Renewable ENERGY INSTALLER

THE BUSINESS OF **MICROGENERATION**

SOLAR THERMAL **SOLAR PV** **BIOMASS** **HEAT PUMPS** **WIND** **HYDRO** September 2012

We mean business

FIND OUT MORE ABOUT GREEN DEAL AT THE

Renewables Roadshow

in partnership with PLUMB CENTER

Register for **FREE** tickets at **renewables-roadshow.co.uk**

GREEN DEAL.

FROM THE PEOPLE WHO SPEAK YOUR LANGUAGE.

Green Deal, the government's new energy efficiency scheme is almost here.

But don't worry.

We've been working tirelessly to bring together the most comprehensive package of energy efficient products, installer accreditation, advisor training and informative literature* to ensure you have everything you need.

What's more, our Green Deal Advisor training course (Fast-tracked for Gas Safe Registered Engineers) is extremely competitive and includes an innovative installer e-survey tool that will make assessments easy to complete.

Reserve your place today. Call 0845 287 1970

A whole deal more for your business!

*Literature and new website will be available from October onwards

GREEN DEAL™

- Training
- Products
- Accreditation
- Support

PLUMB CENTER
a WOLSELEY company

Contents

NEWS

4 News

10 News Analysis
News on the REI / MCS partnership

12 News Profile
Including details of our Business Strategy Conference

OPINION

18 Lochnivar and Suntech speak out, Talking Ten to the Dozen and Pollard's Patter

29 Two Minutes With
Mike Lowes, Renewables Solutions

KNOWLEDGE

30 Solar PV
Solarcentury and A Shade Greener

33 ORES
The Oil & Renewable Energy Show

35 The Green Deal
Its impact on renewables

53 Solar Power UK preview
A preview of exhibitors

74 Data
REI's exclusive data page

80 Case Studies

82 My working week
Eco2Solar

Editor: Lu Rahman
Managing Director: Nick Smith
Staff Writer: Paul Stephen
Sales Manager: Lynn Amey
Advertising Sales: Paul Smith
Publishing Manager: Mark Green
Circulation/Directory: Sandra Curties
Production Manager: Ann Butler
Production Assistant: Berni Chetham

Published by: Ashley & Dumville Publishing Ltd, Caledonian House, Tatton Street, Knutsford, Cheshire WA16 6AG

Advertising
Tel: 01565 626762
Email: lynn@andpublishing.co.uk

Editorial/press releases
Tel: 01565 653283
Email:lu@andpublishing.co.uk

www.renewableenergyinstaller.co.uk

News

Editor's comment

Perfect partners

Welcome to the first of REI's monthly magazines which is also the first issue featuring our new regular MCS column. We are absolutely delighted to report that REI has formed a partnership with the MCS, making us the only magazine in the marketplace able to genuinely say this. Every issue the exclusive MCS column will keep you up-to-date with the latest developments from this important scheme, making REI readers the best informed installers in the sector. We are all very excited about working with the MCS and look forward to its news.

When we announced this development we were inundated with messages of congratulations, so on behalf of the entire REI team, I'd like to say thank you to those of you that contacted us to let us know what an important step this is for the publication and its readers. The MCS is a sign of quality and certainty for the consumer. For the magazine to now be a part of this, officially, has clearly come as fantastic news for the industry. Thank you for letting us know. It is good to know our readers are pleased with our progress.

We have also received positive feedback on *A Profitable Future in Renewables – Business Strategy Conference*. At a time when there is much uncertainty in the sector, as many companies look for clear business advice on opportunities for growth and diversification, this event couldn't have come at a better time. Boasting high profile speakers including Jeremy Leggett and Jonathan Porritt, the event, at the British Museum on 21 November, offers an unrivalled line-up and programme. See page 12 for more information.

Over the last four years, since REI was launched, we have worked to deliver a brand that can be everything you need. With a monthly issue now in partnership with the MCS, a rapidly expanding online offering and a business strategy event to ensure a successful future for you, we are able to offer the all-round package. And don't forget the *Oil & Renewable Energy Show* on 17 and 18 October to further help you do profitable business in this exciting and expanding industry.

Front cover: British Museum auditorium courtesy of Alexis Howells

ISSN 2049-3525

"Microgeneration provides opportunities and the MCS is the way to get involved" p11

2B or not 2B?

Following the Department of Energy and Climate Change's (DECC) announcement of changes to the Feed-in Tariff (FiT) for all non-PV technologies, **Paul Stephen** gauges the renewable sector's reaction

There were both winners and losers as the results of February's Phase 2B consultation were unveiled in July. Whilst there was a decrease in the FiT rates payable for wind, microCHP and certain hydro projects will enjoy small increases when the new tariffs kick in on 1 December 2012. Rates for anaerobic digestion (AD) will mostly be frozen.

Some installers and manufacturers praised the decision whilst others were more critical. Ploughcroft managing director, Chris Hopkins, said: "It will be welcome news for some customers that the reduction to the wind FiT has been delayed until December, however we do not expect this will make a huge difference to the market.

"When you consider that planning permission for wind turbines takes around 16 weeks, plus a couple of weeks for installation, the 1 December deadline announced by the government leaves little time for farmers and other landowners to receive the higher tariff."

Now that the market has much-needed clarity, we can focus on driving growth

Andy Boroughs, managing director of Organic Energy, said: "Now we have the new FiT levels for non-PV installations, this should provide some stability and confidence for those investing in renewable energy projects. It would appear that lessons have been learned regarding the impact unpredictable changes in tariffs can have on the whole sector."

Tony Staniforth, sales development director at Kingspan Renewables, said: "Despite cuts, we're confident about the future of small-scale wind. Now the market has been given clarity about long term tariffs, we can focus on driving growth."

Mike Clay, marketing manager at Dulas, added: "We are encouraged by the clarity brought by these announcements which will help the sector plan for future growth.

"DECC has obviously listened to the industry through its consultation for the non-solar FIT scheme. We are pleased with the extension of the current FiT rates until the end of November as this will allow the sensible deployment of appropriate technologies such as medium scale wind."

In contrast, Kevin Parslow, ceo of Evance Wind Turbines, said: "DECC took a decision to deal a severe blow to the future of the UK small wind industry by announcing a disproportionate reduction to the Feed-in Tariff for small wind turbine installations, compared to other non-PV technologies.

Technology	Band (kW)	Current generation tarriffs (p/kWh)	Final tariffs from 1 Dec 2012 (p/kWh)
Hydro	<15	21.9	21.0
	>15 - <100	19.6	19.6
	>100 - <500	12.1	15.5
	>500 - <2000	12.1	12.1
	>2000 - <5000	4.9	4.48
Wind	<1.5	35.8	21.0
	>1.5 - <15	28.0	21.0
	>15 - <100	25.4	21.0
	>100 - <500	20.6	17.5
	>500 - <1500	10.4	9.5
	>1500 - <5000	4.9	4.48
AD	<250	14.7	14.7
	>250 - <500	13.6	13.6
	>500 - <5000	9.9	8.96
Micro CHP	<2	12.5	12.5

"As a country that has 40 per cent of the total European wind energy and leads the world in the design, manufacture and installation of small wind turbines, we unfortunately have a government actively discouraging the adoption of small wind, as well as hurting the industry that supplies it."

The Micropower Council's chief executive, David Sowden, broadly welcomed the news calling the proposals 'positive' and 'in line with what the industry body campaigned for'. In a joint statement, Sowden and the directors of both the Heating and Hotwater Industry Council and the Combined Heat and Power Association praised the decision to increase the tariff for microCHP to 21.5p/kWh.

It said: "The industry welcomes the modest increase in tariff as the government's endorsement of the strategic importance of microCHP. This technology is the only one to receive an increase in tariff in this round."

Finally, the Anaerobic Digestion and Biogas Association's policy manager, Matt Hindle, said: "We do have some concerns. Anaerobic digestion has a huge amount to offer as a form of renewable energy: biogas is constantly generated, storable and relatively cheap. We need to make sure we realise these benefits to meet our climate change commitments – and to realise the green growth which our economy so desperately needs."

Green light: Mike Clay, Dulas, says the clarity brought by these announcements will encourage future growth in the sector

Azur Solar goes into liquidation

Azur Solar's UK subsidiary has entered into voluntary insolvency proceedings by issuing notice of winding up. A liquidator has been appointed for the Slough-based PV supplier which had announced earlier in the year its intention to double revenues for 2012 to £20m.

It is believed that the government's decision to reduce the Feed-in Tariff played a large part in the German company's decision to withdraw from the UK market.

DECC loan to Green Deal Finance Co

The Green Deal Finance Company Limited has secured a £7m loan from the Department of Energy and Climate Change (DECC) to establish a loans administration system and pursue the credit ratings necessary so that Green Deal finance packages can be offered to consumers in early 2013.

The Green Deal Finance Company (TGDFC) is an industry-led consortium with over 50 members, both public and private sector entities, committed to the success of the Green Deal. The company, set up as a not-for-profit mutual limited by guarantee, has the aim of delivering low cost financing that accredited providers will offer households, enabling the widest possible installation of domestic energy efficiency measures under the Green Deal programme.

The DECC loan will be used to develop the finance structures and credit rating of TGDFC, which will provide low cost financing to households by enabling the organisation to raise long term low cost financing in the bond market. In addition, IT and loans administration systems will operate at a national level to minimise the costs of administering the financing of the Green Deal for Green Deal providers and local authorities, and so in turn, consumers. The company intends to be operational in early 2013, when the first loans will be offered to consumers.

Paul Davies, partner at PwC, one of the founding companies behind The Green Deal Finance Company Limited said: "DECC's support for The Green Deal Finance Company is fantastic news for the industry. Our members, both private and public, are committed to the Green Deal to lower carbon emissions and address fuel poverty. For TGDFC to access the cheapest sources of finance, we need a strong credit rating and a first rate loans administration capability. This funding will allow us to meet those objectives."

Greg Barker, minister of state for energy and climate change, said: "Our loan to the Green Deal Finance Company will help them carry out essential development work as they get ready to offer finance for Green Deals early next year. Ultimately this aims to enable a wide range of providers, including SMEs to participate in the Green Deal market and offer sustainably low cost finance to consumers."

The GDFC has expanded membership to over 50 organisations, representative of the future Green Deal market. This includes Ampere GDP, BritishEco and Carbon Clear.

REI and MCS partnership in place

Renewable Energy Installer is delighted to announce it has formed a partnership with the MCS. Supported by the Department of Energy and Climate Change (DECC), MCS, an industry-led scheme, came into operation at approximately the same time as REI was launched four years ago. The partnership will see MCS writing a regular column for the magazine which MCS has described as, "a well read and respected industry publication". The column will keep readers up to date with the scheme and important technical updates.

"This is a fantastic development for Renewable Energy Installer magazine and its readers," said Lu Rahman, editor. "Everyone working within the renewables and microgeneration sector is aware of the importance of MCS-accreditation. Renewable Energy Installer is the only magazine in the marketplace which lands on the doorstep of every MCS-accredited installer. To have this partnership in place really cements the quality of the publication. Teaming up with MCS means our readers will be at the forefront of the MCS scheme. No other publication offers that guarantee."

Team effort: The MCS and REI partnership has been announced keeping readers at the forefront of the scheme and important technical updates

SMEs act now

CITB-ConstructionSkills has warned that small and medium sized (SME) contractors must act now to benefit from low carbon work, with the registration of Green Deal installers through certification bodies set to begin in just two weeks. The call from the Sector Skills Council and Industry Training Board comes following approval of the Green Deal and ECO secondary legislation, passed by the House of Lords.

With the government announcing schemes are on track for launch in October, CITB-ConstructionSkills chief executive, Mark Farrar, is urging SMEs to work with accreditation bodies to become registered as Green Deal installers, ready to win work through the scheme from January 2013.

Farrar commented: "The Green Deal and ECO represent a huge opportunity for small and medium sized businesses to win work so long as they have acquired the right skills and qualifications. We have worked hard to ensure the training opportunities are in place for firms to upskill and get the qualifications they need to become Green Deal installers. It is now up to SMEs to make sure they are in a position to benefit."

The government has announced that the Green Deal Oversight and Registration Body will begin registering assessors, providers and installers. From October, authorised and accredited assessors will be able to begin operating so consumers will be ready to complete a Green Deal Plan at the end of January. Green Deal authorised installers will be able to complete work for consumers prior to the end of January if paid for upfront or wholly supported by the Energy Company Obligation.

Team work: Mark Farrar, ConstructionSkills, is urging SMEs to work with accreditation bodies

Farrar continued: "SMEs should already be working with a relevant body to become certified against the requirements of Publicly Available Specification (PAS) 2030. Only those who complete this process will have the opportunity to win low carbon work under the Green Deal and ECO schemes. Low carbon building is set to play an important role in the construction industry for years to come and the time to prepare for the future is now. SMEs can use our Cut the Carbon campaign at **www.cskills.org/cutcarbon** to help them take action."

"The REI team is behind A Profitable Future in Renewables - Business Strategy Conference" p12

News in brief

The BPVA is creating a film to demonstrate that installing solar power still makes sense, not just from a clean energy perspective, but also from a business sense too. The film will be featured across BPVA's media channels including its website, YouTube and all social media channels as well as featuring on media partners websites and BPVA's Video Wall at the Solar Power UK show.

The Green Electrician Group, installer of solar PV and energy efficient technologies, has launched a new heat division. It will be headed by Matthew Evans, who has more than 10 years of engineering experience in commercial, industrial and domestic renewable heat technologies.

Solarlec has appointed seven energy advisors following a rise in demand for its solar panel systems. Three will be based in the Cornwall area, while the other four will cover Milton Keynes, Birmingham, South Wales and the North East. This takes Solarlec's sales team to 26.

SunGift Solar has appointed management specialist Neil Durno as head of business development to ramp up its supplier development activities. Durno, who has more than 15 years of experience in renewable energy sales and global distribution, will focus on one-to-one relationships with Sungift's key suppliers.

Paul Wood is Nu-Heat Underfloor & Renewables' new national field sales manager. The company says this will enable better face-to-face relationships to be developed and maintained with key customers and installers.

Chris Hopkins, managing director of Ploughcroft, has been shortlisted for the 2012 Institute of Directors (Iod) Yorkshire & Humber Award for Director of the Year. Hopkins was selected as one of three finalists from hundreds of entrants for these annual awards, which recognise excellence in business leadership. The winner will be announced on 4 September in York.

Windhager ups sticks

Biomass heating system supplier Windhager has said goodbye to its cramped headquarters in Chippenham, Wiltshire, opening new and spacious premises in nearby Marshfield. The company hosted an opening day in July giving installers, press and other guests of the company a glimpse of the 1,500m² facilities which includes showrooms, office space, warehousing and a dedicated training centre.

The building, which used to host a call centre, has been refurbished and is fully heated by Windhager's own technology – two 60kW bioWIN Excel wood pellet boilers. It also incorporates other eco products such as smart taps, LED lighting, eco carpets and smart radiators.

Oliver Duckworth, managing director Windhager UK, said: "It was in December last year when I saw the for sale sign in Marshfield. It was a dark, soulless environment but we have completed the project in just over three months.

"One of the most complex procedures was convincing the gas supplier that we no longer needed their services. We are now 100 percent biomass heated.

"In the building we wanted to incorporate as many eco-products as we could to match with the brand. Windhager stands for three values – innovation, quality and service – and I trust you share with me that this building encompasses that philosophy wholeheartedly.

"We look forward to working in this building and growing. There's still a long way to go in growing biomass in the UK."

Branching out: Windhager UK's new headquarters at Marshfield, Gloucestershire, features a showroom for the company's range of biomass technology

Evergreen PV forms partnership deal

Evergreen PV has announced a partnership with solar inverter manufacturer, Samil Power, to supply Samil Power's inverters to the UK.

Commenting on the deal, James Woollard, managing director at evergreen PV said: "We're delighted to be in partnership with Samil Power. They are fast becoming recognised as one of the world leaders in solar inverter technology. Their products are of the highest quality, and we're looking forward to building a successful working relationship."

Justin Claxton, managing director at Samil Power UK, said: "We've spent a lot of time developing our products, and therefore are very particular who we choose to supply them to. What we have is a very good product at a very good price, with low production costs. This gives us a massive advantage in the UK market where investors of residential and commercial solar schemes, are looking for very good alternatives to their traditional brands."

Waxman Renewables' news

Waxman Renewables, part of the Waxman Group of companies has teamed up with Dimplex. Waxman will focus on distributing Dimplex air and ground source heat pumps on both a domestic and commercial level, from its 40,000 sq ft distribution facility in Elland, West Yorkshire.

Richard Waxman, chairman of the Waxman Group said: "The partnership between ourselves and Dimplex is an important one, as it indicates Waxman's considerable growth into the renewables market place."

Chris Davis, sales director at Dimplex said: "We were impressed by Waxman's solar PV credentials and the company's comprehensive design and aftercare service. We see Waxman as a major player within the distribution sector and know that the Dimplex brand will sit well."

Europe's first hydropower interchange comes to. . . Rochdale

Construction has started on Rochdale's new bus and Metrolink interchange – the first in Europe with integrated hydropower generation.

The £11.5 million interchange is next to the River Roch. When it opens next year it will be the first building of its kind in Europe to have integrated hydropower generation, using the river to generate its electricity.

A hydroelectric turbine has been installed which converts energy from the river as it flows rapidly through a weir. The weight of the water turns the screw-shaped turbine, generating electricity. The turbine produces up to 86,000kWh of electricity every year, which will help to reduce the interchange's carbon footprint by over a quarter.

The turbine is driven by an Archimedean screw, which was supplied by Spaans Babcock, a specialist contractor with a local base in Heywood. There is also a fish pass, funded by the Environment Agency, which helps fish to swim upstream past the turbine to migrate and spawn.

For passengers, the interchange will be a modern landmark for the town, replacing the existing bus station and providing significantly improved passenger services. It has been funded by Transport for Greater Manchester, the European Union's INTERREG IVB Ticket to Kyoto project, the Northwest Development Agency, Rochdale Borough Council as well as the Environment Agency.

Travel in style: Construction has started on Rochdale's new bus and Metrolink interchange – the first in Europe with integrated hydropower generation

Loan deal brings solar to new audience

Solar installer Joju Solar is entering into a deal with Sharp and Hitachi Capital to provide customers with loans at competitive rates, the aim of which is to bring affordable green energy to a new audience.

"Until now people who wanted to install solar had to choose between paying for the system up front in order to get the Feed-in Tariff or choosing a 'free solar' scheme and not getting any of the Feed-in Tariff. Our collaboration with Sharp and Hitachi bridges this gap and allows customers to get the best of both worlds meaning that customers should be able to own their own installation and pay for it through the Feed-in Tariff payments that they receive," said Dr. Chris Jardine, technical director, Joju Solar.

Residential customers can now apply for an unsecured loan from Hitachi Capital to install Sharp solar panels.

The fixed interest rate is 7.9 per cent APR and the loans are available on terms between 3 and 10 years. No deposit is required.

The price of Sharp solar panels, meanwhile, have dropped by more than 50 per cent in the last two years.

"The Feed-in Tariffs still presents good returns over the long-term and with the cost of panels tumbling there has never been a better time to reap the financial and environmental rewards of solar," Dr. Jardine said. "Prices have already comedown massively, and now this loan opportunity makes it more accessible that it has ever been."

Events

The Renewables Event
11-12 September NEC, Birmingham
www.therenewablesevent.com

The Energy Event
11-12 September NEC, Birmingham
www.theenergyevent.com

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

Solar Power UK 2012
2-4 October NEC, Birmingham
www.solarpowerukevents.org

Energy Solutions
10-11 October London Olympia
www.energysolutionsexpo.co.uk

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

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

Installer Live
14-16 October NEC, Birmingham
www.installerlive.com/installerlive/website/Home.aspx?refer=1

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

A Profitable Future in Renewables
21 November British Museum, London
www.reiconferences.co.uk

The UK's only business focused conferen

A Profitable Future in Renewables
Business Strategy Conference

WEDNESDAY 21ST NOVEMBER
THE BRITISH MUSEUM

Brought to you by REI
Renewable ENERGY INSTALLER THE BUSINESS OF MICROGENERATION

With enormous changes affecting the whole microgeneration industry in the UK it is increasingly difficult to plan ahead and ensure that your business is well positioned to take advantage of the opportunities.

Brought to you by the industry-renowned REI magazine, a host of leading experts are positioned to present and debate on topical issues, ultimately providing you with detailed information to take away, digest and use to drive your business forward.

Why attend?

- Understand from the Policy Makers the in depth details behind FiTs, RHI and Green Deal
- Expert opinion on how the changes will impact the market
- Clarity on how to take advantage of the opportunities for growth
- Insights into the key issues affecting everyone in microgeneration
- Networking with over 100 of the most senior people in the industry

Who should attend?

- Installers
- Green Deal Providers
- Policy Makers
- Manufacturers
- Wholesalers
- Investors
- Training Companies
- Professional Services

In association with...

MICRO POWER · MCS · pwc · REA Renewable Energy Association · WORCESTER Bosch Group

Key Speakers

Alasdair Grainger, DECC
Lead-delivery and engagement

Jeremy Leggett, Solarcentury
"Britain's most respected Green Energy Boss"
Feed-in Tariff

Jonathon Porritt, Forum for the Future
Visionary Green Leader

Howard Johns, Southern Solar
Chair Solar Trades Association until 2012

Paul Davies, PWC
Interim Head Green Deal Finance Company

Paul Thompson, REA
Head of Policy

ce for the sub 50kW renewables market

Conference Programme

START TIME	END TIME	SESSION	PRESENTATION	SPEAKER
09.30am	10.00am	Registration		
10.00am	10.05am	Introduction		
10.05am	10.20am	Keynote Address	**Importance of the Microgeneration industry to the UK**	**TBC**
10.20am	11.00am	Feed-in Tariff review	**Current state of Feed-In Tariff**	**Alasdair Grainger** DECC
			PV What's happening to the market	**Jeremy Leggett** Solarcentury
			22 by 2020 Achieving 22GW	**Howard Johns** Southern Solar
11.00am	11.15am	Refreshment Break		
11.15am	12.00pm	Renewable Heat Incentives	**RHI in 2013** What, when and how	**DECC**
			Winners and losers technologies	**Sustainable Ventures**
			Full accreditation	**MCS**
12.00pm	12.45pm	Green Deal	**Green Deal** What's the difference	**DECC**
			EPCs and their effect	**Brian Scannell** NES
			Financing the Green Deal Access for installers	**Paul Davies** PWC
12.45pm	2.00pm	Lunch & Networking		
2.00pm	2.15pm	Keynote Address: Making sense of the noise	**3-4 things to consider for your business**	**Paul Thompson** REA
2.15pm	3.15pm	Collaborating	**Vision of the future**	**Micropower Council**
			Partnership working	**TBC**
3.15pm	3.30pm	Refreshment Break		
3.30pm	4.30pm	Making it happen	**Getting your business right** Business support	**TBC**
			Addressing the skills gap	**Neil Schofield** Worcester Bosch
4.30pm	5.00pm	Keynote Address	**Making a success of life**	**Jonathon Porritt**

To book your place

Visit: www.REIConferences.co.uk
Call: 01565 626753
Fax: 01565 755607
E-mail: delegates@REIConferenes.co.uk

Places are truly limited and available on a strictly first come first served basis.

A&D Publishing, Caledonian House, Tatton Street, Knutsford, Cheshire WA16 6AG

For all sponsorship enquiries please contact Lynn Amey on sales@REIConferences.co.uk or 01565 626762

Twitter: @REIConf

Best sellers

With renewable applications, there is a huge amount of training required and the industry is changing all the time. **Ian Kenny**, marketing director for Graham looks at the benefits of utilising a merchant to select products that are fit for purpose but to also gain the support to make each installation a success

Around 50 per cent of the UK's energy is used for heating and hot water. Already a significant sum - this figure rises to a staggering 75 per cent in domestic applications. With this in mind, the domestic heating industry has a responsibility to help households reduce energy use and associated carbon emissions through the increasing use of renewable technologies.

Installers who haven't yet readied themselves for the rise of renewable technology will quite simply be missing out on an opportunity to expand their business and increase their income. This opportunity can do nothing but grow with initiatives such as the Feed-in Tariff (FiTs) and potentially the Renewable Heat Incentive scheme (RHI) undoubtedly encouraging the installation of renewable technologies. Even with the question marks surrounding the Green Deal - the performance and energy saving benefits of renewable technologies means they will increase in popularity.

The landscape of the domestic heating industry has rapidly changed and as such we are seeing a new breed of professional tradesmen evolving, which is going to have an exciting and positive impact for the industry. However, with new technologies and tradesmen moving into new areas, manufacturers, suppliers and government bodies need to work together to ensure we have a supply chain that is able to cope with these changes.

Certainly plumbers' merchants are in an ideal position to support tradesmen and allow them to realise the potential business opportunity of renewable technologies by making inroads in this growing sector.

At Graham, we have already undertaken an extensive programme of education and training at local levels. Education has to come from both sides of the counter - from both merchant staff and its customers. In each Graham family around the UK, there is a renewable specialist for customers to speak to and gain advice from. This is to ensure in every local area - we can provide the guidance needed and we were the first merchant to ensure that all of our renewable specialists were trained to BPEC level on solar thermal and heat pump technologies.

Plus points: Ian Kenny, Graham, outlines the benefits of using a merchant to select products

With an onslaught of renewable technologies available from a variety of manufacturers - customers, particularly when new to the market, need to be able to feel confident in the systems and products they select. This is really where merchant staff can prove invaluable as only a merchant can provide unbiased advice on a wide range of systems. By having dedicated staff working day in, day out on renewable products - customers can look to their local merchant to help plan projects and deliver the best customer solution that is fit for purpose.

At the same time stepping up training for customers is essential. The Greenworks Training Academy in Birmingham is playing an integral role in Graham's efforts to provide hands-on training for tradesmen looking to branch into renewables. The facility offers a practical and multi-purpose training space which boasts products and solutions in real-life settings.

Demonstration areas include room sets for wet and dry work, a dedicated low level roofing rig, a training set for the commissioning of solar thermal and solar PV systems; an elevated drainage pit allowing the training of rain water harvesting as well as a replica sales counter area. In addition, the facility has two inter-connecting training rooms with full IT and internet access.

To complement the practical and hands-on training at the academy, the Greenworks Learning Gateway also provides an opportunity for Graham customers to access e-learning modules on a range of sustainable products and solutions, renewable technologies, market drivers and legislation updates. This additional service will offer another valuable means of education and training for the marketplace.

To be able to offer a renewable installation service installers must then achieve the mandatory qualifications required to install them. Through Greenworks, Graham can help installers become accredited with MCS certification, enabling the landlord or homeowner to be eligible to claim RHI and FiT incentives.

With this shift towards governmentally led initiatives such as the Feed-in Tariff and the Renewable Heat Incentive there is a growing need to educate those installing the technologies selected. Now really isn't the time to turn your back on the business opportunity renewables can afford - but instead draw from the expertise, product base and guidance that is available from your local plumbers' merchant.

Scheme of success

With the raft of new technologies aimed at reducing bills and energy usage, the government is aiming to get close to two million installations in place by 2020, so there is a big market there for any installer company looking to get involved, says MCS.

Approximately 50 per cent of all our energy is used for heating and hot water, with 75 per cent of domestic household energy consumption being heating and hot water. It is estimated that 30 per cent of our electricity may be delivered from renewables, with 2 per cent from small-scale electricity generation.

Microgeneration provides opportunities for construction industry professionals and MCS is the way to get involved.

MCS is the Microgeneration Certification Scheme. It is an industry-led way of guaranteeing that micro-renewable products bearing the mark, and the installation companies fitting them, meet robust standards. It was set up to help companies demonstrate to customers in a potentially bewildering market that they can be trusted to do a decent job. At the moment, for micro-scale (sub-50kW) electricity generators, the only way to access Feed-in Tariffs (FiTs) is for the job to have been carried out by an MCS-certificated installation company. The same model will be followed when the Renewable Heat Incentive (RHI) is launched to consumers, with the likes of solar thermal and heat pump installs sized below 45 kW eligible, if the job is carried out by an MCS-approved company.

Installer certification entails assessing the supply, design, installation, set-to-work and commissioning of renewable microgeneration technologies.

Scheme benefits

MCS is an internationally recognised quality assurance scheme. It allows you to demonstrate to your customers that your company is committed to meeting rigorous and tested standards. It was designed with input from installer and product representatives. Similar to the Gas Safe Register, the MCS gives you a mark of competency and demonstrates to your customers that you can install to the highest quality every time. In a growing and competitive market place, it is likely that companies carrying the MCS mark will become the leading choice of many consumers. This is partly because MCS is linked to many of the key factors driving demand, such as:

- Feed-in Tariffs which provide guaranteed payments to individuals, businesses and communities for small-scale electricity generation. For technologies where there is an MCS standard, both the technology and the installer must be MCS certificated to be eligible.
- The Renewable Heat Incentive Phase 1 (for non domestic installations) provides cashback to businesses and communities for renewable heat generation. For technologies where there is an MCS standard, both the technology and the installer must be MCS certificated to be eligible.
- The Renewable Heat Premium Payment provides a one-off grant for renewable heat technologies and requires that MCS certificated installers and products are used.
- The Code for Sustainable Homes is the Government's national sustainability standard for newly built homes. MCS certificated technologies can be used to meet the requirements of this Code.
- Planning permission for consumers for certain renewable energy technologies has now been made a lot simpler thanks to permitted development rights introduced in England and Scotland.
- The Standard Assessment Procedure (SAP) for Energy Rating of Dwellings recognises MCS certificated products when determining whether products are eligible for inclusion in SAP assessments

To take advantage of this growing demand you should be considering the certification process and how you can get involved now.

Becoming MCS certificated

Becoming a certified installation company is not as difficult or as expensive as is sometimes reported. An applicant is assessed based on the twin criteria of technical competence and having a well-run business. For many installations, we commonly see companies coming forward, using their existing know-how, perhaps supplemented with some additional training in the new technologies they plan on installing. To assess the business side, things like health and safety policies and complaints procedures are looked at. Assessment is proportionate to the size of the company, so a small firm will be asked to provide a much simpler set of information than a large national company.

Certification is carried out by independent, UKAS accredited bodies. There's a choice of nine at the moment. Each has a different fee structure, which can be found on their website, so you can easily compare them all. MCS itself collects an annual certification fee of £110, and then a small charge for each installation that is carried out. Those fees cover all the costs of maintaining the scheme, running the industry groups that write the standards, providing a helpdesk and website, and marketing the scheme to raise consumer awareness.

We also ask that companies sign up with a consumer code of conduct, which makes sure that selling practices are fair to the consumer, and comes with benefits like a deposit protection scheme and workmanship warranties, which are an added reassurance for customers.

To find out more, and to get involved, visit the MCS website. It has more detail on the process for becoming certificated, and guides you to the certification bodies mentioned above. Once you are confident that you want to be part of the scheme, the next stage is to contact those bodies, and identify the right one for you. The timetable from there depends on individual circumstances, but it is reasonable to expect that within a couple of months the average installer company will be fully certified, and off and running.

For further information, see **www.microgenerationcertification.org,** or call the MCS Helpdesk on 020 7090 1082.

PV or not PV?

When it comes to solar PV installation it does not always make sense to fill a roof to maximum capacity says **Chris Laughton**, Solar Design Company

A difference of one underperforming module can have a serious impact on the accuracy of predictions. The following case-study simulations compare three different survey techniques to see how increased accuracy would affect predictions. A local football clubhouse building was chosen, which was shaded in the afternoon by a set of trees.

The three surveying methods were:

- Overhead Aerial photo only
- Photo and site selector horizon background only
- Panorama background with 3D tree as near object

The financial and energy generation consequences of each of these methods were then compared using PV*SOL Expert 5.5 simulation software with an hourly climate file for that location.

Figure 1: Roof layout simulated in PV*SOL's PhotoPlan module

Without visiting the site, Google Earth and its ruler tool was used on an office computer. The measurements taken using this method were as follows:

- Building width: 8.9 m
- Building length: 14.6 m
- Orientation: 120 degrees

The measurements were presumed to be derived as parallel to the earth's curvature, which would be plumb level within the scope of the building. Using only an overhead image there was no way to check if the roof was level. Some features of the roof could be seen but were lacking clarity. Once the site was visited, the roof turned out to be a dormer porch. Nearby trees and hills were visible but their heights could not be measured, so 2 per cent shading was assumed.

Continued on page 17

REI launches business strategy event

Using its expertise in the renewables and microgeneration market, the REI team is behind **A Profitable Future in Renewables – Business Strategy Conference** at the British Museum on 21 November

November 21 will see **A Profitable Future in Renewables – Business Strategy Conference** take place at the British Museum in London. This is the UK's only business-focussed conference for the sub 50kW renewables market and is aimed at installers, Green Deal providers, manufacturers and wholesalers. Its content will also be of interest to investors, training companies and those involved in the professional services sector.

Our market has undergone many changes, making it difficult for many businesses to plan ahead and make informed decisions to benefit profitability.

Organised by **Renewable Energy Installer** magazine, the event will address a range of topical business issues, brought to you by key industry experts to help increase profit and drive forward your company.

"This conference represents an exciting move for Renewable Energy Installer. There is currently no other event which offers the same level of expertise and insight into the renewables sector and how to maintain a successful business. We have some key speakers lined up, including Jonathan Porritt and Jeremy Leggett which, coupled with the fantastic British Museum venue, make this an unmatched event in our marketplace" said REI editor, Lu Rahman.

There are many reasons to attend the event. Its aim is to help installers understand the in-depth details behind Feed-in Tariffs, the Renewable Heat Incentive and the Green Deal. It will also offer expert opinion on how industry changes will impact on the market. "Installers really need some focussed advice. REI is at the forefront of the industry and has recognised the need for clarity and expertise on how to proceed within this sector," added Rahman. "The conference programme will provide clear advice on how to take advantage of the opportunities for growth – and this is key for many installers in the current climate. The speakers will be offering insights into the issues affecting everyone in the microgeneration sector and the event will also provide the opportunity for networking. With senior and well-respected industry experts," she said.

The REI team has structured a conference programme to meet the needs of the renewables sector. *A Profitable Future in Renewables – Business Strategy Conference* boasts a first-class line up that will see DECC's Alasdair Grainger discussing the current state of the Feed-in Tariff. Grainger is an engineer and member of the UK Civil Service, serving in the Department for Energy and Climate Change (DECC). His current role is head of the UK Feed-in Tariff policy, working on the comprehensive review of the scheme. He joined the FiTs team to work on the fast track review in early 2011. Previous roles include establishing a new engineering team within DECC, policy work for the chief scientist (Prof. David Mackay), negotiating the UK's position on technology within the UNFCCC and completing the first banding of the Renewables Obligation. Grainger has a deep interest and considerable experience in low carbon technology and development, both in the UK and abroad.

Other speakers include Solarcentury's Jeremy Leggett discussing '*What's happening to the PV market?*' and Southern Solar's Howard Johns who will be asking whether 22GW can be achieved by 2013? For those looking ahead to the Green Deal, PWC;'s Paul Davies will be looking at '*Financing the Green Deal and Access for Installer*'. Paul Thompson, REA will be speaking on '3-4 *Things to Consider for Your Business*' whilst Jonathan Porrit, Forum for the Future, will be giving the keynote address on '*Making a Success of life*'.

"The involvement of Jonathan Porritt is fantastic news for the conference," said Rahman. "It highlights the important role both the magazine and now the conference, hold within the industry. REI has been reporting on the key events within renewables – the legislation and the technological developments – for four years now. With our knowledge and in-depth understanding of the marketplace, we have produced an exciting and highly relevant business conference that is unrivalled in the sector. Jonathan Porritt is synonymous with sustainability and environmentalism, which of course, are at the heart of the renewables revolution.

"With so many changes affecting all parts of the renewable energy market, it's important to understand what the long-term business opportunities will be, and what needs to be done to stay successful."

A Profitable Future in Renewables – Business Strategy Conference has an important role to play in knowledge sharing for the renewables industry. Jonathan Porritt echoed this: "This is a critical time for the future of the renewables industry in the UK. Continuing policy uncertainty has spooked investors, and the general public is understandably confused. Yet one thing remains crystal clear: the industry has a vitally important role to play in delivering a secure, low-carbon energy future for the UK".

Talking point: Jonathan Porritt, Forum for the Future, will be speaking at A Profitable Future in Renewables – Business Strategy Conference

Pride and glory

The renewables industry has changed considerably since REI was launched four years ago. Latest developments at the magazine include a partnership with the MCS and the launch of a new publication addressing the Green Deal sector, reveals **Lu Rahman**

It's hard to believe that four years have passed since Renewable Energy Installer was launched. At the time, the Microgeneration Certification Scheme (MCS) was the latest news, Clear Skies was becoming a dim and distant memory, the Feed-in Tariff was a twinkle in the eye of the Labour government, if you mentioned Green Deal, most people wondered if it was Noel Edmond's new TV show, and Renewable Obligation Certificates were the latest buzz word. REI was run by an editorial team of one and landed on your mat every three months.

Four times as good

What a difference four years makes. MCS has become key to the running of a successful renewables business and every self-respecting installer has gained or is working towards gaining this accreditation; the Feed-in Tariff is firmly ensconced in industry, its status affecting business up and down the UK and providing much debate and discussion in the sector; Green Deal is almost upon us and you now receive your copy of REI every month. We have launched a new-look website and there are regular e-newsletters to keep you up-to-date with the latest sector developments.

Team renewable

To deal with this constantly evolving marketplace, the REI team has now expanded. I'm still at the helm of the magazine, enjoying the challenge of keeping you at the forefront of the renewables world. Joining me on the editorial team is Paul Stephen who is a postgraduate in journalism and a graduate in geography.

A partnership to be proud of

MCS is paramount to the successful running of a renewables business. REI prides itself on its circulation which ensures every MCS installer receives a copy. You can imagine how

delighted the team was when we secured a partnership agreement with the MCS. No other title in the marketplace offers this and the partnership underlines the fact that REI is a credible, well-respected publication offering the quality editorial every issue – see page 18 for this month's MCS column which will now be a regular feature. According to MCS: "Renewable Energy Installer magazine is a well read and respected industry publication, so we are pleased to be able to work alongside them in this manner."

Team unique: Lu Rahman and Paul Stephen, Renewable Energy Installer. The magazine has formed a partnership with MCS and is set to launch Energy Efficient Installer for the Green Deal market

Focus on business strategy

The hard work at REI doesn't stop there. We have the *Oil & Renewable Energy Show* on 17 and 18 October at Manchester Central, as well as our new-launch event, ***A Profitable Future in Renewables – Business Strategy Conference***. Taking place at the British Museum, London on 21 November, not only is the venue unrivalled but the conference programme is first-class. The event boasts an unrivalled line-up of speakers including Alasdair Grainger, DECC, Jeremy Leggett, Solarcentury, Howards Johns, Southern Solar, Paul Davies, PWC, Paul Thompson, REA and Jonathan Porritt, Forum for the Future. "This is a critical time for the future of the renewables industry in the UK. Continuing policy uncertainty has spooked investors, and the general public is confused. Yet one thing remains crystal clear: the industry has a vitally important role to play in delivering a secure, low-carbon energy future for the UK," said Porritt, highlighting the relevance of the conference for the sector at this time.

The event will address key issues renewables companies are dealing with on a daily basis. This includes government initiatives; the future of Feed-in Tariffs; the introduction of the RHI; the Green Deal; energy performance – barrier or opportunity; planning for the future; addressing the skills shortage; managing partnerships; financing growth and taking risk.

Looking ahead

And finally, another exciting development. The publisher of REI is set to launch **Energy Efficiency Installer**. This new title will cover all aspects of energy efficiency, sustainable business growth and the technologies and services being offered under the Green Deal. It will cover regulatory and business issues, legislation and opportunities the Green Deal will bring. Focussing on retrofit, and given that the market is set to be worth £14 billion over the next ten years, this new title has a significant role to play in the market.

So with an exciting four years behind us, the REI team is looking forward to the years ahead, addressing the needs of the industry.

The all-in-one PV test solution

The PV150 is the only all-in-one multi-function PV installation tester designed by professionals, for professionals. As a result, it's lightning fast, intuitive, reassuringly safe when connected to live PV systems and provides complete test traceability.

Also available as part of a Solarlink™ Test Kit with Irradiance meter

To find out more visit www.seawardsolar.com/rei
Call 0191 586 3511 or email enquiry@seawardsolar.com

SOLAR

Part of SEAWARD GROUP

Continued from page 12

The orientation of the photo was presumed to be grid north. The roof pitch was assumed to be 30 degrees. These dimensions were programmed into the simulation software with a generic poly-crystalline 200Wp module.

Using a non-skilled surveyor visiting the site, a photo of the building was obtained along with a landscape sketch using a solar site selector tool. This gave a rough calculation of the sun-path and shading objects. This was then quantified within the simulation software as a 5.8 per cent shading loss of irradiation. Dimensions were assumed from the overhead aerial method.

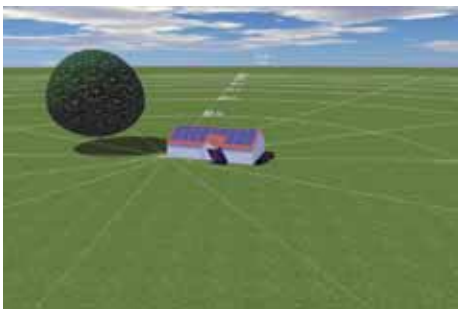


Figure 2: 3D image of the building and shading objects

Using PhotoPlan in the simulation software it is possible to create a photorealistic representation of the building with PV modules (see Fig. 1). Through this survey method the dormer porch was seen to be more prominent than suggested by the aerial image. This forced a reduction in array size. Using this method the roof pitch and dimensions were still uncertain. Panorama background with 3D tree as near object.

Finally, a skilled surveyor visited the site using a laser measuring device and compass. The actual building measurements taken using this method were:

- Building width: 8.600 m
- Building Length: 15.538 m
- Orientation: 105 degrees
- Roof pitch: 30.2 degrees

Magnetic declination was allowed for 1.5 degrees west of north. The nearby deciduous tree was also separately measured. This allowed a precise 3D landscape to be created in the simulation software (see Fig. 2). These more accurate roof dimensions showed there was room for another row of modules.

The surveyor also a landscape digitising tool with a digital camera to capture the surrounding landscape. This was then quantified within the software as a 13 per cent shading loss of irradiation. A representation of the shading frequency of each module could then be produced (see Fig. 3).

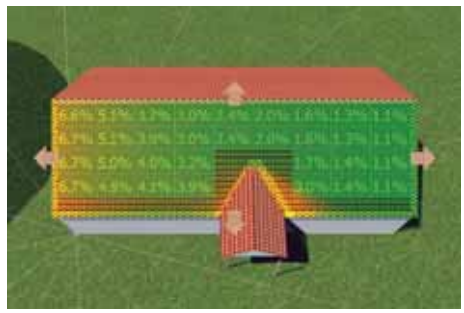


Figure 3: Shading frequency per individual module

Results calculated

This comparison showed an 11 per cent difference in energy and a 40 per cent difference in Net Present Value over 20 years between the results of the three surveys.

Through poor anticipation of shading the overhead aerial method overestimated the performance potential of this roof. The customer would end up with over £4,500 less in their pocket than would have been originally promised.

	Overhead Aerial	With Photo	Full Survey
System Size (kWp)	6.0	5.6	6.4
Shading (%)	2.0	5.8	13.0
Cost (£)	15,000	14,000	16,000
Energy Produced (kWh/a)	5,214	4,375	4,685
Specific Annual Yield	867	778	729
Payback Period (years)	14.0	15.5	16.5
Net Present Value (£)	15,295	11,162	10,779

REI and MCS partnership

MCS is pleased to announce that we are now working in partnership with Renewable Energy Installer magazine. Supported by the Department of Energy and Climate Change (DECC), MCS has been developed over the past four years as an industry-led scheme. As such, we will be using this monthly column to keep you up to date with what is happening within the scheme, any important policy and legislative issues, what's happening within industry, and any important technical updates. Renewable Energy Installer magazine is a well read and respected industry publication, so we are pleased to be able to work alongside them in this manner.

MCS is the Microgeneration Certification Scheme. It is a way of guaranteeing that microgeneration products bearing the mark, and the installation companies fitting them, meet robust standards. It was set up to help companies demonstrate

MCS is pleased to announce that we are now working in partnership with Renewable Energy Installer

to customers in a potentially bewildering market that they can be trusted to do a decent job. At the moment, for micro-scale (sub-50kW) electricity generators, the only way to access Feed-in Tariffs (FiTs) is for the job to have been carried out by an MCS-certificated installation company. The same model will be followed when the Renewable Heat Incentive (RHI) is launched to consumers, with the likes of solar thermal and heat pump installs sized below 45 kW eligible if the job is done by an MCS approved company. Installer certification entails assessing the supply, design, installation, set-to-work and commissioning of renewable microgeneration technologies.

The MCS website provides further information relating to installer and product certification, the associated consumer benefits, an up-to-date listing of Installation companies and products as well as general information about the scheme. Please visit the MCS website at **www.microgenerationcertification.org**.

Renewable ENERGY INSTALLER THE BUSINESS OF MICROGENERATION

MCS
The Certification Mark for Onsite Sustainable Energy Technologies

Q&A

JAMIE BALDWIN

Caplor Energy

REI: What have you got planned for the rest of year?
JB: We've got several commercial solar PV and solar thermal projects to build, including some high profile tenders we have recently won. Finance is a key barrier and Caplor Energy is now offering finance options across the board for homeowners, businesses and community projects.

REI: What do you see as the growth areas in renewables?
JB: Biomass is doing what solar PV did last year. A lot will depend on the appearance of the domestic RHI, however, when it launches next summer for technologies such as heat pumps and solar thermal systems. My bet would be on solar PV – especially on the large scale – making steady progress. And, of course, we have the Green Deal.

REI: How is your company cutting its carbon footprint?
JB: We've just completed our third carbon audit for the Caplor group which has pinpointed a number of additional ways to reduce our collective carbon footprint. We've installed 60kWp of solar PV, a 15kW wind turbine and a 50 tube solar thermal system at our premises. In doing so we've reduced our annual carbon emissions by nearly 20 tonnes a year.

Jamie Baldwin is business development manager, Caplor Energy

CanadianSolar

27th EU PVSEC
www.eupvsec.org
Visit our booth:
Hall 3.1 – Booth E30

NEW!
Canadian Solar´s highest efficiency **ELPS** module

Delivers up to 10% more electricity!

QUALITY I VALUE I INNOVATION

Canadian Solar Inc. (NASDAQ: CSIQ) is one of the world's largest solar companies and a leading vertically integrated provider of ingots, wafers, solar cells, solar modules, solar power systems and specialized solar products. Our customers benefit from our premium quality, cost-effective and environmentally-friendly solar solutions.

www.canadiansolar.com

Introducing the most essential bit of kit in any Solar Installer's tool box...

The Installer Partner Program

from **SOLFEX** energy systems

SOLFEX energy systems accredited installer partners are a nationwide group of skilled & qualified Solar Thermal & Photovoltaic technicians who can specify, Install & maintain our quality systems. The scheme is free of charge to join provided set competence & criteria can be met and maintained.

All partners will benefit from National & Regional sales leads & project specifications through our extensive network of contacts from the following sectors:

- Building Services Consultants & Architects
- Housing Associations
- National & Regional Property developers
- Homeowners

Other benefits include:

- FREE access to solar thermal installation and design software.
- FREE marketing pack including brochures and presenters to aid project securement.
- FREE promotional items such as pop up stands & banners are available to all members to support marketing & show events.
- FREE vehicle signage & graphics.
- FREE SOLFEX energy systems stylish work wear.

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

Leading supplier of photovoltaic & solar thermal products in the UK

SOLFEX energy systems

Pollard's Patter

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

At last, some good news in regard to the Feed-in Tariff.. The decision to increase the export tariff for micro-CHP, the proposal to remove the energy efficiency requirement for community and school solar projects and the decision not to extend energy efficiency requirements beyond PV are all very welcome. Everyone knows that degression – a staged decrease - of support over time is both sensible and prudent; the industry has only had issues with the imposition of unworkable deadlines.

Larger scale projects will benefit enormously from providing certainty over accreditation and tariffs. This is a great demonstration of how allowing the industry to help in shaping the solutions can lead to a mutually satisfying outcome for both government and commerce. The end result should be the development of a successful and sustainable renewable energy sector in the UK, which is, after all, what we all want, isn't it?

Next up will be the consultation on the long-awaited and much delayed domestic Renewable Heat Incentive. We are told that the consultation will take place later this year for implementation next year. This will provide another opportunity for the industry to give another clear message to government about what is (and what is not) the most effective way of building this scheme for a successful outcome. I know that we are all stretched for resource, and time is a valuable asset but plenty of responses to this consultation will give us the best chance of success.

Pens at the ready?

Banking on solar

Chris Hopkins, Ploughcroft Training discusses the merits of PV as a solid investment

So the Feed in Tariff has been cut and as an industry we must continue to show that investing in solar PV still offers one of the best returns there is. According to the Energy Saving Trust, the new tariffs are expected to provide a rate of return of between 4.5 per cent and 8 per cent for a typical well sited 4kW domestic installation – is this right?

Research by DECC has shown that solar PV uptake is highest in more affluent locations, as well as amongst the 50-plus population. However, market trends suggest that this is starting to change and people in their 30s and 40s are seeing solar as an investment that is guaranteed for 20 years ahead – offering a much better return on investment than banks.

It's also a fact that high electricity consuming households are more likely to install solar PV, which means any household that comprises more than two people, or where people are in the home during the day, will benefit. There are still new entrants to the market and we have seen continuous demand for our CSkills-accredited course, Solar PV for Roofers, as well as renewed interest in our wind turbine installation, solar thermal and air source heat pumps courses. Opportunities are also continually presenting themselves and we recently added Electric Vehicle charging station installation and the Green Deal courses to our portfolio, as installers look to extend their expertise.

I'm optimistic about a future for solar. Demand won't be as high as we have seen over the past couple of years, but there will still be a market for good quality, value for money solar PV, particularly as energy bills continue to rise.

Securing success

The reduction in the government's Feed-in Tariff (FiT) continues to see subdued sales across the domestic sector, says **Richard Waxman**, Waxman Group. He argues the commercial sector holds the key.

In the wake of the FiT reduction, it's no surprise sales in the domestic sector has fallen flat. In the lead up to the reduced subsidy, householders were told so often to 'act now before it's too late'– so many now believe they have missed the boat. But the truth is, solar remains a terrific investment because the cost of installation has pretty well halved – and although the subsidy has been reduced, it remains substantial.

The commercial sector is waking up to the opportunities offered by PV and other renewables. Businesses are generally much better able to understand the figures involved. They see that there are still significant returns to be made and those with good liquidity are quickly working out that they won't get close to that kind of return from current banks rates. Commercial companies are much less likely to move location than a domestic householder, so it is easier for them to calculate their investment, plus they get free electricity.

Commercial customers are also more discerning in terms of who they buy from and the products they choose. For them, price is not the only factor. They are looking for an all round package, so we need to gear ourselves up to a more commercial offer that includes PV and other renewable energy products.

We need to offer a total package with service and advice so there is confidence in the company and the products. Businesses tend to look at things more precisely – they may be more cautious but they are waking up to the fact that not only is it a good investment, but PV is here to stay. Building Regs are also getting tighter and, going forward, renewables will have to be adopted on new builds to meet the standards.

It's never too late to make this sort of investment. PV is here to stay and, although reduced, the FiT remains substantial which, combined with the much reduced cost of installation, makes now as good a time as any.

Ardenham Energy

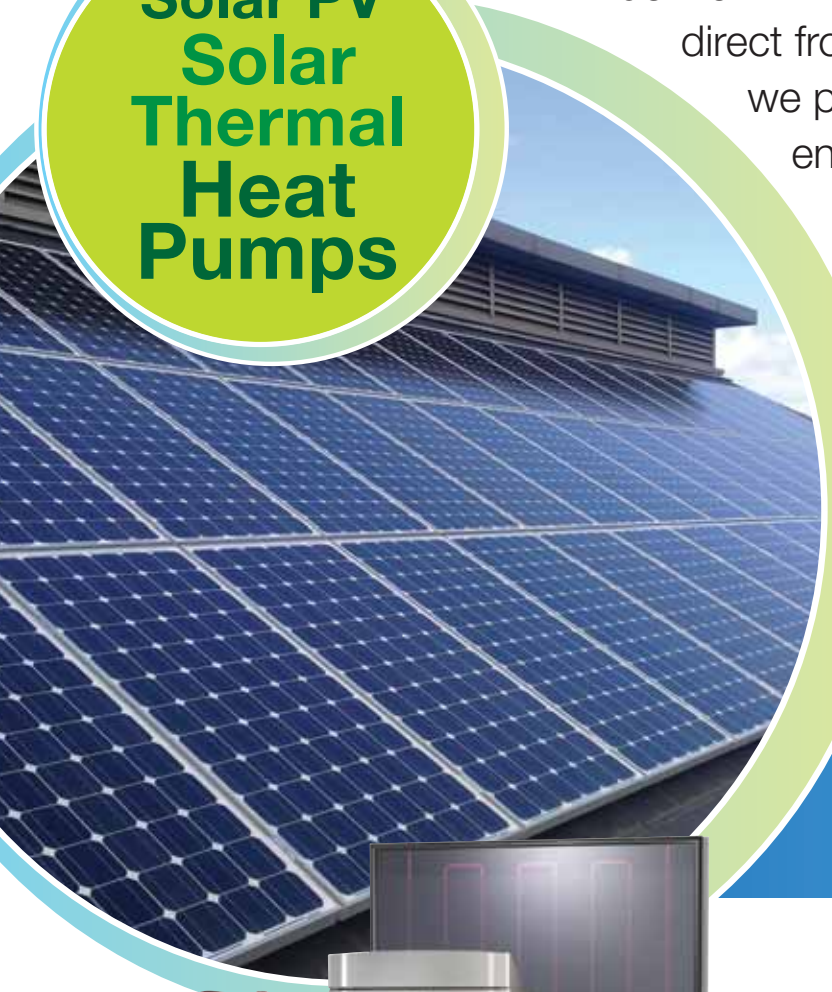
Wholesale

Renewable energy systems and equipment

Solar PV
Solar Thermal
Heat Pumps

Ardenham Energy source a full range of products direct from the manufacturers, and because we purchase in large volumes we can ensure consistent stock levels at very competitive prices.

- Core range of renewable energy products always in stock
- Quality products at competitive prices complete with full manufacturers warranties
- Exceptional customer service
- Full system design service available
- No minimum order – individual items through to complete systems
- Technical support and advice
- Credit available with sensible terms



Authorised distributors for:

Fronius – SHIFTING THE LIMITS
SUNTECH
CTC Enertech Group
VIESMANN
Roth
SENTINEL – EXPERTS IN ENERGY EFFICIENCY

Nationwide Coverage
www.ardenhamenergy.co.uk/wholesale

For more information or to place an order call Ardenham Energy on

0845 128 1472

wholesale@ardenhamenergy.co.uk

TECH TALKING

Making energy radio products work

Adrian van den Heever, Green Energy Options, explains about radio frequency systems in wireless electrical devices such as smart meters, electricity monitors and PV displays, and how to make them work better in a home.

The design of consumer radio products results in a number of complex performance and cost trade-offs that should ultimately result in a radio system that performs well in the majority of typical homes. This does not mean that products need to be complicated to work well but they do need to be well designed.

All too often, radio system performance is compared through a trivial metric – the range over which the device will operate reliably, usually measured 'line-of-site'. Properly designed radio systems consider a number of parameters: Path Loss, Interference and the effects of Multi-Path.

The first is addressed by maximising the transmitter power (properly limited by legislation that allows many devices to share the same space) and the receiver sensitivity, which when optimised is typically limited by the physical properties of the receiver and its associated antenna system.

All too often not considered is the system's resilience to interference from other radio and electrical devices in the home and multipath (the effects of radio signal reflections inside buildings combine in ways that result in areas of stronger and weak signal inside a room).

In all cases, it is worth educating installers and users as to how systems can be made to work or work better:

- Make sure that the energy sensors and display work inside the same room or close proximity.
- Move the transmitting energy sensor to the room where it will be installed and avoid placing it near metal objects or behind metal, brick or concrete building features.
- Take the display to where it is going to be used. If it doesn't work, or works intermittently, check for nearby appliances that might cause interference and remove them.
- If the system is still not working properly move the product around by 5 cm to 15 cm and check if the system starts working. If this fails, try the display in a number of different places in the room.

If the display is still not operating correctly at this point move the display to a different location where the signal might be better – and tell your product vendor that you are unhappy with the radio performance.

They are unlikely to be able to fix the product you have – but the company's future products will be better designed.

For the community

Steve Pester, BRE, discusses the work done by carbon reduction charity, PURE the Clean Planet Trust

PURE genius: PURE, the clean planet trust

In these days of reduced Feed-in Tariffs (FiTs) and delayed domestic RHI, you might think that financial help for renewables projects is difficult to come by. However, there are organisations out there with money to spend on the right projects.

One such organisation is a carbon reduction charity called PURE the Clean Planet Trust, which supports community renewable energy projects in the UK through the PURE Community Energy Fund, providing low interest loans of up to £50k to help community organisations to install renewable energy technology.

So far, PURE has helped to finance 40 community renewable energy projects in the UK; in the most recent round two community-owned swimming pools, two community centres and one community energy cooperative received funding.

There are, of course, some eligibility criteria, but PURE is mainly interested in projects that demonstrate a strong community benefit and are located in the 50 per cent most deprived areas according to the governments' Index of Mass Deprivation, and energy cooperatives as well as not-for-profit organisations.

Further details of eligibility and registration are on the website: **www.puretrust.org.uk** (see Pure Community Energy Fund).

"Let's turn the conversation from a fixation on FiTs to energy and making homes/ businesses a more efficient environment" James Woollard, Evergreen PV. p32

Talking Ten to the Dozen

Leading renewable experts reveal their opinions

How far is the UK from achieving PV grid parity?

Ben Hill, **Trina Solar Europe**

"There are definitely a few stages to go before then. Certainly in countries such as Spain and Italy grid parity is there already. I think the UK is probably a couple of years away but the way electricity prices keep rising its coming closer and closer."

Jeremy Leggett, **Solarcentury**

"For residential systems, I predict grid parity by 2013 or 2014 depending on exact price movements and location in the UK and only if grid prices do not drop unexpectedly due to government intervention or an unexpected utility price war. For commercial systems, the same timescale will apply with double ROCs and towards the end of the decade, without."

Rajiv Bhatia, **Alternergy**

"I believe that the UK is close to grid parity and should achieve this within two years for larger systems of 1 Megawatt and above. If one removes the cost of capital, smaller residential systems will also achieve grid parity within two-three years. This is based on energy prices rising by at least 5 per cent per annum."

Henry Dziuba, **SMA Solar UK**

"The term 'grid parity' can be misleading. Does the term refer to PV's competitiveness vs. wholesale generation prices, ie 'busbar parity', or the competitiveness of PV vs. end user prices ie 'socket parity'. By 2013-14, I expect grid parity of wholesale electricity with 'Socket Parity' being achieved by 2016-2017 as energy prices continue to rise."

Chris Laughton, **The Solar Design Company**

"The term is not well defined. It is taken to mean equality of the cost to end-user of PV per kWh. You might presume this would include the opportunity cost of PV capital. The assumptions of such costs are by no means an exact science. The industry has to agree what 'grid parity' means before we can say how long it will take."

Alan Aldridge, **STA**

"In the UK, all the forecasts show that grid parity is achievable and that we are well on the way. We've already taken 50 per cent off our costs in the last 12 months which is a major step towards it. While we continue to drive up volume it encourages suppliers to lower their margins further."

Steve Barrett, **Solarsense**

"I see 2014-2017 as the likely range for parity, depending on the impact of 'cheap' gas supplies and the UK solar market maturing as new storage technologies become viable. The VAT break on fossil fuels constitutes over 80 per cent of their subsidy, itself more than three times that for renewables – change this ratio around and we'll achieve parity much sooner."

Steve Fisher, **UTN Training**

"The greater the number of PV installations in the UK, the less money expended on more traditional power generation methods. However, as demand for electricity increases through technological development, to achieve PV grid parity there would need to be a culture shift, awareness and essential training to allow the technology to catch up with demand."

Markus Hoehner, **Hoehner Research & Consulting Group**

"The UK residential market is closer to grid parity than many think. Assuming a household electricity rate of €0.16/kWh, a discount rate of 4%, 1.5% OPEX, 1% annual system degradation rate, inflation of 3% and an energy yield of 900kWh/kWp, prices need to hit €1,800/kWp for a full equity financed system to reach grid parity."

Sven Armbrecht, **LG Electronics**

"Grid parity is not far away thanks to massive cost reduction efforts from all companies active in the solar sector. With increasing electricity prices, solar energy is getting more and more attractive for UK households. LG Electronics is dedicated to support the development towards reaching grid parity."

Power of the sun

Jerry Stokes, president Suntech Power Europe, looks at the potential of European solar expertise

Yes, there is a market consolidation going on and we are all aware of the fact that the gold rush period of the solar industry is over just as it was after the hype of other high-tech industries such as the mobile phone or internet markets. Unfortunately however, the focus of the current discussions is nearly always placed on the module producing part of the business. This shouldn't be the case as there are at least four jobs in the European PV industry not related to making modules for every one that is.

European companies such as European automation system and inverter suppliers as well as project developers and distributors have already started to branch out into neighbouring European countries and have become global players as world markets continue to grow. Their expertise and strength is sometimes overlooked by companies that would like to pretend that the module is everything. It is not. The solar industry covers all parts of the value chain from R&D, equipment making, material and component manufacturing, cells, modules, inverters, structures, distribution, financing, installation and others.

Global opportunities for the solar industry are still growing with great potentials in the USA, China and Japan but also in Europe where the maturing market shows a development towards smart solutions, high efficiency for small systems and limited space, residential systems and self consumption. There are a number of innovations that might not look spectacular at first but are a big step forward for resellers, installers and the overall cost reduction of solar. Instead of jeopardizing the industry with protectionist measures capable of pushing the increased adoption of solar and distributed generation back by years and put millions of jobs downstream at risk, the solar industry should work together on achieving lower prices to make solar more affordable, reduce the dependency on imported fuels and offer hope to those for whom reliable access to affordable solar energy is currently a dream.

Singled out: Jerry Stokes, Suntech Power Europe, says the module is not everything



The Oil & Renewable Energy

The Oil & Renewable Energy Show 2012

Borne out of technologies working hand in hand to achieve energy efficiency, the show features some of the best respected names in the industry in both the Oil-Fired and Renewable sectors. If you are looking to keep up to date with all the latest developments in the industry including the Renewable Heat Incentive (RHI) and The Green Deal, The Oil & Renewable Energy Show is a must visit for:

- Oil, gas and renewables installers
- Specifiers
- Technicians
- Those interested in self-build
- Those interested in renewable technologies

Your FREE ticket entitles you to exhibition entry plus FREE access to practical demonstrations and seminars delivered by industry experts including:

- Renewable Technology Review
- Easy MCS – Training for the Green Deal
- EPCs – a debate
- RHI – What's going to happen and when?
- GSHPA – An overview of Ground Source Heat Pumps

Sponsors:

@Oil_Renewable

Kingspan Environmental · PLUMB CENTER · PARTS CENTER · WORCESTER Bosch Group · Harlequin · RIELLO · WARMFLOW · OFTEC

Show is fast approaching

Register now at: **www.oilandrenewableenergyshow.co.uk**

17th & 18th October 2012

Manchester Central
Petersfield | Manchester | M2 3GX

For all enquiries regarding exhibiting or marketing opportunities surrounding the event, please call the events sales team on **01565 653 283**.

From the publishers of:

Oil Installer

Renewable ENERGY INSTALLER THE BUSINESS OF MICROGENERATION

Panic not

The government's decision to cap the funds available to the Renewable Heat Incentive (RHI) is not necessarily bad news, says **David Pepper**, managing director of Lochinvar UK

On the surface, the recent announcement that the government would cap the funds available to the Renewable Heat Incentive (RHI) at £70m was a little dispiriting. It has also said it will pull the plug completely at just a week's notice if it looks like the scheme will go over budget. Again, that's not really a massive vote of confidence.

On top of that, it delayed the start of the domestic RHI for a year until next summer.

However, this is not all bad news. At least, there is now some welcome certainty and we have something to work with. The heating industry and its existing and potential customers can now plan for the future safe in the knowledge that there is a ring-fenced budget for the scheme.

The vast majority of applications for RHI payments so far have been for biomass schemes – 80 per cent of projects; accounting for 98 per cent of total heating capacity generated by the scheme. This is, in part, because these schemes are relatively straightforward to install and meter

Our government, which came into office claiming it would the greenest ever, has changed its mind far too often on energy issues. The Feed-in Tariff payments were changed (although that was the right decision in the end); and it dropped the ball spectacularly by failing to make 'consequential improvements' mandatory under Part L of the Building Regulations.

On top of that, there seems to be no clear concept of how the Green Deal, which is due to start this October, will be implemented because the professional competence criteria for installers are not achievable under the current arrangements.

Metering - simple or complex?

However, let's give credit where it is due. The RHI is up and running in the commercial sector and the regulator Ofgem is trying to iron out some of the problems and learn lessons from the projects that are now in place. For example, heat metering is proving to be a major sticking point. Currently, metering can be classed as either 'simple' or 'complex'.

If your system is classified as complex it means some parts qualify for the RHI and others don't. The user only receives payments for the heat used, which means the systems need meters to measure heat used and others to calculate what fraction of the heat comes from the RHI approved part of the system.

The meters must be good quality; they must be well installed and regularly calibrated or the data produced will be inaccurate, leading to incorrect RHI payments. There are currently no professional standards for heat meter installation and that is something that must be quickly addressed.

The vast majority of applications for RHI payments so far have been for biomass schemes – 80 per cent of projects; accounting for 98 per cent of total heating capacity generated by the scheme. This is, in part, because these schemes are relatively straightforward to install and meter – but the unintended consequence is that other renewable technologies are missing out.

To its credit, Ofgem is trying to simplify things. It has published a Frequently Asked Questions document and promised to give more guidance on how to make a successful application for RHI payments.

Think positive: David Pepper, Lochnivar UK, says the government's decision to cap the funds available to the RHI is not necessarily bad news

The decision to set a budget and rules of engagement means our industry can get on with its job of ironing out the technical issues – particularly installation standards for heat meters, but also some of the more general issues surrounding the production of renewable heat.

The scheme is on a much more modest footing than we all hoped but at least it is moving forward. Now the government must stick to its guns and give the industry a chance to get on with delivering our part of the bargain – the solutions and the technologies that underpin all political ambitions for cutting carbon and improving energy security.

Two minutes with . . .

Who are you?
Mike Lowes, managing director of Renewable Solutions UK

What do you do?
I run a large national multi-technology renewable energy sales, installation and consultancy company.

Where are you?
We are based in Liverpool at present, but are in the process of moving in to a new purpose-built HQ on the Wirral. We have satellite offices in Belfast, Sunderland, Edinburgh and Swindon.

How's business at the moment?
PV is a challenge as I'm sure it is for us all. If the government left it alone for a while then consumer-confidence would return - fact. Biomass and heat pump sales are strong, and turbines remain a popular purchase. Our GridBuddy is a great success for us as is our new RS Guardian data-logging system. We have launched in Scotland and Northern Ireland and are finalising an office in Atlanta, from where we will be trading by 2013.

How could it be better?
As noted, the government could help the industry by supporting it. At present they seem to be intent on doing anything but. Aside from that, the company is in a very strong position and continues to move from strength to strength.

Who do you admire in renewables?
Iain Calderwood, formally of Secon Solar. He was instrumental in developing solar thermal in the UK when there was no established market and worked closely with the likes of the STA for many years. He is retired and enjoying a lazy life, I hope.

What's the best business advice you have received?
Worry about how well you are doing, not how well everyone else is doing.

How are you going green?
We have solar PV, a solar tracker, thermal, biomass and under-floor heating at our new HQ, so we are certainly practising what we preach. We recycle 100 percent of our packaging and have our own compactor. We also run a fleet of Hybrid assessor vehicles.

Raising the roof

Solarcentury has announced that work is well underway to completing London's largest solar array having passed the half way stage in July

An impressive total of 4,400 solar panels are currently being fitted by the company above London's Blackfriars Railway Station as part of a multi-million pound upgrade of the historic site.

Key milestones have already been achieved on the project with 180 panels successfully fitted in a test phase by the end of February followed by the 2,200th panel being installed in early July.

The cells, made by Panasonic, are designed to provide 900,000kWh of clean energy a year – almost half the station's annual power consumption – and will become fully operational later this year.

When completed, the 6000m² array will create only the second solar bridge in the world alongside Kurilpa footbridge in Brisbane, Australia.

Network Rail, which owns and operates the site, is also installing other energy saving measures such as sun pipes for natural lighting and rainwater harvesting which, alongside the solar PV, is hoped to reduce Blackfriars' carbon emissions by an estimated 511 tonnes per annum.

The Victorian bridge, constructed in 1886, was overhauled and widened in time for the Olympics to cater for more passengers and longer trains on the Thameslink route from Bedford to Brighton.

Solarcentury's ceo, Frans van den Heuval, said: "Blackfriars will be one of the world's great solar power installations. Architecturally challenging, the project demonstrates what is possible with this technology in dense urban areas. We've been working amongst one of the most complex build programmes in the country, at height, over water and live train lines."

Paul Byrne, Network Rail senior manager for Blackfriars, added: "We've rebuilt Blackfriars on a 125 year old rail bridge, creating a 21st century, solar-powered station on Victorian foundations. Blackfriars' iconic location spanning the River Thames makes it a showcase for the potential of solar power."

Trail blazing: The installation of London's largest solar array above Blackfriars Railway Station is scheduled for completion later in the year

New directions

Mace Midlands was keen to construct an efficient and cost-effective solar array on the roof of its headquarters. However, without a south-facing roof to use, it required an alternative approach and a design that would prove equally efficient. Drawing on the expertise of IBC Solar UK, this was achieved and is producing impressive results.

Built in 2009, Granary House is a 3,500 sq ft office complex located in Granary Wharf Business Park, Burton-on-Trent. It's the headquarters of Mace Midlands, specialists in the design, specification and installation of electrical and security systems for commercial, industrial and public sector clients across the UK.

The building incorporates a number of eco-friendly designs aimed at reducing its carbon footprint and improving energy efficiency. Sun tubes allow natural daylight to illuminate stairwells, heating throughout the building is provided by an air-source heat pump and all electrical sockets are isolated when not in use, ensuring IT hardware and other electrical equipment doesn't sit in standby mode. As an MCS-accredited installer, Mace Midlands was keen to add to its green credentials and use its roof space for solar PV.

The challenge

The roof of Granary House has an east-west elevation and a slightly shallow 20-degree pitch. This prevents the construction of what is often deemed to be the most efficient solar array design – a south-facing installation. Mace Midlands was looking for a reputable supplier that could offer the best advice about solar PV hardware, guidance on how to maximise energy production and a company that could offer ongoing technical support if and when, required.

Mace Midlands was established in 1985 by managing director and founder Simon Chapman. He explained: "There's not much historical data in the UK that shows the performance of solar panels situated on roofs with an east-west elevation. Historically, industry says that you need a south-facing roof to make solar work. That simply isn't the case as we are getting some excellent results with this set up. The monitoring of each elevation allows us to collect some interesting data which backs this up."

The solution

IBC Solar UK helped with the solar array design and provided two Sunny Boy 12000 TL inverters plus 112 SunPower STP 250 solar panels (56 on each elevation). The project was completed in just two-weeks following planning approval. Despite the unusual east-west configuration of panels, Mace Midlands says it is experiencing excellent performance results with an estimated 21-23,000 kWh/year output.

Mace Midlands has been working with IBC Solar UK since the company first opened its UK subsidiary in September 2010. Impressed with the company's professionalism and passion for the industry. Chapman said: "IBC Solar UK has a vision of excellence. The support we received was outstanding. It is customer-driven and it is an outstanding supplier in the industry."

Flying the flag: One of A Shade Greener's 10,000 existing rent-a-roof installations. The company continues to succeed in the free solar market despite recent FiT reductions

Survival of the FiTtest

In the light of the Feed-in Tariff cuts and its subsequent impact on the proliferation of free solar schemes, **Sarah Dyson**, A Shade Greener, explains why the company's PV business model is still going strong and remains as attractive as ever to homeowners. Paul Stephen writes

Since the government reduced the Feed-in Tariff (FiT) to 16p for all domestic installations registered after 1 August, the number of companies able to offer free solar panels has tumbled. Previously able to recoup the costs of the system by claiming the subsidy themselves whilst homeowners benefitted from free or cheaper electricity, many of these businesses no longer feel that the numbers stack up.

However, whilst the likes of FreeSolar4U has suspended taking on new leases (according to its website), and other 'free solar' alternatives are limited to loans offered by companies including Engensa and Caplor Energy, which are typically paid back with interest over ten years, South Yorkshire-based firm A Shade Greener is as keen as ever to build on its 10,000 installations to date.

"The decrease in FiT doesn't actually have any impact on free solar for our customers because it is the free solar company that is taking the hit," says Dyson. "It does not affect how much electricity the panels produce, and accordingly it doesn't affect how much free electricity is available."

A Shade Greener says it is a market leader in providing solar energy nationwide at zero cost to the consumer – a key factor in maintaining a healthy interest in the scheme despite the demise of rival companies.

"Our scheme is entirely free - at no point do we ask for any contribution from our customers. Many free solar companies charge something but we don't. We will even remove the entire system and reinstall it at least twice during the 25 year period for reasons such as roof replacement or loft extensions. Most free solar companies charge for that and some even expect the customer to compensate them for lost revenue.

"We install our system entirely free-of-charge and the homeowner can use the free electricity that the system generates. In return, we receive the FiT payments but also insure and maintain the system. At the end of the 25 years, the homeowner can opt to keep the system or we will remove it entirely free-of-charge."

Dyson adds that with thousands of satisfied customers and large energy savings to be made, there remain several reasons for homeowners to get in touch and benefit from free solar. She also refutes any claim that signing one of its rent-a-roof leases in anyway breaches mortgage terms or affects the ability of homeowners to sell their properties.

"We have installed over 10,000 systems since we commenced in April 2010. The Council of Mortgage Lenders consulted our own in-house solicitors when they were putting the guidelines together. Our lease has been approved by nearly 40 mortgage companies, including all the main high street lenders.

"The fact we are renting the roof space makes it easier for people to buy and sell a property with our system in place. The new homeowners don't have to sign any documentation and simply purchase the property with our lease in place and continue to use the free electricity. We estimate that over 1,000 properties have already been sold with our system in place."

Pie in the sky?

James Woollard, Evergreen PV asks whether solar PV kits can become self-funding without the need for a Feed-in Tariff?

The UK solar market has been through a turbulent 18 months, highlighted recently with the government announcing plans to cut the solar tariffs available yet again.

At the start of 2012 tariffs were reduced from 43p to 21p per kilowatt-hour. From August 1 it fell to 16p per kW hour, a month later than expected. It will fall every three months depending on market conditions.

There's been a lot said since the government made the latest Feed-in Tariff (FiT) announcements, saying the tariffs had to be cut to reflect lower costs of installing solar panels. Meanwhile, experts have been out in force arguing that thousands of jobs have been lost and the industry has spare capacity because the government created uncertainty about tariffs and cut them too sharply.

Over the last few months I think we've been so obsessed with the rate drops that it has skewed the market and customers away from what is the real issue facing them as home-owners and businesses – energy, energy cost, energy security and the long-term potential.

When we set up Evergreen PV two years ago, our intention was to address the energy needs of homes and businesses, source the world's highest quality products, and create a better world for those like us wanting to reduce our reliance on carbon based fuels.

Our success to date has been based on homeowners and business owners wanting to do something to reduce their energy bills and help the environment.

However, there's a case that the 'help' from the government in the last couple of years has robbed companies similar to ourselves, such as Power One and SMA, of this opportunity. Consumers now want something for nothing. The FiT has distorted the consumer's view of renewable technologies. Yes, it's made the news and made people more aware of renewables, but at a cost. There's also a strong argument that the handling of the Renewable Heat Incentive (RHI) scheme has harmed long-term take up. Consumers/businesses are not asking about long-term savings and eco-credentials, they all want to know how much they can make.

Our success to date has been based on homeowners and business owners wanting to do something to reduce their energy bills and help the environment

It's no secret that the industry has become flooded with installers. And, with the government suggesting that because of the overcapacity in the solar industry this is a good time to haggle over the cost of solar panels, inverters and solar installation, the right messages aren't getting across.

As a result, the wrong products are being sourced, and the wrong people are selling them (people trying to make a quick buck). Already it's fast getting a reputation similar to that of the double-glazing industry.

Like with most things, a long-term view is needed. Solar PV kits can become self-funding without the need for a FiT to encourage purchase and installation. There are a lot of great products being manufactured at the moment, from England (Sharp for example), to the Far East Asia (Samil Power, Kinve Solar, for example), which can last for years and produce great results. But it's about getting this message out to the consumer. People will see their return on investment, but it will take time. We need to work together to get this across, from manufacturers and suppliers, to government.

It's great that the government has shed light on the final FiT subsidy. But let's turn the conversation from a fixation on FiTs to energy and making homes/businesses a more efficient environment with lower running costs and lower carbon emissions.

It's all in the mix

Make a note in your calendar as **The Oil & Renewable Energy Show** is about to return bigger and better than ever before at Manchester Central on Wednesday 17 – Thursday 18 October

New and improved: The Oil and Renewable Energy Show 2012 promises to build on 2010's successful event

Following on from the success of the inaugural show in Coventry in 2010, next month's Oil and Renewable Energy Show is guaranteed to bring you the latest cutting edge technologies in both the renewable energy and oil sectors.

Some of the best known names in renewable energy have chosen to become sponsors of the show including Kingspan Environmental, Worcester Bosch and Plumb Center whilst other high profile brands have also taken floor space.

Hundreds of visitors have already pre-registered for the show which promises to be the most important event of the year for manufacturers, installers, specifiers and consumers embarking on renovation or self build projects.

The breadth of technologies featured at the show is unparalleled with solar thermal, PV, biomass, heat pumps, wind and hydro being showcased alongside the latest oil fired heating equipment.

The finishing touches have also been made to an exhaustive two day seminar series tackling diverse themes such as integrating oil and renewable energy, training for Green Deal, the Renewable Heat Incentive and the use of Energy Performance Certificates.

Respected industry commentators will lead the sessions from organisations including YouGen, Glow-worm, ICS, Plumb Center and NAPIT.

The event is being organised by A & D Publishing – publishers of a portfolio of titles including Renewable Energy Installer and Oil Installer.

Exhibition director, Jonathan Hibbert, said: "Our show is borne out of technologies working hand in hand to achieve energy efficiency, and, without doubt, it will be the most important event on this year's calendar for everyone involved in the specifying and installations of renewables and oil heating.

"Combined with the exhibition will be an impressive seminar programme, bringing together some of the industry's most influential, high profile speakers."

Register now for your free ticket at **www.oilandrenewableenergyshow.co.uk.**

Wednesday 17th October	Seminar Programme	
10.00 -11.00	Training for Green Deal	Pete Roberts (Head of Mentoring, Easy MCS)
11.00-12.00	Solar Thermal Technology and its Applications	Tony Staniforth (Specification Sales Director, Kingspan Environmental)
12.00-13.00	Green deal – What's it all about?	Lu Rahman (Editor, Renewable Energy Installer) Don Graham (Sales Manager, Plumb Center) Cathy Debenham (Director, YouGen) Jacqui Crawford (Director, OFTEC)
13.00-14.00	Panel Debate – The Future of Oil Heating	Mark Askew (CEO, FPS) Jeremy Hawksley (Director General, OFTEC) Peter Carter (Sales Director, Atkinson Equipment) Barry Gregory (MD, Riello) Jane Hughes (Editor, Oil Installer)
14.00-15.00	Integrating Oil with Renewables	Don Graham (Plumb Center) Chris Clancy (Worcester Bosch)
15.00-16.00	EPCs – An overview including their use and training	James Dodd (Director, The National EPC Company)

Thursday 18th October	Seminar Programme	
9.30-10.00	Welcome address	Tom Greatorex MP Jeremy Hawksley (Director General, OFTEC) Martyn Bridges (Technical Director, Worcester Bosch)
10.00 -11.00	Renewable Technology Review	Garry Broadbent (Managing Director, ICS) Alun Williams (Marketing Manager, HETAS) Pippa Wibberley (Commercial Director, Glow-worm)
11.00-12.00	Best Practice and Technical Review	Paul Rose (Technical Director, OFTEC
12.00-13.30	Future Renewable Energy – Are Renewables Right for your Business?	Watson Carlill (Director, Future Renewable Energy) Andy Buchan (Director, Future Renewable Energy)
13.30-14.30	RHI – What's Going to Happen and How Should you Prepare?	Lu Rahman (Editor, Renewable Energy Installer) Cathy Debenham (Director, YouGen)
14.30-15.30	Ground Source Heat Pumps – An Overview	Dave Matthews (Chief Executive, GSHPA)

Panasonic
ideas for life

IN 25 YEARS THERE WILL BE A LOT OF CHANGE. ONLY THE PERFORMANCE OF HIT SOLAR MODULES LASTS.

Panasonic is truly committed to quality since starting development and manufacturing of photovoltaic modules in 1975. Our long track record is supported by our claim rate of only 0.0022 % out of 3,052,799 modules produced in our European factory in Dorog, Hungary (as of Feb. 2012) with 0 cases of output guarantee*.

* Power output guarantee of 25 years for 80 % of Pmin.

HIT®
Photovoltaic Module

Panasonic Eco Solutions
Energy Management Europe

SANYO Component Europe GmbH

eco ideas www.eu-solar.panasonic.net

Perfect partnership

The Green Deal can seem like a complex and increasingly remote scheme for SMEs involved in the renewable energy sector. **Dr David Strong,** chairman of the newly launched Energy Efficiency Partnership for Buildings (EEPB) explains how they can still have their say

As someone who has been involved in the renewable energy sector for several decades, I am very excited by the opportunities offered by the Green Deal. On the one hand, it will enable householders to invest more affordably in energy efficiency measures. On the other hand, it will help the development of organisations involved in renewable energies. This includes SMEs.

However, the Green Deal is a vast scheme, where organisations involved need to work together to benefit from each other's expertise. This is why the Energy Efficiency Partnership for Buildings (EEPB) was put in place. Launched in April, it is facilitating closer working relationships between industry, government and community organisations on aspects of the Green Deal, ECO and energy efficiency in buildings.

It acts as a platform for communication between national and local government, voluntary groups and business, in particular collaborating through Green Deal forums and working groups. The Partnership looks beyond Green Deal though: We are establishing dialogue on all areas of energy efficiency policy and research, including energy efficient heating, fuel poverty, the implementation of the UK's microgeneration strategy, insulation and more.

Smaller installers in particular can sometimes feel that their concerns and ideas are not heard among the vast number of bigger organisations. The EEPB will help them find their voice.

By involving everyone in the industry and by taking advantage of their knowledge and expertise, we will give the Green Deal a better chance of success. **www.eepb.org.uk.**

Good times: David Strong, EEPB, is excited about the opportunities for both the homeowner and the SME

A helping hand

With the launch of the Green Deal initiative upon us, businesses across the industry are at the vital preparation stage, for what will undoubtedly be a radical overhaul of the present system. Andy Wynter is dotting the Is and crossing the Ts at Green Deal Consulting. With a raft of industry experience, Wynter and his team are guiding installers and advisors through the process of becoming Green Deal accredited.

All Green Deal installers will require certification and must adhere to the Green Deal Code of Practice. Green Deal Consulting assists with all aspects of installer accreditation, from sourcing appropriate training and guidance through the essential paperwork, ensuring installers are prepared to receive that all-important Green Deal mark.

Currently, Green Deal Consulting is training a team of Green Deal advisors to carry out property assessments on behalf of installers. As experts within its field, it will provide the integral link between the client and the installers. The process will take into consideration several factors, including the way the property is used and local climate, as well as a detailed and improved version of an Energy Performance Certificate (EPC), adapted to the Green Deal requirements.

Guiding light: Andy Wynter and his team are helping installers and advisors through the process of becoming Green Deal accredited

The assessment of a property, residential or commercial, is a fundamental part of the Green Deal process. The specialist assessment will provide customers with the impartial information they require to make an informed choice as to whether the Green Deal initiative is right for them. In addition, it will outline suggested work to increase the green credentials of a property, which Green Deal installers will take on board.

Green Deal and the installer

The Green Deal is the government's flagship policy for achieving low impact buildings in existing stock and, as a result, hitting the carbon targets set by the Climate Change Act. **Tim Pollard**, Plumb Center's head of sustainability, who has worked in construction materials for the past 24 years, looks at what it means for plumbers and installers and where Plumb Center fits in

Green for go: Tim Pollard, Plumb Center, outlines how the company is helping the plumber and installer approach Green Deal

Details are still being finalised, but this is an overview from my perspective, having lived with the development of Green Deal over recent months. It is useful to view Green Deal as a framework, rather than a single scheme. It has been deliberately designed to allow different models to flourish.

Green Deal covers around 45 product areas, or 'measures'. Of course, not all of these will be familiar to the plumbing and heating trade – window upgrades for example. But at Plumb Center we see the replacement of a domestic boiler as the trigger for discussions about a bespoke package of measures for any particular property. And, logically, we see the heating installer as being the prime focus of Green Deal.

We believe that this is an opportunity for traditional installers to offer their customers a fuller service – by becoming Green Deal Advisors as well as installers, and also by providing a wider range of complementary 'measures' – such as roof insulation.

So, let me outline what Plumb Center will be offering to its customers, when the Green Deal roll out begins in October. Our model - which is especially designed to enable SME installers to fully participate in Green Deal - is made up of the following components:

Training – we have organised fast-track training for those holding either Gas Safe or MCS qualifications, to allow them to become fully accredited Green Deal Advisors and/or Green Deal Installers. Certified by Napit, we will be delivering this training at a really competitive price.

Software – we are developing a software package for the iPad that will enable Green Deal Advisors to introduce Green Deal, carry out the assessments, identify potential ECO opportunities, carry out technical surveys, lodge EPCs and to be fully compliant with the necessary regulations.

We believe that this is an opportunity for traditional installers to offer their customers a fuller service – by becoming Green Deal Advisors as well as installers,and also by providing a wider range of complementary 'measures' – such as roof insulation.

Products – we are assembling a range of Green Deal products that are especially selected and priced for the purpose, which will be readily available from Plumb Center branches throughout the UK.

Finance – for those who take up all the above options, Plumb Center will provide access to Green Deal finance.

We believe that the Green Deal process must be both quick and efficient if we are to see a successful scheme. The needs of 'distress purchasers' of boilers must be addressed speedily, and for this reason I can see clear benefits to the customer in the Green Deal Advisor and installer being the same person. And there needs to be a robust nationwide supply chain in place to expedite the process.

So, engaging with SME installers is a fundamental to providing householders with the security and comfort of dealing with trusted, local professionals of their choice. These really are the people best placed to deliver Green Deal.

The low carbon sector will receive another boost with the introduction of the Green Deal. Becoming a Green Deal installer is not that easy, however. **Steve Fisher**, managing director for UTN, which provides Green Deal assessor and insulation training, explains PAS 2030, the standard that installers need to meet to deliver services under the scheme

Look and learn: UTN, based in Wakefield, provides Green Deal training for insulation installers and assessors, renewables courses plus a range of construction and health & safety programmes

Getting ready for the Green Deal

"While the Green Deal is a welcome boost to companies dealing in the low carbon products covered, the procedures associated may be prohibitive for some SMEs, with many not realising the lengths they have to go to, to meet the legislation. The larger organisations are of course clued-up, which potentially creates a situation where one-man-bands and small businesses can't compete for a share of the Green Deal market. This presents an unhealthy trading environment, with less choice for the consumer and some companies suffering unduly when they should, in-fact, be receiving an increase in profit-making opportunities.

PAS (Publically Available Specification) 2030: 2012 - Improving the Energy Efficiency of Existing Buildings, is the standard that has to be met in order to deliver services under the Green Deal. To meet this legislation, companies must apply, have their office and on-site work assessed and be inspected periodically once they have been approved – much like the Microgeneration Certification Scheme (MCS). There is good news for many Renewable Installer readers; if you're Gas Safe Registered or already compliant under MCS you will be exempt from PAS 2030.

The standard details the processes for the installation and quality of service provided to the customer before, during and after the installation, covering:

- Gas, oil and LPG condensing boilers
- Heating systems and controls, including underfloor and electric storage heaters
- Flue-gas recovery devices
- Wall, loft, floor and roof insulation
- Loft insulation
- Draught proofing
- Energy efficient glazing and doors
- Lighting fittings and controls
- Renewable systems, such as heat pumps, solar thermal, solar PV and biomass

Items assessed within PAS 2030, include:

- Pre-installation surveys
- Use of agreed installation method statements
- Use of Green Deal approved products and systems
- Building regulations and Planning permission
- Adequacy of site-supervision and competency of technicians
- Supervision of sub-contractors
- Equipment, tools and calibration
- Checking, handling and storage of products/systems
- Customer contact and information supplied
- Complaints procedure
- Insurance and warranty provision

Once certified under the Green Deal, the scheme requires an on-going review of installers, based on an evaluation of at least 1 per cent per annum (minimum of 1) recorded installation. This will usually translate to an annual office and a number of site visits; to both complete jobs and those that are in progress. Companies will also have to comply with the Green Deal Code of Practice, details of which will be released over the coming months.

The Green Deal Register opens in August this year and to help SMEs and sole-traders get on it, more support needs to be given. Ideally, some of the red tape should to be lifted, and if that's not achievable, some hand-holding should be available to get Britain's smaller businesses through the legislative process. At UTN we're happy to provide advisory sessions when it comes to PAS 2030, so if any Renewable Energy Installer readers are interested, do get in touch."

FIND OUT MORE ABOUT UBBINK INNOVATION AT **www.ubbink.co.uk**

Less energy, more comfort

At Ubbink, we have some great ideas about how buildings should live and breathe... and how products and systems on or under one roof should work together for a better internal environment, with reduced impact on our external environment.

Our ever-evolving product range includes • advanced heat recovery ventilation - part of our Passive House strategy • integrated systems to combine the efficiencies of solar thermal and state-of-the-art gas heating • ultra-efficient solar PV • integrated solar thermal and PV arrays for improved aesthetics • lead-free flashings • and much more.

We are part of Centrotec Sustainable AG, one of the world's leading providers of energy-efficient technologies for buildings, with operations in over 45 countries.

To find out more about Ubbink innovation here in the UK, call us today on **+44 (0)1604 433000** or visit **www.ubbink.co.uk**

ubbink

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 Roof System 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 are guaranteed weathertight with our 15-year Roof System Guarantee. 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

Deal or no deal?

It would have been virtually impossible to be unaware of the upcoming Green Deal. Reports suggest there is much business to be had from this scheme which will see the installation of energy efficiency technologies within properties in the UK. How do installers view the Green Deal and the opportunities it brings asks **Lu Rahman**?

This autumn sees the launch the Green Deal, a flagship scheme which allows energy efficiency and low carbon technologies to be installed at no up-front cost to the householder.

Many installers are looking ahead to the Green Deal and associated business. Chris Hopkins, Ploughcroft, says: "Since the launch of the Feed-in Tariff, the Green Deal represents the single largest opportunity for renewable installers. Our Green Deal installer and assessor courses are proving popular, which we are running in our newly refurbished Green Deal training centre, as we help the industry to take advantage of this new initiative."

Andy Buchan, CEEC is equally positive. He says: "We at CEEC believe that the Green Deal has to be the way forward. In this country there are 14 million homes that are poorly insulated. Before we can consider renewable energy products (like heat pumps), we have to look at insulation and the Green Deal has the potential to do this."

Both Hopkins and Buchan are however, not without their doubts. "We were used as a pilot company for the Green Deal and on the 17 April we were inspected by UKAS, which included quality management, a site inspection and APHC inspecting us as installers. Our only concern is whether the government is ready. We cannot afford more delays, especially following the Renewable Heat Incentive debacle – it only deepens mistrust for the whole industry and the public.

"The most important benefit to us at CEEC is that the Green Deal is aimed at what we always advise our future customers ''insulation before installation."

Hopkins adds: "I believe it is SMEs who are best placed to deliver Green Deal advice and installations and who have the expertise to do so on a local level. If this lies in the hands of a few large providers it may compromise the service to householders. I have been calling for transparency and openness regarding how the initiative is managed and run, in order to ensure that SMEs are given the best chance to reap new business opportunities from the scheme."

Dr Chris Jardina, technology director, Joju Solar, says the concept of the Green Deal sounds great. But will it work?

He asks that while the Green Deal is intended to create a market for low carbon retrofitting, is it possible to 'create' a market out of thin air? "The current numbers of people who are undertaking whole house retrofits of this sort are small. Whilst removing barriers of up-front cost can only be a good thing, is there any evidence that householders want to renovate in this way, and if so what will the uptake be?"

Looking ahead: Andy Buchan, CEEC, is feeling positive about the Green Deal

Jardina also points out that the benefit of a loan scheme over straight purchase depends on the rate of interest being charged on the loan. "With talk of 7.5 per cent interest rates being charged over long timescales, it is questionable whether this actually represents a good deal for the householder. It will also restrict the range of technologies that can be offered – the higher the loan rate, the fewer measures will actually meet the Golden Rule. Certainly being able to add the cost of refurbishment to a mortgage would seem a preferential financial case at current interest rates. Other technology-specific financing such as Sharp/Hitachi offering for solar PV look just as financially attractive but contractually simpler," he adds.

Jardina is concerned as to whether the loan repayments will actually be met by the energy bill savings. "Although any measure has to meet the Golden Rule to ensure that predictions of savings outweigh loan repayments, actual savings in the energy efficiency market are notoriously difficult to predict due to the 'rebound effect'. This is where not all benefits of an energy efficiency measure are taken as cash savings. A classic example is insulation, where some of the benefits are taken as a warmer home, rather than lower bills, which would break the Golden Rule in practice, although not in theory."

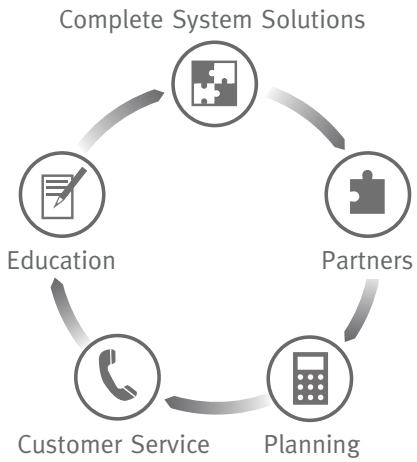
For installers, the picture is complex, he says. Most installers are specialists in one or a few technologies, rather than covering the whole range of energy efficiency and renewable technologies. "Developing a project will require coordination of smaller teams, and a finance partner as well. This kind of project structure will lead to larger project overheads. Additionally, this appears to favour the Big 6 energy companies, who would have the ability to offer the largest range of technologies."

Whilst offrering opportunity, the Green Deal and decarbonising UK housing stock is a challenge for the industry.

The sun has always given us great ideas.

Today, we use it more effectively than ever before.

Our fascination with the sun is perpetual. That is why we develop complete photovoltaic systems that simplify your everyday working life. High-efficiency modules, easy installation, first-rate service – MAGE SOLAR provides a one-stop solution. So, make it easy for your customers to benefit from the sun too.



Contact us for free:
0 0 8 0 0 / 6 2 4 3 7 6 5 2 7
w w w . m a g e s o l a r . c o . u k

MAGE® SOLAR

THE SUN ON YOUR SIDE

Body building

Ahead of the launch of the Green Deal in October, **Gemserv** is pleased to announce that it has been appointed as the Green Deal Oversight and Registration Body (GD ORB)

We are well acquainted with the challenges and requirements involved in operating a scheme of this nature. Gemserv is at the centre UK's energy and environment sectors, providing a range of services including consultancy, market design, certification, training and support services. We are hard at work using all our skills and experience in these fields to design and develop the processes needed to ensure the government's flagship energy efficiency programme is a success.

We will listen to and work with a number of organisations, such as government departments, trade associations, amongst other market participants. Whilst we cannot guarantee the future, we can do our best to ensure that, within our remit, we work hard with participants to make it work.

Over the next three years, as the GD ORB, Gemserv will be responsible for the registration of assessors, installers, and providers, as well as monitoring compliance with the Code of Practice. We will be working in partnership with REAL, who can provide expertise in consumer protection.

The service commenced in August (ahead of the introduction of the Green Deal in October), alongside the launch of the GD ORB website which holds the ongoing register of all participants.

We are looking forward to again bringing together our skills and expertise to drive forward standards for the Green Deal and to see the scheme become a great triumph

www.decc.gov.uk/orb

Training ground: The Green Wall at Burnley College which has become a Green Deal accredited centre

Northern star

Burnley College has become one of ten Green Deal-accredited training centres in the UK

The Green Deal will require qualified Green Deal Advisers capable of producing Energy Performance Certificates and Display Energy Certificates.

In order to assess property under the Green Deal, assessors must hold a Green Deal Assessor qualification. By 2015 up to 100,000 Green Deal workers could be employed as part of the efforts to improve the way homes and businesses are heated.

Following a rigorous selection process, the college was successful in becoming the government's accredited Green Deal training centre for the North West. Demand for the qualification has been high, says the college, and over 40 delegates have already signed up for the three day training programme.

On a recent visit to the college, Mike Keoghan, director of skills at the department of business, innovation and skills, met college bosses and representatives from local green energy companies to discuss the training implications of the new Green Deal and to congratulate them on being awarded one of the prestigious accreditations.

John Shaw, head of construction at Burnley College, said: "Green energy is the future of this country and it's been kick started here in Burnley and the North West through the hard work of Burnley College staff and local companies. We have worked in partnership with local and national green energy providers, including Worcester Bosch, Speakman Contractors, EcoSolartech and the Low Carbon Energy Company, to ensure our training programmes and facilities meet the skills needs of the industry and we are delighted that this has resulted in us being awarded a highly sought after national training accreditation.

"Green Deal Assessors will play an important role in helping the country meet ambitious green energy targets and it is important that the qualifications they hold are properly accredited by the government. Our courses are innovative and recognised by many national bodies. One of the leading figures in our green energy provision, Mark Summerfield, was presented with a Worshipful Company of Lightmongers award by Her Royal Highness The Princess Royal in recognition of his work in developing our innovative sustainable energy courses."

As a National Skills Academy for Environmental Technologies, the college has developed a wide range of innovative green energy programmes for sixth form and degree level students and those currently employed in the green energy sector. The college is also committed to embedding green technologies into its own business operations, working with Speakman Contractors and LED Electrical to install a solar panelled wall which enables many energy efficiencies including its Gatehouse to be energy sufficient.

Making history

One of the UK's best-loved historic country estates, Chatsworth House, Derbyshire, has commissioned a biomass-fuelled advanced gasification CHP system that is set to reduce its carbon emissions by 90 per cent.

Work has already begun on the new system which is being designed and constructed by Lincolnshire-based LowC Communities. Utilising only the low-value timber felled as part of the estate's normal annual harvesting operations, the new system will convert it into electricity via an advanced gasification system known as Arbor ElectroGen.

This produces a clean, combustible gas that is used to power a combined heat and power (CHP) system - generating around 97 per cent of Chatsworth's annual electrical requirements. Nearly all of the heat created by the engine's cooling system and exhaust will be recovered and used in a new district heating network to supply the house, restaurant and garden glasshouses.

Nicholas Wood, land agent at Chatsworth, said: "This project perfectly illustrates our on-going commitment to sustainability at Chatsworth. There is normally a proportion of timber from our harvesting operations that is of poor quality and limited use – this will now be utilised on site as biomass. All felled areas are replanted thus ensuring that our woodlands continue to be sustainable."

Richard Griffin, chief executive of LowC Communities, added: "We are truly delighted that Chatsworth will be taking a leading position in reducing carbon emissions and I would hope that it demonstrates that if a stately home can achieve carbon-neutral status, then this level of reduction is well within the reach of all other types of buildings regardless of their size or age."

Renewable energy goes back a long way at Chatsworth. In 1893, the eighth Duke of Devonshire commissioned water-powered electricity generation turbines to harness the gravity-fed water system that was in place to feed the estate's famous fountains. This hydro-power system is still producing electricity to this day.

Best of both: Chatsworth House will now showcase a blend of traditional architecture with new CHP technology

Avoiding the pitfalls

Bruce Boucher of Bruce Boucher Consulting, outlines best practice for installing biomass boilers in order to ensure a working system for you and your client

Sound advice: Renewables consultant Bruce Boucher says investing time in properly understanding biomass boilers will pay off handsomely for installers

Biomass heating - does it work and can it work for you? Yes! However, let's be positive but with caution. Don't instantly accept the results of a feasibility study, invariably they are not a design document, neither are they always correct.

Most systems in the UK will be retro-fit, properly conceived and delivered, and should be rewarding to all involved. The great majority of biomass boilers on the UK market are from reputable manufacturers. It is the idiosyncrasies of the systems that have to be reckoned with.

Size matters

The main criterion is the actual biomass boiler capacity that is to be installed and 9 times out of 10, the current installed capacity won't automatically decide the biomass boiler size. I cannot stress enough that the actual sizing of the biomass boiler will be critical to the final outcome. Quite often clients assume it's a like for like swap. Never if ever is that the case.

A biomass replacement will not redeem any actual malfunctions in an existing system. If the existing system is in a poor state, badly maintained and poorly controlled, the new biomass boiler will not overcome this.

Do not mix an old water system with a new biomass boiler. Suggest to the client a possible interface such as a heat exchanger. If you are going to deliver this new heat to various zones, houses or heated spaces such as in a school or hospital, suggest installing a local interface such as X-Block. It can also help to consider a buffer or accumulator which can improve the performance of the system and reduce carbon.

"Good commissioning takes time and money"

Chalk and cheese

Biomass boilers like to work hard and will not turn off instantly as do fossil fuel boilers. Fuel is the next most important part to understand. If you want to be part of a successful biomass replacement heating system, you should also know about the fuels most commonly used - pellets and woodchip. They, again, are chalk and cheese in terms of the design and operation of a system.

When all of the above has been resolved, I cannot stress enough that the overall re-commissioning of the system is as important as all the work you have done to date. It is no good the biomass boiler supplier coming along at the end of all your hard work and commissioning his bit, when the rest of the system is being ignored. Good commissioning takes time and money. It won't be anywhere near as expensive to commission properly, as it will be returning days on end, hour after hour at huge cost to you if the overall system is not performing.

Safeguarding the system

It is also likely the client will want to keep some of their existing heating capacity as a safeguard against the new system requiring fettling and sorting in the first few months. Therefore, you need to design your piping configuration to keep the existing fossil fuel in-situ and on-line if required.

For those contractors wanting to develop and grow their business in an ever-expanding market, the time you invest in understanding these alternative heating solutions will pay off handsomely. Bruce Boucher Consulting is specialist in ensuring that systems work for you and your client. With 40 plus years' experience, we can help you and your client by delivering systems that work.

Most systems in the UK will be retro-fit, properly conceived and delivered, and should be rewarding to all involved. The great majority of biomass boilers on the UK market are from reputable manufacturers. It is the idiosyncrasies of the systems that have to be reckoned with

Clear thinking

Bruce Allen, chief executive of HETAS, offers some clarity on the Renewable Heat Incentive

As I sit down to write this article there is still a great amount of uncertainty surrounding the introduction of the government's Renewable Heat Incentive (RHI). Although a non-domestic RHI is already in place, the domestic version has been delayed and will be introduced some time in 2013. As you can imagine, this has caused a great deal of uncertainly for the renewables industry from manufacturers who are planning production, and installers who need training and accreditation.

As an interim measure the government introduced the Renewable Heat Premium Payment scheme from July 2011 to provide support for the domestic sector. The £15m fund aims to help people cover the purchase price of green heating systems and is intended to support up to 25,000 domestic installations.

In addition we expect the Green Deal to be introduced from October this year for assessors and from January 2013 for installers. Householders and businesses will receive a 'green loan' to install energy efficiency measures which will help lower the amount of fuel they use. This loan will then be paid back through electricity bills at what is hoped will be an attractive interest rate.

Then there's the Microgeneration Certification Scheme (MCS) which has to some extent been successful. Through the Feed-in Tariffs it has generated enough money to give the scheme a real boost. The MCS scheme will underpin the domestic RHI next year and will be of great benefit to manufacturers and installers who have taken the plunge and become MCS certificated.

The picture that is emerging is one of a great will to promote renewables, but so far a disjointed approach to a renewable energy installation infrastructure. As I write there is a lack of clarity about what products or measures will be covered by Green Deal and therefore what measures will be more appropriately covered by the RHI and MCS scheme. In my opinion the non-domestic sector for biomass over 100kW can stand on its own two feet. Commercial and industrial users have seen the benefits of using wood fuel in terms of lower running costs and carbon emissions. And with initiatives such as ENplus for wood pellets and the HETAS quality assured fuel scheme, end users can be confident they are buying good quality sustainable wood fuel.

For the domestic biomass industry I believe we need more clarity. At HETAS our goal is to help and support installers to understand the myriad of schemes and legislation, and to provide one clear point of reference for everything to do with biomass and solid fuel.

At the moment the reputation of the renewables industry is very much at stake, and we need more certainty for the future. HETAS is working with the government and wants to simplify

Answers answers: HETAS' chief executive Bruce Allen says there remains confusion over legislation for biomass installers

what's on offer for the installer and ultimately the customer. We need more joined up thinking so that Green Deal, MCS and RHI all work together rather than appearing to go in different directions.

We have got to remember that for the domestic sector the vast majority of installers are one man bands or small businesses. So think about one person working on one biomass boiler, and having to consider and deal with all those different schemes. In addition they all need to fit with the existing competent persons schemes, which will also change as they have to be UKAS accredited by 2014.

The picture that is emerging is one of a great will to promote renewables

Having said all this, I believe that the biomass industry has a great future. Biomass boilers are getting smaller and quieter, and HETAS training is now being mapped against national standards. And with only 200 MCS registered biomass installers across the country there are still lots of opportunities for installers working on gas and oil who are looking for additional work. Yes there is confusion over legislation and it is affecting the industry, but HETAS is doing its best to minimise duplication and provide a dedicated resource for solid fuel and biomass installers.

Back to school

Cambridge-based GG Eco Solutions has recently installed a biomass-fuelled district heating system at a large boarding school in Suffolk. The system became fully operational in March of this year and is already delivering significant financial and environmental benefits.

GG Eco Solutions says it brought considerable experience in biomass energy installations in Scandinavia to the project. The company aims to make switching to biomass energy easy by bearing the costs of installing, maintaining and fuelling the system. Customers pay for the energy they use at a discount to their previous fossil fuel costs and benefit from a competitive long-term price.

A typical installation comprises a biomass boiler, within a plant room, an automated biomass fuel store and district heating pipework, all of which interfaces with the client's existing heating system. Energy is supplied in the form of hot water which passes through an accredited heat meter, the readings from which form the basis for charging through a Heat Supply Agreement.

One of the many benefits for customers is that they know in advance what they will be paying for their energy. Additional financial savings can also be realised for customers who are part of carbon emissions trading schemes, such as EU Emissions Trading Scheme or CRC Energy Efficiency Scheme.

Managing director of GG Eco Solutions, Greg Hilton, says: "With the current government incentives for the installation of renewable energy heating schemes, now really is the right time to consider the switch to biomass energy. There has been a history of the government withdrawing incentives at short notice, so the rewards will be reaped by the early adopters."

Crispin Muir, operations and commercial manager at Culford, adds: "For Culford School, using GG Eco Solutions' innovative approach to supplying renewable energy has been absolutely the right thing to do and I would heartily encourage other organisations to consider it as a viable option."

Cover up: Culford School's new biomass heating system is housed within a purpose built plant room

Slashing the costs

One of Ireland's top attractions has slashed its energy bills by more than 60 per cent after installing a wood pellet boiler system, explains renewable heating company **Organic Energy**

Waterpoint, in Sligo County, is a unique fusion of water park, health suite and sports centre, which includes a 65-metre flume waterslide and state-of-the-art gym.

As part of a sustainable redevelopment of the Enniscrone site, Waterpoint is now heated by a ÖkoFEN wood pellet system from Organic Energy, installed by Ballina-based Archers.

Transport, tourism and sport minister, Michael Ring, recently joined the Cathaoirleach of Sligo County Council, councillor Michael Fleming, and members of the Board of Enniscrone Leisure for the unveiling of the new facilities.

The works were funded under the Irish government's Energy and Access Upgrade Projects Scheme and have enhanced accessibility and energy efficiency at Waterpoint.

Andy Boroughs, managing director of Welshpool-based Organic Energy, says: "The largest element of the redevelopment at Waterpoint was the new wood pellet heating system which was developed to meet the specific needs of the facility.

"An ÖkoFEN Energy Box, which is delivered ready for installation and connected up to the heating system in a matter of hours, was selected to meet the load produced by the pool, space heating and hot water for the entire centre."

The Energy Box is a complete plant room designed and pre-fabricated by ÖkoFEN for any building or home, which is lowered onto a concrete base on site. The installation at Waterpoint is an Energy Box Type E, with four 56kW ÖkoFEN Pellematic wood pellet boilers operating in a cascade, with automatic fuel supply, heat metering, ash compression system, boiler 'back end' protection and fully automated digital heating controls.

Mr Boroughs adds: "The Energy Box with its four boilers is an excellent example of how this low carbon technology can be installed quickly with little disruption – the centre was only closed for two half days throughout the installation.

"The boiler heating system's output matches demand delivering between 17kW and 230kW at, or above, 92 per cent efficiency and is monitored remotely online."

Mary Rafter, manager of Waterpoint is clearly impressed and comments: "The savings we can report following the installation of the wood-pellet boiler system have given a great lift to everyone at Waterpoint. The rewards were immediate. Our spend on oil was at €1800 per week and the wood pellets cost €2500 every five weeks. This has generated a 60 per cent saving on fuel alone. A story such as ours should give other business hope, there are other forms heating supply and power that we all should embrace." Mr Boroughs adds: "We were delighted to work with Archers to develop this heating system and I know that the Waterpoint board of directors found it extremely helpful to have a company as established and knowledgeable as Archers working on the project."

Organic Energy is the UK's sole distributor of the ÖkoFEN range of wood pellet boilers, regarded as the most advanced and efficient of their kind in the world.

Sitting pretty: The Energy Box is lowered into place

energy solutions

Efficient | Sustainable | Renewable

10-11 October 2012, London Olympia

Energy Solutions – the UK's leading energy management event

Understand new legislation, how the Green Deal will affect you and how to combat your energy costs. Attend the free Energy Sense Conference Programme to hear from:

Committee on Climate Change
Low Carbon London
Energy Saving Trust
SustainAbility
DECC

Managing rising energy costs in the current climate and keeping up to date on ever changing legislation can be a costly and time-consuming task.

Energy Solutions has gathered together a number of experts to provide visitors with an unparalleled, CPD accredited education programme offering the information you need to tackle issues surrounding energy management at your organisation. Attending the event will also provide you with the opportunity to meet over 300 leading suppliers and network with your peers to share knowledge and source advice.

Co-located with

theFMevent Innovation | Education | Networking 10-11 October 2012, London Olympia

Building Services CIBSE The CIBSE Conference & Exhibition 10-11 October 2012, London Olympia, UK

Global Security Summit LONDON 10-11 OCTOBER 2012 | LONDON OLYMPIA

Supported by

energy INSTITUTE

bre

BPVA British Photovoltaic Association

UK GREEN BUILDING COUNCIL

carbonclear

Organised by

UBM

Register to attend for free, visit
www.energysolutionsexpo.co.uk/register
and quote REIA2

When one boiler is better than ten

Companies dismissing biomass boilers should think twice, says **Viessmann**, as Durham County Council chooses a biomass boiler to replace ten outdated models

Growing demand: Viessmann's Nigel Jefferson has seen increased interest in smaller, more compact biomass units for use in built-up areas.

An increasing number of local councils are turning to biomass technology to help honour sustainable energy pledges. Installing wood burning boilers where possible, they are fast realising the superior heating output biomass models offer and dispelling the myth that they require huge amounts of space to operate effectively.

One such example is Sunnydale Community College, in Shildon, County Durham, which adopted biomass in line with Durham County Council's target to supply 12 percent of its heat from renewable energy sources by 2020. The Köb Pyrot 540 biomass boiler from the Viessmann group was fitted with inches to spare in the college's existing plant room, demonstrating that bespoke premises are not a necessary requirement for such installations.

Growing demand

Nigel Jefferson, sales director for commercial and renewable products at Viessmann, says: "In spite of complications when it comes to funding, we have seen a growing customer demand for more compact biomass units. The most popular biomass boiler size in the UK market currently is 190 kW. Many of our sub 200 kW models are currently being used in newly-built schools, for example, demonstrating that biomass isn't restricted to rural properties with vast amounts of space and custom-built fuel stores. In fact, more installations are being commissioned in existing spaces located in urban areas as customers and installers alike realise how suitable the products are to retrofit installations.

Options available

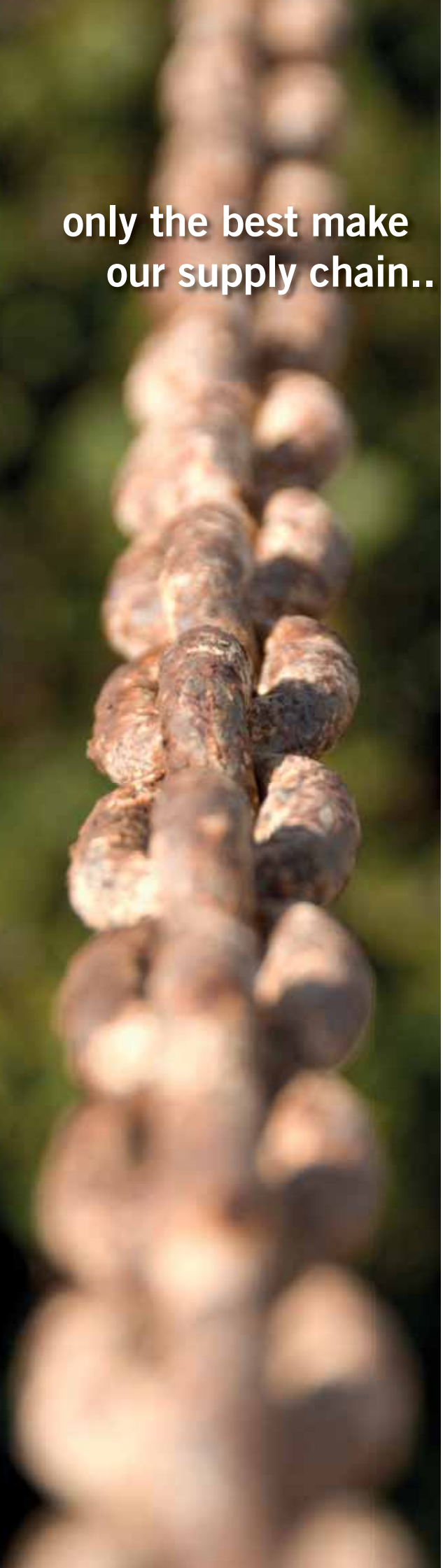
"There are many options available for biomass installations where space is limited," continues Jefferson. "For example, the boiler can be located in a heat cabin located some distance away from a building should the existing boiler room be too small. Many models, including those in our Köb Pyrot range, can be supplied in two parts should headspace be limited, and although pellet stores need to be close to the boiler to supply it with fuel, pellets can be blown up to 20m, meaning the store is not required to be immediately next to the location for the delivery vehicle."

The installation at Sunnydale Community College is a prime example of an increasing number of wood burning technologies being installed where they may not have been considered before. Durham County Council selected the Viessmann Pyrot 540 biomass boiler to replace a bank of ten atmospheric boilers and to provide the school with heating and hot water. The boiler was delivered in one part, along with its pellet store, and slotted into the 10m by 10m boiler room, leaving only 20 mm between the boiler and the roof. Space may be tight, but the boiler is still able to generate up to 540kW of energy and all necessary parts of the model are still accessible should maintenance be required.

Alasdair Cameron, mechanical and engineering consultant at Durham County Council, says: "Renewable energy is at the heart of our plans for development and change in County Durham over the next 20 years. When assessing the available options for this project, we felt

"Viessmann's products were the most reliable and efficient, and offer us the best support for delivering a prosperous and sustainable future for the County."

Since its launch, the Sunnydale Community College installation has become a showcase for other projects and similar biomass installations are now planned with the Köb Pyrot 540 boiler. Durham County Council is also currently in the process of seeking additional funding from the RHI, which could generate returns of over £30,000.



Libra®
ENERGY
balance in power

... so you can be sure there are no weak links!

At Libra:
- customer satisfaction is our focus
- we strive to supply all key components from our UK distribution facility
- we assist you with system design and product training
- we provide complete residential and commercial kits as well as component format

CanadianSolar
- all production in one hand from silicon to modules
- polycrystalline modules with high efficiency thanks to new production technology – new looks!
- complete range mono- en polycrystalline modules
- with over 1.2GW production within top 5 of world's largest manufacturers – financially sound company
- global bankable modules
- in PV Sol as well in practice great yield results
- 25 year power-loss insurance – fully covered by 3 American triple A rated insurance companies

MASTERVOLT
- more than 20 years leading and innovative
- complete range of string inverters for single and three phase public grids
- maximum solar yield through smart concepts: high efficiency – switch early on late off
- the manufacturer of more than 200,000 soladins!
- state of the art product design
- great data-logging and beautiful and clear display

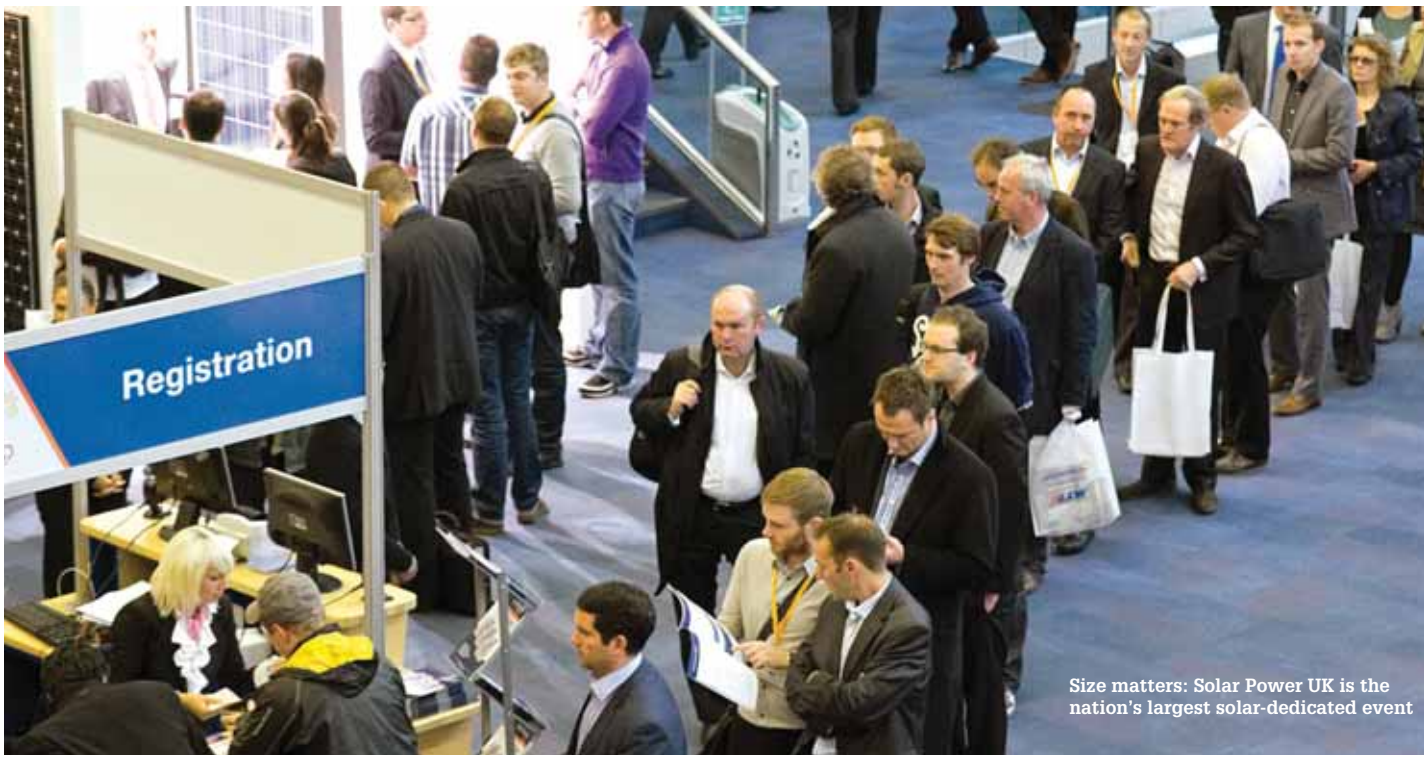
CHINT POWER
- the best price performance ratio by far
- highly reliable – very low failure rate
- full range of string and central inverters
- CPS SC20KTL-O awarded AA rating in Photon test
- red dot design award for best industrial design

www.libra-energy.co.uk
Unit D2, Thorne Enterprise Park
King Edward Road
Thorne, South Yorkshire DN8 4HU
Telephone: 01405 240010
email: sales@libra-energy.co.uk

Solar Power UK

- The UK's one stop shop for everything solar

The UK solar market turned a corner in 2011, installing approximately 800MW and increasing the country's overall capacity to more than 1GW. With new policy in situ and a renaissance of large-scale solar deployment, the market is well on its way to reaching its 22GW by 2020 ambitions



Size matters: Solar Power UK is the nation's largest solar-dedicated event

Ready to cater to this rapidly growing market, the UK's largest dedicated solar event – Solar Power UK – is taking place this year at the NEC in Birmingham. Across three days, over 150 exhibitors will showcase their products and services to more than 5,000 installers, developers, investors and those organisations now looking to incorporate solar into their business models.

New this year are Solar Power UK's comprehensive seminar series. Across 14 carefully constructed half day sessions, industry experts will explore the breadth of the industry – from the future of PV and solar thermal to large-scale deployment, product development, green project financing, business modelling, accreditation, and government's newest initiative, the Green Deal. A must attend for those wanting to stay competitive in the rapidly evolving market; pick and choose which sessions suit you best and purchase online through the show registration process.

Seminar Programme Highlights:

- PV Seminar Hall
- What lies ahead for the FiT degression model in the UK
- Product pricing trends
- Keeping on top of your skills and certification
- Understanding customer needs and instilling confidence in the consumer
- Technology, innovation and matching components for domestic and large-scale installations
- Solar Business Hall

Continued overleaf

Continued from page 53

- The future for solar thermal and RHI
- An installers guide to tendering for public PV installations
- Large-scale deployment, design and development
- The commercial PV market
- Green Solutions Hall
- Government plans for the Green Deal and the reality for the UK installer market
- The role of SME's in the Green Deal
- Accreditation and training requirements for becoming a Green Deal installer
- Integrating solar into whole house energy solutions
- Future PV storage – from smart meters and battery storage to self consumption to net metering
- Green finance options including crowd sourcing and leasing

Also new this year are Solar Power UK's Feature Areas – free to attend, located on the show floor:

Practical PV
Providing answers to all your niggling installation questions, daily discussions will cover the latest safety tips, shading, practice and design. Learn how to optimise your projects delivery through live morning demonstrations and daily afternoon Q&As with those leading the way in the installation market.

Practical Large-Scale PV
For anyone considering moving into the large-scale market, Solar Power UK's Large-scale feature area will provide a step-by-step guide ensuring your projects get off the ground. From site selection, accreditation and grid connection; to the types of components available, construction, and how to secure your development – a one-stop shop for those serious about making a name for themselves in the UK's utility-sized market.

Eco-House Area
Discover what can be done to bring up a building's energy efficiency rating, and how it is done. For all your Green Deal product inspiration, make sure you stop by Sonnen-Macht's eco-house area at stand C43.

Solar Power UK: 2nd – 4th October at the NEC in Birmingham. Register today for the exhibition and feature areas for free.

With new speakers and show highlights announced daily, make sure you keep up-to-date with all the latest show news through the event website **www.solarpowerukevents.org**

Hot shots

This year at Solar Power UK, **Navitron** is excited to be exhibiting its new range of solar hot water panels which it says have the same high efficiency and output of the company's usual range but also includes a curtain feature to allow the panel to be automatically covered if necessary

Opening up: Navitron will be exhibiting its new solar hot water range with curtain feature

The company specialises in solar thermal and PV systems for domestic or commercial buildings but also offers wood burning stoves and off grid systems.

According to Navitron, as MCS approved installers it offers a system specification service, technical support, installation work and commissioning. Its network of installers stretches the length and breadth of the country.

Navitron adds that all of its equipment is available separately or as part of a kit, which can be tailored to individual customer's needs.

Stand D15

WE DEVELOP SWITCHGEAR YOUR BUSINESS CAN RELY ON

A range of loose switches, boxed switches and electronic fault detection units offer safety and convenience to any residential or commercial PV system

YOUR SAFETY IS OUR REPUTATION

Using the right DC switchgear provides safety, whilst at the same time also contributing to a longer lifetime of an installation. People working with DC current know the potential danger of flame arcs and the damage it can do to an installation. Santon Switchgear is specialised in developing DC switchgear which can switch off DC current and isolate PV panels.

Flexibility meets usability

With a range from 16A up to 1000A and 1000V DC, Santon offers a wide selection of loose switches which meet the most common international standards. The modular design of the switches results in an endless variety of configurations, as well as very compact switches considering their performance. With a wide range of boxed switches and remotely operated switches, Santon has a solution for any application.

Arc fault detection

New to our the range of DC switchgear is the Arc fault Detection Unit. The Arc fault Detection Unit (ADU) offers extra safety, efficiency and convenience to any PV system. The especialy for PV systems developed electronic device detects arc faults within a string and gives both visual ánd acoustic feedback the moment an arc fault occurs.

Firefighter Safety Switch

The Firefighter Safety Switch can isolate PV panels quickly, completely and remotely with one simple action. The Firefighter Safety Switch consists out of a operating panel and a motorized switch. The operating panel is located in a easy accessible area or integrated with the fire alarm system, whereas the motorized switch is located directly to the panels. By pushing the emergency button or activating the alarm system the motorized switch isolates the panels creating a safe situation.

www.santonswitchgear.com

santon
superior switch solutions

FUTURE TECHNOLOGY YOU CAN RELY ON

LG
Life's Good

LG Solar – the difference is in the detail

Solar technology from LG gives you efficiency, reliability and profitability in one. Consistent research down to the very last detail, high quality standards and the full expertise of a globally successful brand make this possible and ensure LG's leading position in the solar technology sector today and tomorrow. The best conditions to be a highly professional partner for you in the future.
LG. Life's Good.

Over 50 years of award-winning quality: LG Electronics.

MonoX™

MonoX™ Black

Hot stuff

New products and innovations to feature on **Solfex** Energy Systems' stand at Solar Power UK includes the new FK 500 series flat plate collector which will be exhibited for the first time

According to Solfex, the 2.5m² modular collector is available in portrait or landscape versions and is suitable for on roof parallel mounting, raised mounting 35-50°, façade mounting and the collector can also be roof integrated with an anthracite grey aluminium flashing kit which is suitable for both tile or slate.

Also featuring on the stand will be the GK 3000 series large scale crane mounted collectors which are suitable for installations over 80m².

Solfex Energy Systems also are displaying PV products it supplies including modules from Kioto Photovoltaic, JA Solar and ET Solar, inverters from Power-One and a comprehensive range of mounting systems for all applications along with many other photovoltaic associated products.

Two separate experienced sales divisions will be on hand to deal with solar thermal or PV product enquiries.

Stuart Cooper, Solfex's managing director, said: "Solfex Energy Systems is one of the UK's first and leading innovators and suppliers of solar energy systems, established in 2006 we have a long track record and understanding of the solar thermal and photovoltaic sector offering superb technical support to clients with a robust delivery chain."

Stand: A24

Standing out: Separate sales teams will be on hand to answer enquiries specific to PV or solar thermal

Back to Black

Waxman Energy will showcase its product portfolio across solar thermal and PV at this year's Solar Power UK plus its new Black Panel range

The Yorkshire-based company says it will highlight the aesthetically pleasing Black Panel ranges from LG which are particularly aimed at design conscious, savvy architects, developers or homeowners looking to go eco-friendly whilst making a style statement.

The Phono Solar Onyx PS250M all-black module is designed for large commercial and residential installations whilst the LG 250S1K features a frame construction designed to keep the module free from rain, snow and debris without affecting power output.

Waxman, which has 50 years experience in the distribution sector, will also display a selection of evacuated tube collectors from Swiss solar thermal manufacturer AMK-SOLAC, and flat plate collectors from TiSun.

Sam Waxman, joint managing director at Waxman Energy, said: "We look forward to welcoming visitors onto our stand at the show, where they will be able to find out more about our product range and meet the Waxman team. We will also have our technical staff on hand to answer any questions."

Stand: C32

Waxing lyrical: Waxman will be showcasing its new Black Panel range

Creative solutions

Sibert Solar is excited to be exhibiting its full range of PV installation products

As well as its standard range of ancillary Balance of System products (including connectors, cable, isolators, switch-disconnectors, generation meters and custom enclosures), Sibert says it will also be exhibiting a range of specialist circuit-protection products from partners Doepke (DC-sensitive RCDs) and Dehn (lightning/surge protection).

In addition to this, Sibert's PV inverter manufacturing partner, Eltek, will be on hand to demonstrate its HE-t range of single-phase inverters and to provide technical support for all aspects of Eltek's inverter solutions for the solar PV installation sector.

Other new products being showcased by the Hampshire-based design, development and manufacturing firm includes ranges from Santon Switchgear and Seaward Solar.

Andy O'Leary, Sibert's business development manager, said: "We look forward to meeting new and existing clients at this important event in the UK calendar and invite all the readers of the Renewable Energy Installer magazine to come and talk to us about how we can help with the configuration, protection and installation support of your solar PV system, whether small single-phase or large-scale three-phase.

"Specific to our growth in the UK renewables market, and particularly for the solar PV installation sector, our Sibert Solar range of products has been carefully selected and developed to provide our customer-base with productive, yet cost-effective procurement solutions."

Stand: D47

Acid test: Seaward Solar's PV testing kit will be among the innovative products being showcased by Sibert

Impressive display

Green Energy Options (GEO) will be launching two new PV monitoring products at this year's Solar Power UK exhibition with demonstrations available on its stand

This company specialises in the design and production of a range of energy information products and services for EU and international domestic energy markets by combining In-Home displays with online energy services and mobile applications.

The first of its new products is The Solo II PV which shows PV generation data with a live connection to a smartphone or PC. GEO says it connects to the generation meter's pulse output and is very easy to install.

Also on show will be The Chorus PV: A premium display designed to show generation and consumption, with a live connection to your smartphone or PC. The display connects to the generation meters' pulse output and also the electricity meter to give consumers a better understanding of import and export together and how to get the most out of PV systems.

Stand: D18

Showing off: Green Energy Options is offering demonstrations of its new Chorus PV display being launched at the show

See PV Generation & Consumption in the Home, Online & on your Phone

GEO is introducing two new PV Display Solutions for your customers

- **The Solo II PV:** the **new** version of our PV display showing generation, with a **live** connection to your smartphone or PC
- **The Chorus PV:** a premium display showing generation **and** consumption, with a **live** connection to your smartphone or PC

The Solo II PV

The Chorus PV

geo GreenEnergyOptions

For further information on these two solutions come and see us on Booth **D18** at **Solar Power UK** on **2-4 October 2012** or visit our website **www.greenenergyoptions.co.uk/pv**

SOLAR POWER UK 2012

2-4 OCTOBER 2012, HALL 5
THE NEC, BIRMINGHAM, UK

WE'RE EXHIBITING.
COME AND MEET US THERE!

SEE GEO ON BOOTH D18

HIGH-PERFORMANCE, TRANSFORMER AND TRANSFORMERLESS STRING INVERTERS WITH EFFICIENCIES UP TO 98% AND VERY LOW POWER-FEED LEVELS.

THE SUPERB "THEIA" RANGE OF INVERTERS FROM ELTEK ARE AVAILABLE THROUGH SIBERT SOLAR, YOUR #1 CHOICE FOR BALANCE OF SYSTEM PRODUCTS.

1PH THEIA HE-t DESIGN FROM 2kW TO 4.4kW

1PH THIEA TL DESIGN FROM 4.3kW TO 7.2kW

3PH THEIA TL DESIGN AVAILABLE FROM 13kW TO 22kW

reddot design award winner 2012

SIBERT Solar
BALANCE OF SYSTEM PRODUCTS

Excellent peak and EU efficiency ratings
Excellent UK support and warranty options
Excellent yield and performance results
WWW.SIBERT.CO.UK +44 1252 815518

ELTEK always on

Safety first

Santon Switchgear will be launching a DC Arc Detection Unit (ADU) onto the British market at Solar Power UK

Developed in accordance to UL1699B, Santon Switchgear says it can detect a series arc in any installation and gives visible and audible indication of a DC arc. It can also be integrated with an existing fire safety system or Santon Firefighter Safety Switch either new or retrofitted into existing installations.

The Santon Double Safety Switch (DSS) will also be on show at the company's stand which is said to be the only combined AC and DC switch unit that meets the DTI standards for PV installations.

Building on the Santon 'true' DC switch, the DSS is designed to allow safe switching of the installation by a unique interlocking system, so that the DC switch can only be switched 'Off' after the AC switch has been switched 'Off'. The DSS should allow the installer to safely make all connections only when both the AC and DC switches are isolated, due to a cover interlocking feature. Santon says the DSS can be fitted by installers with smart metering and lightening protection to give complete peace of mind.

Also in Santon Switchgear's portfolio at Solar Power UK is the Firefighter Safety Switch (FSS) designed for the isolation of a PV array on a building. Three strings at a maximum of 1,000v DC 25A can be isolated with the Santon FSS whilst the product should be located as near to the PV panels as possible, either on the roof or in the attic/loft, in order for the DC cable entering the building not to pose a threat to firefighters. The FSS Incorporates the Santon 'true' DC switch so that it safely switches the DC on-load and is easily resettable in the event of a false alarm or fire drill.

Stand P31

Brand new: Santon Switchgear is launching a DC Arc Detection Unit (ADU) to customers in the UK

Close to home

Altec Solar will premier its range of PV mounting components at Solar Power UK which are specially developed for the UK market

Drawing on 18 years' experience in the European market, Altec says it has designed a new range of roof hooks suitable for narrower UK domestic roof timbers and tile sizes. Together with innovative quick fit components, the range is said to reduce the need for on-roof adaptation and speeds up fitting time whilst helping to provide a safer weatherproof module installation.

Also on show, to cater for industrial buildings and free standing structures, will be Altec's 4kW-50kW ground mount kits which are based on designs from its large scale solar park installations, plus Trafix 10 – a 10kW commercial roof mounting system in a box. Both products are now being offered for immediate UK delivery.

Other recent product portfolio additions such as low ballast flat roof mounting products and the company's stylish Solar Carport Design will also be presented.

Stand: B70

Centre stage: Altec Solar will be presenting a range of products aimed at both the domestic and commercial PV markets

/ Battery Charging Systems / Welding Technology / Solar Electronics

Fronius

SHIFTING THE LIMITS

/ As a Fronius Service Partner, you not only provide the fastest service on the market by replacing circuit boards for your customers, you also benefit from our professional sales and marketing support, have a direct line to our Technical Support team and receive exclusive information first hand. You can become a Fronius Service Partner by attending our Fronius Service Partner Qualification training course. Find out everything there is to know about the Fronius Service Partner programme at www.fronius.co.uk

BECOME A FRONIUS SERVICE PARTNER. BECOME MORE SUCCESSFUL!

VISIT US AT SOLAR POWER UK STAND C22

Did you know?

- The Fronius FSP Training programme now includes the Fronius TL inverter
- Every FSP receives a FREE Welcome Box worth £200*
- Every FSP is issued with £300 of credit to use against spare parts+

The Fronius FSP Training runs every month and is based in Milton Keynes.
Call us on 08444 721 822 to book now (low-rate from BT landlines).

+ One Welcome Box issued per company
*If ordered within 6 months of the training. Terms and conditions apply

Powering up

At Solar Power UK, **Power-One** will display its inverter products which are available to the UK market

On display on the Power-One stand will include the new improved Aurora Micro-0.25 and Micro-0.3 micro-inverters, the Aurora Uno-2.0 and Uno-2.5 single phase inverters as well as the Aurora Trio-27.6 and Trio-20.0 three-phase string inverters. Furthermore, the company will present the Aurora CDD monitoring device, which is designed to allow the connection of Power-One's micro-inverters and power optimisers to the internet quickly and easily.

Power-One says it has benefitted from experience gained during the past twelve months in designing and testing the new Aurora Micro devices to now offer many more benefits to small residential rooftop installations. With efficiency ratings of up to 96.5 per cent for some products, Power-One aims to allow the maximisation of energy harvesting for every installation – regardless of its size.

According the company, its micro-inverters can be connected to the internet using the Aurora CDD monitoring device for an optimised plant monitoring. This enables installers to monitor the PV installation's performance in real time and detect failures rapidly via the company's web-based monitoring portal. Up to 30 micro-inverters can be directly monitored by a single Aurora CDD.

Another solution for the average residential rooftop installation on show is Power-One's Aurora Uno single phase inverters now featuring a special built-in heat sink compartment and a front panel user interface. Moreover, Power-one says the devices provide an output of 2.0kW or 2.5kW, a high speed MPPT and an efficiency of up to 96.3 percent.

The Aurora Trio-20.0 and Trio-27.6 three-phase string inverters will also be on the company's stand which are designed for the roofs of farms, commercial or municipal buildings and have outputs of 20.0kW and 27.6kW.

Stand: B40

Smart technology: Power-One's Aurora Trio-27.6 three-phase string inverter will be on show at Solar Power UK

Small but powerful

Fronius says its reputation for setting new technological standards worldwide is reinforced by its latest product being unveiled at Solar Power UK

The Agilo is a new central inverter which the company says is the first in its power category that can be completely installed and maintained by the installer. With an output of 100 kW, the three-phase device is designed for industrial or commercial PV systems.

Fronius adds that despite its high output, the inverter is one of the most compact devices in its class. The maximum efficiency rating of 97.2 percent guarantees highest yield levels whilst the Fronius Agilo is compatible with Fronius DATCOM, the data communication system for PV system monitoring.

Operating from Milton Keynes, Fronius UK aims to offer a first-class service to customers whether sales, technical support, service or repairs. In addition, installers can benefit from the company's product training which qualifies them to become Fronius Service Partners. Fronius UK also offers regular free sales training to customers.

Fronius has been researching new technologies for converting electrical energy since 1945 which is more than six decades of experience and progress. Headquarted in Austria, Fronius says the solar division of the company has been continuously creating outstanding products and services, such as the Fronius IG Plus series of inverters, the IG TL transformerless inverter and the unique Fronius Service Partner programme.

The Solar Electronics division was started in 1992 and markets its products via a global network of sales partners. It develops and manufactures inverters for grid-connected solar power systems of all sizes.

Stand: C22

First of its kind: Fronius describes its Agilo inverter as the first in its power category than can be completely installed and maintained by the installer

Perfect match

Libra Energy will use Solar Power UK to celebrate the sealing of several major new distribution deals

As an international PV distribution and wholesale company with outlets throughout Europe, the UK and USA, Libra Energy is pleased to now be part of Canadian Solar's authorised reseller programme. It is one of only two countries to achieve this feat in the UK. Libra Energy says that this new deal will bring increased access to stock at competitive prices and an increased level of support from partners. This will ensure that Libra Energy can not only remain in the market but to grow its customer base and expand service and operations.

The company, which has been involved in the field of solar energy since 2007, has also struck deals with Omnik and Chint which it says will supply a complete range of inverters at favourable prices to UK customers and bring further training and support opportunities. Master volt and Van Der Valk are also two of Libra Energy's major suppliers plus Libra UK has signed up with Ealand cables and Apex Voltage optimisers to further enhance its product portfolio.

The company will be featuring a new trapezoidal roof on its stand in addition to A frame and standard pitched roof products from Clenergy.

Paul Bradbury, UK operations manager, said: "We are an exclusive B2B company and can offer our customers, big or small, access to some of the best and most cost effective products on the market. We can supply anything from a large solar park all the way down to a single isolator. In recent months the UK market has seen us supply more and more domestic kits and small commercial developments. This has meant anything from a single kit all the way up to large social housing projects.

"We are confident that we have selected the right long term partners to ensure that our customers enjoy the peace of mind that comes from third party warranties and back up from some of the most established and financially secure companies in the market."

Stand: C26

Prime example: An agricultural installation using Mastervolt CS inverters and stringboxes being displayed on Libra Energy's stand

Demonstrating excellence

Phono Solar will be present at Solar Power UK to showcase to the industry its latest innovations

On display for the first time in the UK will be the Phono Solar Enercube – a storage system which the company says intelligently distributes electricity, ensuring that power is available even after the sun has set. Available in three different models, the Enercube offers storage capacities of 6.4, 7.7 or 9 kWh and annual energy outputs of up to 2880, 3360 or 3840 kWh, respectively. The energy management system is designed to provide households with excellent power outputs combined with detailed analysis of energy usage.

According to Phono Solar, it has provided modules for over 15,000 installations around the UK and works with a number of high-profile and well-trusted installers. Most recently, the company supplied modules for an Empower Community and Nationwide Solar project in York, which involved installing 800 residential solar PV systems on council houses. The residents now benefit from free electricity, significantly reducing their bills. In 2011, Phono Solar reached a production capacity of 450 MW, upon which is continues to build.

At Solar Power UK, Phono Solar adds that it will exhibit the latest in module and storage technology and demonstrate to the market its viability as a supplier that meets the needs of UK customers.

Mariana Hall, vice-president, said: "Solar Power UK is a very important event for Phono Solar. Not only will we be unveiling products that haven't yet been shown to the UK market, but we will be actively demonstrating to potential customers the possibilities held by our solutions. The UK market is, and has always been, integral to Phono Solar's strategy as a PV manufacturer."

Stand: C40

Debut performance: The Enercube will be displayed for the first time in the UK at this year's exhibition

Phono® Solar

SHARE THE SUN, POWER THE FUTURE!

MAKING BRITISH BUILDINGS BEAUTIFULLY GREENER

ONYX all black high performance solar modules

Ammonia corrosion test passed

Salt mist corrosion test passed (IEC 61701)

SOLAR POWER UK 2012

WE'RE EXHIBITING, COME AND MEET US AT

BOOTH C40

2 – 4 October 2012
The NEC Birmingham, United Kingdom

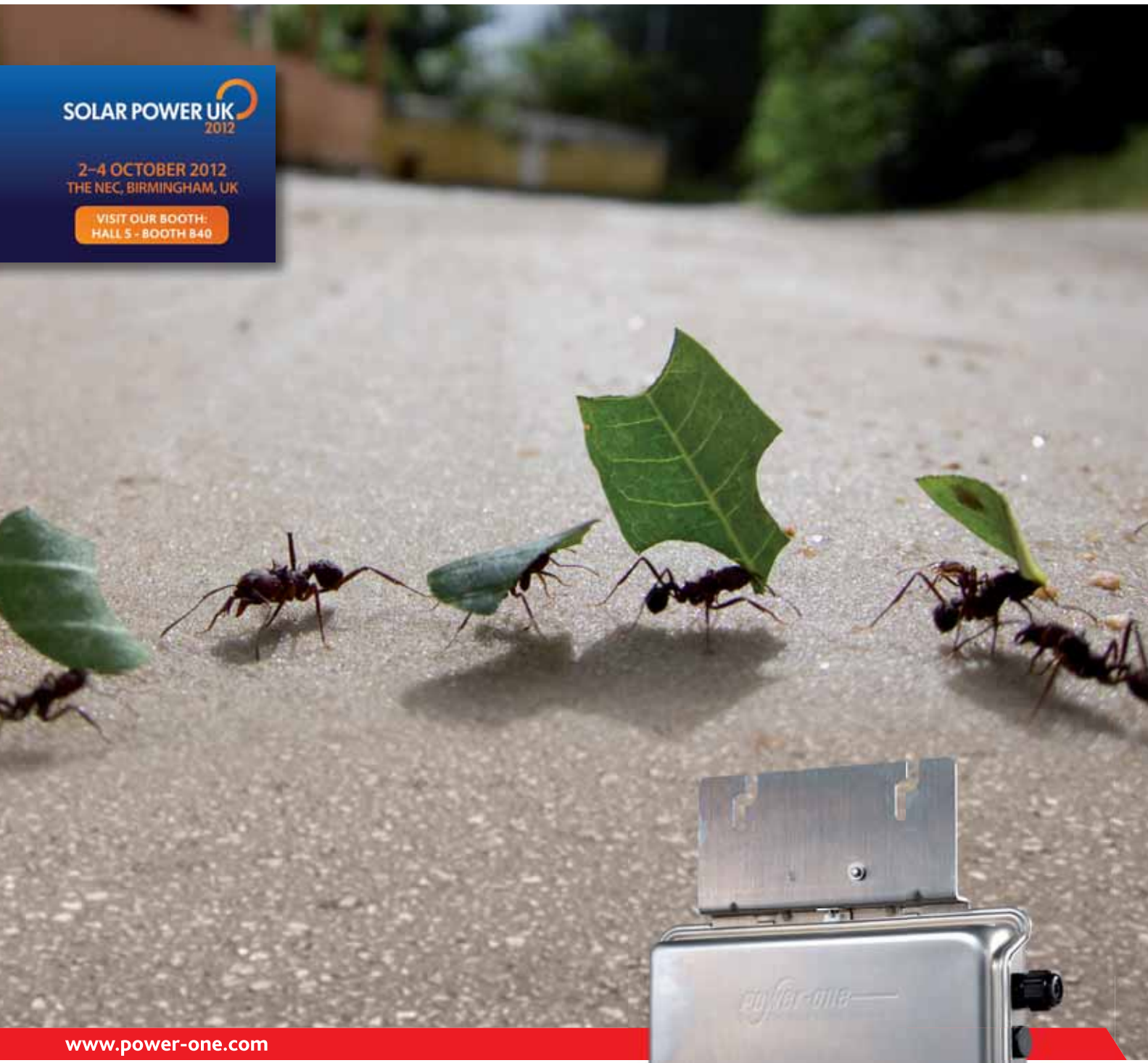
For more information call us on **01904 477920**

Email: **uk@phonosolar.com**

www.phonosolar.com

power-one®
Renewable Energy Solutions

AURORA®



www.power-one.com

AURORA MICRO. SMALL CONTRIBUTIONS FOR A SURPRISING RESULT

Power-One's new Aurora 250W and 300W micro inverter provides module level Maximum Power Point Tracking (MPPT) to optimize energy harvest, system availability, with unlimited design flexibility. Dual stage topology allows a wide MPPT range, higher reliability and easy to install wireless communication. The Aurora MICRO is electrolyte-free leading to long-term reliability and additional life expectancy.

power-one®
Renewable Energy Solutions

Solar thermal – what lies ahead?

Attention is now shifting from solar PV to other technologies, says Intergr8's **Philip Chapman** as he explains the benefits of his company's offerings

These are interesting times for the UK solar thermal industry. Often overlooked as PV's little brother, which stole all the headlines with generous Feed-in Tariffs and exponential rates of installations, it is now cementing its rightful place at the heart of the renewable energy industry.

Times have changed, however, in recent months. PV installations have dropped off, as have the aforementioned high tariffs. The result is that other technologies, such as solar thermal and heat pumps are getting more attention from the public and businesses, and their benefits are being lauded more than ever.

With the upcoming Renewable Heat Incentive for domestic projects due next summer, installation rates are surely set to increase, perhaps not at the rate we have seen with PV, but significantly nonetheless.

Integr8 Renewable Energy, as MCS accredited installers for solar thermal (as well as heat pumps and solar PV) is seeing already that the discussion about solar thermal has increased, both domestically and commercially.

We offer a range of traditional solutions from recognised manufacturers, including Worcester Bosch and Valliant. But what we think sets us apart as a company from a lot of our competitors it that we like to see what other technology is out there and try to bring that to our clients.

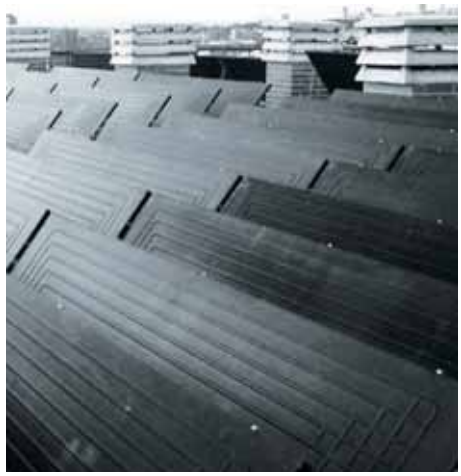
A good example of that is the Energie Thermodynamic Solar System from Thermal Reflections. It is a solar thermal system but is able to operate 24 hours a day, unlike a traditional system.

The Energie System is capable of taking energy from the atmosphere at temperatures as low as -5°C and it also works at night. It does this by utilising a special refrigerant instead of water.

Using this special refrigerant instead of water is the secret to this system.

There are four stages to the process:

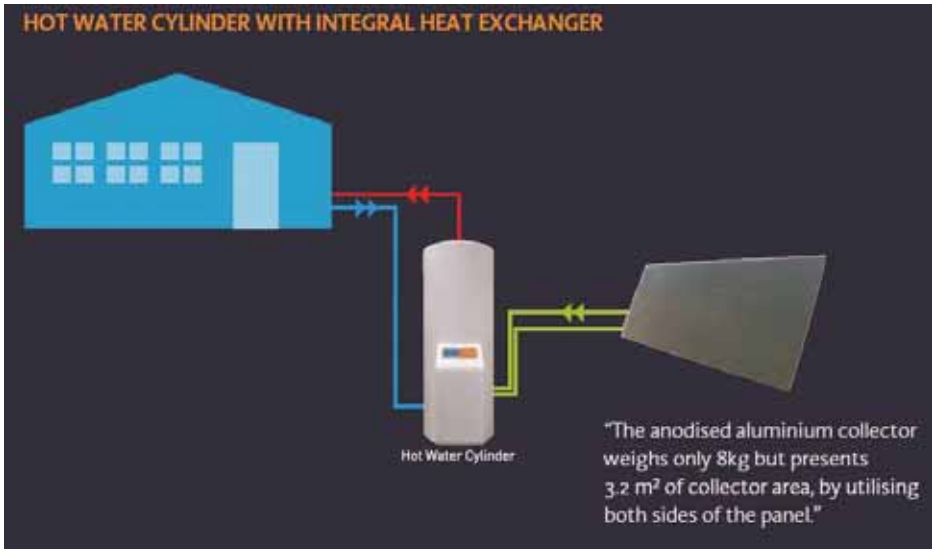
1. *Aluminium Panels*: Energy is absorbed from the atmosphere into a special liquid circulating through the aluminium panels. The absorbed energy turns the liquid into a gas.
2. *Compressor*: When the gas leaves the panels, it is compressed and becomes a hot gas.
3. *Hot Water Cylinder*: The hot gas then flows through a coil inside the water cylinder and heats the water.
4. *Expansion Valve*: The gas goes through a valve and reverts back into a liquid. It then goes back into the panels and the process continues.



The Energie Thermodynamic Solar System offers you the chance to benefit from the production of domestic hot water, at up to 55°C, with high-efficiency and with a minimum release of CO2 into the atmosphere. (The system does use electricity to drive the compressor, albeit just a small amount).

As well as its ecological and economic benefits, the reliability of the system is demonstrated via the thousands of systems already installed. Maintenance is practically non-existent, giving peace of mind to the user.

We are very proud to offer this to our clients, and are very happy to discuss the merits of this system with our commercial partners. Shading is not an issue so more collectors can be installed per m² which is an added advantage over traditional solar thermal collectors.



Other technologies, such as solar thermal and heat pumps are getting more attention from the public and businesses, and their benefits are being lauded more than ever.

We go further for renewable energy

Solar Thermal • Biomass • Heat Pumps

At Waxman we source the very best biomass, solar thermal and heat pumps from around the world. And we don't just look for cutting-edge features and design, but quality and reliability too. It's a tough job, but someone has to do it.

Call 01422 374114
Email info@waxmanrenewables.co.uk or visit www.waxmanrenewables.co.uk to see how far we can take your project.

ezinc Gledhill VIESSMANN MCZ
AMK-SOLAC Systems TiSUN

Waxman Renewables Your renewable energy partner

Added options

A renewable space-heating system such as a heat pump, has an increasingly high profile says Nu-Heat's senior development engineer, **Chris Weightman**. But where these are not practical, customers may be interested in solar thermal as a feasible, affordable 'green' option

Analysing a typical household energy bill shows that around five to six times as much energy is used for space heating than for hot water. For example, if 30,000kWh is used on space heating, only 5,000kWh of that is likely to be used for hot water. If a homeowner is looking to save money, then logically it is the space heating element that they would consider first.

However, with the trend for buildings to be better insulated and increasingly airtight, along with the requirement for all new builds not to require space heating at all by 2016, the market for solar thermal looks bright.

Solar thermal offers an annual average saving of 50 per cent on hot water bills, depending on location and the amount of sunshine. Across the year around 90 per cent of the hot water demand will be met in July and 10 per cent in December.

Where heat pumps are not practical, customers may be interested in solar thermal as a feasible, affordable 'green' option, says Nu-Heat

Retrofit

Solar thermal is the least intrusive renewable technology for retrofit properties as insulation will not need upgrading and much of the existing plumbing is likely to be reusable. The roof should ideally be south-facing with a pitch of between 30 to 50° and the structure must be strong enough for the system.

System requirements include a new cylinder with a solar coil and dedicated solar volume such as Nu-Heat's EnergyMaster thermal store, along with space for the pump station. Ideally this will be situated close to the cylinder but can be located elsewhere, if necessary. For smaller dwellings such as a flat or terraced house, where the household might use around 100 litres of hot water daily at 50°C, a single solar panel system will streamline installation and provide a cost-effective option. Nu-Heat supplies two sizes of panel that are both the same width but the larger one is slightly longer – although it will still fit comfortably on a standard roof. The bigger of the two, the Heliostar 252 panel has approximately 15 per cent more output than the smaller panel Heliostar 218.

Installer perspective

Ryan Faint has been working for over 17 years in the plumbing and heating industry. Initially a sole trader, he now has two employees working for him.

Faint recently attended a solar thermal course, primarily because he decided to install solar thermal on his own property, with a view to marketing himself as a solar installer. He feels that showcasing the product on his house will be a good advert for the technology. He says: "I believe that solar thermal should be on every new build. With its lower installation costs, it is garnering quite a lot of interest – and for the customer, the results are instantaneous."

Faint suggests that solar thermal is currently easier for customers to understand than heat pump technology, although this will change as the technology becomes more commonly used.

Feel-good factor

Many homeowners would like to be part of the 'green revolution' but are not yet prepared or able to commit to a renewable space heating system or the insulation improvements needed. For these people, solar thermal is a halfway house that enables them to improve their carbon footprint and take advantage of the current domestic Renewable Heat Premium Payment scheme or the Renewable Heat Incentive when it begins.

New dawn for solar thermal

Solar thermal has been overshadowed by its more fashionable relative solar PV, despite being one of the earliest renewable technologies to be offered, says **Julie McLean**, Plumb Center's head of marketing

However, with the forthcoming reduction in Feed-in Tariff (FiT) payment rates, perhaps now is a good time (fortunately, this technology is not reliant on bright sunlight…) to look again at the benefits of installing solar thermal systems.

Working alongside a conventional water heating system, a solar thermal system can provide around 50-60 per cent of a home's annual hot water needs. This clearly reduces environmental impact – the average domestic system reduces carbon dioxide emissions by around 325kg per year when replacing gas water heating, more when replacing other fuels. But equally, if not more attractive are the financial savings offered.

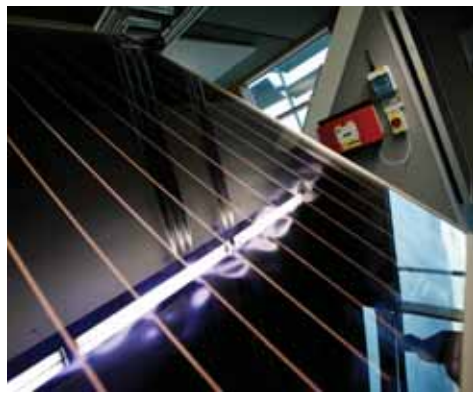
Solar thermal technology is well developed, with widespread distribution (usually next day availability) and a large choice of equipment to suit many applications. There are two types of solar collectors: flat plate and evacuated tube, the latter being slightly more efficient than flat plate collectors.

Plumb Center has seen a steady growth in sales of solar thermal products over the past five years, led by ranges such as Kingspan's Thermomax, Worcester Green Skies and Vaillant's Aurotherm. Specification has been greatly simplified by the introduction of bundled product packs, although individual components are available if required.

A complementary product, often installed at the same time as a new domestic boiler, solar thermal does however require specialist installer knowledge and accreditation. Fortunately, training needs are met by reputable providers, ranging from manufacturers, through training organisations to distributors such as Plumb Center.

Another concern of some installers is the danger and cost of installing panels on roofs. Again, Plumb Center offers a solution in the form of its SOLAR Ready installation service, attractively priced from £800 per project.

And the inevitable question of payback period? Well, that of course depends on hot water usage. But as the renewable technology with the lowest capital cost, solar thermal certainly deserves consideration as part of a replacement hot water system. With scant prospect of lower energy prices in the future, the financial numbers will only get better.



Right skills: Plumb Center meets all training needs for the installation of this specialist technology

Best of both worlds

Sue Wroe, owner of a barn conversion on the outskirts of Ashbourne, Derbyshire says she is now enjoying more efficient heating and savings on her fuel bills after having the Glow-worm Universal Hybrid system installed

Being a large barn conversion requiring a higher heat output than most regular domestic properties and with LPG underfloor heating, Wroe was finding that her fuel bills were escalating and her current system was proving inefficient in providing the property with heating and hot water.

Wroe contacted her local Glow-worm installer who recommended the Universal Hybrid system which is designed to select the most cost-effective method of heating the home, be that through the heat pump or high efficiency boiler, based on energy tariffs and outdoor temperatures.

In very cold conditions, when there is a smaller amount of energy in the air for the heat pump to use, the system selects the boiler, allowing the homeowner or tenant to benefit from using gas when it's most cost effective to do so. In more general UK autumn and winter conditions, the superior efficiency of the heat pump will come into effect automatically as the system switches to the more cost effective fuel source; the electrical heat pump. With a CoP of up to 4.06 (measured at A7W35) in optimum conditions, the heat pump is said to generate more than 4kW of heat for every 1kW of electrical energy used in operation.

To control her heating, Wroe uses the Climapro2 RF remote control – a handheld control that enables her to programme specific heating and hot water requirements in detail.

Saving the pennies: Sue Wroe says bills for her Derbyshire barn conversion are down 30 percent following the installation of a hybrid system

Alistair Cooper, the installer who fitted the system, said: "There are very few hybrid systems available on the UK market and the Glow-worm Clearly Hybrid is the only system which uses intelligent controls to make an automatic selection of heat source.

"The Clearly Universal Hybrid system has transformed the efficiency of Wroe's property. In addition, her bills have been reduced by over 30 per cent."

Don't get left in the Dark ages with inferior solutions...

Discover **Prestige Solar Thermal Packs** from SOLFEX energy systems

Pack includes:

- U pipe / direct flow vacuum tube collectors - **(or)**
- In roof or on roof flat plate collectors
- Choice of collector mounting materials
- Twin line pump group with air separator
- Prozeda Solar thermal controller with sensors
- Expansion vessel connection kit and bracket
- Zilmet Solar Rated Expansion vessel.
- Overvoltage protection kit
- Original Tyfocor LS pre-mixed transfer fluid
- Transfer fluid discharge container

Primos series available for basic system hydraulic to advanced system hydraulics with additional relay outputs & inputs

View your solar thermal system info on iPhone & iPad

Optional web-module available via Conexio 600 for remote controller access & remote viewing of your solar thermal system information & yield through your IPhone / IPad

Inbuilt data logging as standard with SD card

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

*mobile controller viewing is an optional upgrade.

Leading supplier of photovoltaic & solar thermal products in the UK

SOLFEX energy systems

Making a splash: Solfex Energy Systems was contacted by Ecoliving when Ryedale District Council undertook a planned swimming pool boiler replacement

Going swimmingly

Rising energy costs and the newly introduced government-backed Renewable Heat Incentive (RHI) payments were the key drivers for **Ryedale District Council** when it recently undertook a planned swimming pool boiler replacement

Solfex Energy Systems was contacted by Ecoliving with a brief and, in conjunction with Preston Lee Chambers building services, consultancy plans were put in place to design and cost the large scale solar thermal system.

An SSK 2.1 flat plate collector was chosen due to the collector field orientation being due south with no shading plus its price performance ratio and 25 years warranty conditions. The installation was two rows of 21 SSK 2.1 solar thermal panels, connected in series seven at a time on the facility's flat roof. It is integrated with two gas boilers and a CHP unit controlled by a BMS system.

No ballast required

The collector layouts and mountings were chosen with no ballast needed due to direct fixing into the roof supports. The pipe work was sized allowing for long pipe runs and pressure losses and designed according to the Tichelmann principle creating even flow rates across the system. De-aeration and commissioning valves were installed on the collector arrays and in the plant room.

The Solfex ergo-pro commercial pump group was used with a Wilo Para high efficiency pump to further reduce energy costs without loss of performance in addition to an Alfa Laval plate heat exchanger for maximum energy transfer. The installation has a visual display panel fitted in the reception area for all to see the effect of the savings in carbon and energy.

The estimated saving taking all improvements into consideration - the replacement of the old gas boilers , upgrading the air handling unit, new DHW cylinders and a CHP and solar thermal installation - are expected to be 46 per cent per annum on the 250m² community swimming pool.

Excellent installation

Simon Wardle, Solfex's national sales manager for solar thermal products, said: "With swimming pools being acceptable under the RHI program for systems sizes up to 200Kwth, this installation working alongside our partners has resulted in an excellent installation which will bring financial benefit to the system owner and environment alike."

Ecoliving's technical manager, Steve Sutcliffe, said: "This is an exciting installation because of the scale of solar thermal used and the financial benefit delivered to Community Leisure, specifically an estimated 46 per cent reduction in heating costs over all as well as the reduction of their carbon footprint."

Win-win situation

Mike Adams, facilities manager for Ryedale District Council, added: "Ryedale District Council has been able to make a significant contribution to reducing CO2 emissions while at the same time reducing expenditure on energy. Solar thermal technology is particularly suited to this type of facility due to the large energy demand and also aided by the orientation of the large south facing elevation. This is a win-win situation, having positive benefits for the customers of Ryedale Pool, for the council, for residents of Ryedale and for the planet."

Figure it out

Each issue of REI brings you a range of valuable industry statistics and data

Current and new generation tariffs for non PV technologies

Technology	Band (kW)	Current generation tariffs (p/kWh)	Consultation tariffs from Oct 2012 (p/kWh, 2012 prices)	Final tariffs from 1 Dec 2012 (p/kWh, 2012 prices)2	Community energy tariff
Hydro	≤15	21.9	21.0	21.00	21.00
	>15-≤100	19.6	19.7	19.60	19.60
	>100-≤500	12.1	12.1	15.50	15.50
	>500-≤2000	12.1	12.1	12.10	12.10
	>2000-≤5000	4.9	4.5 (2.2 from April 2013)	4.48	4.48
Wind	≤1.5	35.8	21.0	21.00	21.00
	>1.5-≤15	28.0	21.0	21.00	21.00
	>15-≤100	25.4	21.0	21.00	21.00
	>100-≤500	20.6	17.5	17.50	17.50
	>500-≤1500	10.4	9.5	9.50	9.50
	>1500-≤5000	4.9	4.5 (4.1 from April 2013)	4.48	4.48
AD	≤250	14.7	14.7	14.70	14.70
	>250-≤500	13.6	13.7	13.60	13.60
	>500-≤5000	9.9	9.0	8.96	8.96
microCHP	≤2	10.5	12.5	12.50	12.50

(Source: DECC)

Generation tariffs for Solar PV

4kW	16.0P/kWh
4-10kW	14.5
10-50kW	13.5
50-100kW	11.5
100-150kW	11.5
150-250kW	11.0
250kW-5MW	7.1

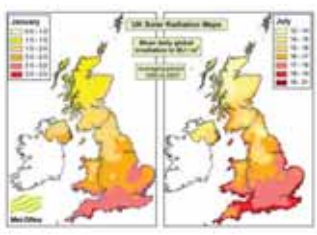
Number of FiT registered domestic installations per technology

Technology type	Total number of installations	Last month available (June 2012)	Total installed capacity (kW)	Last month available (June 2012) (kW)
PV (<50kW)	338,890	12,739	1,160,676	48,024
Wind (<50kW)	2,564	115	26,779	1,320
MicroCHP	505	15	506	15

Source: MCS Database & Central Feed-in Tariff register

What do you think?

In our last edition we talked about whether the UK is well placed to meet its 22GW PV by 2020. Almost 75 percent of you said no in our online poll. If you would like your say on this month's question, why not take part in our online poll at **www.renewableenergyinstaller.co.uk?**



Average UK daily irradiation MJ/m²

(Source: Met Office)

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	0.55 per litre	2530 litres	£1,392
Wood chips	3500 per tonne	90	25300	100 per tonne	7 tonnes	£723
Wood pellets	4800 per tonne	94	24300	200 per tonne	5 tonnes	£1,016
Natural gas	1 per kWh	90	25300	0.048 per kWh	25300 kWh	£1,214
LPG	6.6 per litre	90	25300	0.5 per litre	3833 litres	£1,917
Electricity	1 per kWh	100	23000	0.145 per kWh	23000 kWh	£3,335
Air source heat pump	1 per kWh	290	7931	0.145 per kWh	7931kWh	£1,150
Ground source heat pump	1 per kWh	380	6053	0.145 per kWh	6053kWh	£878
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.55 per litre	759 litres	£417
Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.145 per kWh	5552 kWh	£805
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	0.145 per kWh	5552 kWh	£805

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.

RHI non-domestic rates

Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/kWh)	Tariff duration	Current installed capacity (MW)
Small biomass	Solid biomass: Municipal solid waste (inc CHP)	Less than 200 kWth	7.9	20	
Medium biomass	"	200 kWth and above, less than 100 kWth	4.9	20	
Large biomass	"	1000 kWth and above	1.0	20	41.980 (all sizes of biomass)
Small ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	Less than 100 kWth	4.5	20	
Large ground source	"	100 kWth and above	3.2	20	0.105 (all sizes of heat pumps)
Solar thermal	Solar thermal	Less than 200 kWth	8.5	20	0.008
Biomethane	Biomethane injection and biogas combustion, except from landfill	Biomethane all scales, biogas combustion less than 200 kWth	6.8	20	0.000

(Source: OFGEM)
The domestic element of the RHI is expected to be introduced in the summer of 2013 following a UK Government consultation in September 2012

Renewable Heat Premium Payment grants

All house
Solar thermal - £300 – cash voucher valid for three months

Houses not heated by gas from the grid
Biomass boiler - £950 – valid for six months
Air source heat pump - £850 – valid for five months
Ground source or water source heat pump - £1250 – valid for six months
(Source: Energy Saving Trust)
Eligibility criteria can be found online by visiting: **www.energysavingtrust.org.uk/Generate-your-own-energy/Financial-incentives/Renewable-Heat-Premium-Payment-Phase-2**

DEKS
A Skellerup Industries Company

20 YEAR WARRANTY

DEKS Solar Solutions

The Speciality flashings for Solar pipes and cables

Don't waste time or risk call backs by filling holes with silicone (which breaks down quickly with exposure to UV)

Use a purpose designed Deks Solar flashing - the professional choice for flashing Solar pipes and cables on tile, slate or metal roofs

- ✓ Solutions for all types of roof
- ✓ A range of flashings for Solar Pipes and Cables
- ✓ High UV Resistance
- ✓ Fixing is fast and easy
- ✓ 20 year warranty

DEKS
A Skellerup Industries Company
01275 858866
sales@deks.co.uk

Star of the west

Installing a ground source heat pump in a large coastal property looking out over a vast expanse of ocean brought a number of considerations for the design team and installer, says **Nu-Heat**

Nu-Heat was invited to design a heating system based around a ground source heat pump utilising boreholes sited on the coastal side of the house. This is where the boreholes are sited

Sea Star in Cornwall is currently being refurbished with the enclosing of a large, open atrium to create a new living space, a 'grand' entrance, six bedrooms with en-suites, a gym and a wetroom. The existing heating system comprised four oil-fired boilers and a mixture of radiators and underfloor heating (UFH) that had been installed at an earlier time in three of the rooms. The oil was stored in four 2,500 litre oil tanks. Nu-Heat was invited to design a heating system based around a ground source heat pump using boreholes on the coastal side of the house.

The finished property is of a near-commercial specification, with a NIBE 60 KW ground source heat pump and primary pipe work split between two buffer tanks: A 300 litre buffer that will feed into the swimming pool heat exchanger (which already utilises evacuated tubes on the roof in the summer) and a 500 litre buffer that will feed the UFH via ten manifolds. The hot water is to be supplied by a 1000 litre hot water cylinder, which will be heated by the heat pump but will also benefit from two solar panels that will supply heat via a 300-litre pre heat cylinder. Underfloor heating has been specified throughout and the original underfloor pipes are being retained as part of the new system, so the floor does not have to be taken up in those rooms. Additionally, a 7.5 kW, 30 solar PV panel array has been installed, fortuitously in time to take advantage of the higher Feed-in Tariff (FiT). This will help balance out additional electrical usage for the new system.

Installer Lee Woodhatch of Woodhatch Plumbing & Heating, says his first impression of Sea Star was that it was a "massive, massive job". The existing system of underfloor heating and radiators was somewhat muddled, with radiators teeing into the underfloor heating primaries and with many odd additions made over the years, the starting point was not ideal. However, Woodhatch says: "I decided that if I could handle this installation then other projects would be simple in comparison."

I decided that if I could handle this installation then other projects would be simple in comparison

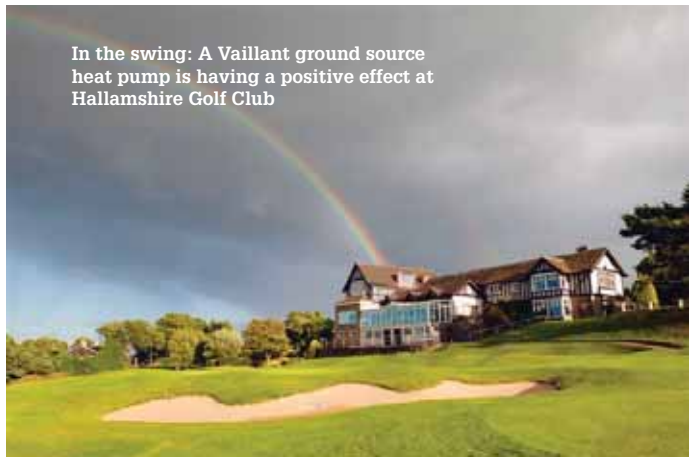
With a coastal ground source heat pump installation like Sea Star the considerations are not for the heat pump itself but for the energy source. For any borehole-based system, Nu-Heat calculates the amount of energy that the heat pump is expected to harvest from the ground each year in kilowatt-hours, as well as the steady state peak power draw in kilowatts. A borehole contractor will then use these two values to determine the amount of ground collector required whilst considering the thermal properties of the ground beneath the property. In some cases, thermal response testing may be necessary.

At Sea Star, once the first borehole was drilled by Orchard Drilling. A hydrogeologist was brought in to check the extraction rate of the borehole using a heat pump test rig. The results were very interesting, as the readings showed peaks and troughs which turned out to be tidal. Sea Star is only 30m above sea level and not far from the sea, and at low tide the readings showed that a higher heat is available, with less extractable energy at high tide. This is apparently due to the fact that the natural water courses are kept at bay during high tide, reducing the warmth of the ground. The average reading, however, indicated sufficient energy to heat the house and a further 10 boreholes were drilled.

The homeowner is intending to claim the domestic Renewable Heat Incentive when it begins in summer 2013 and should also qualify for a payment towards the cost of the ground source heat pump through the Renewable Heat Premium Payment (RHPP).

Peak perfomance

A Victorian golf clubhouse welcomes renewables with the installation of a **Vaillant** ground source heat pump bivalent system



In the swing: A Vaillant ground source heat pump is having a positive effect at Hallamshire Golf Club

Hallamshire Golf Club is enjoying the rewards of its recent investment in renewable energy, after installing a new heating system based around a Vaillant ground source heat pump.

The Victorian clubhouse's location and high footfall means its heating system is in heavy demand. The building's exposed position overlooking the Peak District moors means it faces into the prevailing winds and rain, and like most golf clubhouses it operates most days of the week, all year round.

Its energy bills had been rocketing and the inefficient four-boiler heating system was in need of an upgrade

Its energy bills had been rocketing and the inefficient four-boiler heating system was in need of an upgrade. It enlisted the help of the Green Energy Centre (GEC) to conduct an energy assessment and then used the services of renewable energy solution company Positive Footprint to handle the installation.

Energy efficient renewable technologies were chosen to power the club's environmentally considerate set-up, which included a 4kw solar PV system and centred around Vaillant's geoTHERM ground source heat pump system. Positive Footprint managing director, Gary Chamberlain explained: "The heat pump we installed provides 70 per cent of the clubhouse's energy needs and the high-efficiency boiler takes up the extra 30 per cent when necessary. If we were dealing with a newer build the heat pump could have easily taken care of a space this size by itself, but with a building of this age and constant use, renewing the fabric of the building was not an option.

"Vaillant's innovative systems allowed us to implement the required set-up of nine separate zone controls, creating an effective and efficient way of regulating the various heating requirements of the building."

The heat pump we installed provides 70 per cent of the clubhouse's energy needs

Despite the vast amount of work the project was organised to ensure minimum disruption to the running of the clubhouse and its members. As a result of the installation Hallamshire Golf Club was also able to remove two of its three gas meters, thereby reducing its annual standing charge.

Settle for the best

Green Energy Solutions UK has carried out a major installation at the events and wedding venue in Stainforth, Settle. This has a ground source heat pump and associated underfloor heating

Settle Green Energy Solutions has installed an energy efficient 40kW ground source heat pump at Taitlands

Taitlands is a listed Gothic Revival building owned by Emma Milligan who bought the building in 2007 from the Youth Hostel Association. Milligan's love of the buildings and estate has resulted in a stunning return to its former glory after many years of under investment and inappropriate usage. Green Energy Solutions was the major heating contractor undertaking sympathetic plumbing work to protect the buildings and preserve the integrity of the Grade II listed building.

Green Energy Solutions has installed an energy efficient 40kW ground source heat pump that will run the newly installed underfloor heating to all three floors of the main house and both floors of the newly opened coach house which equates to approximately 1500m2.

The Doncaster-based company has also installed the plumbing and sanitaryware for the bathrooms, provided the services for the commercial kitchen in the tea room, and installed the disabled toilets.

Milligan said: "Marcus Payne and Green Energy Solutions have delivered an amazing heat exchange system in a very friendly and professional manner.

"Their dedication to getting the job done, regardless of effort, has been a blessing in a trade renowned for its intransigence."

Marcus Payne, managing director of Green Energy Solutions, said: "We were delighted to work on this project; the transformation of the building is stunning thanks to Emma's dedication and vision.

"Taitlands now benefits from a very energy efficient heating system which means the building's heating bills will be significantly lower thanks to this renewable energy technology."

Green Energy Solutions is able to provide a complete solution from design through to installation has a varied client list. Some of its key commercial and public sector clients to date include NHS Trust, Salvation Army, Frank Haslam Milan, Shoreline Housing Partnership, Linden Homes, Sainsbury's, Marks & Spencer, Morfitts, Gleeson Homes, DMBC and Emerson.

WIND

What: Cattle farm slashes electricity bills and earns secondary income

How: Installing a Kingspan 6kW wind turbine

Result: 15,000kWh of renewable electricity generated per year

The owners of a West Yorkshire beef cattle farm have cut electricity bills and started generating an additional income for their retirement with the help of a Kingspan Wind turbine.

As well as providing a steady source of free electricity and cutting bills, installing the new Kingspan Wind 6kW turbine has allowed the owners of the farm, Maureen and David Pickford, to benefit from Feed-in Tariff payments (FiTs).

Maureen said: "Although we're not retired yet, my husband and I were keen to plan ahead and secure a welcome extra income for when we do stop working. With electricity costs set to soar even higher over the next few years, we saw it as a real investment for the future.

"We had seen large companies making the most of the strong winds in our area and thought there was no reason we couldn't do the same for ourselves. We chose the 6kW Kingspan Wind turbine because its simple and effective technology appealed to us and it was compact enough to make it just the right fit for our small farm. The wind speed here is around 6.5 m/s and in the year since it was installed the turbine has generated around 15,000kWh of electricity – enough to power our whole house! As a result, we've been able to cut our electricity bills by around two thirds.

"We didn't have any (planning) problems when we decided to go ahead with the installation. We chose a local accredited installer, Eagle Power Energy, which specialises in fitting Kingspan turbines, and everything went smoothly from start to finish. In fact, the whole process took just eight months from the initial decision right through to full operation. We're delighted with it all."

Kingspan Wind technical sales manager, Gavin Kerr, added: "Wind power is not just an option for large farms, and it's great to see the KW6 delivering such substantial benefits for Maureen and David. Our turbines provide the perfect solution for farmers like the Pickfords who want to make the most of the energy savings as well as make additional income wind power offers."

The right moove: The Pickfords now enjoy a secondary income from a 6kW turbine installed on their dairy farm

HEAT PUMPS

What: Lincolnshire holiday homes invest in renewable heating

How: Using a Danfoss ground source heat pump plus solar thermal flat plate collectors

Result: More cost-effective heating system for accommodation and swimming pool

A luxury holiday lettings company has chosen renewable energy from a Danfoss ground source heat pump for a barn conversion in rural Lincolnshire.

The heat pump has been installed at Ings Barn near Wainfleet, a five-bedroom countryside retreat, comprising a group of renovated disused farm buildings.

The conversion was carried out by property owner Debbie Ward, who decided on a ground source heat pump complemented by eight solar thermal flat plate collectors on the roof and a wood burner with a built-in boiler. All three systems heat water which is stored in an 800 litre buffer tank and then distributed to the underfloor heating system.

She said: "As soon as I saw the property I knew it had great potential. This was always going to be a long term project and I wanted the conversion to be cost effective and have minimal impact on the environment, so a heat pump was the obvious choice, combined with the eight solar panels and the wood burner. All of our electricity is purchased from a green supplier with only the wood burner creating any carbon emissions."

During the summer months, when there is less demand for space heating, some of the water from the buffer tank is automatically redirected to a heating system for the swimming pool keeping it at a comfortable 29°C without incurring additional energy costs.

The ground source heat pump also supplies hot water for the property that can accommodate up to ten people and has three bathrooms and a hot tub. Trenches were dug in land adjacent to the holiday let, in which 660 metres of ground loops were laid one metre below the surface.

SOLAR PV

What: 900-year-old church embraces 21st century technology

How: Using a 3.6kWp system installed by Solarsense

Result: 2,500kWh clean energy produced annually and carbon emissions saving of 1,400kg

A North Somerset church built nearly 900 years ago has become one of the oldest churches in the country to save on its energy bills with solar panels.

Solarsense was chosen to install the 15 panel PV system bringing St Bridget's Church at Chelvey, a Grade 1 listed building, from the 12th century firmly into the 21st. It also happens to be the company's local church, being less than half a mile from its base at Backwell.

Let there be light: Chelvey Church in North Somerset is the oldest in the diocese to benefit from solar energy

Solarsense worked closely with the church architect to ensure the panels were as discreet as possible in order to obtain separate planning consents from the diocesan advisory committee, North Somerset Council and English Heritage.

The 3.6kWp solar PV system will generate more than 2,500kWh each year and save almost 1,400kg of carbon dioxide emissions each year by using less fossil fuel.

Churchwarden Tony Stirratt said: "The results from our solar panels are even better than we expected. We have already had people from outside the diocese asking about them and we hope that the success of our solar PV will encourage more churches to install their own."

Steve Barrett of Solarsense added: "St Bridget's is our local church as well as a historic building so we are delighted to have been able to install carefully tailored solar PV that not only saves the congregation money but also blends in with the church's historic fabric."

In the mix: Ings Barn, Lincolnshire, meets all its heating requirements through a heat pump and solar thermal combination

Who: Paul Hutchens, managing director of Eco2Solar

What: Eco2Solar provides renewable energy solutions for private domestic homes, commercial buildings and social housing across the Midlands. Based in Kidderminster, the family run business has grown rapidly since 2007, expanding to become a significant local employer of over 35 people, and enhancing its reputation

Back to school: Paul Hutchens, Eco2Solar's managing director, has enjoyed the positive feedback received from the company's solar thermal tutorials

Making radio waves, cheering on the Olympic flame and planning strategies…

Monday

The week starts with a team briefing on the week's work schedule and priorities, I have an opportunity to get my head down and complete a list of 25 tasks on my 'to do' list. The highlight of my day is a call from Edinburgh Napier University with great feedback from our solar thermal tutorials in partnership with European Energy Centre. Next I run through my presentation this evening to a group of local farmers on the benefits of solar energy. After an interesting Q&A session, it's time for me to head home. The day goes well and I am ready for a hectic week ahead.

Tuesday

Today begins with an update meeting with my sales director, Ryan Mee. By 10am we've covered our agenda of upcoming installations and plans for the coming weeks. Then I'm on my way to a meeting with a local radio station to discuss sponsor opportunities. They have put forward interesting proposals and I leave me with plenty to consider. I get back for a meeting with Francesca Minett, my trusty marketing executive, and the marketing agency to agree the new design for our leaflets and outdoor exhibition equipment to reflect our new branding.

Wednesday

Wednesday is an exciting day for one of our partners The Community Housing Group, which is opening their brand new Kidderminster offices. I am delighted to be invited and really enjoy catching up with the team. After meeting some interesting new contacts and potential prospects, it's back to the office to finalise arrangements with our marketing team for entertainment at tomorrow's Olympic Torch Relay in Worcester. After a promising meeting with a key supplier, it's time for more emails and a catch up with Ryan for an update on a large project we are currently working on.

Thursday

Today is a very special day as we prepare to line the streets to see the Olympic Flame as it passes through Kidderminster and Worcester. After spending the day in the office catching up on emails and meetings with staff, I make my way to Worcester at 5pm to wait patiently for the torch bearer in our home county. I take part in a PR photo shoot with our promotional stilt walkers, we agree our social media tactics and then it's time to fight through the crowds to make my way home.

Friday

It's time for our monthly board meeting with Ryan and our chairman Keith. The board meeting is always one of the most productive days of the month, giving us the opportunity to assess each and every aspect of the day-to-day running of the business from accounting, to logistics and marketing as well as strategy and business planning. We review progress over the previous month and agree our strategy for the month ahead, as well as start our budgets for 2012/13. The meeting rounds off the day nicely and I am looking forward to a nice cold drink in the sun to finish off a very a busy week.

TRITEC

More than efficient

TRI-CELL

The efficient storage system for solar power.

Maximum independence with own solar power.

With TRI-CELL, the electrical energy of a solar power system can be stored for later use. Depending on the available solar energy, TRI-CELL regulates own consumption, energy storage, as well as power grid feed-in. Thus, solar power can be conveniently used any time of day or night – e.g. for electrical equipment and heat pumps.

That's how efficiency is easily increased. More at www.tritec-energy.com/uk