Renewable
ENERGY INSTALLER THE BUSINESS OF MICROGENERATION
SOLAR THERMAL SOLAR PV BIOMASS HEAT PUMPS WIND HYDRO November 2013

Organic growth

RHI – the countdown begins

Plus: marketing and professional services

NEW RHI DOMESTIC TARIFF SET TO ENERGISE INSTALLER MARKET

GIVE YOUR EARNING POTENTIAL A REAL ENERGY BOOST

Grab your piece of the action with Plumb Center.

The new Renewable Heat Incentive launches early next year and we're ready, willing and able to help you make the most of it.

To start there's tasty deals on all the leading Renewable brands – most of which are readily available! What's more we can offer Renewable training and MCS accreditation at over 8 venues across the UK to get your qualifications up to speed.

And we're constantly developing innovative installer support too.

• Air Source Heat Pumps • Ground Source Heat Pumps • Biomass • Solar Thermal

PICK UP YOUR COPY OF THE RHI GUIDE IN BRANCH OR READ IT ONLINE NOW!

DOWNLOAD THE NEW PLUMB CENTER APP

Available on the iPhone App Store

plumbcenter.co.uk

OR AVAILABLE AT THE ANDROID APP STORE

App Store

We're making Renewable more do-able

PLUMB CENTER a WOLSELEY company

Shelter from the storm

Whichever side of the fence you sit on, Ed Miliband's decision to take on the 'Big Six' energy suppliers should have drawn a wry smile from all in the renewables industry.

His pledge to freeze energy prices for 20 months (should Labour win 2015's general election) can be considered a sticking plaster to a deep seated problem at best, or simply a futile effort to stem the rising tide of excessive profiteering driven on by a relentless increase in the wholesale cost of fossil fuels.

There can be no doubt that the only way to give consumers a better deal and the permanent immunity from rising heating and electricity bills they so crave, is to spread the proliferation of renewable energy technologies. Real relief from punishing price rises can only come from microgeneration, is what we must tell our customers.

Therefore, putting price manipulation and the gerrymandering aside, the most obvious market intervention for our elected politicians to embark on should be in the rigorous application of green policies. I hardly need to remind readers of the manifold benefits this will bring in lowering energy prices, reducing carbon emissions and diluting the power of a centralised energy system controlled by relatively few organisations.

The RHI will go some way to achieving this as will the government's first solar strategy, announced by Greg Barker at Solar Energy UK, which is designed to address one of the key consumer barriers to uptake – cost. It is up to us to continue to innovate and bring down costs if we are to take our wares to the masses.

Necessity is, of course, the mother of invention. Never has it been more necessary to offer a viable alternative to the general public and release us from the tightening grip of the major energy firms.

Contents

ISSN 2049-3525

Editor: Paul Stephen
Sales director: Jonathan Hibbert
Circulation/directory: Sandra Curties
Managing director: John McCaffrey
Published by: Ashley & Dumville Publishing Ltd, Caledonian House, Tatton Street, Knutsford, Cheshire WA16 6AG
Advertising
Tel: 01565 626760
Email: jonathan@andpublishing.co.uk
Editorial/press releases
Tel: 01565 653283
Email:paul@andpublishing.co.uk
www.renewableenergyinstaller.co.uk

BPEC Life Award donates over £30,000 to good causes

The BPEC Charity has handed out over £30,000 in charitable donations at its second Life Award presentation ceremony.

The awards offer financial support to members of the plumbing industry seeking to use their skills to enhance life and help those less fortunate.

Awards were made by the Charity's trustees to four deserving projects on October 11 at Derby's Pride Park Stadium.

Top honours went to Anita Smith and Nick Foley to fund the development and refurbishment of Bansang Hospital, The Gambia. The £15,006.02 cash sum will help the team replace and/or refurbish all toilets, showers, sinks and tiles in many areas of the hospital including the Eye Unit, Maternity and Labour Wards and Administration Block.

The BPEC Charity also awarded £8,000 to self employed plumber John Robinson for a project installing a safe water supply in Nicaragua. £5,000 was presented to Danny Jones from Exodus Solutions who will work in partnership with Willmott Dixon 4life Academy to install solar PV and other equipment in rural Togo, West Africa.

Trainer/assessor Trevor Deacon was also handed £2,000 to bring hot water to an orphanage in the Zimbabwean town of Marondera.

BPEC chairman, Frank Glover, said: "2013 has been a brilliant Life Award, the panel have been truly inspired by the submissions.

"The life award experiences have had a real inspirational effect on both the recipients and the deliverers. It is changing perspectives and attitudes in a really positive way."

First aid: Anita Smith and Nick Foley receive a cheque for over £15,000 from BPEC Charity Trustees to help fund the refurbishment of Bansang Hospital, The Gambia

The search has now started for applicants for the 2014 BPEC Charity Life Awards with organisers urging those in the plumbing sector to put themselves forward at: **http://www.bpec.org.uk/charity/life-award/**

The closing date for applications is June 27 2014.

Itron research indicates metering skills gap

New research commissioned by technology manufacturer Itron has shown that over half of renewables installers surveyed are not trained to fit heat meters, despite their requirement under the commercial RHI.

Sizing up: According to Itron, its new interactive heat meter installation guide has been created to solve a significant skills gap in the market

51 of the 100 MCS registered installers questioned said they have no training whilst 82 percent would like training to boost their confidence.

Itron has responded to the findings by launching a new interactive e-learning guide for fitting heat meters efficiently and properly, which is available for free download from the company's website.

Bernard McWeeney, Itron's water and heat pump manager, said: "It's accurate to say that DECC expects 900,000 renewable projects to be installed by 2020. As metering is mandatory on the commercial side to access the RHI, it is important for people to know how to install them properly to get the full benefit of the RHI.

"The cost of installation is often more than the value of the meter so it is essential to get it right. We also listened to our customers who communicated that a tool like this would be useful."

He added: "We wanted to develop an e-learning tool because that's the way people want to learn now. We've not come across anything like this for heat metering so we wanted to tackle the issue head on."

The Itron Heat Meter Installation Guide provides videos and information on installing two of Itron's thermal energy heat meter models in accordance with EN Standard 1434 section 6 and can be downloaded from **www.itronheat.co.uk.**

Barker reiterates 2020 PV vision

Greg Barker has re-affirmed his aspiration to see 20GW of solar PV installed within the UK by 2020.

The minister for climate change restated this personal goal during his opening speech at Solar Energy UK 2013 at Birmingham's NEC on October 08 whilst also launching the government's first ever Solar PV Strategy Roadmap.

He said the Roadmap would play a central role in turning his ambitious vision into reality by meeting four key challenges – cost reduction, carbon effectiveness, sustainability and scaleability.

"The DECC central forecast expects some 10GW to be deployed by 2020. And that's just under business as usual," he said.

"I think we can go faster and further - if industry drive down costs even quicker, if companies innovate faster, if the sector drives efficiency through the whole supply chain, if solar PV developers work closer with local communities, if the industry looks at export markets.

"Now, I recognise that a number of barriers stand in the way of meeting my big 20 GW ambition. The government's Roadmap to a UK National Solar PV Strategy sets down what we see as the four key challenges facing the sector."

With full details of the Roadmap now available on DECC's website, the document is intended to set the basis for the government's

Solar PV Strategy which is due to be published in the spring.

The Roadmap covers what progress has been made to date and enshrines the key principles of future government policy – that solar continues to be a cost effective solution, efforts are made to reduce carbon emissions in the supply chain, large PV arrays are sensibly sited and that issues are addressed concerning the lowering of costs of financial incentives and developing grid connectivity.

He added: "I'd emphasise that the Roadmap is just that – a road map. It sets down the questions, and the pathway to get the answers – in the form of a UK Solar PV Strategy.

"I will launch this Strategy next spring. It will explain how we intend to address these challenges, to secure real, lasting, ambitious growth in this sector.

"Our economy is now growing faster than any other in the developed world. The UK solar sector is part of that growth."

Keep the public onside, urges minister

Sensitively-sited PV will be central to the growth of the technology throughout the next decade, said climate change minister Greg Barker.

Although public support currently remains high for the deployment of solar energy, the minister said there is a risk of undermining confidence unless developers and businesses work closely with communities and give proper consideration to environmental factors.

He added: "Sustainable deployment is critical to the success of our industry. That means, where possible, focusing on previously developed sites for large solar arrays and most importantly on-site generation.

"It does not mean 'no' to all greenfield or ground-mounted sites. Indeed, well-planned sites can become islands of biodiversity, providing protection for bumblebees and wild flowers. And discreet, well screened sites can sit alongside farming, particularly on low-grade agricultural land.

"But, first and foremost, you – as solar developers – need to continue to bring communities on-side. I will not allow solar developers to grow rich on public subsidy from mega-arrays that scar our countryside.

"In other words, do not allow a few irresponsible companies to ruin the reputation of what I know to be a popular and responsible industry. If you alienate the public, you will not reach the industry's true potential."

Events

Renewable UK Annual Conference & Exhibition
05-07 November NEC, Birmingham
http://www.renewableuk.com/en/events/

Ecobuild
04-06 March 2014 ExCel, London
www.ecobuild.co.uk

The Energy Saving Home Show
10-11 May 2014 London Olympia
www.energysavinghomeshow.co.uk

Energy Efficiency Exhibitions plus Heating & Plumbing Roadshow

9 September 2014
Westpoint Arena, Exeter

11 September 2014
Ricoh Arena, Coventry

16 September 2014
Highland Centre, Scotland

18 September 2014
Event City, Manchester

23 September 2014
Sandown Park, Surrey
http://energyefficiencyexhibitions.co.uk/

UK's Leading Solar Wholesaler

Part of a multi million global trading group

zenex solar

Credit Limit Smaller than Your Business Potential?

Let Zenex Partner Projects Help Your Business Grow

HOW IT WORKS

- **Zenex invoices your customer direct**, thus avoiding any credit limitations which would prevent you delivering the deal.
- We bring **100% FINANCE** deals to the table for your customer. You don't need to cash-flow the equipment purchase.
- Use Zenex's **superior buying power** to deliver **more competitive pricing** for your large scale jobs.
- Piggyback on Zenex's strong credit status with corporate customers.

With the launch of this scheme we are providing training sessions in the UK

9th December / 10am til 2pm - Jury's Inn, 43, Jeffrey Street, Edinburgh
17th December / 10am til 2pm - Hilton Reading Hotel, Drake Way, Reading RG2 0GQ
18th December / 10am til 2pm - Radisson Blu Hotel, Manchester Airport, Chicago Avenue, Manchester, M90 3RA

Contact us and find out if you qualify...

01484 475 804
info@zenexsolar.co.uk | www.zenexsolar.co.uk
St Pegs Mill, Thornhill Beck Lane, Brighouse, West Yorkshire HD6 4AH

DON'T forget - call today to book your place on our training session!

Energy price fix must not cut green investment, says industry

Labour leader **Ed Miliband** has reignited the energy debate by pledging to freeze gas and electricity bills until 2017, should his party return to power in two years' time

The bold undertaking, made during the Labour Party's annual conference in September, has drawn a mixed reaction from the renewables sector.

The Renewable Energy Association (REA) gave the plan a cautious thumbs up by applauding any efforts to protect consumers from further fuel bill rises whilst warning against the risk of a slow down in low carbon investment.

With two percent of the average household dual fuel bill currently funding renewable energy, investment could be put on hold by 'the big six' energy suppliers in an effort to protect profit margins for the duration of a price fix.

"We welcome (Miliband's) focus on consumer affordability, as volatile gas prices have been pushing bills up and up for several years now," said REA chief executive Dr Nina Skorupska.

"The big question is: How can Labour square a major reform of the consumer energy market and a freeze on energy bills with the urgent need for investment in new low carbon generation?

"Investment is already on hold as government works through the details of Electricity Market Reform, so a freeze on bills must not be allowed to lead to another freeze in renewables investment. If we are to keep the lights on, boost our domestic energy supply, mitigate the risks of dangerous climate change, create green jobs in new industries and meet binding renewable energy targets, then we need to be accelerating the rate of growth in renewable energy and we cannot afford another investment hiatus."

Paul Hutchens, Eco2Solar's managing director, and Sibert Solar's business development manager, Andy O'Leary, both echoed the REA's stance by calling for low carbon investment to be safeguarded or even increased to drive uptake and permanently reduce homeowner's energy bills.

"On the face of it, recent comments by Ed Miliband seem to be a populist announcement, who wouldn't be delighted at the thought of lower energy bills?," said Hutchens.

"However, we need to be investing in our energy sources and networks, renewables or otherwise, to ensure that we are able to continue to produce our own energy and keep Britain's lights on.

"The reality of the situation is that higher energy prices caused by increasingly scarce quantities of fossil fuels are what actually strengthen the case for renewables."

Andy O'Leary added: "Potentially forcing energy providers to halt price increases is not a forward-thinking solution. More focus and resource needs to be allocated instead as to how we can continue to improve the capabilities and efficiencies involved in making best use of the renewable energies available to us now, for a more permanently stable energy future."

A guide to quoting and winning a job, by Trade Skills 4 U

- First impressions count. Create the wrong impression at this point and your customer could lose confidence in you.
- If you have told the customer you will ring them at a set time, don't let them down. Lack of returned calls can lose you the work.
- Although your customer won't mind seeing you in your work clothes, you should always look professional.

- Take an interest in what your customer wants doing. Maybe you could suggest extras to improve your customers comfort.
- Never quote a job on the spot. Your quote should be clearly presented and supplied by either post or email. A headed quotation with your company logo looks more professional.
- Be realistic in when you can start the job. If you cannot fit your customer in for a while, don't be afraid to say so.

Raising the roof on industry standards

Richard Jenkins, md of Ecolution Renewables, reminds PV installers of the importance of maintaining high standards in securing future business

We are in a PV sector that has undergone considerable change in the last two-to-three years and if we want to see continued growth, we must ensure that the standard of service is high, installations are well-designed and expertly executed with top-quality, durable products. We must care enough to maintain and monitor the systems that we install. We have to stick by what we do to ensure that the systems are achieving what we said they would when we won the business. If our customers are delighted, growth will be the reward. If standards slip then the sector will deservedly slip too.

If our customers are delighted, growth will be the reward

Due to the rapid growth of PV in the UK in recent years, the quality of installations is proving to be variable as some installers struggle to maintain standards of work. At Ecolution Renewables, we have seen a recent increase of requests to solve site issues and examples of unacceptable workmanship.

The key issues of concern include poorly designed systems, inefficient systems due to incorrectly sized or installed inverters, or basic installation issues such as poor wiring, crimping and the wrong tools being used.

Damage limitation: Ecolution Renewables reports a recent increase in requests to remedy poor workmanship, harming the future prospects of the PV industry

One example that we have recently dealt with shows that the system had not been installed in accordance with the manufacturer's instructions and the roof was in poor condition; wind caught the underside of the flashing causing it to rip.

No side sheets had been used on the PV modules (causing rain water to run behind the slate tiles) and the brackets had been screwed through the flashing, penetrating the roof.

We discovered no means of AC isolation in the loft area near the inverter and the inverter had been wired directly into a junction box with an excess of cable (which had been rolled up, creating a potential fire hazard). An AC isolator was used to isolate the DC supply in the loft area and the isolator in the loft area had no stuffing glands where the cables penetrate.

There were no visible warning labels and no generation meter had been fitted, therefore, the Feed-in Tariff cannot be claimed. Cables had been lashed across the loft area, unclipped, and the MCB was over rated. No schematics or shut down procedures were displayed and the inverter was not functioning correctly as leaking water had caused a short circuit. The entire system had therefore been switched off.

Housing associations, schools and all our customers deserve a good return for their investment because they are spending large sums of (public) money. Installation companies should set the highest standards regarding the quality of the kit used and the skills of the installers employed. It is also critical to constantly monitor the systems to ensure that they are performing to the optimum level. Our job should not finish when the system is installed.

Our job should not finish when the system is installed

We urge customers to check the long-term experience of installers; get a list of case studies and works completed over three to four years and look into the quality and current performance of those installations. The quality of the recommended products should be rigorously checked, along with the warranty available.

If the installer owns the life cycle of the kit being installed and offers maintenance and monitoring service, they will install products that have longevity and will stand the test of time – as they will have to guarantee that the system is working as it should.

It is up to us all to raise the standards of the industry to secure growth and a future.

secon

'everything for the professional renewables installer'

If you're buying one of these…

SAMSUNG

…then you'll probably need these…

…we've got it all!

Discounted kit deals available now

All products are available to purchase separately.

Secon Solar Limited, Unit 87, Business & Innovation Centre, Wearfield, Sunderland SR5 2TH

T: 0191 516 6554 **E:** info@seconsolar.com **W:** www.seconsolar.com

Decision time

Gary Fuller, UK managing and sales director, WINAICO UK LTD provides some pointers on what to look for when choosing the right solar panel for your projects

When deciding on a PV system it is important that you compare in detail the offers available, as there are considerable differences in quality and prices. Furthermore you must look at the durability and yield of different systems. Just purchasing modules based on information on a data sheet without understanding the qualities and performance in real world conditions is very much guess work and your customers could possibly come back to question your offer.

The real PV qualities lie deep within the technical data and component quality used during production, so I will look at Flash Data, Fill Factors, Series Resistances, Framing and Real World Performance Data.

Flash Data

Flash Data provides vital test information of each module and should show the modules serial number, model type, STC output, Voc, Isc, Vmp, Imp, Rs, Rsh and Fill Factor. This allows you to design the system in accordance with module output and create even more strings.

Series Resistance (RS) and Soldering

Soldering within the modules may seem unimportant but this is vital in reducing the RS (Series Resistance). Any imperfections within the soldering, no matter how small can have a detrimental effect on long term generation for your customers. The series resistance gives information about the number of electrical resistances in a module. The closer the resistance is to zero, the higher the yield will be of a module. High performance modules have a series resistance of <0,5. Generally you do not find this sort of detail on data sheets so it is more important than ever to ensure you receive the flash data of each module to highlight its RS.

In the frame: Installers should look beyond the data sheet and study technical data in depth when sourcing solar panels

Fill Factor (FF)

The fill factor describes the power performance of a module. Basically, it accounts for the amount of light that is converted to usable energy. The closer the fill factor is to 100 percent, the higher the performance level of the module. High quality modules will achieve fill factors of 72 percent and above and this is generally down to the quality of the EVA sheets and cells used. Fill Factor information should be provided on flash data.

Framing and Seal

Framing on a module must take the stress of system mounting for a period of 20 years plus. High quality manufacturers will use the highest grade aluminium and use a chambered frame and rarely used mitred corners. WINAICO's frame stands out from the crowd as it utilises specialist L keys which are pneumatically pushed into place during production allowing for the stress and tension caused by mounting to be spread evenly, removing risk of possible delamination.

The type of seal used to encapsulate the module frame to the back sheet needs to be versatile and allow for expansion and contraction whilst protecting from natural elements such as rain, UV etc.

Real World Performance Data

Independent data is always a great tool when selling or specifying a PV system as it provides analysis which can be checked online by your customers which in turn builds trust. WINAICO has worked with many organisations across the globe to show how our modules perform in real world conditions.

The above is a brief overview of some aspects of module data to consider when purchasing your next PV system. WINAICO has held training sessions directly for sales teams, architects and specifiers and should you wish be interested in learning more, please do not hesitate to contact us directly.

The real PV qualities lie deep within the technical data and component quality used during production

Grant Aerona HE Air Source Heat Pump range

New for 2013, Aerona HE heat pumps are available in five single phase outputs of 6.5kW, 8.5kW, 12.5kW, 17.5kW and 21.5kW. These efficient units maintain impressively high COP's even at lower ambient air temperatures.

For a sustainable heating alternative, the Aerona HE range delivers exceptional performance, reliability and value.

- R410a refrigerant
- Built-in 3kW electrical backup
- Sound deadening insulation
- Weather compensation control
- Base tray heating element
- MCS approved

Green products • Great thinking • **Grant Engineering**

For further information visit:
www.grantuk.com or call our sales team: **+44 (0)1380 736920**

GRANT UK

Partner organisation MCS presents its regular column for REI

Laying down the law

Gideon Richards, chairman of the MCS Steering Group, publishes a statement on the Judicial Review sought by claimant Energie EST LDA, and defendants the energy secretary and MCS SMG. Held on October 02 & 03 2013, it concerned decisions relating to the certification of thermodynamic products to MCS standards, and has been dismissed in its entirety.

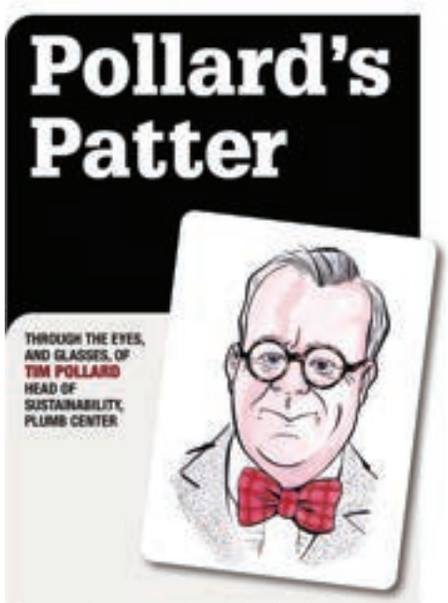
MCS welcomes the decision to dismiss the claim against the energy secretary and MCS and thanks Mr Justice Blair for his considered and balanced judgement, in a case that looked to test the scope of certification for products entering the UK market.

MCS was set up as an industry-led scheme to support the deployment of microgeneration technology by increasing the public's confidence in the products and installation companies in the sector. This is our core purpose and MCS strives hard to develop and maintain a scheme that provides that confidence.

MCS is grateful the judge recognised that MCS continuously has to "strike a balance on the one hand between the application of its standards and methodology in support of consumer confidence, and on the other avoiding the risk of discouraging innovation and competition." This is not an easy task with so many stakeholders to satisfy.

As a body which relies on so many volunteers, it is important that the balance is maintained and MCS would like to take this opportunity to thank all those stakeholders for maintaining this balanced approach.

As with any fast developing technology sector, innovation of technology and systems will always need to be accommodated in a timely manner, to ensure consumers can benefit from the latest developments. That is why MCS has processes in place to support and assist industry in developing standards that can be certified against. It is important that all MCS standards provide ongoing confidence in the safety, performance and durability of systems installed across the UK, while being cognisant of our obligations under UK and EU law – obligations which MCS takes very seriously. This is why MCS is grateful for Mr Justice Blair's recognition that there has been no breach of UK or EU Law.



I've not long completed the final event in the series of six Energy Efficiency Exhibitions which was certainly challenging in travel terms but enormously enjoyable in meeting so many great people. Our Plumb and Parts Center stand drew lots of interest with the opportunity to test out our Green Deal Assessment software and the opportunity to discuss the potential business opportunities arising from the Domestic RHI.

As we enter the heating season, the dialogue will return once again to the cost of heating our homes and buildings. The Domestic RHI will allow us to genuinely add renewable heating systems into this conversation as a valid alternative, especially for those householders in areas off the gas grid.

It was also a refreshing opportunity to hear at firsthand about the plans of individuals and businesses to prepare for the market as it unfolds. This means that we have to redouble our effort to support all our customers to benefit from rising demand for renewable heating systems and energy efficiency in general.

Plumb and Parts Center are working on some really exciting and innovative ideas related to training, products, software and events associated with the Domestic RHI and visitors to the Expo events got a preview of what some of those new initiatives might look like. Our air source heat pump packs leaflet certainly caused a bit of a stir, you can pick up a copy at your local Plumb Center. **So watch this space!**

Opinion

"In spite of the blossoming popularity of biomass, some still hold misguided views on the technology" Nigel Jefferson, Viessman P25

CURRENT AFFAIRS

By guest columnist **Bill Wright**, head of energy solutions, Electrical Contractors' Association

The recent hot summer and sunny autumn meant that the PV installation on my house has really produced a lot of power and hence income. The recent stability in FiTs and the resolution of the Chinese PV panel anti dumping argument with the EU means that now is an excellent time to get PV panels installed. Prices have stabilised and what other investment can give a 6-8 percent return on capital guaranteed for 20 years with index linked payments?

There has been a lot of publicity in the press about the potential for power cuts in the years around 2015/16 due to coal fired and nuclear power stations being shut down at the end of their working lives, and insufficient supply capacity replacing them. Although this is a doomsday scenario, there is a possibility that in severe weather and if power stations are shut down due to a fault (not unknown) that brown outs (reduced voltages) or black outs could occur in some regions. Those with renewable energy systems might think they are partially immune but the invertors used in PV systems rely on mains power to be available to work. When power fails, so does the invertor, central heating pumps and other ancillaries. Now might be the time to be thinking about 'off grid' systems which can run independently from incoming supplies and use battery storage, which could provide power to essential equipment in a building. A 'hybrid' system utilising both battery storage and mains synchronised invertors would be an ideal solution.

Letters to the editor

REI editor Paul Stephen invites readers to send in their views to paul@andpublishing.co.uk

Dear editor

Thank you so much for generating such a well laid-out, comprehensive and condensed overview of the FIT's and RHI tariffs on your data pages. This will be essential information we'll provide our potential customers with.

Just two small suggestions if I may. Some people may struggle to extrapolate the cost comparison data to their demand situation. We usually provide a cost overview based on costs pence / kWh to allow for an easy like-for-like comparison between the different fuel types.

Secondly, your wood pellets are shown at £235 per tonne, which appears to be a middle value between blown/bulk pellet price and bagged pellet price. We do generally provide the costs for pellets separated into these two categories since there is about £60 difference per tonne depending on how you buy them.

Jens Gburrek, Greenearth Energy

Dear Jens, REI appreciates the importance of accurate and user friendly data and will endeavour to factor in your feedback in time for the next issue

Renewables in 140 characters

REI scours the Twittersphere for some of your best tweets.

Don't forget to follow us @REI_digital

@LeonieGreene
So frustrating Labour, LibDems & Tories all champion nuclear so uncritically. Shows big energy's hold over Westminster - & stuck mindset
(REA & STA head of external affairs Leonie Greene 21/10/13)

@3WhitehallPlace
EDF nuclear talks update: Ed is close to securing extremely good value-for-money, multi-billion financing from Wonga, Cash Lady and QuickQuid
(DECC spoof account 14/10/13)

@GregBarkerMP
Seems Ed's price freeze con comes more unstuck with every outing. Consumers aren't fools, they want real change not a gimmick. #RealChange
(Climate change minister Greg Barker 10/10/13)

@lucianaberger
Ed Davey floundering in DECC Qs – the best energy deal in a broken market is not a good deal. We need to #freezethatbill & reset the market
(Shadow climate change minister Luciana Berger 17/10/13)

TECH TALKING

Staying in control

Heat pump trouble shooter **Bob Long** continues last month's theme of bivalent energy

In my last column, I discussed why we need bivalent energy and where best to introduce it into a system. Now I will look at how the bivalent energy can be regulated according to system demand.

When a system is being designed, an operational water temperature will have been decided and the chosen temperature will be led by the type of emitters intended for the particular installation.

There will be many factors to consider when selecting a suitable type of emitter but, when the choice has been made, the water circulation temperature will also be confirmed.

For example, an under floor heating system may require the water temperature to be say 31°C before it can emit enough energy to maintain a stable temperature inside the property when the temperature outdoors is below zero (see MCS guidelines).

Arguably, if the circulating water temperature dropped below 31°C, the indoor temperature would probably also fall, possibly to an unacceptable level. Therefore, in this instance, bivalent energy support should begin here, and maintain the heating water temperature at the designed minimum of 31°C.

The amount of bivalent support will always remain unstable, and difficult to quantify, linked directly to the ever-changing outdoor temperature, and influenced by all potential heat-losses such as ventilation, door opening, or losses through the actual building fabric.

Agreeing that this system in particular needs at least 31°C water temperature to be effective, the heat pump controller is likely to be programmed to start up when the water temperature drops to say 31.5°C, and to cut out when the water temperature increases to perhaps 34°C .

During regular operation, above zero ambient temperatures, bivalent energy should not usually be required, and the minimum water temperature is likely to be satisfied entirely by the output from the heat pump.

However, when the heating water temperature reaches 31.4°C (in this instance), we can clearly see that the heat pump is not coping and, unassisted, the water temperature would continue to fall.

Just before the minimum water temperature is reached, say 31.2°C, additional energy from the bivalent source must be added, proportionate to the requirement. Introducing more energy that is actually required would create waste, and elevated operational cost.

How do we control the bivalent energy accurately?

This is where PID controllers, or Proportional-Integral-Derivative to give it its full title, come to the rescue.

PID control can measure and respond to not only the temperature difference, but also to the rate of temperature change, and respond to an energy requirement trend as one begins to form.

PID controllers can turn this information into a modulating electrical output, proportionate to any small energy deficit in the heating systems capacity.

Typically, the output would be 4-20mA or 0-10V and would be used to instruct the operation of the bivalent controller. A PID controller with auto-tune will be able to monitor the rate of temperature change over time and eventually anticipate the bivalent energy requirement as and when required.

This relatively complex method of control can be used in all heat pump powered systems, irrespective of water temperature, made user-friendly by the advent of the auto-tune feature.

Auto-tune is designed to automatically set the control parameters of the device for optimum accuracy. However, the 'purist' still has the option to manually tune the device if skill levels to hand exceed the capabilities of auto-tune.

To benefit from PID control, the choice of bivalent source (excluding log burners etc) would therefore be limited to devices that can modulate their output proportionally.

The choice of such devices is currently small but manufacturers respond to market need.

Harnessing the power of the RHI

Robert Burke, HETAS, encourages installers to diversify into multiple technologies to meet the shifting needs of the market

It's difficult to talk about renewables without mentioning the RHI, but it is one of the main drivers behind the demand for biomass, solar, wind and heat pump technology. The non domestic RHI has been successful in helping commercial users to make the switch to more renewable forms of energy, and it's hoped that the domestic version will follow suit when it's launched sometime next year.

There has been a change in attitudes to using hybrid systems for domestic users

But rather than considering just one technology, there has been a change in attitudes to using hybrid systems for domestic users. Traditionally these have been popular in commercial installations where a specific piece of equipment is used for a certain job such as water heaters for domestic hot water, and boilers for space heating only - as opposed to one boiler doing both jobs. However, the rising price of fuel has made many consumers examine their energy costs and look for the most effective way of providing heating and hot water for their homes.

Solar thermal is the perfect partner for biomass boilers, with solar capable of producing cost effective hot water and heating during the summer backed up with the heating capacity of the biomass boiler during the winter. Together the two technologies combine to help bring down energy costs. And, with the addition of an individual room heater such as a log burning stove, households can reduce their carbon footprint and save energy at the same time.

Solar thermal and biomass boilers can be combined using a thermal store, which can be used to supplement space heating and hot water demands. In the summer hot water (and space heating if needed) is effectively supplied free of charge from the sun's energy. To meet the requirements of the MCS, a hybrid solar/biomass installation must use a thermal store in order to efficiently use the energy generated by both renewable sources.

Using a hybrid system with a thermal store means your customer can have mains pressure hot water without the need for a pressurised unvented system. As the mains pressure hot water is fed into the store it passes through a coil heat exchanger where the heat inside the thermal store is transferred to the mains water. A blending valve fitted at the exit of the coil brings the water to the required temperature. This type of system avoids the need for large runs of pressure relief pipe work and reduces the risk of Legionnaires ' disease from large volumes of stored hot water.

Installers working in off-gas areas are being encouraged to add both solar and biomass qualifications to their skills

With tariffs already confirmed for the domestic RHI now is the time to make sure you're up to speed with training and qualifications. MCS registered installers using MCS approved products will be able to take advantage of the full funding available, which could mean householders will receive hundreds of pounds a year for using biomass boilers, solar thermal panels or heat pumps. The tariff levels for biomass boilers have been set at 12.2p/kWh, and households will be paid on a quarterly basis for seven years based on the estimated heat demand of the property. A Green Deal assessment is required, and installers must be MCS certified or equivalent.

Most biomass installations are likely to be in rural areas, and installers working in off-gas areas are being encouraged to add both solar and biomass qualifications to their skills. For more details on MCS certification, installers and products visit **www.hetas.co.uk**

Continental drift

Steve Pester, BRE, reflects on why the outlook remains bright for the UK PV market compared to other European nations

As an industry, we all know that over the past couple of years the UK PV sector has taken some serious knocks. Many established, successful companies in the supply chain have had to implement large cuts in their workforce due to the FiT-related drop in demand and the lower profits available from module sales after the dramatic price drops.

What may be less obvious to us island inhabitants is that mainland Europe has arguably been going through even harder times – especially in the manufacturing sector. This much was clear at this year's EU PVSEC conference & exhibition in Paris. This annual event is recognised as probably the best scientific PV conference in the world and two years ago the number of companies exhibiting alongside the conference was around 1000. This year the 250 exhibitors had a fairly quiet time. But one thing that was interesting was that when I walked onto an exhibition stand and asked about selling products into the UK, there was usually immediate interest. The UK is nowhere near as large a market as Germany or China, but we are currently seen as one of the markets with the best potential in Europe and about sixth in the world for installations in the first half of 2013 (figures from Solarbuzz). The FiT scheme is now seen as stable and this gives us, as a market, a great advantage over countries where the support mechanisms are still uncertain.

So, what to make of this? Well, I believe this is good news for all involved in the UK supply chain because it means we can expect better products and more variety to become available - this line in thinking is borne out by the current high demand for BRE Global's product certification services. More standardised BIPV products would be especially welcome. Of course, more products are no use without the demand but the evidence is that this is starting to pick up again.

Since the return on investment is still reckoned to be about 10 percent, the final piece of the jigsaw would appear to be a question of marketing - telling potential buyers about the latest products and how PV is still an excellent investment.

Q&A

Paul McCullagh

Urban Wind

What have you got planned for the rest of 2013?

For the rest of 2013 our key focus is to continue to expedite and grow customer confidence in our existing delivery programme for our renewable energy customers.

We are also growing our corporate and SME customer base to achieve our goal of becoming the recognised leading industry expert in providing affordable renewable energy solutions in the UK.

What do you see as the growth areas in renewables?

For me the key growth areas are in providing funded renewable energy opportunities in the business to business sector.

We are seeing growing customer desire, both SME and corporate, to secure renewable energy solutions to reduce and/or provide greater security of pricing and supply in a rising and volatile UK energy market.

The importance of controlling and mitigating growing operational expenditure is a key challenge for businesses.

How is your company cutting its carbon footprint?

We actively encourage carbon reduction initiatives from our employees. For example, to use train and bus travel as well as car sharing, wherever possible. Our two bases are both ideally placed less than a mile from the motorway network and within easy rail links to Glasgow and Preston to reduce fuel consumption and emissions.

We've downsized much of our vehicle fleet to smaller hatchbacks and are encouraging staff to leave their cars, whenever possible, through a cycle-to-work scheme.

Talking point

Liz MacFarlane, Zenex Solar, refutes claims that the PV sector is a male-only domain

I recently suggested that readers might challenge me to include unusual words for them to spot in this column. I was a bit disappointed when ideas included 'Performance Induced Degradation,' and it did make me wonder if perhaps I was being a bit too light-hearted or that my readership was dubious about my technical knowledge. I pondered whether or not to come back at that with a piece on how Light Induced Degradation is more of an issue – just really to prove that I can. Articles like that are common place and my role here is to cast a more approachable angle to the industry.

Setting the pace: Zenex Solar is bucking the trend with over 50 percent of the work force being female, says sales director Liz Macfarlane

In fact, I read an article which suggested that UK solar excludes women. It's probably just that most women have more sense! Professional female friends who are outside this sector are there because they choose to be. Most of them work fewer hours, earn more and spend more time with their families. I also have lots of female industry colleagues who chose to be in this sector and love it. Exclusivity doesn't come in to it. Zenex's team is over 50 percent women and many have diversified from other areas of our business.

It's been a good few months for solar. Not only have we seen a vibrant Solar Energy UK exhibition (SEUK), there has also been great coverage around Lightsource's 5MW Bentley project and soon Wolseley Plumb Centre's 2MW NDC roof installation.

We are taking some proactive steps ourselves to grow the market. Keep your eyes peeled for Zenex Partner Projects and Zenex 0 percent Finance for Home Owners – aimed at helping our customers grow PV. I spoke to Greg Barker at SEUK about how we are helping develop the market and have been invited to a meeting at Whitehall as a result. I'm planning on encouraging a more approachable attitude to renewables!

Two minutes with . . .

Who are you?
Sean Sowden, director/co-owner at Go Geothermal Ltd

What do you do?
We're the UK's largest independent supplier of ground source and air source products. Products include geothermal collector pipe, heat transfer fluids, manifolds & manifold chambers, UFH products, low temperature radiators, heat pump cylinders, ground & air source heat pumps, pre-insulated hot water pipe for biomass & district heating projects and heat meters. We ensure that everything is available from stock for delivery to site next day.

Where are you?
Newton Aycliffe, County Durham but we also have a satellite office in Retford, North Nottinghamshire.

How's business at the moment?
Very good. We've grown again in what has been a difficult year in the renewables market and expect rapid growth next year.

How could it be better?
I think we've improved things recently by investing heavily in a decoiler for preinsulated pipe (RAUVITHERM by REHAU). It has allowed us to take an order, cut the required pipe to length and deliver it within 24 hours.

Who do you admire in Renewables?
Customers and installers of GSHPs. The capital investment is not cheap and it's probably the most complex install but also the most efficient.

What's the best business advice you have ever received?
Give all of your customers the finest service possible and you'll not go too far wrong.

How are you going green?
Our Midlands office is run purely from renewables (both heat and electricity) and we hope to introduce similar measures at our head office in County Durham in the very near future.

OUR SOLAR PV TILES PRODUCE 90 WATTS AND SOME IMPRESSIVE QUOTES.

"Weathertightness is not an issue, and completed roofs come with a 25-year Power Output Guarantee and Redland's 15-year SpecMaster Guarantee."
James Robinson, Senior Estimator, Steadfast Roofing

"We needed to satisfy the sustainable element of the Building Regulations and installing solar PV technology from Redland was the best way to do this. What impressed me most is how aesthetically pleasing the completed roofs are … from street level you hardly notice them."
Richard Lotherington, Director, Chase Green Developments

"With the strong wind and rain in Scotland, we recognised the importance of the fixings and installation process in ensuring the long-term security and weathertightness of our roof … incredibly easy to install and the whole job was completed within a week."
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

Fully integrated, our Solar PV tiles are easy on the eye, easy to install, and carry our unique 15-year design liability SpecMaster Guarantee when designed and built in accordance with SpecMaster. They're compatible with eight of Redland's most popular tile ranges, including slate, profile and plain.

Find out more at redland.co.uk

Part of the MONIER GROUP

SOLAR PV

Roofs for every environment

Redland

Realising potential

Nancy Jonsson, of Daikin UK, spells out ways to ensure your business maximises the potential of the domestic RHI this spring

Air-to-water heat pump installers can prepare for the introduction of the domestic RHI by following these four steps:

1. **Carefully design systems to achieve minimum system SPF 2.7**
The domestic RHI payment calculation relies on the Heat Emitter Guide (HEG) to estimate the Seasonal Performance Factor (SPF). Using the current HEG, the minimum SPF which would qualify for RHI is 2.7, which is equivalent to a maximum design flow temperature of 50˚C.

2. **Design all systems to be 'meter ready'**
DECC is aiming to make it a requirement that all systems installed after the domestic RHI launch are 'meter-ready' where possible. This includes leaving sufficient space for meters to be fitted; installing isolation valves to avoid the need to drain systems when fitting meters and leaving the pipework accessible and not boxed in.

3. **Consider partnerships with local Green Deal Assessors**
MCS accredited installers could consider becoming an accredited Green Deal Assessor, to simplify the customer journey and avoid multiple visits. Alternatively, MCS installers could work with Green Deal Assessors to help the householder to meet RHI eligibility criteria.

4. **Correctly estimate the RHI income**
Estimate potential RHI income up-front, to ensure customers are not taken by surprise. For individual heat pump systems, tariff payments will be determined by a "deeming" calculation. For an air-to-water heat pump, this will be the estimated heat use from the Energy Performance Certificate carried out as part of the Green Deal Assessment. Heat use is combined with the heat pump's design SPF to estimate how much renewable heat will be generated. Payment is based on this renewable heat output.

Joining the dots: To simplify the customer journey, MCS accredited installers should consider becoming Green Deal certified too, says Nancy Jonsson of Daikin UK

Question time

DECC answers REI's questions on the domestic and non domestic RHI

Q: How credible is the delivery timetable for the domestic RHI given the previous delays?
There are a lot of people beavering away behind the scenes at DECC and at OFGEM to make sure the scheme does go live on time. The number one thing we hear from the minister responsible, Greg Barker, at meetings is 'no delays, no delays' so we are still on track for spring and we hope to make an announcement soon.

Q: Did the industry get what it asked for during consultation in terms of tariff levels?
If you look at the tariffs we proposed during consultation and the final tariffs we have announced in the policy document, the changes exist because we have listened to industry and installers telling us what the genuine costs are today, rather than in 2010 when we collected our first set of data. It is also a targeted off-gas product, so we have to be careful that this is not seen as a panacea for everybody.

Q: Is linking the RHI and RHPP with the need for a Green Deal assessment not just one more barrier for renewable energy installers?
The most interesting feedback we've had is in terms of access to Green Deal assessors in rural areas. We are looking at what we can do to help MCS installers cross that line to Green Deal accreditation without all the additional training, cost and days off. That is an interesting challenge for us and we would be grateful for installers' views on how we could roll that out.

New dawn for heat pumps

Driven by the domestic RHI, 2014 will see a strong uptake in heat pumps. **Phil Hurley**, NIBE's managing director, discusses

While 2012 proved to be a year of uncertainty for heat pumps, at NIBE we look forward to the coming months and a strong 2014. In the face of a somewhat unpredictable outlook for wider legislative support – such as the future framework of the Renewable Heat Incentive (RHI) – this technology continues to operate successfully in both domestic and commercial applications across the UK, and we are confident in its abilities going forward.

Consultations into positive proposals for the RHI have now taken place and this support is vital if we're to stimulate the necessary uptake of heat pumps this year. Not only would it help drive growth in the renewables market, it would mark long-overdue recognition of heat pumps and the significant role they are set to play in achieving strict carbon reduction targets.

Confirmation that heat pumps will be well represented in future RHI subsidies would also help drive a more consistent high skill level and standard of technology across the industry. Under the new proposals, to be eligible for payments, heat pumps and the installers who fit them must be officially accredited under the Microgeneration Certification Scheme (MCS).

At NIBE, we believe cementing the importance of MCS is central to the success of heat pump installations in the year ahead and beyond. In fact, we are calling for accreditation to become a legal requirement for all installers working with the technology. This would help ensure the right standards of quality are being upheld across the industry, by manufacturers and installers alike. Introducing a mandatory quality assurance scheme is the way to promote the higher levels of expertise, reliability, performance and safety needed to build confidence in heat pumps and their capabilities in the years to come.

Setting standards: Phil Hurley, NIBE, would like to see MCS accreditation become compulsory for anyone installing heat pumps

Q: How confident is DECC that the cost control measures and degression mechanism introduced to the RHI earlier this year will be sufficient to avoid a repeat of the Feed-in Tariff fiasco?

For most of the renewable heat technologies, they are mature throughout Europe and costs will only really come down through the economies of scale of installation. We are not envisaging huge product savings in the first couple of years from massive innovation like with PV. Also, you cannot export heat so generation is limited to the size of the install. That makes the conditions of the RHI, and especially in the domestic sector, very different to that of PV and the Feed-in Tariff.

Q: Is deeming the right way to calculate heat generation or would universal metering of been a better strategy?

The overwhelming view, during consultation, was that deeming was the only way to pay sensibly in a household scenario. What we are trying to do is give people as early an indication as possible of what their money would be so they can make an informed choice. Installers have to be able to give customers an indication as early as possible in the customer journey so they are not disincentivised.

Q: What can the government do to further drive uptake?

There is definitely a government role in making sure installers are trained and in a position to go out to market, and we are looking at that in terms of supplying vouchers and talking to training providers. There is also some targeted work that government can do through third parties in rural areas such as the Church of England and the National Parks Authority. These organisations are part of the fabric of these rural off-gas places and if they are talking about renewable heat then the people in these areas will start thinking about it too giving installers the opportunity to sell.

Questions answered by Stephen Roberts (head of market intelligence) and Patrick Allcorn (head of RHI) from DECC during the Micropower Council's RHI debates at the Coventry and Newcastle Energy Efficiency Exhibitions on September 12 & 17 2013

Stay in control

Secon has introduced the new solar thermal controller from Resol – the Deltasol SL.

According to Secon, the new design has a sliding front cover that allows easy access to 'manual mode' function and a simple to use 'holiday cooling' function. Access is also gained to the microSD card slot that can be used for logging system data, transferring and storing system settings as well as running firmware updates. Finally, a mini USB slot can be found under the slider.
Other features include 27 pre-configured systems, four relay outputs (inc. potential free relay), four temperature sensor inputs (4x PT1000 sensors included), two PWM outputs for high efficiency pumps, inputs for one analogue Grundfos Direct Sensor, one Flowrotor and Vbus connection.

Paul Hind, technical manager at Secon, said: "The design of the SL is a departure from the usual well known Resol look, however, the operation via the two buttons and the new multi-coloured LED Lightwheel still follows the well-known operating concept of the Resol range, it will still be very familiar to the hundreds of installers that currently use Resol controllers."

Brand new: Resol's new solar thermal controller – the Deltasol SL – is now available to UK customers

Climbing wall

Despite not being listed within the EU Renewable Energy Directive, **CA Group Ltd** explains why its SolarWall TSC technology could be the next big thing in the UK solar heating market.

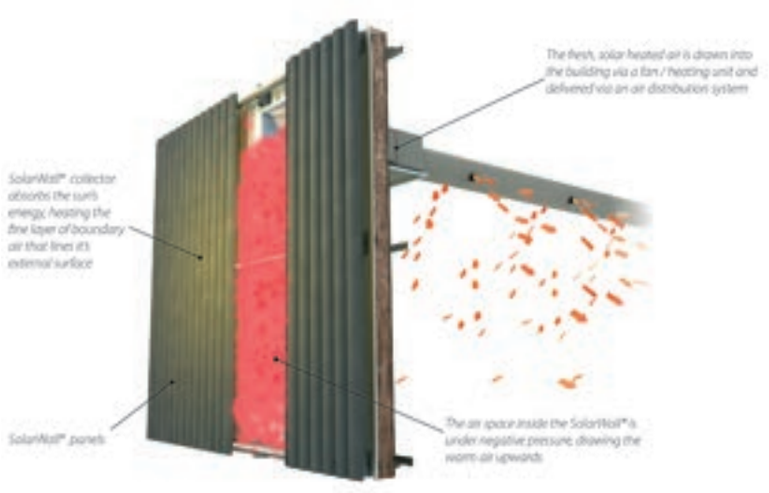
Transpired Solar Collectors (TSC) have been delivering significant results for large scale projects around the world for more than 30 years.

Use of TSCs to date has been focused on larger commercial and industrial projects, well in excess of the 45kW covered by the MCS scheme. For example, the recent installation of a 4,500m² TSC for Marks & Spencer in Castle Donington has a thermal capacity of 2,250kW and is expected to reduce the building's heating requirement by 30 percent.

The technology works by turning a building's southerly elevation into one large solar collector. Solar energy is used to pre-heat outside air before it is drawn into the building's heating system, reducing its consumption of fossil fuels.

The inclusion of TSC technology within the Green Deal scheme may well see this solution make its way into the portfolio of smaller-scale renewable energy installers. Solarwall is also actively trying to gain MCS certification to be eligible for RHI payments.

The technology has gone from strength to strength in the UK since its introduction in 2006 as it is easy to install, has the lowest capital cost and the highest known efficiency (up to 80 percent) of any solar technology in the world, with proven paybacks as low as three years, without incentives.



Numbers game: Manufacturers of the Solarwall, CA Group, claim its TSC technology is up to 80 percent efficient

Expertly pieced together by SOLFEX

SolarHeat

The renowned & exclusive SOLFEX energy systems solar thermal collectors, components & total solar thermal solutions.

In house dedicated thermal design team, yield forecast, system design, collector field & hydraulic layout.

SolarPower

Distribution of market leading Global brands with competitive pricing.

In house dedicated photovoltaic design team – yield forecast, system design, module field layout, mountings systems statically verified.

Underfloor Heating

Total supply solution for all floor types , new build, refurbishment, domestic & commercial.

In house dedicated UFH design team, floor plan pipe work layout & heat loss calculations.

Heat Pumps

SOLFEX energy system Heat Pumps / Powered by Samsung.

In house dedicated Heat Pump design team, sizing calculations & product type specification.

All system designs are covered by professional indemnity insurance!

COME CHECKOUT OUR NEW PV WEB SHOP

Contact us now for more info - T 01772 312 847 F 01772 335 277 E info@solfex.co.uk W www.solfex.co.uk

The UK's leading specialist integrator
and distributor of renewable energy systems focusing on
Solar Thermal & Photovoltaic Power, Heat Pumps & Underfloor Heating

SOLFEX energy systems

Myth busting

Viessmann's sales director of commercial and renewable products, **Nigel Jefferson**, considers the origins of misguided views on biomass technology

In spite of the blossoming popularity of biomass, some still hold misguided views on the technology. All too often, biomass boilers are perceived as being less technical than other heating technologies. This misconception spans both installers and end-users and, once the intricacies of the products themselves are properly understood, it becomes clear this is an unfounded perspective. But where does it originate from?

Fuelling the problem

One interpretation could lie in the manual nature of refuelling biomass boilers. Where alternative renewable heating technologies such as heat pumps and solar PV 'get on with things' behind a layer of electronics, biomass boilers require fuel in the form of wood chips, logs or pellets to be regularly fed into the heating chamber, and the ash tray intermittently cleared. This hands-on approach to heating has led some installers and end-users to view biomass boilers as being simplistic in design.

Where there is more sophistication to biomass boilers than some may think, many products available on the market are less technically advanced than they will shortly need to be. Despite the stringent emissions levels demanded by the highly anticipated domestic RHI, few boiler manufacturers are producing biomass boilers that meet the tighter requirements. For example, all biomass boilers up to 20 MW will require an 'RHI emissions certificate' to demonstrate the boiler complies with the emissions limits of 30 g/GJ net for total particulate matter (PM) and 150 g/GJ net for NOx. Currently, only 10 per cent of registered biomass boilers meet this target while all Viessmann's biomass products qualify.

Installers and specifiers are advised to search for specialist product features such as Viessmann's cyclonic combustion technology which lowers emissions of dust and particulates when designing biomass systems, not only to meet the upcoming policy changes, but also to ensure products deliver the efficiency levels and savings that end-users demand.

A rural matter

The long-standing association of biomass and rural settings could also have a part to play in generating the myths around the technology's simplicity. The increased availability of wood chip and outdoor space does often render biomass a highly suitable option for rural installations such as farms. Likewise, it is usually not that difficult to find the big and bulky units of the renewable heating world at home on a farm. However, the units are by no means any less efficient in urban environments, and can benefit end-users in a wide variety of applications.

A case in point is the tight-squeeze installation of a Viessmann Köb Pyrot 540 biomass boiler in Sunnydale Community College. The council needed a cost-effective solution to operate out of the college's existing boiler room and provide the property with sufficient, environmentally friendly energy; thus they turned to biomass as the solution.

Due to the limited available space of 10m², the boiler was delivered in one part, along with its pellet store, leaving only 20 mm between the boiler and the ceiling. In spite of these close quarters, Sunnydale Community College saves approximately £40,000 per year from gas consumption and further savings from the RHI could amount to returns of over £600,000.

The inner most workings of any system are of vital importance if optimal efficiency levels are to be reached, and this is no less true with biomass. Regardless of units' size, fuelling system and applications, they are no less technical than any other renewable heating technology and should be regarded as such if they are ever to deliver the efficient performance and energy savings end-users demand.

City limits: Many installers and end-users wrongly assume that biomass is restricted to being a rural application, says Viessmann's sales director of commercial and renewable products, Nigel Jefferson

SPECFLUE

Renewable Energy

Musa Pellet Stove

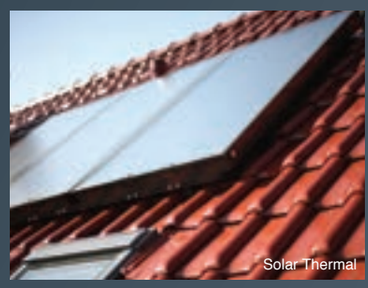
Our expertise, your reputation.

Specflue is the UK's sole trade supplier of MCZ pellet appliances.

Your business relies on quality, reliability and keeping ahead of the game. Today's ever-increasing demand for environmentally-aware products means it's never been more important to be at the forefront of heating technology.

With an expansive product portfolio including biomass boilers, solar thermal, pellet stoves and thermal stores, we're here to help you give your customers what they need. Technical expertise and extensive product knowledge comes as standard, all backed up by our dedicated solid fuel and renewables training centre.

Recommended by retailers throughout the country, our products comply with the RHI and MCS, and come complete with excellent after-sales servicing and support giving you and your customers complete confidence.



Solar Thermal

Compact 24
Biomass Boiler

MCZ

Renewable Energy Solutions | Flue & Chimney Products | Wood Burning Stoves | Training

0845 337 1652 // www.specflue.com

Specflue Ltd 8 Curzon Road Chilton Industrial Estate Sudbury Suffolk CO10 2XW Fax: 0845 13 07 555 Email: sales@specflue.com

Surging ahead

Oliver Duckworth, Windhager UK md, talks about how the biomass industry must ramp up for the imminent household demand ahead of the domestic RHI roll out

Rising energy costs of fossil fuels, carbon emission reductions and government incentives to switch to renewable technologies have led to a heightened consumer awareness of biomass as a renewable form of heating.

Windhager UK has seen that the domestic biomass market is at long last starting to show signs of movement. The continuous delays and uncertainty in the RHI policy had caused the consumer to be uncertain if there would ever be a domestic RHI policy, which resulted in a significant slowing of demand in the domestic biomass market.

With the future now looking more positive the industry must ensure that the skill set is in place to ensure that adequate installation capacity is available to undertake the expected increase in sales.

Customers investing in biomass need confidence in the quality of their new technology, and assurance that it can offer payback through both energy savings and lower fuel bills.

As a consequence, the need for established heating installation companies as well as new businesses to be familiar with the requirements and regulations involved in installing biomass has never been greater. The training of installers will not only enable this but will equip companies with the sales tools to explain the systems and benefits to consumers.

The domestic RHI is capped at 45kW thermal load which means that all products and installation companies must be MCS approved. As of the beginning of October 2013 there were less than 400 MCS approved biomass installation companies registered on the MCS website. This number needs to increase many-fold if the industry is going have the capacity to increase installation volumes.

The success of what is perceived to be a relatively new industry to the UK is dependent on three factors: quality reliable products, the high quality and trusted skill base of installers and ongoing customer service from both manufacturers and installers. Top quality products depend on trained and registered installers, and it is this combination which is essential for the success of the industry, and will be a crucial step towards meeting the government's carbon reduction targets.

Well stocked: The training centre at Windhager is fully equipped with a full range of working wood pellet and split log boilers for effective training

There is a huge pool of installation companies who are experienced with traditional (fossil fuel) boilers and who are Gas Safe and OFTEC registered, for these installers to undertake a small amount of training to understand the biomass technology would be a simple undertaking and for them to then gain MCS approval. Windhager UK's training programmes have already seen an upsurge in interest from potential new installers looking to diversify from their current skill sets into biomass.

Windhager has a reputation for offering an excellent range of services from the initial specification and design of the system through to customer service to ensure the reliable and efficient operation of the equipment. It has increased its provision for industry training through increasing the area and capacity of its training centre at its new Windhager UK headquarters in the South West. The training centre, which is HETAS approved, covers approximately 500m2 and incorporates practical, theory and assessment training rooms along with some eight 'live' appliances from 9 – 120kW, where installers and engineers can gain experience in all aspects of installation, commissioning, servicing and fault finding on appliances and control system.

The industry is heading for exciting times and we as manufactures have to step up to the mark to educate not only consumers of the benefits and incentives available for switching to biomass heating but also installers to ensure that an adequate skill base is in place to support the growth in demand for installations and after sales support.

Why biomass is best

Simon Cross, commercial director at IXUS Energy, discusses the anticipated demand for renewable heating appliances in homes and explains why he feels biomass boilers are the best option

Easy living: In addition to the environmental benefits and cost savings on fuel bills, biomass will add value to properties, says IXUS Energy's Simon Cross

At IXUS Energy, we expect to see a surge in demand for biomass boilers next year, with tens of thousands of new appliances to be installed, helped by the arrival of the domestic Renewable Heat Incentive (RHI).

RHI is the government's move to help home-owners improve their green credentials by subsidising the cost of biomass boilers and making them an attractive investment. This means households with biomass boilers or biomass pellet stoves with a back boiler will get paid 12.2p/kWh.

Many installers are being asked by homeowners who are considering biomass 'do the savings outweigh the initial costs? Our answer to this is - yes, energy bills will fall, but homeowners will need to act to quickly to benefit in the long term. Reports indicate that after capital costs are taken into consideration, biomass is approximately a third of the cost of oil and two-thirds the cost of natural gas.

Considered to be close to carbon neutral, biomass also significantly improves a home's energy rating which is a real benefit not just to the eco-conscious, but the financially savvy too. Earlier this year, research by The Department of Energy and Climate Change revealed that energy efficiency measures can also improve the market value of a property by up to 14 per cent, with some properties boosted by up to 38 per cent. This illustrates that the biomass trend is one worth following.

Energy bills will fall, but homeowners will need to act to quickly to benefit in the long term

However, the benefits are more than just financial gains. Biomass boilers boast a string of other benefits – they are efficient, durable, cause minimal disruption to the home, and are clean and easy to use. Unlike some renewable heating appliances, biomass boilers are also suitable for a wide range of properties and require no alterations to existing radiator or under floor heating systems.

Collectively all these advantages make biomass boilers an ideal replacement for any existing boiler powered by gas, oil or LPG. They have advantages for the installer too – a higher sales value and easy installation.

For those considering a biomass boiler, there has never been a better time to invest. Biomass can make a home more comfortable and affordable to live in. So, the message from installers to homeowners should be to act now and reap the biomass benefits. Biomass is the way to go and that is why more and more installers are adding biomass to their offering.

For those considering a biomass boiler, there has never been a better time to invest

Citizens' advice

Ensuring your heat pump business delivers the best possible standards and service is essential to take advantage of potential market growth, says **Nancy Jonsson**, product manager, heating and renewables, at Daikin UK

To maximise potential business opportunities, proactive installers need to ensure that they are in a position to advise customers about the best options available to them. The installer who can only offer one product to suit every installation will simply not be delivering the best option for each individual application. Products on the market can differ significantly and, to achieve maximum levels of efficiency, it is important to specify the right system for each project.

There are split and monobloc air-to-water heat pumps, high temperature and low temperature systems and specialist heat pumps designed for multi-occupancy buildings or commercial applications. In addition, there are now smaller capacities available, which have been specifically designed for today's highly insulated new-build homes.

Low temperature air-to-water heat pumps are most suitable either where an existing house is being refurbished with improved insulation levels and heat emitters are replaced, or in new-build homes. Operating most efficiently when generating low flow temperatures, these systems work best when installed with correctly dimensioned heat emitters designed to cover the required heat load with the lowest possible flow temperatures. Underfloor heating systems can be designed to operate with flow temperatures as low as 35°C; heat pump convectors can also be selected to operate at similar low flow temperatures, and low temperature radiators typically require 45°C.

Offering a versatile solution, the latest low temperature split refrigerant systems have very high efficiencies with a Coefficient of Performance (COP) of up to 5 (at outside air temperature 7°C and water temperature 35 °C, tested to EN14511) and the highest possible running cost savings. The outdoor unit is typically smaller and more compact, and depending on the capacity, the outdoor unit can be situated up to 70m away from the property, making them ideal where aesthetics are of paramount importance. They are available in a wide range of capacities to suit every size of home, ensuring that the system can be carefully matched to the property to provide highest possible system efficiencies.

New direction: Installers must be able to specify appropriate products for a range of projects as the industry moves away from the 'one size fits all' approach, says Daikin

Where internal space is at a premium, a monobloc system may offer a suitable alternative. Lower capacity monoblocs (6kW and 8kW) are ideal for smaller refurbished properties and are particularly suited to UK off-gas properties. Monobloc air-to-water heat pumps are also an ideal product for installers making the move into renewable heat pumps, because refrigerant-handling qualifications are not necessary for installation.

It is also worth bearing in mind that almost 30 percent of the UK's housing stock was built before 1944, some of which is classed as 'hard to heat' with solid walls, high ceilings and poor thermal design. In these properties, particularly where the householder wishes to retain the existing heat emitters, a high temperature system could be a better option when coupled with improved insulation measures.

For such properties, specifiers and installers may wish to consider the option of a high temperature heat pump. Typically these are designed to provide flow temperatures of up to 80°C using advanced refrigerant and compressor technology and without the use of an additional back up heater. High temperature heat pumps are often suitable as a direct replacement for traditional boiler systems and avoid the associated hassle and cost of replacing radiators.

Air-to-water heat pumps are clearly an excellent alternative to traditional heating and hot water systems in both new-build and refurbished housing. But, like any technology, it is vital both for public reassurance and the industry's reputation that any given application meets the highest standards and that the correct system is specified in order to maximise energy efficiency for any given application.

Going to ground

Simon Lomax, managing director of Kensa Engineering, discusses funding opportunities for ground source heat pumps using Phase One of the RHI and the ECO

Without doubt, many installers are naturally frustrated that the domestic RHI has still to be launched – the latest target date is April 2014 – and many spend an inordinate amount of time attempting to explain the proposed policy. At this stage, much has still to be agreed and it would be premature to detail how any policy might finally reward the patience of the market.

Residential opportunities

Instead, the time could be spent developing residential opportunities supported by the non-domestic phase of the RHI which was launched in late 2011. Thus far, there has been only a modest deployment of ground source heat pumps since the original policy not only unintentionally excluded the most marketable application – installations which provide both heating and cooling – but also offered inadequate tariffs, a point that Kensa has been emphasizing to policy officials for some time.

Fortunately, there is now an acceptance that significant change is necessary and a summer consultation proposed much higher tariffs. Final confirmation is expected in the autumn with the higher tariffs possibly available for all installations commissioned after January 2013. These overdue tariff adjustments should ensure heat pumps become an appealing choice again for commercial and industrial buildings.

District heating

More interestingly, the non-domestic phase of the RHI also covers district heating systems in the residential sector and supports installations designed for both new build and existing properties. Traditional district schemes – typically featuring a large boiler in the plant room of an apartment block – are not especially popular as they can create billing issues. Worse, they don't generally represent a technically elegant solution as it is necessary to circulate heated water around any building. And if the plant fails, there could be many unhappy householders.

Alternative living: In many cases Phase One of the RHI will deliver a stronger financial case for residential projects than the domestic scheme due to be launched next spring, says Simon Lomax, Kensa Engineering

All these drawbacks can be eliminated with an innovative design pioneered by Kensa which features its new Shoebox. Intended to be installed within each property, the Shoebox is linked to a communal ground array which satisfies the district heating definition, a point confirmed by DECC officials. It is worth pointing out that a district scheme may cover just two dwellings, perhaps a pair of semi-detached social houses, so there are opportunities to use Phase One funding for houses as well as apartment blocks.

Many observers are now recognising that Phase One of the RHI will provide a better option (than Phase Two) for the financial support of GSHPs

Cost reduction

Of course, sharing a ground array makes plenty of sense as drilling contractors can reduce costs whenever their scope is focussed on a smaller number of deeper boreholes. And these lower costs, combined with the soon-to-be-increased RHI income stream, means the financial case is very compelling with index-linked payments extending for 20 years based upon the metered output of the heat pump. These payments can be made to the owner of the installation or, in some circumstances, to the funder who retains ownership for the duration of the RHI payment.

Better still, select retrofit district heating schemes in the social housing sector can also attract additional funding via the Energy Company Obligation (ECO). Paid as an up-front grant, ECO contributions are available whenever a district GSHP installation accompanies a solid wall insulation upgrade. In addition, in select postcodes, housing the most vulnerable residents, the GSHP can be offered as a stand-alone measure.

In both cases, eligibility for the RHI won't be affected so the financial case becomes even more compelling. Indeed, many observers are now recognizing that Phase One of the RHI will provide a better option for the financial support of ground source heat pump installations. And it is very likely to offer a better option than anything that might eventually emerge under the domestic RHI.

Playing the field

Cathryn Hickey, executive director for the National Skills Academy, answers some of the key questions asked by installers embarking on structured promotional activities for the first time

Casting the net: Social media is a free way to connect with large audiences

Q. I want to start actively promoting my business, should I pay for expert help?
If you're a small company with only a few employees, it's unlikely you'll be able to afford (or need) a dedicated sales and marketing resource. Larger organisations, around the 20 employee mark, should look to employ someone in-house or outsource this function.

Q. I've just added renewable technologies to my core heating/electrical services, how can I let my customers know?
There's a number of ways you can inform existing and potential customers of additions to your services; when you meet face-to-face, including a leaflet with invoices and estimates, having all services clear on your website and keeping regular contact with existing clients through e-newsletters, and social media, for example.

E-newsletters can be a valuable sales tool, for cross-selling and also drumming up new business; particularly if you have a good database of contacts – if you don't already, make sure your collect the email addresses of people you work for and anyone who makes an enquiry. This doesn't have to cost the earth either: some e-newsletter programmes, such as Mail Chimp, are free. Do be aware of Data Protection – recipients need to agree to receive information from you, plus be given the option to opt out.

Q. I need to be found on the internet but haven't got the budget to invest huge amounts on online activities.
Every business should have a website, this doesn't have to cost a lot of money – basic sites can be built for a few hundred pounds – but it is essential for letting people know about your services. Static sites are cheaper to create than interactive ones, so if you've not got a lot of money, keep it simple. Make sure your website shows what you do. Language should be clear and relevant and include things like case studies and testimonials, a great way to demonstrate your credibility.

Search Engine Optimisation (SEO) is the practice of getting a site found under relevant terms in search engines, such as Google. There

Sizing up: Even the smallest companies with low budgets can successfully market themselves, says Cathryn Hickey, executive director for the National Skills Academy

are experts who can help you with this, but as a starting point, each page on your site should describe what it's about (e.g. heat pump installation services), use lots of words and phrases relevant to your business and regionalise where possible ('solar thermal installer in Kent', for example, is better than just 'solar thermal installer').

If a customer finds you via the National Skills Academy Trained Installer Register, they may be more inclined to trust the quality of your business. In general, you should make this clear on your website and all company literature, plus any other accreditations your company has; such as the Microgeneration Scheme Certification (MCS), Green Deal Quality Mark and Gas Safe Registration, for example.

Q. Is there anything I can do for 'free'?

Social media makes telling potential and existing customers about your business easier than ever before. Many people with an interest in going green regularly trawl Twitter, Facebook and other social media channels for useful information and recommendations from people they trust.

For the technophobe all this might seem like a headache, but with social media 'free' in terms of cost and potentially reaching a huge audience, it's well worth a try. Why not encourage happy customers to endorse your services on their Facebook page? Sign up to Twitter and 'follow' anyone in your local area, search for conversations related to your business and join in. If you're unsure of how to get started, talk to a friendly teenager.

Make sure anything you do on social media focuses on talking to your region; clearly state where and who you're working for on your website and maybe consider building a relationship with local newspapers.

Press relations: Sending in relevant stories to trade or local publications can be a great way to get coverage for 'free'. You could help explain new initiatives, like the Green Deal – why not put yourself forward as an expert? Or, if you do anything as a business that contributes to the local community (charity work for example), this could be of interest to media outlets in your area.

Q. How do I know if marketing is working? Am I spending my time and money wisely?

Before you embark on any sales and marketing activity, you must put systems in place to measure effectiveness – there's no point blindly throwing time and money at something if you have no idea whether it works.

Online measurement is relatively straightforward, with programmes like Google Analytics used to track activity on your website. Google Analytics is free - the code just needs to be put in the right place within the back-end of a site (ask a web developer or web editor to help). You will then be able to access reports which, amongst other things, tell you what words people used in the search to find your site and what pages they looked at. If you advertise online, the website you choose should be able to provide statistics in terms of how many people have clicked on your advert. To take advantage of the rise in Smart Phones, you can add QR codes to your websites or online advertising, another traceable mechanism.

Offline, you can ask customers to state where they found out about you when they call and get unique phone numbers/URLs and email addresses placed within advertising – that way you know which piece of promotional activity they've engaged with. Once they've made contact, send them further information by email and direct them to areas of your website or even your company's Facebook page.

Q. How do I go about putting a marketing plan together?

You probably plan how larger jobs are going to be implemented - the same attention to detail should apply to sales and marketing. Set some time aside to do this, it doesn't have to be lengthy but will help focus who you want to target and how you're going to reach them. The National Skills Academy's free guide for SMEs working in the environmental technology sector can help, providing participants with a printable report, based on your particular business type and needs.

The National Skills Academy for Environmental Technologies FREE Sales and Marketing Guide for SMEs is available from **www.nsaet.org.uk/salestool**

Making arrangements: Just as a large installation job would be planned, the same level of detail should be applied to a marketing strategy

Record breakers

Despite the supposed downturn, Grant Engineering is training ever increasing numbers through its award winning academy, says Grant UK training manager **Phil Stanley**

At a time when many companies are cutting their investment in training, there's an training academy that is as busy as it's ever been, providing training courses to installers and merchants working in the heating and plumbing industry, with significant growth in the renewables sector.

The Grant UK Training Academy is based in the company's head office in Devizes, Wiltshire with an extensive area of the premises dedicated to the delivery of training – both to its own product instruction but also to the OFTEC training and assessment courses and Logic Certification. The purpose built training facility includes a large oil boiler training workshop, renewables training and assessment area, a working biomass installation, vacuum systems, a full size training roof, working solar thermal, air source heat pumps and thermal store fittings. In addition there are solar thermal and PV training/assessment rigs and working unvented hot water training modules.

Established following the move to our current location in December 2002, the OFTEC Award Winning Grant Training Academy clearly defines the commitment of the company to providing professional training.

There's little point in having such an inspiring facility, if you don't have high calibre trainers to deliver the courses. Thankfully the Grant training team brings a wealth of experience and technical knowledge of heating systems and installation practice to the daily courses being delivered. On conclusion of each course the trainee is asked to complete a feedback form. It's a common occurrence for the staff to receive rave reviews.

Out and about: Grant UK delivers off-site training at customer's premises in addition to courses at its Wiltshire training centre

Growth market: Grant UK reports a significant rise in installers working in the renewables sector visiting its OFTEC Award-winning training centre

The combination of a comprehensive facility and excellent trainers is a perfect recipe for success resulting in the Grant UK Training Academy winning an array of gongs; OFTEC Training Centre of the Year 2003, the H&V News Training Award for Excellence in 2004, followed by OFTEC Regional Training Centre of the year in 2005 and 2006 and again in 2008 and 2010.

Having built, grown and developed the infrastructure over the past twelve years, Grant understands that not everyone can take extended time out, away from their business, so to accommodate customers we organise and deliver 'off-site' training to installers and commissioning / service technicians. These include OFTEC 10-105E/10-600A training/ assessment (2-day) as well as 'free of charge' 1-day Grant product training sessions. Off-site courses are arranged in conjunction with local Grant stockists, fuel suppliers, heating contractors, or technical colleges/training centres.

We're very proud of our reputation in the training field and are convinced of its value to us as a manufacturer as well as to the delegates who attend the courses here. There's no better way of ensuring good quality installation and maintenance than to allow people to get hands on experience in a training course. The theory is vital but the practical makes all the difference. We've seen this time and time again over the years and we're committed to continuing to offer these courses to those who are willing to give their time to being here with us and learn the ins and outs of working on our equipment.

Beating the credit crunch

Offering attractive consumer credit can make all the difference in converting prospective customers into signed deals, says **Andy Wallace**, managing partner of finance provider Consumer Credit Solutions (CCS)

Today over 10 percent of CCS's business – circa £300 million approved loans this year - comes from the renewables sector and the numbers are increasing monthly. Customers in the solar market tell us offering soft sell, interest free or low interest credit finance has had a significant effect on their sales. There is a lot of interest in solar energy products but, like many home improvement markets, they've suffered from the economic downturn, and they've also had the added problem of numerous reductions to the Feed-in Tariff. So offering no-hassle finance has been a lifeline for companies selling Solar PV. In fact many of our customers are reporting record levels of credit volume.

Consumers want to save money on their energy bills and they are looking to renewables to help. But translating interest into sales can prove difficult when money is tight. If the cost is prohibitively high the sale is often lost, so offering point-of-sale credit to your customers can be a deal maker.

If the installer can offer a soft sell finance package with low or even 0 percent interest rates it's possible to complete the sale without the need for compromise or delay. A comprehensive selection of finance products means there is an option to suit most circumstances - Buy Now Pay Later for those with timing issues (the ISA matures in 6 months, or the car loan is paid off), or longer term unsecured loans such as the Bank Buster with a repayment term of 120 months often available, at better rates than traditional lenders offer. Today's credit is also easy to arrange. With support and training such as CCS provides, salespeople can be confident of arranging finance for their customers when they take the order. There's no waiting for approval or appointments with lenders as it can all be arranged in the home. Retailers such as Solarlec, Mark Group, MyPlanet and Solar King are reporting increased sales as homeowners take up the various finance packages on offer. They can have PV installed on their home without dipping into cash reserves, or borrowing from uncooperative traditional lenders such as banks and building societies.

Many companies regard finance as another service to the customer. There has been a lingering idea that upmarket customers don't want finance, but that isn't the case now. Buyers of top end cars are used to being offered finance. One of CCS's biggest customers realised this when buying his new Porsche; he'd resisted offering finance to his customers 'in case they are insulted, they think I'm implying they can't afford it'. But he wasn't at all offended when the car dealership proposed a finance package, and realised he could offer the same to his customers. No-one objects - even when they have cash available canny homeowners realise it's better to finance a major purchase using low rate credit or Interest Free Credit and keep their savings for a rainy day.

Numbers game: Even cash-rich customers will opt for low rate credit to keep money in the bank, says Andy Wallace, managing partner of Consumer Credit Solutions

Some installers are wary of getting involved, remembering the days of very high interest rate finance products and high cancellations when the consumer re-considers. There's also the feeling that the administration might be complicated. But times have changed. The paperwork is designed to be simple and easy to administer, and decisions can be made on the spot, so customers know instantly that the installation can be completed.

Call of nature

Matthew Criddle, managing director of Naturesave Insurance, tells REI why insurance needs to be at the top of the list of priorities for renewable energy installers

In a time of difficult economic conditions and with margins coming under increasing pressure, insurance may not be at the top of the list of priorities for installers, but nevertheless it is so important to have cover in place to protect you, the materials and the public. There are several types of insurance policies that installers need to consider as well as the items each of them covers.

The insurance industry offers a range of insurance policies for the design, creation and construction of renewable energy systems installed by renewable energy contractors. This includes cover for the value of the materials being installed before they become the legal property of the end user/owner along with protection for the installer's tools and plant, which could either be owned or hired in by the contractor to complete the installation.

Additionally the installers need to safeguard against accidents at work which could include injuries to their own staff and/or third parties on their property, which is covered by Employers and Public Liability. The liability emanating from faulty product is usually covered by the manufacturer under performance guarantee and warranty provisions. The installer would usually act as an agent of the manufacturer in that they would/should have established that the manufacturer has such cover in place.

Prior to any renewable energy system being installed, its design should be covered by a professional indemnity insurance policy which needs to be based on a 'design and construction' wording as the installer needs to protect themselves from claims arising from poorly designed renewable energy systems in addition to a poorly installed one, which they have recommended to their customers to install.

Insurance Products relevant to an installer:

- Construction Risks (including testing and commissioning and advance loss of profits)
- Engineering Risks
- Professional Indemnity
- Employers, Public and Products Liability
- Transit Risk (operational machinery breakdown)
- Material Damage
- Loss of revenue and business interruption
- Director's & Officers and Trustee Liability

Insurance is a risk transfer mechanism. Having thought about what risks need to be protected, an installer who has put the contracted work, employer and public liability, and the design and construct professional indemnity insurance in place can pitch for business whilst reassuring customers that any sudden or unforeseen events during the construction phase would be covered by insurance. The ability to produce evidence of cover on request will convey to the potential customer that the installer has already thought of, and put in place, the appropriate insurance cover needed to trade in the renewable energy system installation business.

What makes a Naturesave Policy unique?

- We source the market – most brokers don't.
- We check competitiveness every year.
- We network with operatives who need contacts for spare parts and Operation & Maintenance provision.
- We use the insurance industry as a vehicle for sustainable development.
- We don't use call centres – you get to speak to a person and not an automated system.
- We work to get the best cover for your needs.
- We treat people the way we would like to be treated.

Image credit: Richard Tamblyn

Back up: Installers should not underestimate the importance of having comprehensive insurance cover despite the current economic climate, warns Naturesave md Matthew Criddle

Panasonic

FOR REAL SAVINGS AT HOME, CHOOSE THE AQUAREA HEATING SYSTEM

5 COP HIGH EFFICIENCY

Panasonic's Aquarea range of heat pumps delivers major energy and environmental savings thanks to its incredible efficiency

Aquarea is part of a new generation of heating systems that use a renewable, free energy source (the air) to heat or cool the home and to produce hot water:

- Extremely high efficiency (COP of 5.00 for 3kW unit)
- Line up developed for low consumption homes (starting at 3kW)
- Line up developed for retrofit with dedicated control system
- Easy to control with your smart phone (Using an optional interface)
- Large range of efficient tanks for domestic hot water storage

ENERGY SAVING

- **High** efficiency heating — INVERTER+
- Environmentally **friendly** refrigerant — R410A
- Down to **-20 °C** in heating mode — OUTDOOR TEMPERATURE

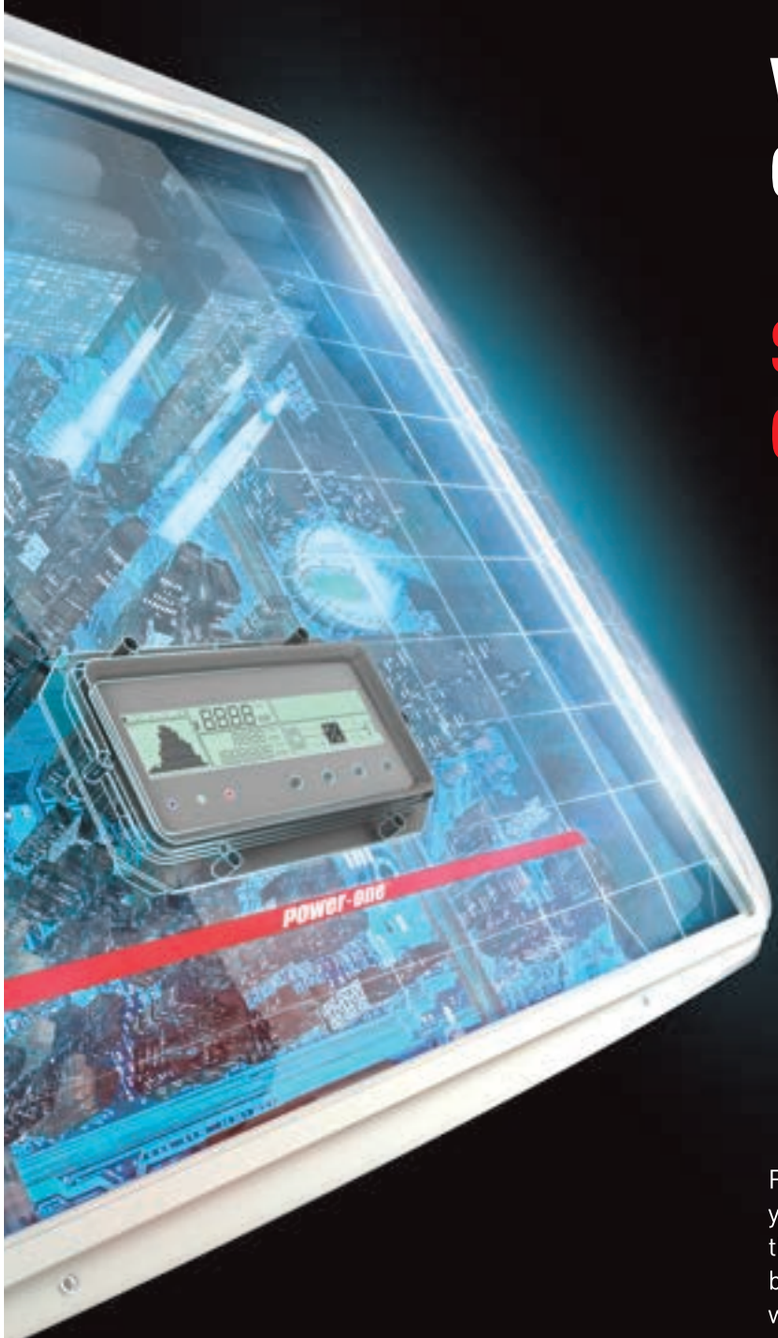
HIGH CONNECTIVITY

- **Boiler** connection — RETROFIT
- **Solar** panels connection — SOLAR KIT
- Domestic **hot water** — DHW

heatingandcoolingsystems

AQUAREA

www.panasonic-heating.co.uk



WE CAN'T MAKE TIME GO FASTER

SO WE MAKE THE FUTURE COME SOONER

From utility-scale to micro inverters, we bring 40 years of innovation to everything we do. Many of the technologies that set the standards today have been part of our offerings since our first product was launched. But we are far from done. We are now developing innovative energy storage systems, which is just one of our many initiatives to ensure that tomorrow's energy will be more plentiful and affordable than today's.

www.power-one.com

power-one®
A MEMBER OF THE ABB GROUP

The importance of being Earnest

Stuart McDonald, pensions officer at Plumbing Pensions, discusses the importance of installers saving for the long-term security of a pension

Certainly during the earlier years of our working lives when we have other, seemingly more important, commitments such as buying our first house or starting a family, then spending a few pounds each payday on something many years in the future may seem the last thing we want to do.

But we do need to think about the future and the earlier we can do this the more beneficial this could be.

Concerned that there are too many employees who don't understand what pensions can offer and as such reluctant to voluntarily contribute towards their own arrangement, the government has introduced "Automatic Enrolment", believing it to be the new way to save. It is hoped that by introducing this saving method a higher proportion of employees will be encouraged to act thereby ensuring they have sufficient income at retirement.

To give you a bit of background into exactly what automatic enrolment is all about; from a set date between October 2012 and April 2017 (the actual date being dependant on business size) employers will enrol their employees into a qualifying pension scheme. Each employer will be advised of their own specific starting date, known as their 'staging date', at least six months in advance.

At this point employers will have the difficult decision of choosing which arrangement is right for them and their employees. There are many options available and employers are encouraged to do their homework and not leave their choice until the last minute as this could lead to choosing an option they are not entirely comfortable with.

We need to think about the future and the earlier we can do this the more beneficial it could be

There are two main types of pension arrangements open to employers - defined benefit, where member benefits are calculated as a defined fraction of salary earned and, defined contribution where contributions are invested in funds and the performance of the funds over the lifespan of the policy will decide what benefit the member receives at retirement (remembering that the value of this type of benefit can go down as well as up).

In our industry we are fortunate, we have an industry-wide arrangement available to all employees which was established almost 40 years ago.

Future proofing: Plumbing Pensions is still enrolling members after 40 years service to the industry, says Stuart McDonald, the scheme's pensions officer

The Plumbing and Mechanical Services (UK) Industry Pension Scheme (to give it its full name, Plumbing Pensions for short) is a fully funded defined benefit arrangement based on career average earnings. The fund is currently valued at £1.4 billion.

This type of scheme works well for the plumbing, heating and associated industries as the physical nature of the work means that earnings tend to peak in earlier years and tail off later in working lives.

While many company pension schemes are closing down, Plumbing Pensions pride themselves in the knowledge that they are still in a strong position and open to new members.

Membership of the scheme is available to all company employees with basic contribution levels being 3.75 percent of earnings for an employee and 7.5 percent for an employer. As the scheme is presently contracted-out of the state second pension scheme there is a reduction in National Insurance contributions of 1.4 percent for the employee which together with tax relief means net contributions payable are considerably reduced. The employers' National Insurance saving is currently 3.4 percent.

On retirement there will be a pension payable equal to 1/80th of the member's average earnings for each year of service. Part of which may be 'given up' in return for a lump sum payment, all or part of which will be tax free.

BAHCO

www.bahco.com

THE POWER TO DELIVER

THE ALL NEW 1000V RATCHETING SCREWDRIVER WITH 6 INTERCHANGEABLE BLADES.

Introducing our finest electrical screwdriver to date. It's adaptable, it's safe and the quality is everything you have come to expect from Bahco Tools.

- 1000V Ratcheting screwdriver with interchangeable blades set - 6pcs
- 2-component handle with soft, high friction-material with ridged surface for comfortable grip
- Smooth ratcheting action for forward, reverse and fixed
- Safe way to release the blade by pushing the release button

TO VIEW OUR CURRENT PRODUCT RANGE VISIT:

bahco.com

OR CALL FOR YOUR NEAREST STOCKIST

01709 731 731

SNA Europe [UK]
Moorhead Way
Bramley
Rotherham
South Yorkshire
S66 1YY

ergo®

Border force

Simon Williams, of national law firm TLT, explains how the planning process for renewable projects can differ across UK legal jurisdictions

The general permitted development rights are broadly the same in England and Scotland, however if there are any nuisance or title restrictions on a home owner's entitlement to install microgeneration equipment, then the enforceability of those restrictions is different in England and Scotland.

In England and Wales, in order for a disgruntled neighbour to take action against the erection of a small wind turbine on a home owner's roof or garden, which is burdened by a title or nuisance restriction, they must establish a number of things, including; whether the restriction genuinely affects the land and is not merely of personal benefit to the disgruntled neighbour; whether the restriction affects the nature, quality and use of the land; and whether it preserves the value of the neighbour's land. A restriction can benefit land in a number of ways, for example, by preserving its character or view, or by prohibiting a nuisance. A valuation will form a key part of negotiations in terms of whether restrictions are capable of being enforced or not.

North of the border a displeased neighbour will need to be able to establish if he or she has the right and 'interest' to enforce the restriction, known as a burden.

In Scotland, for a neighbour to enforce a restriction in their favour they must show that there will be a 'material detriment to the value or enjoyment of his or her home'. The 'enforceability threshold' in Scotland is higher than in England albeit any outcome will depend on the particular circumstances and valuation evidence. Generally if a house value falls by 10 percent by reason of the installation of the small turbine, this will be considered as a material detriment and a neighbour is more likely to be successful than not in his arguments.

Hadrian's Wall: Installers and project developers should be mindful of the changes in planning rules between England and Scotland, says TLT's Simon Williams

Towering success

A £3million refurbishment in a social housing tower block in Walsall is using **Dimplex** ground source heat pumps to cut residents' fuel bills and reduce the landmark building's carbon emissions.

Tackling fuel poverty is a key concern for housing provider Walsall Housing Group, as is improving environmental performance, and for a 65-flat refurbishment project, a Dimplex communal ground source heat pump was chosen to meet space heating and hot water requirements.

The newly-refurbished Austin House is the first tower block in the UK to be heated exclusively by ground source heat pumps. The addition of external wall insulation and solar PV has created a complete energy efficiency overhaul. Total carbon savings for the project over 25 years is estimated at 2,340 tonnes compared with the existing heating system, while residents can expect to save around a third on energy bills.

Econergy, a British Gas company, designed and installed the heat pump system, opting for a turn-key solution which involved a bespoke pre-packaged plantroom that was assembled off site, delivered to site and installed adjacent to the property. Three Dimplex SI 50 TE ground source heat pumps power the heating system, while an additional two SIH 40 TE high temperature ground source units provide centrally-stored domestic hot water to all flats.

Derek Grosvenor, project manager at Econergy, said: "The pre-packaged plantroom simplified the installation, in that it was assembled in a clean and controlled environment, away from the winter weather on site. While this was being done, we were able to drill the boreholes, complete the header works and construct the base for the plantroom, ready for its arrival. The external self-contained plantroom also means that there has been no loss of space or storage in the block. "

A complete 'wet' heating system was installed, with radiators to allow the low temperature system to heat the homes effectively but efficiently. Timers and thermostats in each flat give residents independent control, while individual metering ensures users pay only for what they draw from the communal system.

Faced with the challenge of supplying heating and hot water to 65 flats over 16 floors, Econergy used conventional bulk hot water storage techniques combined with bespoke heating, incorporating large buffer cylinders into the system, combined with correctly-sized circulation pumps, all housed in the external plantroom. For users' safety, the system operates a legionella pasteurisation cycle, raising the water temperatures in the buffer vessels to 60°C on a daily basis.

The project has reportedly not only significantly improved the performance of the building, the exterior has a dramatic new look, too. The south elevation is now clad with 200 190Wp PV panels to generate energy for communal areas and lifts, also contributing to the running of the heat pump system. The PV array (total output 38kWp) means zero on-site emissions and minimal draw from the electric grid, giving a projected carbon offset of just under 12 tonnes CO_2 per year.

The project received funding under the Community Energy Saving Programme (CESP). The new scheme is also eligible for payments under the RHI and the Feed-in Tariff.

High and mighty: Walsall Housing Group's 65 flat Austin House is the UK's first tower block to be exclusively heated by GSHPs, according to Dimplex

Cliff Horrocks, director of asset management at Walsall Housing Group, said: "Austin House is our first project to use heat pumps, as we really wanted to seize the opportunity to do something significant with the refurbishment.

"The residents have noticed a huge drop in their heating costs and are also much warmer so are very satisfied. Flats are 50m2 and average 1.5 people per flat, and each flat now takes an average of 14kWh/day for heating and 22 litres of hot water."

Numbers game

£3m refurbishment cost
65 flats over 16 floors
200 x 190Wp PV panels
3 x Dimplex SI 50 TE GSHPs
2 x Dimplex SIH 40 TE GSHPs
2,340 tonnes of total carbon savings

Historic heating

Heating historic properties with modern means is often a tricky task. But **Euroheat** approved installers, Northdown Wood & Heat, have found the solution, says co-founder John Haffenden

Despite being one of the most populated countries in the world, rural England is still home to some truly unspoiled villages, many of them belonging to ancient Estates. Often let out to tenants, owners of these buildings are faced with the challenge of providing 21st century amenities that don't detract from these historic sites. In some instances, traces of the modern world must be kept to a bare minimum, with overhead cables and pylons a definite no, no.

Within this context, a great solution is district heating. A boiler plant room is built out of sight and heat is transported wherever it is needed through a series of underground pipes. Villages, farms, and other areas of privately owned land often have multiple buildings so this set-up works well in a range of scenarios. What's key at the moment is that if the heat source is biomass, owners are entitled to considerable returns under the commercial Renewable Heat Incentive (RHI) and when compared to oil in particular, wood offers a sizeable saving in fuel costs - especially when it can be sourced on site.

We are currently working on an Estate of over 20 properties; comprising of a mansion, let homes and a church. With its own managed woodland, biomass in the form of wood chip is the ideal fuel. The carbon footprint of the whole scheme is kept to the bare minimum thanks the extremely short distance 'from tree to radiator' – a key factor in the types of projects Northdown Wood & Heat prefers; importing trees is unsustainable and therefore negates the carbon cutting claims of biomass. For the customer, this means fuel costs are virtually nothing and, as long as the woodlands are properly managed, they can be sure of a constant supply.

Steps towards complete self-sufficiency are further enhanced by using solar PV to power the boilers' electrics. Located on the plant room roof, the panels make no impact on the village itself and deliver a smart solution that ups the green credentials even further.

The project is one of the first outings for Euroheat's newest and largest boiler, HDG M400; a 400 kW chip boiler, of which there are two on this site. Combined with an 8,000 litre accumulator in the purpose-built boiler room and one other 5,000 litre accumulator within the village itself, extensive care has been taken to ensure that the presence of biomass is hardly felt by residents and visitors.

Another benefit of the district heating set-up is that, while the biomass kit is undeniably bulky, in individual homes there is less impact than a gas central heating system. Each property simply requires a small heat exchanger – small enough to fit under a sink in many instances – which connects the biomass system to existing radiators.

Where space and wood are readily available, biomass is an excellent choice; one that presents all the benefits of a modern heating system. For example, heat is available on demand and can be controlled by the end user to create a comfortable environment. The sophisticated machines from Euroheat include an on-board computer that tells the customer (or us) how the boiler is running and if there are any problems. In keeping with the country locations to where biomass is best suited however, wood is a natural and ancient fuel, that, if applied correctly, can deliver a sympathetic solution to help preserve Britain's heritage.

Going underground: With its sub-surface pipes, district heating can be an excellent way of supplying renewable heat whilst maintaining the historic and rural character of certain properties

National treasure

As part of its pledge to generate 50 percent of its energy needs from renewable sources by 2020, **The National Trust** has transformed Morden Hall Park into one of the most energy efficient historic properties in the UK

Under the National Trust's ambitious plan, the main green sources will be biomass, heat pumps, hydro and solar. Energy consumption will also be reduced by 20 percent.

A notable example of this praiseworthy scheme is Morden Hall Park in south west London which already features a combination of renewable technology including the thermal HEATBANK, a wood-fired boiler and three different types of solar panels. Added to this is a new Archimedes Screw which calmly generates power for the vistor centre by churning the water of the River Wandle.

Thermal Integration Ltd coordinated the project – whose product range is distributed by Specflue. The project was guided by Richard Hanson-Graville of Thermal Integration who said: "As you would expect there were a number of high end companies and frankly new mindsets involved in the redevelopment. The opening act involved one of our team being able to demonstrate to the Trust's building surveyor a permutation of HEATBANK – being our own core product - wood burner and solar panels actually installed in her own home. The project gathered its own momentum and we maintained ongoing communication with architects, low carbon consultants, the lead construction partner and providers of underfloor heating, wood burners and heat pumps whilst always aware of the needs of DEFRA and health & safety requirements."

The layout of the system revolves around Specflue's thermal HEATBANK. Two 475 litre tanks are fed depending on weather conditions and the time of year by a mixture of solar panels, wood burner and a heat pump in tandem with an unvented hot water cylinder which pre-heats incoming cold water using the solar panels before sending it to the two banks. The banks and cylinder are neatly tucked away adjacent to the renewables showroom which attracts a steady flow of adults and school parties eager to absorb the knowledge which is complemented by information displays around the park which welcomes a staggering 750,000 visitors a year.

Great escapes: Morden Hall Park, south west London, has become one of the latest National Trust properties to benefit from the organisation's drive to generate 50 percent of its energy needs from renewable sources by 2020

Changing places: The Stable Yard at Morden Hall Park was previously a storage area before being converted into a green energy powered visitor centre

Maureen Patel of the National Trust at Morden Hall added: "The Stable Yard used just to be the storage area for our equipment and machinery. Now it has been transformed and we have restored the sensitivity of the area whilst also generating our own power and becoming self sustaining in our own right. We are very conscious of our public role with initiatives such as the Taster Days for renewable energy and checks by the Environment Agency to ensure everything is being run carefully and properly. We also have a steady flow of senior visitors from the head office. The installation went very well in variable weather conditions and the system pretty well runs itself especially as we have so much here in the way of natural sources which cost us nothing."

Living it large

John Felgate, head of technical at **Stiebel Eltron UK**, discusses how the company's installer network is tapping into a growing wealth of commercial opportunities

The UK government is committed to producing 15 percent of its energy from renewable sources by 2020. It is hoping to achieve this through incentives such as the Renewable Heat Incentive and Feed-in Tariff. Already businesses and property owners are exploring this as an opportunity for long-term investment – both to benefit from additional income and to save on their own energy expenditure. At Stiebel Eltron UK, we have got a large installer partner network across the UK, and while many of these installers prefer to focus on domestic projects, a number have been able to branch out into exploring commercial opportunities.

Business owners, property owners and facilities managers are always looking to save money whatever sector they operate in. To manufacturers with warehouses, commercial property owners with office blocks or perhaps farmers with large agricultural operations – pitched in the right way and with the promise of quality and a good ROI, green energy is a no-brainer.

One of our installer partners is working with a poultry business to look at using renewable technologies in its vast chicken sheds to provide heat and hot water. This may be achieved through heat pumps, solar, LED lighting, or indeed a mix – but installed correctly it could potentially save the business tens of thousands of pounds each year.

While many installers prefer to focus on domestic projects, a number have been able to branch out into exploring commercial opportunities

A good manufacturer will always offer advice and support to installers to help them

On a smaller scale, we have recently had a WWK300AH air source heat pump fitted into the kitchens of a comedy club in London. The pump recovers the latent hot air from the ovens and other appliances and turns it into free energy to heat the hot water for the whole premises.

This type of system can be applied right across the leisure and hospitality sector and we are encouraging our installer partners to look at opportunities in their market areas. While some commercial projects are clearly huge scale and therefore require significant resources, many renewable technologies can be installed relatively quickly and easily by sole traders and SME installers.

Commercial installations therefore should certainly not be disregarded from the get-go. A good manufacturer will always offer advice and support to installers to help them a) decide whether they have the capability to complete a project and b) how to design the system and install the optimum product.

Bigger picture: John Felgate, head of technical at Stiebel Eltron, says installers should not be daunted of taking on larger projects when free support and advice is at hand

At Stiebel Eltron we offer a free design and specification service which extends to both domestic and commercial projects – this allows installers to seek our assistance with absolutely no obligation – a real benefit when considering large or complex installations.

Many renewable technologies can be installed relatively quickly and easily by sole traders and SME installers.

SPECFLUE

Courses available:

- BPEC Environmental Awareness Certificate
- BPEC Water Regulations (WIAPS)
- BPEC Vented & Unvented Hot Water Systems (Part G3)
- BPEC Solar Thermal Installer (QCF Accredited)
- BPEC Heat Pump Installer
- HETAS HOO5 Biomass Appliance Installer
- NICEIC Health & Safety Certificate
- MCS Quality Workshop
- MCZ/RED Commissioning & Installation Workshop
- MCZ/RED Product Awareness Training

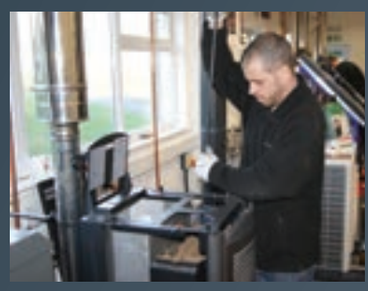
A class of our own.

Specflue is the UK's No.1 provider of solid fuel and renewable energy training courses.

Not only are we the UK's leading supplier, we're also *the* place to train. With vastly experienced industry specialised trainers and modern, purpose built facilities, we're in a class of our own.

We offer a variety of the latest HETAS, BPEC and NICEIC QCF accredited courses with outstanding theory and practical areas and live working appliances for the best possible tuition and experience.

What's more, discounts are available for multiple course bookings.



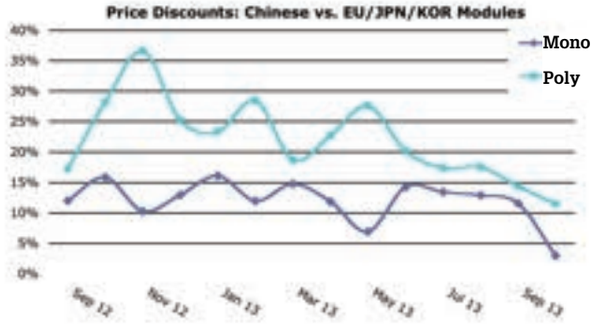
Renewable Energy Solutions | Flue & Chimney Products | Wood Burning Stoves | Training

0845 337 1658 // www.specflue.com/training

Specflue Ltd 8 Curzon Road Chilton Industrial Estate Sudbury Suffolk CO10 2XW Fax: 0845 13 07 555 Email: training@specflue.com

European PV pricing data (compiled by Iain Garner Associates)

This month's sample is beginning to show the effect of EU tariffs on market prices and supply availability. The gap (price discount) between Chinese and European PV module prices has closed (see graphs below) to around 3 percent for mono-Si modules and 11 percent for poly-Si modules. This is the first time since January 2009 we have seen single digit percentage price differences. There are still modules out there at low prices and several in our sample below GB£ 0.40/W, although these are usually slower moving items with lower power output from Tier 1 suppliers or higher power modules from riskier Tier 2/3 brands. This change in market landscape is being reinforced by very slight but important price increases for Tier 1 brands, with average prices in the range of GB£ 0.49 - 0.58/W for Tier 1 products from Yingli, Trina and Suntech. With high demand in Asia and US markets, it seems likely that prices will continue to increase for European and UK customers.



Top 20 European PV module offers by volume (kWp)

Manufacturer	Country of Origin	Total Offers kWp	Max Price GBP/Wp	Min Price GBP/Wp	Average Price GBP/Wp
Yingli Solar	China	11834.6	0.65	0.36	0.52
Trina Solar	China	9043.7	0.58	0.45	0.50
S-Energy	South Korea	5922.5	0.52	0.50	0.51
Solarpeace	China	4900.0	0.45	0.45	0.45
EGing	China	3560.4	0.55	0.41	0.49
Sonali Solar	China	3099.0	0.46	0.45	0.45
RealForce	China	3051.0	0.45	0.41	0.43
Q-Cells	Germany	2646.7	0.70	0.50	0.58
Years Solar Co.,LTD.	China	2540.0	0.46	0.44	0.45
Solyndra	USA	2166.5	0.38	0.33	0.35
Sharp	Japan/UK	2121.1	0.59	0.29	0.48
Philadelphia Solar Co.	China	2000.0	0.44	0.44	0.44
ReneSola	China	1976.7	0.55	0.49	0.51
Chaori Solar	China	1513.2	0.46	0.44	0.45
Hyundai	South Korea	1253.7	0.60	0.56	0.58
Noble Solar Industries (NSI)	China	1217.2	0.45	0.45	0.45
Europe Solar Production	Poland	1127.0	0.47	0.47	0.47
First Solar	Germany	1120.6	0.74	0.39	0.55
Solar Frontier	Japan	1107.0	0.67	0.60	0.65
REC	Singapore	1101.6	0.62	0.32	0.42
JA Solar	China	1093.6	0.61	0.51	0.55

Report Date 15-Oct-2013 Exchange Rate Euros to GBP = 1.18 (www.xe.com) Total sample size - 84432kWp
All figures apply to the 30 day period prior to the report date

Figure it out

Generation tariffs for non PV technologies

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

(Source: OFGEM)

Number of MCS registered installers per technology

Technology type	Cumulative number	Registered August 13
Solar PV	3140	30
Biomass	266	11
Air source heat pump	858	19
Ground source heat pump	719	15
Solar thermal	1074	14
Small Wind	128	0
Total	3650	104

Number of MCS registered installations per technology

Technology type	Cumulative number	Installed Aug 13
Solar PV	463150	6847
Biomass	3184	74
Air source heat pump	17326	210
Ground source heat pump	5639	30
Solar thermal	4854	60
Small Wind	4061	21
Total	511365	7363

(Figures supplied by Gemserv) September data unavailable at time of going to print

Generation tariffs for Solar PV (valid until 31 Dec13)

Tariff band	FiT rate (p/kWh)
<4kW	14.90
>4-10kW	13.50
>10-50kW	12.57
>50-100kW	11.1
>100-150kW	11.1
>150-250kW	10.62
>250kW-5MW	6.85
Standalone	6.85
Export Tariff	4.64

Domestic RHI tariffs

Technology	Tariff rate (p/kWh)
ASHP	7.3
Biomass boilers	12.2
GSHP	18.8
Solar thermal	19.2

Domestic RHI is expected to be introduced in spring 2014 and will apply to all eligible installations installed since July 2009

Number of Green Deal assessments

Month	Assessments
January	74
February	1729
March	7491
April	9522
May	12146
June	13517
July	13645
August	13086
September	13,967
Total	85,177

(Source: DECC)

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	0.61 per litre	2530 litres	£1,543
Wood pellets	4800 per tonne	94	24300	235 per tonne	5 tonnes	£1,175
Natural gas	1 per kWh	90	25300	0.048 per kWh	25300 kWh	£1,214
LPG	6.6 per litre	90	25300	0.48 per litre	3833 litres	£1,840
Electricity	1 per kWh	100	23000	0.15 per kWh	23000 kWh	£3,450
*Air source heat pump	1 per kWh	290	7931	0.15 per kWh	7931kWh	£1,190
*Ground source heat pump	1 per kWh	360	6389	0.15 per kWh	6389kWh	£958
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.61 per litre	759 litres	£463
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.15 per kWh	5552 kWh	£833
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	0.15 per kWh	5552 kWh	£833

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	Reviewed tariff (proposed for 2014/15)
Small biomass	Solid biomass: Municipal solid waste (inc CHP)	Less than 200 kWth	Tier 1: 8.6 Tier 2: 2.2	20	No change
Medium biomass	Solid biomass: Municipal solid waste (inc CHP)	200 kWth and above, less than 100 kWth	Tier 1: 5.0 Tier 2: 2.1	20	No change
Large biomass	Solid biomass: Municipal solid waste (inc CHP)	1000 kWth and above	1	20	2.0
Small ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	Less than 100 kWth	4.8	20	7.2-8.2
Large ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	100 kWth and above	3.5	20	7.2-8.2
Solar thermal	Solar thermal	Less than 200 kWth	9.2	20	10-11.3
Biomethane	Biomethane injection and biogas combustion, except from landfill	Biomethane all scales, biogas combustion less than 200 kWth	7.3	20	No change

(Source: OFGEM)

RHPP Phase 2

Technology	Voucher value (£)
Solar thermal	£600
Off gas only	
Biomass	£2000
ASHP	£1300
GSHP	£2300
All vouchers must be redeemed before March 31 2014	

Applicants must also undergo a Green Deal assessment in order to qualify

What data would you like to see on this page?

email:

paul@andpublishing.co.uk

Knowledge: Case studies

ANAEROBIC DIGESTION

What: Fife Council to generate renewable heat and power from anaerobic digestion

How: MTU engine supplied and installed by ENER-G

Result: 7,200 tonnes of CO2 savings per annum plus 1.4MW of green electricity and heat

Fife Council has appointed ENER-G to supply a high efficiency combined heat and power (CHP) system for its new anaerobic digestion facility at Lochhead landfill site in Dunfermline.

The Fife anaerobic digestion plant, which will begin power generation later this year, will convert methane produced from up to 40,000 tonnes of local food and garden waste into up to 1.4MW of renewable electricity and heat. The renewable heat will supply the Council's existing district heating system and has the potential to meet all of the heating needs of the local Queen Margaret Hospital.

The biogas generation system will be financed, developed, installed and operated by ENER-G at no upfront cost to the Council. The Council will recover Feed-in Tariff (FiT) payments on the export of electricity to the local network over the 25 year contract period.

The anaerobic digestion facility is designed to achieve carbon dioxide savings in excess of 7,200 tonnes per year and produce an organic fertiliser, providing up to 10,000 tonnes of compost per year for use by local farms.

Scott Tamplin, director of anaerobic digestion for ENER-G, said: "The anaerobic digestion project will utilise a MTU engine, which is highly efficient at 42 percent, and can provide excellent electricity yields and renewable heat output. We are proud to partner once again with such a forward looking council as Fife and to contribute to their sustainable waste strategy."

Chris Ewing, environmental sustainability manager for Fife Council, said: "We believe that turning food and garden waste at Lochhead into power and heat could save the council around £1.2 million each year. It will also contribute to our improving recycling rates, which were 55.5 percent in 2012 for household and commercial waste."

Smell of success: Fife's anaerobic digestion plant will convert methane produced from up to 40,000 tonnes of local waste into up to 1.4MW of renewable electricity and heat

SOLAR PV

What: Futuristic home showcases innovative BIPV

How: Transparent solar PV glass atrium

Result: Smart Home's entire daytime electricity needs have been met

Located in the Building Research Establishment (BRE) Innovation Park, Watford, the British Gas-owned *Smart Home* officially opened on October 02 incorporating an innovative building-integrated photovoltaic (BIPV) installation.

Smart Home is expected to generate an average of 3,500kWh of electricity per year directly from the three-storey, BIPV glass atrium, saving 1.8 tonnes of CO2. Also eligible for the Feed-in Tariff, the array is forecast to provide an income/saving yield of over £1,000 per year.

Hamish Watson, ceo of PV manufacturers Polysolar, said: "The building and construction industry is at last beginning to wake up to the value of BIPV. Increasingly, architects, designers and property owners are specifying it as an effective way of including energy micro-generation into the fabric of a building.

"Product availability, upfront costs, improved efficiency, and developments in building regulations provide opportunities for architects and specifiers to take advantage of a truly versatile and innovative multi-purpose 21st century building material."

According to Polysolar, practical micro-energy generation is made possible in a glass facade due to the product's ability to absorb ambient and reflective light on both sides, almost regardless of UK weather conditions. The glass also works for longer during the day and over the whole year when compared with conventional roof-mounted crystalline silicon PV systems, thereby maximising energy generation during sunlight hours.

Over 5,000 people have visited the BBC-featured property since its opening in and many of the technologies have now been adopted into mainstream construction.

Skin deep: Having PV built into the glass atrium of British Gas' Smart Home in Watford will generate 3,500kWh and an income/saving of over £1,000 per annum

HEAT PUMPS

What: Pig shed's underfloor heating powered by green energy

How: Three 5kW ASHPs installed by Norcroft Energy

Result: 50 percent running cost saving on using heat lamps

Yorkshire-based Norcroft Energy has just completed an unusual heat pump installation at Cannon Hall Farm near Barnsley. Farmer Roger Nicholson wanted to provide underfloor heating in the pig sheds using renewable energy.

Norcroft Energy installed three air source heat pumps to the pig farrowing buildings which are connected to an underfloor heating system. Cannon Hall already has a large solar PV installation which will contribute towards the running of these heat pumps.

Mr Nicholson said: "We were looking for a more economical and environmentally friendly way to keep our pigs warm. We spoke to Philip at Norcroft Energy and installing Air Source Heat Pumps seemed like a great solution to help reduce our running costs.

"We are very pleased with the work carried out by Philip and the team at Norcroft Energy. We like to provide the best care for our animals and the pigs are very happy with their new 5 star accommodation."

Philip Mosley, managing director at Norcroft Energy, added: "We did a cost comparison for Roger looking at the annual running costs and ongoing maintenance costs. 21 x 250W lamps is the cheapest to install but it would cost Cannon Hall £5,000 per year to run. The more economical option was to install 3 x 5kw heat pumps with an annual running cost of less than £2,400. This is an annual saving of over £2,500 and has an ROI of 5-6 years. You never see a return on investment with electricity."

Food for thought: Cannon Hall Farm's pig shed now provides underfloor heating to its occupants powered by ASHPs

My working week

Who: Andy Newell, an installer who works with City Plumbing Supplies (CPS).

What: Andy is a plumbing and heating engineer based in Oxfordshire

Hotting up: Heating & plumbing engineer Andy Newell has experienced an increase in solar PV enquiries from high energy usage properties

Best laid plans

Monday:
The schedule for my team had been confirmed on the previous Friday so my day started off on a quiet note. It didn't take long for that to change as one of my operatives unfortunately called-in sick. I reallocated the workload and allocated time to respond to calls received over the weekend from people in distress after failed DIY attempts.

After spending most of the day managing jobs for the week, I managed to squeeze in a boiler installation before the end of the day. I arrived home at around 5pm and started on some administration; this is part of the job that not many people think about when they picture an installer!

Tuesday:
Like most mornings, I had an early start, leaving the house by 7:45am. The first task was to meet with a potential client who was interested in installing solar panels onto their property. Meeting with homeowners and pulling together quotes is a large part of my job, especially when it comes to planning a complete renewables solution.

As we tend to work on larger properties with high energy usage, solar panel enquiries are becoming quite common. I completed a visual assessment and then began putting the plans in place for the specifications and paperwork.

The next stop was my local City Plumbing Supplies branch. I picked up some parts that I needed for later in the day and ordered some goods for the following week. Visiting my local branch in Chinnor, Oxon, is one of my favourite parts of the week. I get to have a much needed sit down and catch-up about new products and how they can help me to improve the service I deliver.

Wednesday:
Things start to settle mid-week, although new jobs are always coming in. I completed a boiler repair in a large property then headed over to a prospective job to complete a quotation. I then carried out some smaller jobs such as fixing a leaking boiler; it's important to me that I still spend some time with local customers.

Towards the end of the day, I try to check-in with my operatives to see how they are all getting on.

Thursday:
Although most of my work is planned by this stage in the week, emergencies are just part and parcel of being a plumbing and heating engineer. As we get into the heating season, temperamental boilers make up the majority of these crises. Never wanting to leave homeowners in the cold, they are always a priority. Thankfully, having such a close working relationship with CPS can make it a lot less stressful for me, the team, and our customers!

Friday:
As you can probably tell, most days follow a similar pattern but no two are ever the same! I'm constantly meeting new people and this can be really interesting. In the week its non-stop from when I leave in the morning, until I get home for dinner, but it generally finishes at 9pm - I'm really ready for Friday when it comes! I can be working on anything from three to ten projects within a week. Our capacity depends on operative numbers and the size of the job, but it's generally all-go to help as many people out as possible. The week finishes with putting the plans in place for another busy week!

One of Europe's leading Distributors of Solar PV Systems to Commercial and Residential Installers

We offer exclusively B-2-B customers complete solar systems for grid connected applications, micro-grid systems, hybrid power generation and project based complete autonomous installations.

Libra have a highly skilled and qualified sales and service network. Our team has many years of experience in the Solar PV business. Our added value and therefore our focus lies in technical support and system development.

We supply high quality products at competitive prices and terms.

To us it is perfectly normal that customer service, communication, efficiency and customer satisfaction are absolutely key.

We build relationships for now and for the future.

Libra® ENERGY
balance in power

We stock all the leading brands

CanadianSolar
HYUNDAI
solsonica
SUNRISE
MNI
CHINT POWER
GOODWE
solaredge
VAN DER VALK
CLENERGY
ELAND CABLES
earthwise
sälzer

Commercial Finance Available

4kW kits available from £2833

CALL US ON 01405 240010

8a Coulman Road Industrial Estate,
Coulman Road, Thorne
Doncaster S Yorks DN8 5JU
T +44 (0) 1405 240010
F +44 (0) 1405 240011
sales@libra-energy.co.uk
www.libra-energy.co.uk

FAST RENEWABLE FINANCE

We're part of your eco friendly family!

Nationwide has over 40 years of experience providing finance to business clients and some of the cheapest rates on the market.

Renewable Energy Finance for Your Clients

- We can fund 100% of the purchase / No deposit needed
- No Charges against Land or Property - Decisions in 3 hours - Fixed Monthly payments
- Payments are 100% Tax deductible - We can pay stage payments
- We finance all commercial projects from £15,000 to £1 Million +

* On selected products.

100% tax deductible*

Decision within 3 hours

Stage payments available

98% acceptance rate

call us on **01234 240155**
or visit **www.ncfplc.co.uk**

feefo
Our customers rate this excellent service 100%

ncfplc.co.uk is ranked 9.7 out of 10.
Based on 2,851 user reviews.

NATIONWIDE
CORPORATE FINANCE LTD

The Works, West Street, Olney, Buckinghamshire, MK46 5HR | Registered in England 4582994
Licensed by the office of fair trading no: 633897 | Nationwide Corporate Finance Ltd is part of Nationwide PLC