director of UGE, has led the opposition to Gaia-Wind’s stance and heavily criticised the company for charging customers a significant amount of money to remedy faults which occurred through no fault of their own.

He added that when similar cases had occurred in the past, turbine manufacturers had upgraded models and repaired manufacturing faults at their own cost.

He said: “As a product, the Gaia is one of the best small turbines on the market, but its warranty of parts only means that we can no longer sell this product. Since the introduction of Evoco’s turbine, it has suffered from an unreliable pitching control mechanism which the company, at its own cost, is upgrading. How Evoco has reacted has been a credit to them. By not supporting the product, Gaia is doing massive damage to their brand and the small wind sector as a whole. You cannot penalise the customer or installer for mistakes Gaia made in the past.

“As the second largest distributor of Gaia turbines in England last year, we have not taken the step of suspending sales lightly, but I feel the position Gaia has taken is harmful to the industry.”

In a statement obtained by REI, Gaia-Wind justified its position by pointing out that it was under no legal obligation to repair the problem turbines.

It said: “As a gesture of goodwill and in recognition of the value, and loyalty to us of our turbine owners, Gaia-Wind is offering to inspect the foundation fastener system at its own cost.

“Normal business practice is that following expiry of a warranty period, unless other arrangements have been made, responsibility rests with the owner.”

Wind and marine trade body RenewableUK also offered a statement to REI. A spokesman said: “RenewableUK welcomes the fact that Gaia-Wind has acted swiftly and responsibly by notifying turbine owners who may be affected by this issue.

Gathering storm: A dispute over charges for Gaia-Wind first generation turbine upgrades has led to UGE suspending sales of the models

“Even though these First Generation turbines are no longer under warranty, the company is still offering to carry out inspections free of charge as a gesture of goodwill, and will also provide materials needed to deal with the issue at no cost to the turbine owner, who only has to pay labour costs.

“The small wind industry has an excellent track record, with customer care remaining a top priority alongside health and safety. This is clearly demonstrated by the positive, pro-active and sympathetic approach taken by Gaia-Wind.”

Evoco Energy offers support package

UK-based Evoco Energy has introduced a support package for installers looking to add wind turbines to their product portfolio. The company, which manufactures the 10kW wind turbine, says it will take the hassle away from the installer. All planning applications, surveying and installation support is offered by Evoco.

Ryan Gill, managing director, Evoco Energy, had the idea after some market research carried out by the company's marketing agency. "Our marketing agency conducted research into the micro-wind installers market. We discovered that despite the Feed-in Tariff (FiT) cuts to the solar PV market, it was the wind turbine market that saw a disproportionate number of installers leave the MCS. We have over six years' experience in wind and know it can be very tricky, taking months of hard word before you achieve a sale. With this in mind we decided to change our reseller's package to include all the support an installer could need."

MCS-accredited wind turbine installer numbers have fallen dramatically since the introduction in 2010. Evoco Energy believes this is down to the difficulty of the installation and sales process. Since the MCS has started 308 installers have joined MCS for small and micro-wind however, almost half – 132 - have left again. Since November 2011 more installers have left the MCS than have joined.

Gill added: "We suspect that some of the number that have left are the PV companies that failed after the cuts to the FiT however, the trend does imply it is more than just those involved in PV that are leaving the micro-wind market. This is contrary to the number of enquiries we are receiving from individuals who wish to have the turbines installed to help with their energy production."

REI joins forces with HETAS

Renewable Energy Installer is pleased to announce it has formed a partnership with HETAS.

HETAS is the officially recognised accreditation body for biomass and solid fuel domestic heating appliances, fuels and services. It also runs the registry for competent installers and servicing businesses in these technologies. The partnership will see HETAS provide a regular column for REI, bringing readers the latest scheme and technical updates.

This exciting development follows September's announcement that REI would also partner with the Microgeneration Certification Scheme (MCS).

REI editor, Lu Rahman, said the combination was particularly timely given the expected introduction of the domestic RHI in the summer and the increasing importance of heating technologies in the industry.

"REI is delighted to name HETAS as a partner organisation," she said. "This association is known for its commitment to quality and best practice in the industry, which are key to the success of the renewable energy installer. The biomass sector has increasing significance in the renewables sector. As we look ahead to the opportunities around the Green Deal and the Renewable Heat Incentive, this market has much to look forward to and REI is excited to be working alongside the association as these schemes widen out.

"REI readers will be provided with HETAS information first-hand giving them an insight into the knowledge on offer at the organisation. We are also delighted to welcome Robert Burke, technical director to our editorial panel."

Bruce Allen, chief executive of HETAS, added: "Renewable Energy Installer is a highly regarded publication in the biomass sector, and HETAS is delighted to be working in partnership with the magazine. Properly trained and competent installers are incredibly important for the future success of the industry, and we are looking forward collaborating with REI on informative articles for the industry."

See page 48 for the first HETAS column for REI.

News in brief

A new E-commerce website **www.ecolutionproducts.com is** offering PV installers and trade customers access to Ecolution products and services.

Power-One and Panasonic Corporation have entered into a strategic alliance to develop, produce and market energy storage systems for the residential and non-residential markets worldwide, combining Power-One inverters with Panasonic lithium-ion batteries and systems.

Professor Furong Li, professor at the University of Bath has been awarded a Wolfson Research Merit Award from The Royal Society for her work in the field of low carbon research. The award recognises Professor Li's research contribution aimed at accelerating the UK's move towards low-carbon living.

The National Skills Academy for Environmental Technologies has produced a consumer guide for the Green Deal. Endorsed by the Energy Saving Trust, *Creating an Energy Efficient and Sustainable Home* doubles as a sales and reference tool, explaining to customers what the initiative involves and how it will benefit them.

HETAS has teamed up with Jelf Clarke Roxburgh to launch HETAS Insurance Services. Jelf has been providing insurance for HETAS registrants for over two years, and the new branding and trading style builds on the existing partnership.

Visitors to the Plumb Center stand at Ecobuild will have the chance to win a prize worth £2,000. Plumb Center, an accredited Green Deal Provider, is supporting heating installers on Green Deal by providing Green Deal products, training, accreditation and funding of customer agreements. Plumb Center's stand in the north hall of ExCel, will feature a prize draw to win a Green Deal Advisor training course, plus an iPad, which is used with Plumb Center's bespoke software to carry out a Green Deal assessment.

Events

Ecobuild 2013
5-7 March London Excel
www.ecobuild.co.uk

ISH 2013
12-16 March Frankfurt, Germany
http://ish.messefrankfurt.com/frankfurt/en/besucher/willkommen.html

The Homebuilding and Renovating Show
21-24 March NEC, Birmingham
18-19 May SECC, Glasgow
29-30 June Sandown Park, Surrey
http://www.homebuildingshow.co.uk/

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/

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

UK public backs renewable energy

Almost four out of five people back the UK generating electricity and heat using renewable energy, according to a new survey published by the government.

Of the 2,107 people polled by the Public Attitudes Tracking Survey, 79 per cent of respondents were in favour – a rating consistent with the findings of three previous surveys conducted by DECC.

Despite high-profile media attacks against onshore wind, two thirds of people supported the technology whilst only 13 per cent were against. The survey also shows that support for renewables is highest in areas containing the largest proliferation of turbines such as Scotland.

The findings fly in the face of anti-wind comments made recently by energy minister John Hayes, and the views of 100 Conservative MPs who wrote to David Cameron last year opposing any further construction of wind farms in the UK.

REI editor, Lu Rahman, said: "The survey highlights the growing importance of renewable energy, both on a small and large scale. It shows public awareness of this important technology and underlines the fact that the consumer is becoming increasingly knowledgeable about technologies available and the benefits they bring. It also shows that MPs do not speak for the wider audience and the householder is an intelligent consumer seeking to make their own decisions on energy.

"The survey is good news for the installer. Renewables and microgeneration technologies are gaining ground. As energy bills rise, the public is seeking alternative ways of heating and powering their homes. Now is the time for the sector to seize upon this awareness and further highlight the enormous benefits of renewable energy."

People's choice: A government survey has found that almost four out of five people back the UK generating electricity and heat using renewables.

Renewables event a success

The Renewables Evening held by Andy Buchan and Watson Carlill, at Gloucester Rugby Club, Future Renewable Energy, was hailed as a success by attendees.

The event was supported by Renewable Energy Installer Magazine as well as 11 sponsors.

Andy Buchan kicked off the evening with a presentation on the practical issues facing renewable energy installers. This was followed by Simon Roberts, Easy Green Deal/MCS who spoke of the route into new technologies and how his company can soften the blow of obtaining accreditation. Watson Carlill then presented on renewable products plus in-depth information on the technical requirements and the upgrade in skills needed to move into the renewable industry.

"There has been great feedback for this event from installers and the sponsors. Watson and I feel it was the best event we have been involved with, as did many of the sponsors we spoke to. This event was all about renewable energy. Maybe not today or tomorrow but one thing is certain - renewables will at some time form part of our future energy requirements and we all need to be ready. This event went some way in preparing installers for that future," said Buchan.

Win, win situation

The stage is set for the **Energy Efficiency & Renewables Awards** and with Greg Barker on board, these UK construction awards have now evolved to embrace energy efficiency

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 benefit businesses that are looking to advance their credentials in the energy efficiency and renewables sector.

On the evening, guests in their high hundreds, are guaranteed a genuinely exceptional evening at an event which has boasted high-quality entertainment from Michael Mcintyre and Omid Djalili and has been hosted by Gabby Logan and Julia Bradbury.

'Best evening, bar none'

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. With Greg Barker on board already and with big names from the entertainment industry to follow, it's the best evening in the UK construction sector, bar none."

Leading light: Greg Barker, minister of state for climate change, will introduce this year's Energy Efficiency & Renewables Awards (formerly the Renewables Awards) at the Ricoh Arena in September.

If your business is serious about staking its claim in the fast-growing energy efficiency market, then the value of being shortlisted should not be underestimated, while the value of winning an award is priceless. As well as an excellent array of awards for products, projects and installers, for the first time this year's categories also include energy efficiency installers specialising in glazing, insulation and lighting.

Awards categories

Nomination packs are available from Friday 1 March, while the deadline for submissions will be Friday 31 May. The categories are as follows:

- 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!
- Heat Efficient Installer
- Water Efficient Installer
- Biomass Installer
- Solar PV Installer
- Solar Thermal Installer
- Air Source Installer
- Ground Source Installer
- Commercial Installer
- Energy Efficient Installer

We pride ourselves on our investment in high-profile hosts for our awards

Industry experts

This year's panel of industry experts, which will select shortlists from hundreds of submissions by Monday 1 July, includes:

- 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 at the Ricoh Arena in the Midlands on Thursday 12th September. They are sponsored by Adey, Anton, Cistermiser, CTC Enertech, Daikin, Greenbuild, Installer Magazine, Krannich Solar, NAPIT, Plumb Center, PTS, REI, Rexel, Twyford, Uponor, Windhager

For more information, visit **www.energyefficiencyexhibitions.co.uk/awards & www.renewables-roadshow.co.uk/awards**

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Warning Labels
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Thinking big

Hugh Taylor, director at Applied Sustainable Energy, discusses the opportunities presented by solar PV at a commercial scale

During tougher times for the domestic market, installers are looking at commercial opportunities to grow their business. But is the grass really greener at a commercial scale and what are the challenges presented when operating at this level?

Applied Sustainable Energy (ASE) is dedicated exclusively to designing and installing commercial and utility scale renewables. The company was created in response to a demand from domestic PV companies for a specialist partner on larger projects. These companies were struggling with the high levels of risk, funding and specialised design that the leap in scale presented.ASE provides a specialist service for anyone wishing to install renewables at a large scale. There is a world of difference between installing a domestic PV system on a tiled roof and the levels of technical design, modelling and financing needed for commercial sites. The overriding factor for anyone investing at a commercial scale is risk. We take on larger installations on behalf of installers wishing to step up to this market. We can do this because we have the infrastructure and credibility that sophisticated investors demand.

Working in partnership

Designing and installing commercial projects without the required skills and credibility comes with obvious dangers. You could find your time and money is completely consumed by a single, high-risk project putting your business under threat. You will also be required to meet G59/2 standards and register your schemes with Roofit, both of which can be challenging and time consuming. It makes sense to consider a shared revenue partnership with a specialist company such as Applied Sustainable Energy, who can take on some or all of the work on your behalf.

The levels of engineering robustness we bring to a partnership give clients the reassurance of long-term performance and reward. We optimise designs by providing detailed modelling, including thorough computer shading analysis and mapping half-hourly consumption data against projected hourly PV performance data.

This type of partnership removes the barrier smaller companies face in accessing funding for commercial clients – and with the bulk of commercial projects funded by third parties, this can be a game-changer for many projects. We welcome introductions to installers who have commercial scale projects in mind. It's rewarding to work together and use our collective expertise to grow our businesses. We're a flexible team and happy to represent installation companies who wish to bring in commercial business without taking on the risk.

Utilities enlist PV resource

Large utilities companies, including British Gas, have taken on the specialist services of Applied Sustainable Energy, following a need to become more streamlined following recent shocks to the market.

Applied Sustainable Energy's focus on large scale photovoltaics, adding value from pre-survey to commissioned installation, has not only attracted smaller installers but increasingly the larger utility providers. We believe this is because our small but elite team allows small businesses and large corporates to 'flex' as opportunities materialise, without having to carry the overhead that our specialist expertise would represent if directly employed. Most companies are either too large, or too small to be this specialised. We operate as a boutique EPC (engineering, procurement and construction company) and have attracted some of the biggest names in the industry as our clients.With the commercial-scale market beset by both opportunity and uncertainty – not least by the upcoming ROC review – the demand for elite, entrepreneurial teams like Applied Sustainable Energy is set to continue for the foreseeable future.

Compare and contrast: There is a world of difference between installing a domestic PV system and a commercial one, says Hugh Taylor, Applied Sustainable Energy

Grand national

BRE is to open The National Solar Centre (NSC) in Cornwall to help industry and government increase the proliferation of solar PV throughout the UK. **Paul Stephen** paid a visit to the launch of the centre in London

Based in St Austell, the centre will focus on testing, research and data collection to drive innovation and further cost reductions in the technology.

Opportunities already identified for further development include building integrated PV, smart grids, storage and power output – all of which will increase the attractiveness of solar PV in domestic and commercial applications.

Speaking at the launch of event for BRE's National Solar Centre in London on January 16, BRE director, Nick Tune, said: "We have an opportunity here to drive uptake of solar PV. The sector has seen a dramatic reduction in installed costs by up to 50 per cent from 2010.

"The centre will help the sector deliver further reductions so PV can become competitive with other low-carbon electricity sources."

Bottom line: BRE director Nick Tune says the NSC will help PV become a more cost competitive technology

With funding from the EU and support from Cornwall Council and DECC, St Austell was chosen as the location due to the majority of the UK's PV installed capacity being in South West England. Cornwall offers more sunshine hours than any other UK county.

Climate change minister Greg Barker welcomed the creation of the NSC and the role it will play in breaking down barriers to PV deployment.

"Innovation is fundamental to the development of any industry if we are to realise our growth potential," he said. "There are really exciting opportunities for the solar industry and we are seeing them happening now. The support NSC will provide for companies who are developing new and innovative solar products will provide an excellent opportunity for UK manufacturing and job creation.

"We welcome the commitment when the British Research Establishment (BRE) has shown in driving this forward, and value the vast experience they will bring."

Solar has come of age, says Greg Barker

Climate change minister Greg Barker used his speech at BRE's National Solar Centre opening event in London to tell PV installers that the industry is returning to full health.

Despite a failure to return to the deployment rates experienced before the government's decision in 2011 to reduce the Feed-in Tariff (FiT), Barker said that solar was set to play a key part in growing Britain's economy.

He told those in attendance: "1.8GW of solar PV is now deployed and in operation in the UK. Now, as we prepare to pass the 2GW threshold, we can rightly say that solar is coming of age. I know just how difficult recent months have been for many of you but the industry has come through this testing period – and has definitely emerged leaner, wiser and certainly larger.

Going strong: Climate change minister Greg Barker says the PV industry is now 'leaner and wiser' following his department's decision to cut the Feed-in Tariff

"2013 is an important year for the economy, as we do everything we can to drive responsibly sustainable growth in the economy. I want solar to be part of Britain's growth narrative.

"This last year or so has been a difficult period of adjustment. The levels of deployment under the original FiT tariff simply wasn't financially sustainable at that level of deployment.

"Now the industry is not to blame for that. That lies squarely on the shoulders of the architects of the original scheme. But despite all the adverse publicity these changes generated, one fact remains true. Solar is still a great deal.

"We are determined that new subsidy levels under the FiT and Renewables Obligation should set the solar sector in the UK on a predictable and sustainable long-term footing."

Getting down to business

Have you ever wondered how you or your company fits into the Green Deal framework? **Ian Feeley**, business development manager at PK Group, discusses the potential business models for small and medium enterprise (SMEs) companies

A key factor in participating in the Green Deal is that businesses must be fully accredited by an external certification body for the field in which they operate and become Green Deal approved. Without this accreditation, businesses will not be able to directly participate.

SMEs play key role

It is expected that SMEs will play a key role in delivering the Green Deal. Knowledge of their local customer base and the ability to engage them through other works (home improvements) will be a major link between potential customers and the Green Deal.

The Department of Energy and Climate Change (DECC) expects to see SMEs mainly in the role of accredited Assessors (carrying out Green Deal Assessments on buildings) and accredited Installers (installing the proposed Green Deal energy saving measures). However, the Green Deal has been designed so that organisations of any size may also become a Green Deal Provider, as long as they can fulfil the authorisation requirements and ongoing obligations required under law, although this function is more likely to be fulfilled by larger companies such as British Gas, Keepmoat and Carillion.

So how will SMEs, particularly installers, operate within the Green Deal? More than likely they will fall into one of the three main models below:

1. Green Deal Approved SMEs entering the supply chain for a Green Deal Provider:

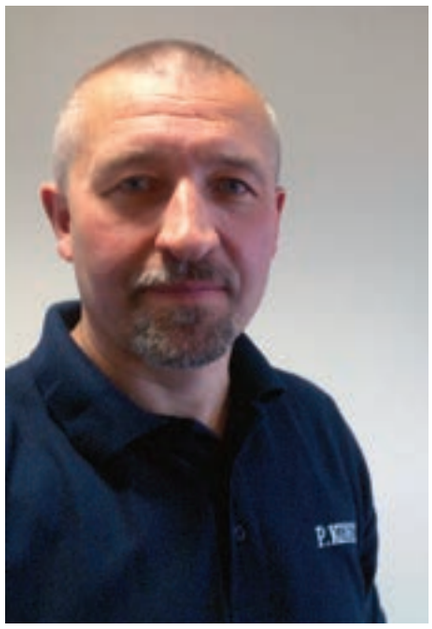
One model, based on existing practice, is for larger companies to use local approved suppliers of goods and services. Under this model a Green Deal Provider would market the Green Deal to customers and then pass on the installation work to accredited companies engaged in its supply chain. This could also

work with Local Authorities becoming GDPs and then creating local supply chains to maximise the local economic benefits.

2. Green Deal Approved SMEs working in a partnership supply chain with a Green Deal Provider:
Under this model SMEs would be the face of the Green Deal and make full use of their local networks and customer bases. The Green Deal Provider would, effectively, become a silent partner behind the scenes, providing the financing and plan management. One (or a number of) SMEs could discharge the ongoing obligations of the Green Deal Provider, including assessment, installation, customer services and ongoing customer relations.

3. Non Green Deal Approved Installers working in partnership with Green Deal Approved SMEs.
Under the Green Deal, installers that are not Green Deal Approved can still play their role in the scheme by partnering with Green Deal Approved Installers for the measures in which they are qualified and competent. For example, a heating engineer who is Gas Safe Registered and therefore qualified, competent and approved to fit gas boilers, may do so under the Green Deal, as long as they are a fully signed up sub-contractor working under the management and oversight of a Green Deal Approved installer of boilers, who effectively takes responsibility for the work carried out.

Quality equals success
SMEs should have nothing to fear from the Green Deal as long as they are qualified, correctly accredited in their field of operation and competent. The successful future of the Green Deal will depend on quality being the benchmark throughout the process and the development of working partnerships at all levels. Remember, the Green Deal is not a short term event; it is here to help us make real progress towards our 2050 emissions reduction target.



Options options: There are several routes into Green Deal for installers, says Ian Feeley, business development manager at PK Group

March of time

Paul Stephen and **Watson Carlill**, director at Future Renewable Energy, summarise the key milestones for installers in the ever-changing world of renewables

Pre - 2008

REAL Consumer Code
Jan 2006
Consumer protection scheme set up by the Renewable Energy Association. All MCS installers will be required to join

Clear Skies and Low Carbon Building Programme
Mar 2006
A monthly fund of £500,000 set aside to fund renewable energy installations

Code for Sustainable Homes
Dec 2006
Steps 1 to 6 introduced to provide Zero Carbon Homes by 2016

Clear Skies and Low Carbon Building Programme
Apr 2007
Suspended in April after March allocation is snapped up within just 75 minutes. Funding increased and scheme is revised to reduce maximum grant levels

MCS
08 Oct 2007
BRE Global and BERR implement MCS by introducing MCS001

MCS
Jan 2008
Installers assessed by BRE for accreditation under MCS

Pre - 2010

Green Deal
Feb 2010
Green Deal proposal passed through the House of Lords

RHI
Feb 2010
RHI policy first announced, public consultation begins

MCS
Apr 2009
MCS registration for installers replaces Clear Skies and MDP schemes

Climate Change Act
Nov 2008
UK becomes legally committed to an 80 percent reduction in greenhouse gases by 2050

MCS
Nov 2008
BRE Global completes government contract to develop MCS. Administration of MCS transferred to Gemserv by DECC

Feed-in Tariff (FiT)
Oct 2008
Feed-in Tariff (FiT) policy is first announced

REI
Sep 2008
First issue of Renewable Energy Installer is published

2011

Low Carbon Programme
24 Mar 2010
Scheme closed to be replaced by RHI (non domestic) in Nov 2011

FiT
1 Apr 2010
FiT launches for PV systems installed since 15 July 2009

RHI
Mar 2011
RHI policy details announced

REI
Jun 2011
Renewable Energy Installer goes bi-monthly

FiT
Aug 2011
Lower rates for large scale installations comes into force

FiT
Oct 2011
DECC opens consultation to reduce FiT for domestic systems from 43.3p/kWh to 21p/kWh from December 2012 as spiralling installation rates threaten to blow the budget

FiT
01 Apr 2012
New 21p FiT rate comes into force for <4kWp installations

FiT
Feb 2012
DECC launches consultation for changes to the scheme for non-PV technologies

FiT
25 Jan 2012
Government loses legal appeal. Cuts ruled 'unlawful' as the proposed date fell before the end of the consultation period. Cuts are delayed until 01 Apr 13

2012

The Carbon Plan
Dec 2011
Published by DECC to set out the government's vision for a nation powered by renewable energy

FiT
12 Dec 2011
Campaigners win judicial review of DECC's proposed December tariff reduction date. DECC vows to appeal decision creating widespread uncertainty in the PV industry

RHI
Nov 2011
Renewable Heat Premium Payment (RHPP) is launched

RHI
Nov 2011
Non-domestic RHI scheme opens

Green Deal
Oct 2011
Green Deal policy becomes legislated for in Energy Act

FiT
Mar 2012
UK PV installed capacity passes the 1GW mark

RHI
Mar 2012
DECC announces the domestic RHI will now launch in the summer of 2013

FiT
01 Apr 2012
Properties now require an EPC rating of A-D to qualify for higher FiT payments. Those without will receive 9p/kWh

FiT
May 2012
DECC announces quarterly degression plan to regularly reduce FiT based on previous installation rates

FiT
Jul 2012
New FiT rates announced for non-PV technologies including a decrease to the tariff for wind

FiT
Aug 2012
FiT reduced to 16p/kWh for <4kWp systems. Tariff duration reduced to 20 years

REI
Sep 2012
Renewable Energy Installer goes monthly

Renewable ENERGY INSTALLER THE BUSINESS OF MICROGENERATION

Green Deal
01 Oct 2012
Green Deal officially launches but finance plans cannot be taken out until 28 January 2013

RHI
Summer 2013
Expected launch date for the domestic RHI

FiT
01 May 2013
The next planned FiT degression date

Green Deal
28 Jan 2013
Green Deal finance becomes available to the public. Government bankrolls a £125m cashback scheme and £2m marketing campaign to boost uptake

2013

FiT
Dec 2012
DECC announces that no degression will occur on 01 Feb 2013 due to insufficient installation rates

RHI
Nov 2012
DECC publishes proposals for the domestic RHI scheme including tariff rates

FiT
01 Nov 2012
First FiT degression date. The tariff falls by 3.5 percent for <4kWp systems to 15.44p/kWh

This month, in its regular column, MCS looks at the publication of the new PV Guide and Updated MIS 3002

Guiding light

The new PV Guide has been released, alongside a newly updated MIS 3002 Issue 3.0 which reflects the changes in the new PV Guide.

The new PV Guide has been a long time coming and is the culmination of over two years work from the MCS Solar PV Working Group, together with support from the Electrical Contractors Association (the ECA), to improve the guidance for installation companies and the standards for PV installations across the UK. It contains a number of new sections which bring the previous DTI Guide up to speed with newer technologies and the fast paced changes in the PV sector.

The key areas of the MIS 3002 standard and new PV Guide centre around changes to:

- The system performance estimation methodology which now takes into account shading and the use of look up tables;
- Installation and site work updates to cover wind uplift calculations, a simplified calculation method with worked examples and guidance on calculating system fixing requirements;
- Design/technical updates.
-

Installation companies will have a three month transition period (until 7t May 2013) before they must work to the new version of MIS 3002 issue 3.0. Before that date, installation companies can use the new version of MIS 3002 issue 3.0 and the new PV Guide if they choose to do so.

The new PV Guide can be downloaded for free from the MCS website, where the new MIS 3002 issue 3.0 is also available.

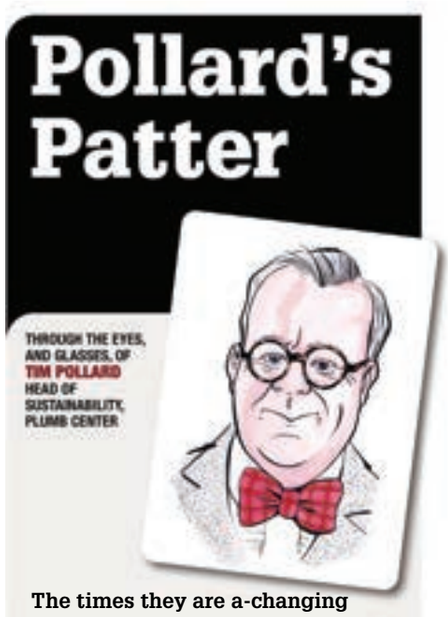
http://www.microgenerationcertification.org/mcs-standards/mcs-standards
http://www.microgenerationcertification.org/mcs-standards/installer-standards

Installation companies can also purchase a hard copy of the PV guide from ECA directly at the following links:

ELECSA Public Shop
http://www.elecsa.co.uk/shop/elecsa/productselection.aspx#first
ECA Public Shop
http://www.eca.co.uk/shop/ECACart/ProductSelection.aspx#first

We hope you find the new guide a useful tool and would like to take this opportunity to also thank the members of the MCS PV Working Group who have worked voluntarily on improving the standards so that the PV sector is one which remains firmly in place for the foreseeable future.

Opinion



The times they are a-changing

Many things have happened since the last edition. We have seen the official launch of the Green Deal with lots of razzmatazz. Let's hope it is instrumental in stimulating our markets which need some good news.

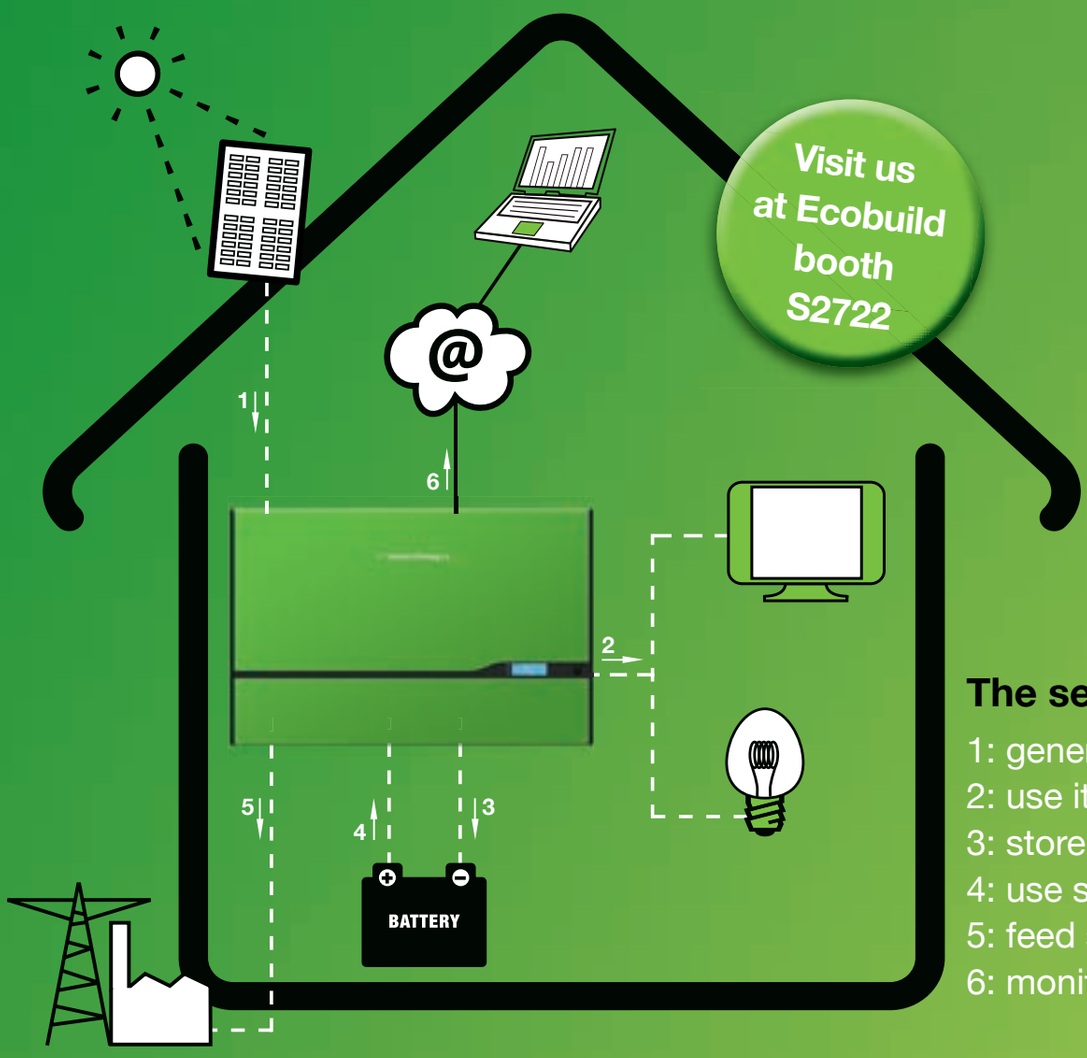
I hope you will forgive me for concentrating on two less obvious issues. The first being a speech made by the prime minister at the launch of the 'Energy Efficiency Mission'. He said: "So to those who say we just can't afford to prioritise green energy right now, my view is we can't afford not to. Far from being a drag on growth, making our energy sources more sustainable, our energy consumption more efficient, and our economy more resilient to energy price shocks – those things are a vital part of the growth and wealth that we need."

I hope the chap next door and the rest of the government were listening intently.

The second issue was the announcement from Centrica it is withdrawing from the nuclear project at Hinkley Point, following the announcement of the costs associated with cleaning up nuclear sites. We are approaching the point at which we have to acknowledge we have no choice but to invest in new generation capacity AND to help our citizens become more energy efficient by investing in renewable technologies. I leave the last word to the PM:

"And in a race for limited resources it is the energy efficient that will win that race."

Make the most of self-generated energy



The self-use solution

1: generate solar energy
2: use it directly
3: store it for later use
4: use stored energy
5: feed surplus into the grid
6: monitoring and control

The PowerRouter, an intelligent all-in-one system. Maximise self-consumption and minimise energy costs.

the PowerRouter
you're **in charge**

nedap

www.PowerRouter.com/ecobuild

History in the making

Steve Pester, BRE, is delighted to see a government minister put his energy into the new solar guide

Wow! That's the first time we have seen an energy minister launch a technical guide for the PV industry!

In the mix: Steve Pester, BRE, is pleased to see a minister involved in the launch of an industry guide

This kind of direct encouragement surely indicates the dawning of a new era in which government and industry are working more closely, and a sign that solar is, at last, being taken seriously. If you want more evidence of this, take a look at the updated UK Renewable Energy Roadmap (2012)[i], which states: *"This year's Roadmap sets out the government's view that solar PV has the potential to form a significant part of our renewable energy generation mix, and analysis shows that the market could bring forward between 7 to 20GW of solar PV by 2020."* The 2011 version of the roadmap did not really mention solar.

The technical guide I am referring to is, of course, the new version of the industry standard guide (A Guide to the Installation of Photovoltaic Systems), now published by MCS (the previous version was the DTI Ed. 2 document). This completely re-vamped guide is the result of many months of hard work over a two-year period by the MCS PV Working Group and is a significant step forward in the effort to improve PV installation knowledge and practice in the UK.

In fact, it is effectively more than a guide because the MCS installation standard (MIS 3002) has also been updated to refer to the guide for nearly all of the technical detail. So what is written in the guide should essentially be regarded as a way of complying with MCS, as well as best practice.

Of particular note, the new document includes:

- A simplified method for calculating the wind loading on roof structures and checking fixings are adequate
- Tables of solar radiation for over 20 regions in the UK
- A simplified method of estimating likely energy yield prior to installing
- An updated decision tree to determine whether or not to earth a mounting frame
- Types of protection devices (RCDs) and whether to fit
- .. and lots more.

The guide, MCS standard, and tables of solar radiation can be downloaded free of charge at: **http://www.microgenerationcertification.org/mcs-standards/installer-standards**

[i]Available from:
http://www.gov.uk/government/uploads/system/uploads/attachment_data/file/68637/7382-uk-renewable-energy-roadmap-update.pdf

Forward motion

Bill Hull, head of the Green Deal team and partner at law firm TLT, has advised on the development of the Green Deal scheme. He looks at the Green Deal and asks - how it is progressing?

Official statistics are not yet available but the Department of Energy & Climate Change has commented that initial interest in the scheme has been underplayed and that figures, indicating that very few Green Deal assessments have been carried out, are wrong. It reports that anecdotal evidence from assessors suggests that hundreds of assessments have in fact been conducted. It was never expected that, on the day of launch, the floodgates would open to mass take-up , but the anecdota evidence reinforces predictions that Green Deal momentum will build.

The Green Deal presents an opportunity for microgeneration technologies to be installed at properties at no up-front cost, where they are recommended by a Green Deal assessment and comply with the Green Deal 'Golden Rule'. This rule states that improvements should, at a minimum, pay for themselves through the resulting savings on the energy bills at the property. Technologies covered by the Green Deal include:

- Ground, water and air source heat pumps;
- Solar water heating;
- Photovoltaics;
- Biomass boilers;
- Micro combined heat and power;
- Micro wind generation;
- Transpired solar collectors.

For a renewable energy efficiency installer to participate in the scheme as a Green Deal Installer it must:

- be authorised by an accredited certification body such as the Energy Saving Trust;
- comply with the relevant requirements of the Green Deal Code of Practice;
- have a relationship with a Green Deal Provider.

Where installation work will be carried out under a contract with the Green Deal Provider there will be liabilities, such as consumer guarantees, that the Green Deal Provider will be keen to ensure are passed on to installers. Installers are in turn advised to seek similar guarantees from their suppliers and consider whether their supply chain is sufficiently financially robust to support such guarantees.

For installers who are prepared to comply with the new requirements, the Green Deal presents an opportunity to access a market that was not previously available.

TECH TALKING

Calling for back up

Bob Long, engineer and heat pump trouble shooter, continues his series of articles focusing on installation issues with this technology

Bivalent energy is the term describing secondary-energy, added to the heating system by an energy source other than the heat pump. The purpose is to ensure sufficient energy is available to meet the prevailing heat load.

Periodic requirements for bivalent energy exist in both air source and ground source heat pump installations, but the requirement is generally more pronounced with air source systems.

The predominant method of adding bivalent energy is by electrical heating elements, located inside the heat pump unit itself. Characteristically, an air source heat pump will deliver its best efficiency and maximum output when ambient temperatures are higher. As temperature falls, so does the heat pump output and efficiency.

Climatic compensation

Heat pump manufacturers are aware of this fact and many models of heat pump are supplied with climatic compensation as a standard fitting. The bivalent energy source is generally an electrical resistance heater element, embedded in the heat pump unit and turned on-and-off according to ambient temperature.

Climatic compensators are usually about 3kW in capacity, but larger heat pumps could be equipped with heaters of significantly higher output.

As ambient temperature declines, output also declines, simultaneously the heat load increases, and an energy deficit within the system is created.

The energy deficit is un-quantified, and often over-catered for by the heater, resulting in a higher than necessary operating cost.

Although some form of bivalent support is inevitable in every heat pump system, defining the precise amount of energy required is more difficult. Too little energy does not solve the problem, and too much is economically impractical.

So, how do we know when and how much bivalent assistance is required?

Fall back: Air source heat pumps have a higher requirement for bivalent energy than their ground source counterparts, says Bob Long

Energy deficit

The first indication of an energy deficit is the precise moment that the heat pump identifiably fails to maintain the minimum designed water temperature. At this precise moment, the materialising energy deficit will be small, but as the differential between actual and adequate water temperature gets wider, the need for energy input increases proportionally.

To ensure the highest efficiency and best economics, supplementary energy input should never exceed the energy deficit, resulting in an overall reduced coefficient of performance.

System efficiency can also be compromised by injecting the supplementary energy into the system at the wrong location.

Supplementary energy should be introduced directly into the emitter circuit, after the thermal store/buffer cylinder, ensuring thermal losses from pipe work located outside the property are not responsible for wasting this high value energy. Bivalent energy added directly to the emitter circuit has much less possibility of an overall negative effect on heat pump efficiency.

Ideal solution

The ideal solution for quantifying and adding just the right amount of bivalent energy is achieved through "Intelligent Temperature Trimming".

By constantly tracking the emitter circuit water temperature, an intelligent device will define as and when climatic conditions deteriorate or improve, adding energy proportionate to the impact these changes have on the system.

It should be noted that all supplementary energy devices need to be prevented from operating until ambient temperature falls below a minimum value.

The actual temperature varies according to geographic region but ranges from -1°C to -3°C.

There is a compelling argument to have bivalent devices operating irrespective of ambient conditions, but MCS guide lines currently state this is not acceptable.

Learning curve

With the Green Deal officially launched, **Brett Pearson**, formerly EcoSkies, outlines the opportunities this scheme can bring

Green Deal is live. Whether Providers have put Green Deal Plans into place or not, as of now, they can, and that is significant. Small businesses will more than likely have a part to play in driving through the first Green Deal Plans with the Providers. Just like large-scale PV, once the precedents are set the floodgates will open. Indications from the frontline are that there is generally a real hunger for new opportunities, a mentality of getting on with it and getting in early to set out your stall.

EcoSkies Training is only one firm, but with over 100 Green Deal Advisors (GDAs) trained and working on their portfolios, the numbers speak for themselves; small businesses have BIG plans for Green Deal. What these small businesses have in common is that they realise it all starts with training and gaining the GDA qualification so they can produce the Advice Reports. Without the Green Deal Advice Report, there is no Green Deal.

Yes there are ifs, buts and maybes with the Green Deal still, but isn't there always? The bottom line is that producing these Advice Reports is the new standard no matter what shape the programme takes and whatever measures win out under Green Deal Plans. Those that fail to evolve, fail to see the opportunities and tie-ins with domestic Renewable Heat Incentive (RHI), fail to offer additional products and services that are essentially self-funding, those businesses will unfortunately become uncompetitive and disgruntled.

We need to help educate GDAs correctly, mentoring them through their qualification and guiding them to supporting organisations and resources. GDAs and the companies they work for will set the Green Deal scene in consumers' minds. They will educate, explain clearly and honestly what is available, how the measures work, how the scheme works. In turn, customers will educate their friends, neighbours and families what they have learned and the about helpful, informative companies that worked with them along the way and the cycle starts all over again. GDAs hold the keys to success so you might as well get one in your team and that will require education and investment in someone you trust.

Q&A

Jonathan Bates

Photon Energy

Q: What have you got planned 2013?

It was a bumpy year in 2012 so this year it's really a question of trying to continue to win as much business as possible. People will be hit by rising fuel bills so we'll be highlighting solar energy as the best way to hedge against that to secure stable prices.

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

The domestic market in solar PV will pick up again but after the previous boom and bust it will take time. I see more large to medium-scale electricity users, such as supermarkets, distribution centres and farms, taking advantage of their big roof space to install arrays to benefit from energy savings and stable costs.

Q: How is your company cutting its carbon footprint?

We have trackers on all our vans and run a monthly competition with a £40 prize for the most economically driven vehicle – it's amazing the impact it's had. Our fleet is high fuel-efficiency too, and our encouragement for staff to use public transport means 100 per cent come to work that way.

Jonathan Bates is director at Photon Energy

"I listened politely but secretly I thought he had been drinking! Solar panels that work at night?" Andy Buchanan, P47

Talking Ten to the Dozen

Leading renewable experts reveal their opinions

Q: What will you be heading for at Ecobuild 2013?

David Macauley, business development associate, EcoSkies

"The hot topic at Ecobuild 2013 will be Green Deal. EcoSkies will be there to offer our brand of practical information and advice about accessing Green Deal opportunities. All Ecobuild 2013 visitors to our stand are eligible for a 20 per cent discount on courses booked and paid for during the exhibition."

Kevin Carling, managing director, Secon Solar

"I'm interested in new technology,, particularly ASHP and biomass in anticipation of the domestic RHI being announced. Also, converging technology such as the Viessmann ASHP that works with solar. I will definitely be at the STA event at the Solar Hub where we normally get at least one free beer."

Mark McManus, managing director, Steibel Eltron

"Presentations and seminars on Green Energy, particularly Passivhaus, and new rules/regulations will be of interest. We are also looking forward to meeting with our installer partners and customers such as Huf Haus, and seeing a range of new innovations which are being launched at the event."

Andy Sharp, sales and marketing director, NAPIT

"NAPIT wants to help visitors make the most of the ever-growing green economy. With exclusive on-the-day discounts on Green Deal and MCS membership, NAPIT is keen to encourage installers to join so their work is eligible for the many financial incentives currently available to their potentially expanding customer base."

Andy McGloin, ecommerce commercial manager, Ecolution

"We are keen to meet those strong businesses that are faring well in a challenging market place. We will be working with our partners Upsolar, Eltek and K2 at Ecobuild to show our customers the technological advancements and business opportunities that exist in the solar PV sector."

Nigel Parkes, managing director, UFW

"It is important that UFW offers the most appropriate solutions and sources the best of breed products; for every development we are requested to advise/design a system for. Previously, manufacturers have used Ecobuild to launch new products and hopefully this year will be no different. Ecobuild always enables you to meet up with key industry personnel."

Steve Richmond, Business Team Leader, REHAU

"REHAU is launching a competition at Ecobuild for installers of the Rauvitherm pre-insulated district heating pipe and an innovative new easy to install ground source manifold. Ecobuild is always a great opportunity to meet new and existing customers and a great forum to network with fellow renewable professionals."

Stephen Preece, Anglian Home Improvements, solar operations director,

"Ecobuild is an ideal show to catch up with the latest technology/ products in the solar PV market whilst developing contacts with new partners/ suppliers. Having been involved in Anglian's Green Deal preparation, I will listen to the latest news and visit the Green Energy seminar and Sustainable Property Conference."

Haimish Mead, marketing director, Adey

"Our main objective will be to promote advances in central heating system protection through magnetic filtration as a huge opportunity for energy efficiency in retro-fit and new builds. But I'm interested to see how far the Green Deal has moved forward within the industry, so I'll be visiting the Green Deal Terrace."

Lee Baxter, general manager, Myriad Solar PV

"The Solar Hub is an attraction, as is the new Future Materials Gallery. Among the seminars, I am going to 'Renovation of heritage properties: energy conservation vs building conservation' and 'The zero-carbon challenge – delivering the targets'. Visiting existing and potential partners is a must, so they can expect me to pop by."

Two minutes with . . .

Who are you?
Hugh Taylor, business development director at **Applied Sustainable Energy**

What do you do?
Applied Sustainable Energy designs, supplies and installs commercial and large-scale PV schemes for commercial clients, the public sector, agriculture and leisure. I am responsible for the strategic direction of the company, and for developing the enduring partnerships that are the life-blood of our business.

Where are you?
We are based in Eynsham, five miles west of Oxford.

How's business at the moment?
Business has never been better. We are installing PV on six public sector sites this month and have orders and a robust pipeline of 30kWp to 250kWp systems for local authorities, farmers and blue chip organisations. We are co-developer of the 40MW solar farm at the Science Museum's Wroughton site in Wiltshire, and will be EPC subcontracting several other utility-scale projects this year.

How could it be better?
We have recently recruited in operations and engineering to address existing demand, and are taking on a 'hunter' to drive additional sales. If these choices come good, the future will be very bright.

Who do you admire in renewables?
We have built our business on the skills and experience of our head of design, Graham Taylor, who is one of the top three PV and building services engineers in the UK. The intelligence and robustness of his approach is stunning.

What's the best business advice you have received?
Cash is king.

How are you going green?
I have an electric motorbike for my commute. In the right weather it saves me a fortune.

Talking point

Liz MacFarlane, Zenex Solar discusses the winning ways of the renewables sector

With column inches being dominated by horsemeat stories, it would have been easy to miss David Cameron's latest comments backing "green industries" - renewable energy and energy efficiency. Cameron's words - whatever your political stance – come as a welcome boost to our industry. He said: "To those who say we just can't afford to prioritise green energy right now, my view is we can't afford not to".

Best in show: Zenex Solar will be on stand S3020 at Ecobuild with new products on display

And of course he's right. Here in Yorkshire renewable energy has become fairly commonplace. The abundance of expertise and proliferation of forward-thinking renewables companies has helped promote renewables to the householder making the county something of a hotspot for our sector. However, there is much work to be done elsewhere and as Cameron says, we really cannot afford not to prioritise green energy. With the Green Deal now launched, there are many reasons to make the consumer aware of renewable and energy efficient technologies. Energy bills are continuing to rise and those that choose to ignore this do so at their own peril. Cameron highlighted that energy consumption is set to grow by to thirds over the next two decades. It's a frightening thought but for those of us lucky enough to be working in this industry, it's a very exciting prospect indeed. We are in a fantastic position to promote the benefits of renewables and help the consumer make informed choices enabling them to take control of their energy consumption and generation.

At Zenex, we are aware of the increased need going forward for high quality renewable technology that the installer can confidently sell to the consumer. As well as solar PV products, we have a range of heating products including a heat pump and solar thermal panels that will offer the energy efficiency benefits the consumer will increasingly be looking for. Come along to our stand at Ecobuild - S3020 – to find out more and see the products for yourself. As Cameron pointed out, "in a race for limited resources it is the energy-efficient that will win that race." On your marks, get set . . .

Time well spent

The UK is using more renewable technology than ever before so it is worth booking a couple of days off work to make the trip on March 5-7 to London's ExCel **Renewable Energy Installer takes a closer look at Ecobuild 2013**

Who's going to be there?

Ministers, architects, lecturers, installers, suppliers and even celebrities - name any job in the built environment and they'll probably be at Ecobuild.

More than 1,500 exhibitors, hundreds of conference and seminar sessions and 1,100 expert speakers, plus dozens of interactive and educational attractions are on offer this year, so it's the perfect opportunity to network with a range of industry professionals.

The chance to play with the latest technologies is also a massive advantage for installers.

Many exhibitors will be keen to show off their latest products and discuss installation and maintenance methods, so installers will come away knowing exactly what technology is available.

Attractions

The attractions encourage interaction with visitors and mix practical displays with a host of expert speakers.

The Ecobuild Arena is back on the show floor by popular demand, and will be covering the issues that matter most to installers.

Ministers, government officials and representatives of the Department for Energy and Climate Change (DECC), are just a few of the people that will be appearing to tackle topics like 'Making our cities better' and 'Green for growth – reality check', a real insight for installers who want to know about the future of their industry.

For a more hands-on attraction, installers should check out Plumb Center's popular Practical Installer.

Featuring live demonstrations on how to fit technologies such as solar thermal and heat pumps, complete with typical Green Deal energy saving and funding calculations, Practical Installer promises to be one of the most popular exhibits at Ecobuild 2013.

The Green Deal

The Green Deal aims to help 14 million homes by 2020 and installers should be keen to discover how to take advantage of the government's scheme.

Luckily Ecobuild is on hand with many exhibitors keen to help installers get the most out of the deal.

The Green Deal Terrace is a new attraction for 2013. Featuring a programme of seminars and a comprehensive advice clinic, the Terrace will help installers understand the ramifications of the government's policy and how to benefit from it.

The energy efficiency scheme is also a hot topic in many of the seminars this year. Installers should take a look at the Refurbishing Britain seminar stream to find out more about 'Green Deal – from debate to delivery' and 'Green Deal or no deal'.

Back to school: Over 130 seminars are on offer at this year's Ecobuild on Green Deal and a host of other topics

Big is best: With over 1,500 exhibitors, Ecobuild is the world's largest sustainable design and construction event

Seminars and Conferences

The Green Deal isn't the only topic being put under the spotlight at Ecobuild this year.

The extensive seminar and conference programmes run every day and cover a range of subjects from fracking to carbon reduction, and a host of industry experts, including some celebrities, will be joining the debate.

There are more than 130 seminars on offer this year and plenty that will interest installers.

These cover a broader range of topics than the conferences and last a bit longer, so if installers have a specific interest, like 'Specifying biomass boilers', then it's definitely worth looking at the seminar programme.

How to get in

To get your hands on a free ticket just head to **www.ecobuild.co.uk/register** and create your account.

Once you're signed up it's a good idea to plan the day. The seminars run on a first come, first served basis so you'll want to get there early. Luckily there's a list of all the seminars and conferences on the Ecobuild website plus a list of every exhibitor, so planning won't be a problem.

Big is best

Canadian Solar says it will be at Ecobuild to show installers its track record in providing cutting-edge PV technology to all types of solar applications, from large-scale solar farms to small residential systems.

It adds that the quality and performance of its modules can be clearly demonstrated by the decision to use 22,000 of the company's panels, in conjunction with its partner and EPC project supplier Isolux Corsán, to build the UK's three largest photovoltaic solar power plants. The three new 5 MW solar power plants were built in Langford, Churchtown and Manor based in Cornwall, for a total of 15 MW installed capacity.

Another Canadian Solar project was recently named the 2012 winner of the Solar Project of the Year Award by POWER-GEN International: the 166 MW solar park PV project in southern Brandenburg, Germany.

Located in southern Brandenburg, Canadian Solar says it is one of the world's largest PV projects covering 352 hectares (870 acres) and was constructed on a former lignite mining strip in the East German community of Meuro, near Senftenberg. Canadian Solar provided 636,000 CS6P-P modules, powering nearly 90 per cent (148 MW) of the project's 166 MW total output.

First prize: According to Canadian Solar, scooping a major award for its 166MW solar farm in Brandenburg, Germany, has enhanced the company's reputation for quality products

According to the PV manufacturer, the Brandenburg solar complex beat off 43 other entrants from around the world to take top honours in the Best Solar Project category.

S2920

Home on the range

Fronius says it will be exhibiting the latest addition to its range of inverters, the Fronius Galvo - an extremely safe single-phase electrically-isolated transformer inverter.

With power categories ranging from 1.5 to 3.1 kW (1.5 kW, 2 kW, 2.5 kW, 3.0 kW, 3.1 kW), it is the ideal choice for households and small PV systems, according to the company.

Power ranger: Fronius' Galvo inverter comes in a range of power categories to suit all sizes of installation

It adds that an integrated energy management function makes it particularly suitable for self-consumption systems whilst the mix of materials provides the best possible prerequisites for lifelong functionality and a safe, user-friendly product. The design also incorporates an innovative hinged system making installation both quick and easy.

Also showcasing at EcoBuild this year is Fronius' latest commercial sized inverter, the Agilo.

The Milton Keynes-based company says this new central inverter is the first in its power category that can be completely installed and maintained by the installer. With an output of 100 kW, the three-phase device can be used for industrial or commercial photovoltaic systems.

The Fronius Agilo is designed to be one of the most compact devices in its class with a maximum efficiency rating of 97.2 percent. The Fronius Agilo is compatible with Fronius DATCOM, the data communication system for PV system monitoring.

In addition, Fronius would like to get installers on board for comprehensive product training, qualifying them to become a Fronius Service Partner. This is a network of professional installers who are permitted to procure spares and dismantle Fronius inverters without invalidating the warranties. Only Fronius Service Partners are qualified to replace the PC boards in the inverters during a service visit, therefore responding quickly to customer service requests and keeping yield loss to the minimum.

S2511

/ Battery Charging Systems / Welding Technology / Solar Electronics

Fronius

SHIFTING THE LIMITS

FRONIUS SOLAR ELECTRONICS 20 YEARS

RELIABLY HIGH YIELDS ARE ONLY POSSIBLE USING TOP-OF-THE-RANGE-TECHNOLOGY. WE AIM HIGHER.

SEE US AT ECOBUILD
STAND S2511 | 5-7 MARCH

FRONIUS AGILO 100.0-3

/ The Fronius Agilo is the first central inverter for trade and industry that is both powerful and portable. Its sophisticated design makes it astonishingly portable and simplicity itself to install. The special recesses in its base enable it to be moved around safely using a lift truck. The integral heavy-duty rollers provide added flexibility when space is at a premium. The Fronius Agilo is delivered on an industry-standard Europallet to guarantee low storage costs. Not only is moving the inverter so straight forward, trained installers will now be able to install, service and maintain it themselves without any special tools. Curious? Find out more at: **www.fronius.co.uk**

Innovative solutions

On show at Ecobuild will be Inta's Air Source Heat Pump Installation Packs, a kit which contains all the components needed to install and safeguard heating systems.

Inta will also be featuring its Circulation Pump Set (CPS) which allows multiple heat sources to combine in their delivery to a system's emitters. The interchangeable parts are designed to allow for a variety of different CPS schemes, meaning there is a pump set to suit any configuration.

Stuart Gizzi, director at Inta, said: "Ecobuild is a great opportunity for us to get out there and showcase the exceptional quality of Inta products across the board. We aim to provide plumbers and installers with innovative solutions they can rely on and the exhibition is a great way to show the very best products."

N2510

High performance: New for 2013 is Inta's Circulation Pump Set

High and mighty

Quick and easy: Mounting Systems says its Alpha fastening system dramatically reduces installation time for roof-mounted solar arrays

Berlin-based Mounting Systems will be exhibiting its range of ground and roof-mounted PV and thermal fastenings including the Alpha and Sigma 1 systems.

The Alpha is designed for panels on pitched roofs whilst the company says the use of aluminium base rails and the patented Quickstone and telescoping technology makes custom cutting redundant and installation exceptionally fast and convenient.

The Sigma I is a single pole ground-mount system especially designed to reduce cost and it is suitable for both laminates and framed modules.

The use of ramming posts and the parallel ground surface installation is designed to eliminate the need for additional excavation work and makes the Sigma I aesthetically pleasing and ideal for large projects. Different module layouts are available.

S2530

Stay in control

NEDAP will be presenting the PowerRouter at Ecobuild this year – the company's answer to providing self-use of solar energy.

Live product demonstrations will be available to visitors giving an insight into the operation of the PowerRouter, which NEDAP says will increase the financial attractiveness of using energy rather than exporting it to the grid.

The company adds that the amount of surplus solar energy stored in batteries for later use can easily be increased up to 70 per cent with the PowerRouter, compared to 30 per cent with a standard inverter.

This, in turn, will improve the economics of using self-generated energy rather than exporting it to the grid, by increasing homeowners' independence from rising energy prices.

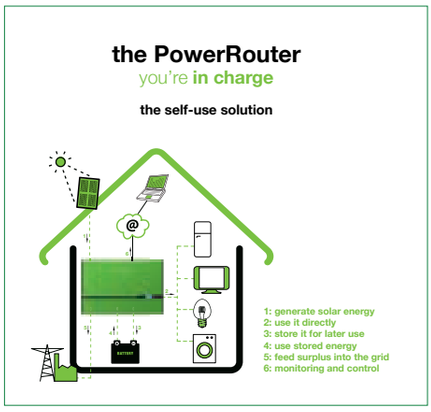
To boost self-use even more, the PowerRouter is designed to switch on additional loads when the batteries are fully loaded and there is still a surplus of solar energy available. For example, a water heater or boiler can be prepared and switched on.

Through the web portal myPowerRouter.com, the PowerRouter can be remotely managed and monitored by the homeowner or installer, potentially avoiding unnecessary service calls and making it easier to keep the system up-to-date.

For the installer, NEDAP also says that the PowerRouter is easy to install. No extra inverters or cables are required as just the solar panels, batteries, loads and grid need to be connected to the PowerRouter.

NEDAP would also like to demonstrate what it calls a 'unique connect and grow' capability which makes it possible to start small with only the solar inverter and then add storage of solar energy (with the Battery Manager) at a later time.

S2722



Use or lose: NEDAP's PowerRouter inverter aims to increase homeowners' independence from rising energy prices by boosting the amount of solar power which can be stored for later use

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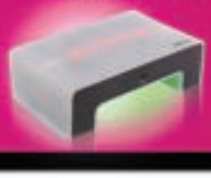

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Green Deal - a great deal

Following the official launch of the Green Deal, NAPIT is eager to make Ecobuild visitors aware of the opportunities it presents for installers.

With the Department of Energy and Climate Change (DECC) referring to the Green Deal as "the biggest home improvement programme since the Second World War", NAPIT wants to spread the message to installers that the potential growth prospects of getting involved should not be underestimated.

The company will be offering all the crucial training and Green Deal membership which installers need to ensure their installations are eligible for Green Deal finance plus exclusive on-the-day membership discounts.

N2125

Opportunity knocks: NAPIT says it wants to educate installers at Ecobuild about potential Green Deal business prospects

Get interactive

Hands on: The Practical Installer demonstration area returns this year created by Plumb Center in association with Ecobuild

Visitors to the Plumb Center stand at Ecobuild 2013 will have the chance to win a prize worth £2,000.

Plumb Center, which recently became an accredited Green Deal Provider, is supporting heating installers on Green Deal by providing Green Deal products, training, accreditation and the funding for customer agreements.

Plumb Center's stand, therefore, will feature a prize draw to win a Green Deal Advisor training course, plus an iPad, which is used with Plumb Center's bespoke software to carry out a Green Deal assessment. The stand will have four iPad consoles linked to an interactive media wall, allowing installers to 'test drive' Plumb Center's Green Deal assessment software.

Also on the stand will be information about Plumb Center's Sustainability on a Budget initiative. This highlights cost-effective measures that installers can use to help customers save energy – and money. Plumb Center partners Grundfos, Fernox, Honeywell and Mira will be using this area to announce exclusive show offers for Ecobuild visitors.

Plumb Center is also, in association with Ecobuild, creating the Practical Installer arena in the north hall, featuring a rolling programme of demonstrations of the installation of various energy efficiency products. Architect and TV presenter George Clarke will open the Practical Installer arena, which promises to be one of the biggest visitor attractions at Ecobuild 2013.

Clarke is best known to the general public for his TV shows The Restoration Man and The Home Show, where he looks at the design and architectural possibilities of people's homes. He has also hosted shows such as The Empty Homes Show. Clarke has his own architectural company, and has worked on a host of high-profile innovative residential, cultural and urban projects.

George Clarke will open Practical Installer on Tuesday, 5 March at 10.30am. **N2710**

It's 4You

Sibert Solar's exhibition stand promises to display a wide range of balance-of-system (BoS) products for installers to have a look at whilst discussing their requirements with the company.

One example of an active solution on display is the new Elios4You monitoring and smart control solution from Greenologic.

According to Sibert Solar, the Elios4You consists of a data-collection device and separate wireless Android tablet that runs the custom GUI App (soon to be available in iOS format for download from the Apple store) that allows end-users to monitor their kWh generation and consumption as well as import/export from the electricity grid.

The company is looking forward to meeting new and existing clients and invites visitors to talk about how Sibert Solar can help with the configuration, protection and installation support of all sized PV systems.

S2342

Controlling interest: Data collection device Elios4You is one of the latest additions to Sibert Solar's product portfolio

Trouble shooting

Power-One returns to Ecobuild this year to present its inverter products including the Aurora CDD monitoring device.

Designed for the use with Power-One's Aurora Micro micro-inverters and Aurora Opti power optimisers, the company says the device will enable installers and homeowners to easily monitor their PV installation.

It adds that the product allows for simple and fast controlling of the energy harvest produced by the entire plant or by a single micro-inverter equipped module, thereby giving plant operators the opportunity to intervene promptly whenever necessary.

Installers often face the potential problem of unexpected shade or dirt on the panels which can lead to significant losses in output and revenues. The Aurora CDD is designed to discover and localise any malfunction or reduction in the plant's power at the individual panel level, thus enabling a quick and precise solution of the problem.

According to Power-One, wireless communication technology connects the micro-inverters and power optimisers of a PV plant with the internet without requiring any additional wiring. By using adjustable data sampling intervals, which can be set between four and 60 seconds, the performance of an installation can be monitored in real-time, thereby allowing fast detection of operational failures.

Quick thinking: Power-One says its Aurora CDD monitoring device enables installers to identify PV problems in rapid time

Installers should be able to easily access both daily and historical data of their PV application through Power-One's Aurora Vision Web Portal.

At Ecobuild, Power-One will be telling installers that the set-up and configuration of the Aurora CDD is easy as the box only needs to be installed within 50 metres of the installation. The maximum distance between PV application and CDD can be extended with a repeater and up to 30 micro-inverters can be directly monitored by a single Aurora CDD.

S3250

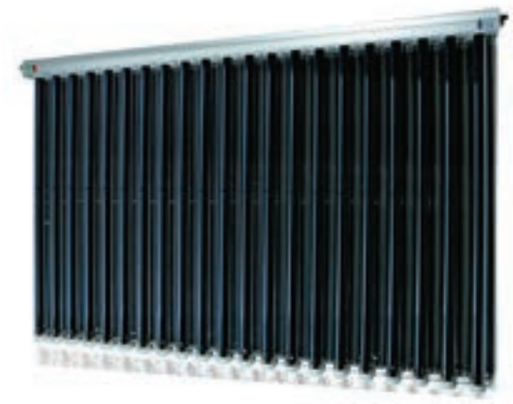
Power in numbers

Power Nation is joining forces with Italian solar thermal manufacturer Kloben to exhibit at Ecobuild 2013, having recently signed an exclusive distribution contract for the UK.

Power Nation will work in partnership with Kloben to focus on solar thermal products including Kloben's Sky Pro Collector range. It adds that by working in collaboration at the exhibition, both firms can capitalise on a strengthening solar thermal market and use mutual co-operation to streamline costs and maximise profits for customers.

"Kloben will be at the heart of Power Nation's 2013 sales strategy and we are proud to be Kloben's exclusive UK distributor as we share the same strengths; quality, experience and innovation," said Jon Mussell, sales manager, Power Nation.

"This year's Ecobuild will also coincide with the launch of Power Nation's full range of renewable technologies and the products on display aim to demonstrate Power Nation's extensive offering of reliable solutions to installers. This will include not only advanced Solar Thermal systems, with interactive demonstrations of our latest products. We'll also be exhibiting our high performance air source heat pumps from Samsung and the latest generation LED lighting, which we believe will be a key growth area for the renewables industries in the coming years, due to its universal application."



Doubling up: Power Nation will be exhibiting alongside Kloben to demonstrate both companies' solar thermal portfolios

As part of Power Nation's solar thermal range, the company says it will also be exhibiting the popular metal-to-metal 'leak free fittings', which the company reports are now outselling traditional style fittings, controls from Sorel, with crucial anti-legionella features and SunnPro Twin Insulated Pipe, meeting the new MCS MIS 3001 requirements.

N3300

Perfect focus

Austria-based Solarfocus will be marking its 20 year anniversary in the solar and biomass sectors by exhibiting one of its most innovative products at Ecobuild.

The Octoplus dual system pellet boiler (10-15 kW) is designed to integrate buffer and solar thermal energy supply in less than 1m² floor space.

According to Solarfocus, in cases where the energy required for heating and domestic hot water preparation can not be supplied by the sun, the integrated pellet boiler will top up the necessary energy.

The company adds that the integrated touch screen control allows for complete building heat management at your finger tip whilst remote control of your heating system can be achieved via your smartphone, PC or tablet computer for even greater comfort.

N3735

Duel fuel: According to Solarfocus, the octoplus offers dual pellet and solar thermal heating in less than 1m² floor space

In the picture

Testo will be at Ecobuild to persuade installers that using its thermal imaging devices makes for best practice – as evidenced by Cotswold Energy Efficiency Centre (CEEC).

Testo says that its 875 series is used by CEEC to demonstrate heat flow and control across domestic applications including radiators, tracing heating/hot water pipework for leaks and blockages, roof lagging, windows, biomass sytems and even under floor heating where the thermal image helps engineers to detect anomalies without causing any damage.

Andy Buchan of CEEC said: "The Testo 875 is an essential aspect of our portfolio. It is smart and easy to operate and looks good especially with the professional carrying case. Here at CEEC we use the camera for all of our surveys to establish the property is insulated to a standard that will be suitable for a heat pump to operate. We simply couldn't run the business without it."

N1806

Picture perfect: Testo's thermal imaging camera should be an essential aspect of any installer's portfolio, says CEEC's Andy Buchan

Pump up the volume

This year the Wilo stand will have an energy efficiency focus.

Amongst the products being exhibited will be the Wilo-Yonos PICO, the Wilo-Stratos GIGA, the Wilo-Helix Excel and the Wilo Assistant.

The company says its Wilo-Yonos PICO small circulator will be returning having been a huge success since its launch at Ecobuild 2012.

The Wilo-Stratos GIGA glanded pump will also be on display and is designed to offer building designers, specifiers and architects the chance to easily optimise the energy costs and environmental balance of a building or industrial complex.

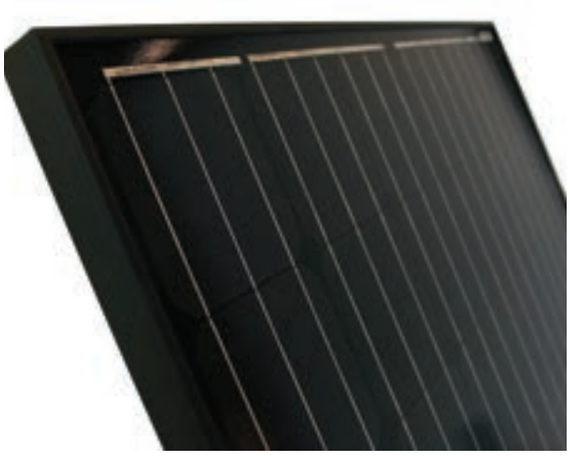
Making its UK debut is the Wilo Helix Excel – a high-pressure multistage centrifugal pump – and the Wilo Assistant interactive guide, available on both iPhone and Android.

"It's going to be an exciting show for us at Wilo," said, sales director of building services, Richard Harden.

"We're looking to build significantly on the success of the show in 2012 and to meet as many people as we can over the three days."

N2145

Pumped up: Wilo's Helix Excel multistage centrifugal pump makes its first UK appearance at Ecobuild 2013



Heat seeker: Zenex Solar will be launching Zanussi's new solar thermal panel at Ecobuild

Standing out

Zenex Solar's Ecobuild exclusive will be the launch of Zanussi's long awaited solar thermal panel at Ecobuild. The panel is the first in Zenex's new range of products that are aimed at heating engineers. As well as the Zanussi solar thermal panel, a brand new LG heat pump model to the UK will also be unveiled.

The new products will be on display at Zenex's pink and black stand which was voted best for impact at Solar Power UK 2012 and has caused jokes inside and outside of the Brighouse-based company.

Liz MacFarlane, sales director at Zenex, said: "We noticed on twitter that the Zenex stand had been voted for as a prominent stand at Solar Power UK. Although we would prefer to be noticed for our expert knowledge and our excellent customer service, we can't pretend that our pink and black stand is not an eye opener, and therefore an attraction at events such as Ecobuild."

Ryan Gill, the company's commercial director, added: "Most installers sell multiple services and products to their customers. In fact, many installers have asked us to bring our great customer service and logistical skills to other products to make their installations run smother."

The new range of products that Zenex will be exhibiting at Ecobuild is part of a wider company strategy for 2013. As the heating market is expected to grow significantly this year with the Renewable Heat Incentive and the Green Deal, most people's thoughts will be on energy efficiency and more specifically heat loss, says the company.

S3020

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Double vision

Solar thermal is a practical and cost-effective renewable solution for both new-build and retrofit properties says **Heather Oliver**, Nu-Heat

Many homeowners would like to be part of the 'green revolution' but are not yet prepared or able to commit to a renewable space heating system or the insulation improvements needed. For these people, solar thermal is a halfway house that enables them to improve their carbon footprint and to take advantage of government funding schemes.

New-build

Solar thermal is an obvious choice for new-build projects where panels and suitable cylinders can be specified from the outset and pipework installed at the appropriate stage of the build; added to which, points will be awarded towards the Code for Sustainable Homes.

Solar thermal in retrofit

For older properties that cannot achieve low enough heat loss for renewable space heating even after insulation upgrades, solar thermal is an excellent alternative, offering an annual average saving of 50 per cent on hot water bills, depending on location and the amount of sunshine. Across a typical year around 90 per cent of the hot water demand will be met in July and 10 per cent in December.

Solar thermal is the least intrusive renewable technology for retrofit properties as much of the existing plumbing is likely to be reusable. The roof should ideally be south facing with a pitch of between 30° to 50° and the structure must be strong enough for the system. Installation is relatively straightforward, particularly when on-roof panels are used. It is also possible to install less intrusive, flush-mounted, 'in-roof' panels in retrofit projects as long as consideration is given to the specific roof structure. The expertise of the solar designer/supplier is crucial to the overall success of the system and consumer confidence, especially in retrofit, so it is important to use a company that bases its calculations on solid design principles.

Cylinders

A solar cylinder is a specialist product therefore only an appropriate model should be specified for each project. Nu-Heat recommends a single cylinder with a dedicated solar volume; it is important that the solar volume is separate so that the boiler can't influence it. In essence this acts as a pre-heat cylinder, but with an additional summer benefit, as in the right conditions the boiler may not need to fire at all and solar-generated hot water will fill the whole cylinder.

Amongst the company's range, Nu-Heat has solar versions of the EnergyMaster cylinder and the heat pump cylinders, enabling solar thermal to be integrated simply into the heating and hot water system. Where insulation is sufficient, solar thermal can be integrated with the renewable heating system to achieve even greater energy savings; a combined heat pump and solar system allows each technology to perform when it is most efficient and can be linked to a low-temperature heat emitter such as underfloor heating.

Top notch: On-roof solar thermal. Heather Oliver, Nu-Heat, says this technology can provide 90 per cent of a home's hot water needs in July

Opportunities for MCS-registered installers

In order for any installation to be eligible for the Renewable Heat Premium Payment (RHPP), Renewable Heat Incentive (RHI) or Green Deal both product and installer must be approved under the Microgeneration Certification Scheme (MCS). All relevant products supplied by Nu-Heat are MCS approved and we have a register of MCS-approved installers that is open to applications from professional installers throughout the UK.

Nu-Heat's solar thermal design and sizing process has been developed in conjunction with European solar design software, TSol and the government's SAP building regulations assessment criteria.

City lights

In spite of a troubled market, interest in solar thermal systems is being sustained by the commercial sector in cities such as London. **Colin Bland**, sales manager for renewable energy systems for Viessmann, explores looks at this trend

Solar thermal technology has been left somewhat overshadowed by the more favourable, financially attractive incentive offered by solar PV. Sales from early adopters have been satisfied and many homeowners who are keen to buy into renewables have given up their roof space to panels for electricity generation as opposed to heating for hot water. It comes as no surprise that the UK's solar thermal market has contracted by half in the last two years, according to Consult BRG, Heating and Hotwater Industry Council and Viessmann estimates. Despite this trend, Viessmann has experienced enduring interest in cities such as London. But why?

A tight squeeze

Far from writing-off solar energy due to complex roof design or tight spaces, many installers and specifiers in London are instead using solar thermal to overcome this problem.

Solar thermal provides in square metres approximately three times more energy than solar PV panels. In city areas, where space is of a premium, this is a distinct advantage. Solar thermal also offers more flexibility as collector tubes can be set horizontally; meaning they do not need to be inclined like solar PV panels, and there's no need to keep gaps between them to avoid overshadowing. What's more, Viessmann's Vitosol 200-T and 300-T solar heat pipe tubes, for example, can be individually rotated to deliver energy closer to their full potential regardless of roof orientation.

Fitting office needs

Whatever the location, the case for harnessing energy from the sun is strongest where there is high hot water consumption in summer, when the solar-generated heat can match the peak load requirement. Organisations running office buildings have long realised this and they represent a large part of our city-dwelling customer base.

As a result of measures to improve corporate sustainability and employee wellness, employers are encouraging greener methods of transport and increased exercise among staff. Activities such as walking, jogging and cycling to work or exercising at lunchtime require showering and the provision of washroom facilities. Even in winter months solar thermal can pre-heat cylinder DHW to around 30 °C, meaning the heating system will use much less energy when demand for showering requires 38-43 °C; a raise of only 8-13 °C.

A viable option

Achieving the targets set for new build homes and businesses under ever stricter planning regulations is most easily realised by featuring renewables in some form. When considering renewable technology options, the appeal of solar thermal to urban environments is even clearer. Wind turbines are easily ruled out due to lack of space, ground source heat pumps pose a similar level of inconvenience due to the amount of ground work required and high capital outlay, and regular wood pellet deliveries to fuel a biomass unit in an inner city area pose a logistical headache.

Solar thermal technologies are benefitting commercial projects as they are easier to adapt and more straightforward to install. But potentially this also rings true for domestic installations nationwide. The anticipated introduction of the domestic Renewable Heat Incentive (RHI) will, at least, raise the public's awareness of renewable energy and installers should be prepared to recommend solar thermal where appropriate.

Solar thermal provides in square metres approximately three times more energy than solar PV panels

Tube journey: Ropemaker, Ropemaker Place, London has 60 m2 Viessmann solar vacuum tubes to provide renewable heat for water in kitchens, washrooms and showers

The government is expected to offer a 17.3 p/kWh incentive for solar thermal technology, the maximum tariff available, which could see customers' investments paid back within a few years, especially if used for contribution to central heating. This domestic update to available commercial funding, alongside that to be offered through the Green Deal, clearly holds promise for the under appreciated solar thermal market, but change will not be brought about unless private end users are educated in the benefits of the products available. The technology must be viewed as beneficial outside of the urban, commercial sector for any change in the domestic market to be brought about.

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Take a view

Alastair Mounsey, UK country manager, JA Solar, looks at UK solar PV from a manufacturer's point of view, seeing a stable and competitive market

For the UK-based participants the turmoil, booms and busts of the UK solar PV industry's infancy has caused as much unrest as it has celebration. From the manufacturer's point of view though, the last two years have been a surprise success. The benefit of high sales volumes is now being complemented by an emerging stable and competitive market, similar to Germany, where there is a confidence in the stability of the subsidy programmes and the economic fundamentals of the country that underpins it.

The UK will remain in the top three European PV markets by installed volume over the next few years, and is home to a diverse spectrum of residential, commercial and ground-mount opportunities. Certainly, this market is very interesting for suppliers of PV equipment, and JA Solar is looking forward to continuing its support for the industry and success in the UK.

Consolidation is inevitable on both the demand and supply sides. Manufacturers are now dealing with a customer base with a commitment to the industry, which values relationships and has the capacity for long-term partnerships. On the supply side, the PV industry has many parallels with the semiconductor industry in terms of technology, main supply locations and also in supply trends. In the 1980s there were hundreds of semiconductor factories, but by the 21st century just a small handful. Similar overcapacity in solar PV is well documented and consolidation here will also result in a small number of the strongest surviving.

The buyers who form relationships with those manufacturers most able to hold for the long-term will have their commitment repaid in time. Just as any buyer assesses a high value product they are looking to purchase, so those in the solar market will increasingly assess fully the product they are purchasing beyond the initial cost. Serious assessment should be made from the perspective of quality, bankability, track record, product benefits and the exacting details of warranty and insurances. Solar products are constantly improving and innovating, and by keeping abreast of developments informed installers will not only remain current, but also increase the value of their installed work. Look out especially for higher-efficiency products becoming mainstream, improved aesthetics of all black modules and exciting developments in building-integrated photovoltaics (BIPV).

Step and repeat: Alastair Mounsey, JA Solar, likens the PV industry to the semiconductor industry in the 1980s – hundreds of factories yet today just a handful remain

Looking ahead, I have trust that the best-in-class players from the installation and finance community will continue to fund and build larger-scale solar, with a reasonable level of subsidy support. They will also drive us also towards grid parity at a rate quicker than many could have predicted. In addition, JA Solar is also focusing especially on the Green Deal, which can be a long-term driver for energy efficiency and the renewables sector - not least for solar PV.

We're really pleased to be a part of Practical Installer at Ecobuild in March 2013. That's yet another reason why we are so proud to throw our support behind our partner Plumb Center, the leading provider of renewables products in the UK, that has a great model that enables installers to benefit from the Green Deal.

The whole truth . . .

Negative news reports about exhaust air systems plagued manufacturers in 2012 with stories that homeowners had been hit with a five-fold increase in electricity costs. Yet the reality is probably a combination of incorrect installation, application and sizing, not pump performance, says **Ian Stares**, PTS

The issues with exhaust air systems, which were rife in the autumn of last year, claimed that homeowners across the UK, in particular a number of housing association properties, faced soaring energy costs due to the inadequacy of the exhaust air systems that have been installed.

One housing association has reportedly removed all of the ventilation heat recovery pumps it installed in new homes after residents complained of high fuel costs. Yet the fact is the systems themselves are unlikely to be to blame. Rather, a 'whole-house' approach needs to be taken for end-users to benefit fully.

PTS has been warning for some time that the key to achieving the best possible performance from heat pumps is correct application, installation and sizing. I have great sympathy for households who have been affected, but I suspect that the properties concerned have had inadequate insulation or the heat pumps have been improperly sized, which would lead directly to these sorts of problems. We must also be aware that there are hundreds of heat pumps installed in the UK which are achieving and delivering cost effective heating performance.

Many in the heating industry know that a well-designed heat pump installation, correctly sized and fitted properly has the capability to offer significant energy cost and carbon savings, but there was the potential for problems if pumps were incorrectly installed and/or sized. Installers can play a vital role in ensuring these problems do not continue in the future.

There are a number of factors that need to be taken into account before a heat pump is installed. Firstly, the house requires good insulation for the heat pump to be as effective as possible. Heat pumps work with a constant low heat that must be able to build up over time, in order that a sufficient temperature is felt around the whole house. Insulation is therefore a key component in system performance.

Ian Stares, PTS, outlines the reasons why exhaust air heat pump problems are due to installation, applications and sizing issues, not pump performance

A common mistake is specifying the wrong size heat pump or radiator as it will dramatically affect the heat output. Either there has been an inaccurate heat loss calculation or no heat loss calculation has been carried out. The standard CoP (Coefficient of Performance) measurement of a heat pump is usually made at seven degrees air temperature and 35 degrees water temperature. However, more informed installers will be using minus three degrees air temperature which takes winter conditions into account whilst completing an accurate heat loss calculation for the home. It is also worth noting that the SAP (Seasonal Annual Performance) rating is now becoming a standard for the measurement of operational performance rather than the CoP.

The value of heat pumps is being proven on the Continent. Heat pumps are still in their infancy in the UK and installation best practices have yet to catch up with our European counterparts. In Germany, for instance, where installation practices are much more advanced, the CoP regularly reaches much higher levels than we commonly achieve in the UK at present. Ultimately, it is the responsibility of the installer, manufacturer and the merchant to ensure a renewable energy product is going to be as efficient as possible. Training is important, as well as attending manufacturer's courses which can help to ensure that sizing and installation is done correctly. In addition, informed merchants must now collaborate with training organisations to provide training courses on all aspects of renewable energy technologies, which is something PTS is doing with Green Deal Providers Toriga and Climate Energy.

Not only are exhaust air systems a strong renewable heating solution, but their installation, with due care and attention, is easy to get right. This technology is capable of delivering significant energy cost and carbon savings and unquestionably there's scope for many more households in the UK to benefit fully from it. Informed merchants such as PTS, which has a capability for the design and advice for the installation of heat pumps, should be the first port of call when installers have an issue. And with all of the required conditions easy to check in this way, households can expect a first-class performance from their heating system.

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James Robinson, Senior Estimator, Steadfast Roofing

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Richard Lotherington, Director, Chase Green Developments

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Steve Scott, MD, Forster Energy

"The Redland Solar PV Tile is a superb product which is quick and easy to install and integrates fantastically into the roof to leave it aesthetically one of the best photovoltaic systems on the market."
Nick Turnbull, Director of Eco Solutions, Kingsley Group

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Panel debate

There has been much talk of thermodynamic panels of late, not least because of the MCS' classification stance on these products. **Andy Buchan**, Cotswold Efficient Energy Centre and Future Renewable Energy, gives his view on this controversial technology

I first heard of thermodynamic panels at a renewables event in Gloucestershire a few years ago. I was talking with another like-minded stalwart who also had a renewable centre in Gloucester, and he was telling me about these new types of panels he had arriving that would operate in the dark! I listened politely but secretly I thought he had been drinking! Solar panels that work at night?

It was some time later that I actually came across these panels at an exhibition and needless to say, I was amazed at the claims from the sales people on the stand. They are basically standard as two packages, the first for hot water only and the second for hot water and central heating - it's just a case of more panels for the larger systems.

I listened politely but secretly I thought he had been drinking! Solar panels that work at night?

The big freeze

Whilst watching the panels in operation I noticed a lot of condensation running off the panels. I was told that this is constant while the panels are operating, my immediate concern was what happens to this condensation when it runs into rainwater gutters on a dark freezing night - surely it must freeze? There is also the issue with it freezing on the panels and roof tiles putting strain on all due to the extra weight?

Classification issue

We are now waiting for a decision regarding certification for MCS - is it a solar panel or a heat pump? It contains refrigerant and not glycol so therefore makes sense that it has to be recognised as a heat pump. This brings in another skill requirement as the installer will need to be 'F' GAS registered, which is a mandatory requirement when working with refrigerant gases. How will not being MCS accredited affect thermodynamic installs in the UK? Well, we at CEEC have found for some years now that the big driver is high fuel prices followed by grants and tariffs, on this basis there are other technologies on the market that are MCS accredited and would be preferred to one that is not, ie. solar thermal and heat pumps.

If thermodynamics eventually get the accreditation we could see a large movement towards these systems. However, a lot will depend on historical testimony from systems installed in the UK and not from Spain and Portugal where they are manufactured. At the various shows I have attended I have asked sales people if I could visit homes where these systems have been operating through a winter period.

I am still waiting for that opportunity ...

If thermodynamics eventually get the accreditation we could see a large movement towards these systems

HETAS – it's all about quality

HETAS promotes the safe and effective use of solid fuels, biomass and related technologies. In the first of its regular columns for REI as a partner organisation, **Robert Burke**, technical director, outlines the work this important association carries out

Behind the scenes: Robert Burke, HETAS, offers an insight into the work of HETAS

Wood is the oldest fuel known to man, and thanks to the demand for renewable energy, interest is growing in biomass as a near zero carbon sustainable source of energy for both domestic and commercial users. Although the growth in demand is welcome news, it must be carefully managed to ensure that installations are safe and efficient, and that they are delivering true carbon savings.

Promoting safety

HETAS' aim is to promote the safe and effective use of solid fuels, biomass and related technologies. When the organisation was originally formed it was very much focused on solid fuel, a large part of which was coal. But in the last five years our focus has widened to include all aspects connected with biomass including appliances, systems, chimneys, flues and maintenance.

From our offices near Cheltenham we operate government-approved schemes for product approval, installers, chimney sweeps, retailers and fuels. We are the only competent persons scheme to specialise in biomass, and offer technical advice and guidance to both the trade and consumers. Through the HETAS product approval scheme we encourage continual development of products whilst at the same time promoting high standards of quality, design, safety and efficiency. All of this information – and more – is available to the industry in the HETAS Guide which is published annually and online.

At European and national level HETAS represents the solid fuel and biomass industry on key policy making decisions. We also work with industry stakeholders to promote the safe and efficient use of solid fuels, raising standards and encouraging the provision of advice and guidance to solid fuel users. The scope and complexity of the biomass industry means there are many considerations we now need to take into account.

Take for example air quality. In order to safeguard both consumers and the environment from unwanted particulates, we have the Clean Air Act. In towns and cities there are smoke control areas where only smokeless fuels can be used, along with DEFRA exempted appliances. Although these regulations may seem onerous they are essential to maintain air quality, and rigorous appliance testing and registration with the HETAS approved appliance scheme is all part of the quality control process.

But we need to make sure that with the growth of biomass these standards are not compromised. At the moment we have a Renewable Heat Incentive (RHI) for the non domestic sector. Around 90 per cent funding has gone to the biomass sector, and it's reasonable to assume there will be a similar interest from consumers once the domestic RHI is launched later this year. Air quality requirements are set at 30g/GJ for particulates and 150g/GJ NOx. HETAS has worked with the government to ensure that RHI Emissions Certificates will be in place up to 20mW when the domestic RHI is introduced.

The Green Deal is also stimulating demand for biomass, with householders able to borrow money to improve their energy efficiency and lower their carbon emissions. Funding is available for home improvements such as insulation, controls, and renewable technologies. At the moment a great deal of work is being done by the government to make Green Deal work effectively.

Installer confusion

For the renewable energy installer, the choice of competent persons schemes could be somewhat confusing. To access funding under the RHI and take advantage of the Green Deal money do they need to be registered with a competent persons scheme, or MCS, or something else? HETAS has lobbied hard to simplify the process so that installers can register with just one scheme. The HETAS competent persons scheme is compatible with Green Deal, and HETAS also runs a microgeneration certification scheme so installers can access RHI funding.

With consumers either borrowing (under the RHI) or investing in renewables, they need confidence and reassurance that those new technologies are going to work. They are looking for payback in terms of lower fuel bills, and the government wants the assurance of lower carbon emissions. A heating system is only as good as the person that designs or installs it, and the growing biomass market needs properly trained and registered installers alongside approved products. Consumers also need to know their fuels are clean and not damaging the environment.

It's essential that installations are safe and therefore they must comply with a set of minimum standards, which is why we have the building regulations. Competent persons schemes like HETAS provide a way that installers can be trained and assessed to meet those minimum standards, and they can then self certify their work. Otherwise, any work on biomass installations must be pre-notified to

and inspected by local authorities which can be costly and time consuming.

Importance of quality fuel

With a safe installation of an approved product, it's essential that the correct quality fuel is used. Different suppliers have different standards, and at it's most basic level it's the choice of buying good quality seasoned logs from a reputable supplier, or chopping down a tree and throwing the logs straight on the fire. Fuel quality is essential. Poor quality fuel will burn badly and inefficiently, and deposits could build up in the chimney. That's why HETAS introduced a fuel quality assurance scheme with government backing, to make sure consumers could choose a good quality fuel which would burn efficiently.

With the choice of different fuels and renewable technologies that are now available, it's unlikely that any one fuel or form of energy will be appropriate for all seasons. The UK climate can be very diverse, and a good example of technologies working together is a biomass boiler used alongside solar thermal. In winter the boiler will provide the main source of heat and hot water, but will be the secondary source at other times when solar can harness the sun's energy. For years people have been using this approach with stoves or open fires supplementing their central heating systems.

Modern control systems mean it's now possible and usually beneficial to link two or more technologies or energy sources. Changes to the standard assessment procedure will in future allow calculations of heat requirements to be based on more than one primary source rather than using the old fashioned primary and secondary heat source perspective.

With systems moving towards more than one heat source, it's an ideal opportunity for installers working on gas, oil or solid fuel to extend their skills to biomass. The HETAS biomass assessment is the only one to be mapped against national occupational standards, and is available at a network of training centres throughout the UK. The trend we see in the biomass industry is very much towards combining different technologies, and transferring skills from one sector or fuel type to another.

Keeping standards high

All of these elements are essential to maintaining high standards and a good reputation for the growing biomass industry. And maintenance is part of that too with regular servicing and chimney sweeping vital for the safe and efficient operation of appliances. HETAS works across the whole supply chain starting with fuel quality, appliances, chimney equipment, ancillaries, installers, maintenance engineers and chimney sweeps. We even have an approved retailer scheme to make sure consumers receive proper advice. The work that HETAS does on standards and influencing policy is driven by the need to promote safety and efficiency, and ultimately quality across all sectors of the biomass industry.

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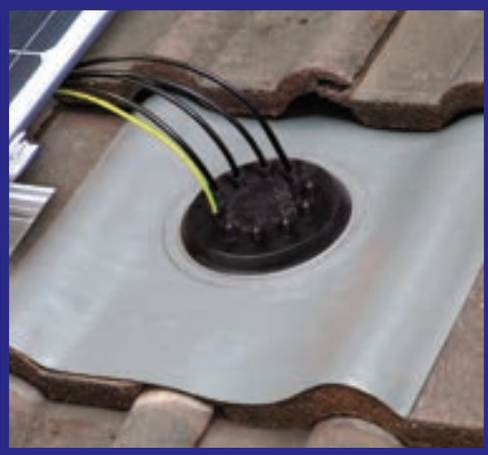

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HEAT PUMPS

What: Low carbon heating for social housing tenants in Scottish Western Isles

How: 77 Grant Aerona air source heat pumps

Result: 38 per cent weekly fuel bill reduction

Under the Renewable Heat Premium Payment scheme, the Hebridean Housing Partnership has installed 77 MCS approved Grant Aerona air source heat pumps across the Western Isles of Scotland. Replacing existing solid fuel systems with this low carbon form of heating has reportedly transformed the life of tenants in this unique part of Scotland where fuel poverty is at its highest as 82 per cent of homes have no access to gas. Figures from January-May 2012 confirm that the total weekly fuel cost of a typical Western Isles property has been reduced by 38 per cent (from £42 to £26). Under Phase 1 of the scheme the Hebridean Housing Partnership was awarded £175,000 to install 28 air source heat pumps. Further funding awarded in Phase 2 of this social landlord competition to install low carbon heating systems in the homes of social housing tenants will see further installations completed by the end of the this year.

The funding has also enabled the Hebridean Housing Partnership to install energy display devices which allows air source heat pump and electricity usage to be monitored separately and compared with historical data.

Peter O'Donnell, investment manager of the Hebridean Housing Partnership said: "We decided to install air source heat pumps in our properties because we know they work and would therefore help to combat the significant challenge of fuel poverty in the Western Isles.

"The installation of energy display devices made possible by the funding will provide invaluable information as we install further renewable heating systems in our properties."

Location location: Heat pumps are ideally placed in the Western Isles where 82 per cent of homes have no access to mains gas

PV TESTING

What: New handheld test instrumentation used to speed up Oxfordshire school PV installation

How: Seaward Solar's new PV150 tester

Result: Need for multiple electrical test instruments avoided

Southern Solar has used the new Seaward Solar PV150 tester on the installation of a 37kWp solar PV system at Bartholomew School in Eynsham, near Oxford.

The new system was installed on the roof of the school's sports hall and is expected to produce 28,065 kWh of electricity each year, offsetting nearly 15,000kg of CO2 annually.

The new PV150 is a dedicated multi-function electrical tester designed specifically for solar panel installation. It is capable of carrying out all electrical tests required by IEC 62446 on grid connected PV systems and, according to manufacturers Seaward Solar, eliminates the need for multiple test instruments for PV panel electrical installation and connection.

Jason Fuller, project manager in the Southern Solar Oxford office, said: "Although this was a relatively small project, the ability to complete all the necessary electrical tests with one tester means that jobs can be undertaken quickly and safely.

"Ordinarily we would have had to use at least two test instruments on a job like this, as well as various test leads and connectors which can be cumbersome.

"This time round we took just the PV150. We plugged in the leads, pressed the auto button and a few seconds later we had open circuit voltage, short circuit current, insulation resistance and other system measurements. On larger installations this will make an even bigger difference to the ease and speed of testing."

The installation of the new solar PV system at Bartholomew School is an important addition to the school's commitment to renewable energy – both from an operational and an educational perspective.

The school has a strong commitment to reducing its carbon footprint and has already achieved a silver Eco Schools Award, a project that was largely student-led with support from members of staff, raising awareness of recycling and energy usage.

The centre also uses an online energy management system to review its energy use, has an on-site eco house which is powered entirely by a wind turbine and has also taken steps to reduce the amount of water they use.

Saving time: According to Southern Solar, the multi-function PV150 handheld tester prevented the need to use at least two separate test instruments

Figure it out

Generation tariffs for non PV technologies

Technology	Band (kW)	Final tariffs (p/kWh)	Community energy tariff
Hydro	≤15	21.0	21.0
	>15-≤100	19.6	19.6
	>100-≤500	15.5	15.5
	>500-≤2000	12.1	12.1
	>2000-≤5000	4.48	4.48
Wind	≤1.5	21.0	21.0
	>1.5-≤15	21.0	21.0
	>15-≤100	21.0	21.0
	>100-≤500	17.5	17.5
	>500-≤1500	9.5	9.5
	>1500-≤5000	4.48	4.48

(Source: DECC)

Number of MCS registered installations per technology

Technology type	Cumulative number	Installed Jan13
Solar PV	402189	6372
Biomass	2021	123
Air source heat pump	11254	701
Ground source heat pump	3819	159
Solar thermal	3674	93
Small Wind	3825	37
Total	437140	7764

Number of MCS registered installers per technology

Technology type	Cumulative number	Registered Jan13
Solar PV	3876	40
Biomass	246	13
Air source heat pump	873	14
Ground source heat pump	740	11
Solar thermal	1196	16
Small Wind	141	0
Total	4527	103

(Figures supplied by Gemserv)

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	4.5

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

RHPP grants

All houses

Solar thermal – £300 – cash voucher valid for three months

Houses not heated by gas from the grid

Biomass boiler – £950 – valid for six months
Air source heat pump – £850 – valid for five months
Ground source or water source heat pump – £1250 – valid for six months
(Source: Energy Saving Trust)
Eligibility criteria can be found online by visiting: **http://bit.ly/RENUVD**
No voucher is valid beyond March 31 2013

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	0.67 per litre	2530 litres	£1,695
Wood pellets	4800 per tonne	94	24300	303 per tonne	5 tonnes	£1,515
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	0.67 per litre	759 litres	£508
*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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My working week

Who: Ashton Crawley, project manager, EnergyMyWay

What: EnergyMyWay has 15 offices across the UK, installing the complete range of renewable technologies for homeowners, businesses and communities. The company was set up in 2008 in Oxford.

Out and about: Project manager Ashton Crawley oversees EnergyMyWay's order book for the week

Doing it my way

Monday
In the office looking at the week ahead, I've got a 6kW turbine installation, several PV jobs and a training day coming up. I need to check all orders are on schedule for the delivery of the turbine to Oxford tomorrow, so it's a quick call to the suppliers before heading off to Wantage to see a domestic customer. This is for a pre-installation PV visit. My customer has a complicated property for PV, with a full-length polycarbonate roof running underneath the one we'll be installing the panels on. I bridge the scaffolding, as well as installing netting to protect the roof below. I also ensure we have an optimum cable run ready and take a set of photos of the site before I'm confident everything is prepared for installation.

Tuesday
Early morning in Oxford and the Kingspan kW6 turbine has arrived. The telehandler is on site and now we have the challenge of transporting the turbine to the field for installation. There's a narrow lane down to the field where we'll be installing with houses on either side. It's going to be a delicate operation so I walk with the turbine down the lane, guiding it slowly through the narrow space. It's a slow process shifting such a big structure, while avoiding danger to neighbouring properties, so it's a relief when we finally emerge into open space without incident.

Last week we completed and cured the ground works so the job now is to latch the pivot point onto the concrete base. The electrician makes sure the cable is correctly placed, ready for installation tomorrow.

Wednesday
The day of the wind turbine installation and it's time to hoist the Kingspan kW6 turbine head up onto its centre point and slot it into the flanged pole. Assembling the turbine is fairly straightforward. We assemble the blades and hub before attaching the winch to the anchor point and finally hoisting the turbine into its seated position.

It's always satisfying to see a turbine go up and we have already previously installed a 4kWp ground mounted solar PV array in this same field. So it's really nice to see so much renewable energy being installer on a privately owned site.

Thursday
A training day at Science Oxford for EnergyMyWay installers from all over the UK. We have 15 offices with new ones starting up all the time. I'm there to share my experience of turbine installations with the other teams. We also discuss best practice on the complete range of technologies and hear about how others are doing things. We all get a lot of value out of getting together regularly; it helps us improve our processes, even if it means a day away from the main job.

Friday
Back in the van and off to a 4kWp solar PV installation for a retired couple in Thame. This is a nice straightforward installation; a single story property and we're installing two rows of eight panels in portrait. We've installed hundreds of similar systems, so the job runs smoothly and the customer is surprised at how quickly the panels are up. There's time to get back to the office and check the board for the following week, making sure all the orders are on track for the next lot of installations.

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