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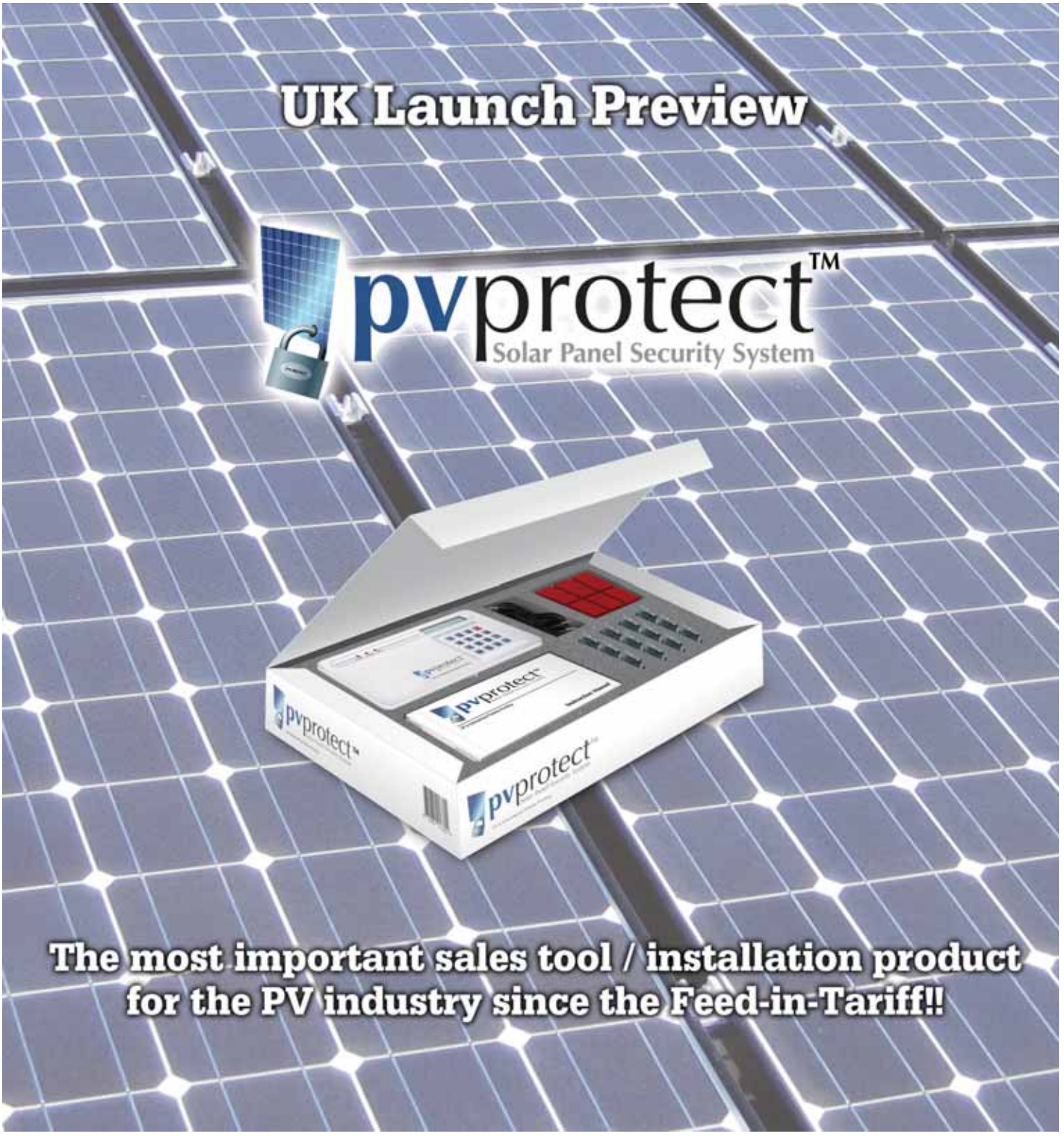
SOLAR THERMAL SOLAR PV BIOMASS HEAT PUMPS WIND HYDRO Jan/Feb 2012



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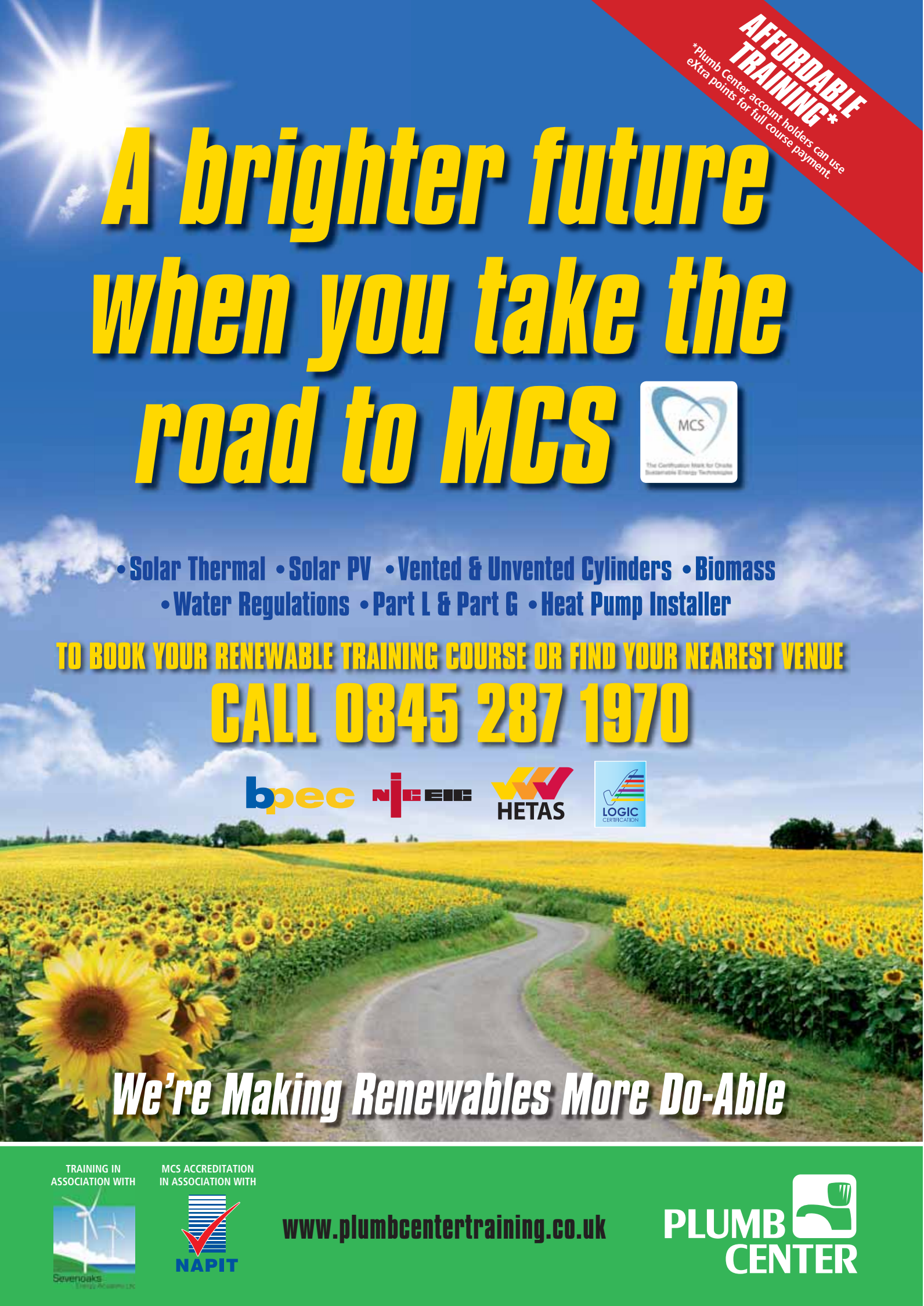
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News

Editor's comment

In with the new

Such is the forward-thinking world of publishing that I'm writing this pre-Christmas and you'll be reading it post-festivities, well ensconced in the New Year, and hopefully looking forward to the business opportunities 2012 has to bring. Hopefully, nothing drastic will happen between the magazine going to press and it landing on your doorstep.

Of course the Feed-in Tariff situation has caused much mayhem in the renewables world of late. Hopefully, as we head further into this new year, there will be a chance to look at new business ventures and grow existing services and initiatives so that the changes cause as little impact as possible. It is important, especially considering the forthcoming Renewable Heat Incentive, that we don't overlook other renewable and microgeneration technologies as we focus on what's happened to solar PV. There are many consumers still waiting to be turned onto the benefits of our industry in general – be it solar thermal, solar PV, heat pumps, biomass etc. Indeed, according to IBISWorld, publisher of industry research, the UK renewable energy industry is poised for strong growth over the next five years. The research highlights the fact that support from government and consumers will enable it to achieve its full potential and that in the five years through to 2016-17, industry revenue is expected to increase by 6.2 per cent to £6.3 billion. Other positive pointers heralding a bright future include the news from the Committee on Climate Change which says that biomass could supply one tenth of the UK's energy by 2050. It may be a long way off but the trend is definitely heading in the right direction.

So, with the ups and downs of 2011 behind us, there's much to look forward to in the year ahead. Of course, on the imminent horizon we have Ecobuild and the potential business that should help achieve throughout 2012.

I'll see you there

‘From our own point of view, the Dulas brand has always been associated with the highest quality products” p12 Ian Draisey, Dulas

Energy minister’s response to Save-Our-Solar campaign

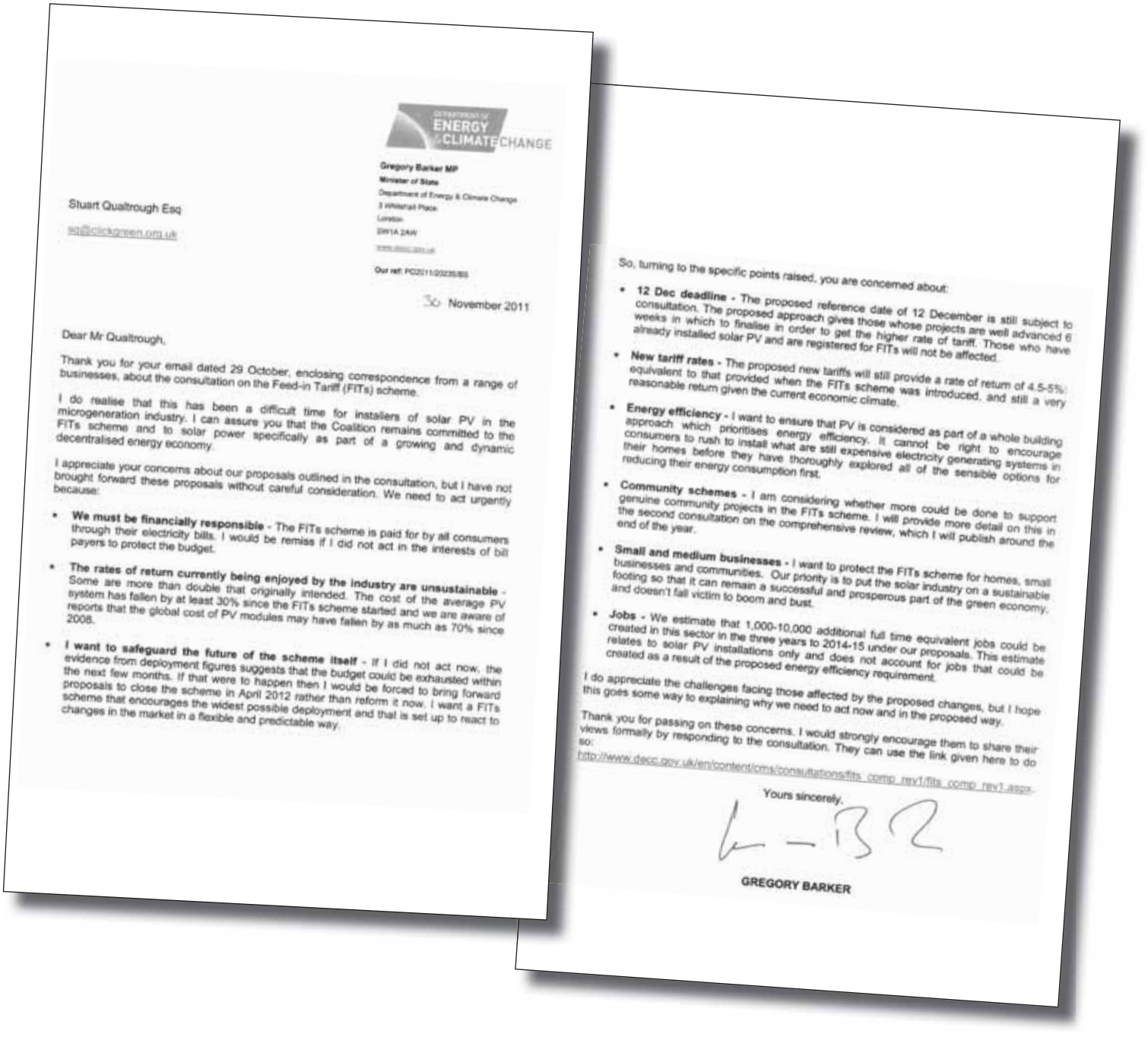
Following the ClickGreen Save-Our-Solar campaign, which received 500 messages from consumers and suppliers all opposed to the government’s plans to bring forward the Feed-in Tariff cuts, ClickGreen received the following letter from Greg Barker.

Stuart Qualtrough, editorial director at ClickGreen, said: “It seems astonishing that on the day Carillion Energy announced its entire workforce of 4,500 solar PV staff were put on statutory redundancy notices, Mr Barker wrote to us to say the plans to cut the Feed-in Tariff would actually create up to 10,000 new jobs in the sector.

“We don’t know where these figures came from, we haven’t seen them mentioned in the Impact Assessment document - neither have we seen any other evidence to support such a claim.

“We feel that DECC has reacted in an exemplary fashion to our ‘Save our Solar’ campaign and has genuinely worked with us on this hugely important issue, but we just don’t understand how Mr Barker can make such a claim on creating new jobs when all the news and messages we are receiving involve job losses.

“The sums just don’t make sense.”



DEPARTMENT OF ENERGY & CLIMATE CHANGE

Gregory Barker MP
Minister of State
Department of Energy & Climate Change
3 Whitehall Place
London
SW1A 2AW

Our ref: PO2011/20235/BS

Stuart Qualtrough Esq

sq@clickgreen.org.uk

30 November 2011

Dear Mr Qualtrough,

Thank you for your email dated 29 October, enclosing correspondence from a range of businesses, about the consultation on the Feed-in Tariff (FITs) scheme.

I do realise that this has been a difficult time for installers of solar PV in the microgeneration industry. I can assure you that the Coalition remains committed to the FITs scheme and to solar power specifically as part of a growing and dynamic decentralised energy economy.

I appreciate your concerns about our proposals outlined in the consultation, but I have not brought forward these proposals without careful consideration. We need to act urgently because:

- **We must be financially responsible** - The FITs scheme is paid for by all consumers through their electricity bills. I would be remiss if I did not act in the interests of bill payers to protect the budget.
- **The rates of return currently being enjoyed by the industry are unsustainable** - Some are more than double that originally intended. The cost of the average PV system has fallen by at least 30% since the FITs scheme started and we are aware of reports that the global cost of PV modules may have fallen by as much as 70% since 2008.
- **I want to safeguard the future of the scheme itself** - If I did not act now, the evidence from deployment figures suggests that the budget could be exhausted within the next few months. If that were to happen then I would be forced to bring forward proposals to close the scheme in April 2012 rather than reform it now. I want a FITs scheme that encourages the widest possible deployment and that is set up to react to changes in the market in a flexible and predictable way.

So, turning to the specific points raised, you are concerned about:

- **12 Dec deadline** - The proposed reference date of 12 December is still subject to consultation. The proposed approach gives those whose projects are well advanced 6 weeks in which to finalise in order to get the higher rate of tariff. Those who have already installed solar PV and are registered for FITs will not be affected.
- **New tariff rates** - The proposed new tariffs will still provide a rate of return of 4.5-5% equivalent to that provided when the FITs scheme was introduced, and still a very reasonable return given the current economic climate.
- **Energy efficiency** - I want to ensure that PV is considered as part of a whole building approach which prioritises energy efficiency. It cannot be right to encourage consumers to rush to install what are still expensive electricity generating systems in their homes before they have thoroughly explored all of the sensible options for reducing their energy consumption first.
- **Community schemes** - I am considering whether more could be done to support genuine community projects in the FITs scheme. I will provide more detail on this in the second consultation on the comprehensive review, which I will publish around the end of the year.
- **Small and medium businesses** - I want to protect the FITs scheme for homes, small businesses and communities. Our priority is to put the solar industry on a sustainable footing so that it can remain a successful and prosperous part of the green economy, and doesn't fall victim to boom and bust.
- **Jobs** - We estimate that 1,000-10,000 additional full time equivalent jobs could be created in this sector in the three years to 2014-15 under our proposals. This estimate relates to solar PV installations only and does not account for jobs that could be created as a result of the proposed energy efficiency requirement.

I do appreciate the challenges facing those affected by the proposed changes, but I hope this goes some way to explaining why we need to act now and in the proposed way.

Thank you for passing on these concerns. I would strongly encourage them to share their views formally by responding to the consultation. They can use the link given here to do so:
http://www.decc.gov.uk/en/content/cms/consultations/fits_comp_rev1/fits_comp_rev1.aspx

Yours sincerely,

GREGORY BARKER

Enfinity and beyond – installer partner programme on offer

International solar power developer Enfinity has launched an Installer Partner Programme to help UK installers with everything from small residential installations to large solar energy plants.

The programme will support installer partners who may not have the resources or technical and business experience needed to survive in an uncertain marketplace.

By accessing high quality products at competitive prices from a sustainable supply chain, installer partners will benefit from dedicated account management, sales and marketing support.

Extensive technical back-up is available during the design and installation process, and the quality-assured products have a ten-year warranty (five years longer than the industry standard, says Enfinity).

Enfinity PV packs contain helpful and easy to understand information for installer partners, for example instructions on how to match the right module inverter to a compatible mounting system – a common problem faced by installers who are new to the industry.

PV Packs include Enfinity PV modules, a suitably sized inverter, and a standard on-roof mounting system, and are available in a range of system sizes between 1kWp and 4kWp using typical roof configurations.

Martin Allman, head of UK Trade at Enfinity, explained: "We are focused on building strong relationships with our installer partners over the longer term. The Installer Partner Programme outlines the commitment that we will make to work with our clients and support them in growing their business in what is a very challenging environment. Ultimately our hope is to become the MCS accredited installer's supplier of choice throughout the UK."

Plumb Center's eco credentials acknowledged

Plumb Center is delighted to have been recognised as Best Plumbing and Heating Merchant (Environmental Focus) at the recent Builders' Merchants Awards for Excellence. Having been shortlisted in the final three, the company says its dedication to promoting sustainability and renewable technologies throughout its business has helped to secure the award.

Simon Allan, renewables director for Plumb Center, said: "We are extremely proud that our achievements have been recognised by the judging panel. Our staff have worked hard and embraced energy efficiency and renewables, not just in our growing product range but across the business - from logistics and marketing to training and sales."

Plumb Center has taken a leading role in the promotion of new technologies, including the development of its Sustainable Building Center in Leamington Spa. The company's comprehensive renewables ranges are supported by accredited training courses, with an emphasis on preparing installers for developments and opportunities in the market, including RHI and the Green Deal.

Triple shot: Simon Allan, renewables director, Plumb Center receiving the award from Calvin Pope (category sponsor, Grundfos) and guest speaker Lawrence Dallaglio

News in brief

A poll of UK SMEs by business-to-business energy supplier, Opus Energy, points to the sector being switched on to buying energy from renewable sources but put off by cost and perceived complexity. Nearly three quarters of small businesses that don't currently buy renewable energy (72%) said they would consider it in the future, with the rest ruling it out as a result of cost (47%) and complexity (18%). One third (29%) claimed to be not interested.

CTC, the renewables division of Enertech, has received MCS accreditation for the EcoAir 125 air-to-water heat pump. It is rated up to 75kw and has been designed with large domestic and small commercial premises in mind.

Ofgem has now published the RHI Guidance document, following the consultation earlier this year. This Guidance is issued subject to the Renewable Heat Incentive Scheme Regulations 2011 receiving Parliamentary approval coming into force. To download : http://www.ofgem.gov.uk/RHI

Solar panel specialist EOS Energy has appointed Darren Gardner as business development manager.

Broseley Fires, supplier of wood burning fires, stoves and boilers has appointed of John Kerrison. He will be sales representative for Lincolshire, East Yorkshire, West Yorkshire, the Northeast and Scotland.

M&E Exhibition & Future Skills Conference: Carshalton College and Kingston College will be welcoming local businesses to its Power Assessment and Training Centre event on 15 February. The event includes conference sessions with a focus on the future skills required to develop business and up-skill your workforce to take advantage of opportunities with the building services engineering, construction, digital technology and low carbon sectors. www.powertrainingcentre.co.uk

1000 installations by Ardenham Energy

"Securing your own energy supply is an incredibly powerful tool," said Brett Cherrington who is part of the Mortimer Energy Initiative and is Ardenham Energy's 1000th customer.

Following his 3.8kWp installation on his home in the village of Mortimer, near Reading, he is one of 20 households who have joined this initiative and is now reaping the benefits of being fully connected.

The intention of the group is that by coming together collectively they will have solar panels on their roofs that will control future energy costs.

"It's great to be in control of our own electricity bills for once," said Cherrington, pointing out how changes to his lifestyle have dramatically changed his energy use too. "Since we've had the panels installed I'm already making big changes in how I use electrical appliances during the day when the solar panels are generating free electricity.

"I now use the washing machine, the tumble drier and cooker during the middle of the day when the solar panels are working best," he added. "This really does mean you are genuinely getting something for free. With all the energy savings I am making, not forgetting that it is tax free, and provides me with a guaranteed income for the next 25 years, it makes me wonder why I didn't get it fitted sooner."

John Langford is the scheme's co-ordinator. He said: "In effect it is a group buying scheme for our community and Ardenham Energy were not only very informative without the salesman patter, but were very competitive on price too."

"By using the expertise of members of the group and experience of those who have had installations in the past we were able to help people decide whether it is for them, and we have been able to negotiate a group discount with our chosen installer."

"Free electricity has got to be music to people's ears as we are constantly reminded of energy price hikes that we are faced with," he said.

Steve Carter from Ardenham Energy which has been involved with a number of community projects installing solar PV is delighted with the uptake from the village of Mortimer which has a population only of 2000.

He said: "Despite the recent cuts announced by the government on the rate of the Feed-in Tariff, people really need to factor in the tax-free element of the scheme as well as remembering it is index-linked and guaranteed for 25 years. It is still a highly attractive proposition and lowering your electricity bills is still a fantastic opportunity by installing solar PV panels on your roof."

L-R John Langford, Steve Carter and Brett Cherrington

UKAS Green Deal pilot

The British Standards Institution (BSI) has been selected by UKAS as one of the pilot organisations trialling the certification scheme to which Green Deal installers and advisors will be audited against.

As part of the government's Green Deal initiative, all installers and advisors must be certified against their relevant standard. The purpose of the pilot is to ensure the robust development of a new certification scheme, which will ensure consumers have confidence in the products being recommended and the installation carried out is to the highest level.

Gary Fenton, global director of assurance at BSI commented: "To be involved in the UKAS Green Deal pilot scheme demonstrates our position in the product certification and testing market. Having been at the forefront of the construction sector for many years, BSI can bring a wealth of knowledge and expertise to the Green Deal certification scheme."

BSI is seeking accreditation to certify installers and advisors against all five measures detailed in the Green Deal.

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Events

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www.ecobuild.co.uk

Ecobuild China
9-12 April SNIEC, Shanghai
www.ecobuildchina.com

International Small Wind Conference 2012
17-18 April, Glasgow
www.renewable-uk.com/events/small-wind-conference/

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

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

Growth sees launch of renewables company

Specialist distributor The Waxman Group has launched a renewables company following the success of its burgeoning energy business.

The move is part of the group's plan to strategically position itself for future growth in the market and be at the forefront of design and distribution of renewable energy technologies in the UK.

Waxman Renewables specialises in the design, consultation and supply of biomass boilers and solar thermal systems. It offers pellet stoves and boilers from Red 365, the biomass arm of Italian stove giants MCZ, and solar thermal systems from Austrian firm TiSun, Swiss AMK and Ezinc from Turkey.

Richard Waxman, chairman of The Waxman Group anticipates that by expanding its offer into solar thermal and biomass it will capitalise on the market growth its energy business has enjoyed. Since its launch in 2005, Waxman Energy says it has become one of the UK's leading specialists in the design and distribution of solar photovoltaic (PV) systems.

He said: "Although the renewable energy market in the UK is still in its infancy, government incentives are helping to make consumers more aware of the support available to them and the potential benefits of adopting these technologies. While this is the case we want to send out a clear message of our intention to become a leader in the field.

"Our background with Waxman Energy combined with our proven distribution expertise provides a strong platform for delivering renewables."

Waxman Renewables will draw on the group's 50 years' experience in the distribution industry.

On the up: L-R Josh Waxman, Simon Pattison and Harry Whitehead, Waxman Renewables

Liverpool opens 'green' training centre

One of the largest 'green' training centres in the country has opened its doors in Liverpool.

The centre – which features a full-size indoor house – has been opened by Liverpool Community College as part of a sustainability drive.

The £250,000 facility at the college's construction and engineering faculty on Vauxhall Road is seen as vital to ensure that Liverpool and the North West can benefit from the high growth levels in that sector.

Elaine Bowker, principal at Liverpool Community College said: "The growth in the sustainable sector is a huge opportunity for this region. With the launch of this training centre, one of the largest in the UK, we will be able to equip workers and businesses with the skills they need to ensure our region will be the leader in the field of green technology."

The centre at the Vauxhall Road faculty includes a 3000 sq ft workshop, with different practical rooms and a large internal area, where a life size house has been built. Joanne Ratcliff, head of faculty at Liverpool Community College, said: "We're rightly proud of the facility we have developed here. We cover one of the largest training areas in the UK and have been recognised by the National Skills Academy as one of, if not the best, in the country.

"The training centre, with the life-size house, gives students a real feel of the practicalities of installing green technology, even to the extent that they can learn what it's like to install full size solar panels at height, on the roof of a house."

Courses on offer will include industry recognised qualifications for electricians, plumbers and heating engineers in sustainable technology, from installing solar panels to heat pumps and water recycling systems.

The college is advising firms to up-skill their staff now to capitalise on growth in the sector. Liverpool Community College will be running the courses for the National Skills Academy (NSA) for Environmental Technologies and is one of only six centres in the country providing training in all green technologies.

School's out:(L-r) Elaine Bowker, principal of Liverpool Community College, Kevin Dowd National Skills Academy, Joanne Ratcliff head of the Construction and Engineering faculty

Reasons to be cheerful

The recent Feed-in Tariff announcement has left many in the industry feeling disheartened and uncertain as to the future of the PV sector over the coming months. Whilst recognising the upset the cuts have created, **Ian Draisey**, of Dulas MHH, is finding positivity in the situation. **Lu Rahman** reports

Dulas began its life as a commercial subsidiary of the Centre for Alternative Energy in 1982. Over the years the company has carried out some interesting projects including developing wind data logging equipment, numerous solar fridge installations for blood and vaccine storage across sub-sharan Africa, supplying 50W wind turbines and battery chargers for Mongolian Nomads and installing the onshore wind industry's first 10m wind monitoring masts at Cernmaes in Wales.

Last year saw the company opening a Scottish office in Stirling, carry out the first installation of an Endurance 55kW wind turbine outside of North America as well as installing solar and biomass at the UK's fist zero carbon church in the UK. All this as well as scooping an array of industry awards over recent years. Last year also saw the acquisition of Dulas' PV wholesale department by the German distributor MHH Solartechnik, one of the biggest global solar PV specialists.

With such a strong renewables heritage behind it, and the experience of working through decades of uncertainty and bust or boom policy edicts, the recent FiTs changes will not hinder Dulas MHH's progress and Ian Draisey (managing director), highlights some areas he feels will affect the industry going forward, one being quality.

He states: "With Feed-in Tariffs (FiTs) being halved, there is an undoubted impact on the rate of return of a system. With this in mind both the consumer and the installer should be mindful of the quality of a system. Both need to be certain that the system will run for at least the payback years, and then well beyond to guarantee the initial investment. From our own point of view, the Dulas brand has always been associated with the highest quality products, and the MHH dynamic has only reinforced this position."

Draisey sees rationalisation happening in the market over the coming year. "I feel that some installers will find it hard to sustain the business they had before and some may diversify," he says.

Despite the changes Draisey sees ahead for the sector, he is adamant that positivity needs to reign and that customer requirements must come to the fore. He insists that "PV is a technology for the future, despite the government's relegation of the technology in meeting 2020 targets, those within the energy industry know that it is both popular with the consumer, and behaviour changer – therefore essential in tackling the domestic energy haemorrhage that the UK experiences". Distributors more than ever need to understand the customer, and support the installer – to know what value they add that gives them the edge.

"This is the angle that we at Dulas MHH will adopt when approaching the new emerging market in the New Year," says Draisey. "We are investing in our website and additional business tools where we can, to give the installer the means to help them communicate to the customer. Now is the time to look at the ways we can grow the business and in doing so help our installers grow theirs."

Draisey also advocates looking at the bigger energy picture (and indeed getting this message out to the general public) rather than just focussing on the cost of a system, its installation and the changes to the FiTs system. "The rise in electricity prices isn't going to slow down," he says, "that alone is reason enough to consider investing in a solar PV system.," he adds.

Clearly, there are business opportunities to be had despite the changes to FiTs. Draisey highlights the commercial Feed-in Tariff. "I see a pick up in bigger ground mount and commercial rooftop systems. Commercial tariffs reductions were less than domestic in percentage terms, and look possible with the right investor, married to the right technology and site. Other drivers ignored during the FiT frenzy will re-emerge and grow in significance, such as the Climate Change Levy, and planning requirements which should help the market move along," he says.

Aim high: Ian Draisey, Dulas says positivity must reign

Looking head to 2012, Dulas MHH has initiatives planned to help it continue with its growth and maintain the reputation it has created over the last 30 years. These include supplying a broader, but still quality-focussed portfolio; to present products with a 'balance sheet' credible warranty; to give customers a full B2B e-commerce online solution with a new client-centric website with installer support materials. Dulas MHH will also be bringing competitive pricing to reflect the return on investment required by both commercial and domestic end users.

Keeping FiT

In the light of the Feed-in Tariff cuts, **Toby Ferenczi**, Engensa, describes a roadmap for surviving policy changes – one company's journey

So the Feed-in Tariff was slashed. The ambitious scheme the UK government implemented to increase the level of renewable energy production and build a new industry – the Feed-in Tariff (FiT) – was so successful that DECC now feels it has to slash it deeper and sooner than planned. The FiT scheme has incentivised more than 80,000 homeowners to go solar – especially through companies being able to offer free solar schemes. Most – if not all – solar installers in the UK have been impacted by the recent slash, leaving many of us wondering "what next?"

Most – if not all – solar installers in the UK have been impacted by the recent slash, leaving many of us wondering "what next?"

Here's the Engensa story, with insights and lessons learnt for weathering the FiT storm by banding together and branching out.

When we first heard rumours of the cuts, Engensa started producing content to inform people of the potential impact on UK jobs. We broke down the numbers and wrote a press release and blogged and tweeted about it to let our community know. We also set the wheels in motion to expand our offerings beyond just solar to diversify our products and services to whole home energy efficiency.

When the cuts were confirmed in September, we knew we needed a community effort to pool our resources to present a unified voice and cohesive message if we were to have a chance to oppose the proposed FiT cuts. Along with our colleagues from the Solar Trade Association, we brought together a coalition of solar companies, non-governmental organisations (including Friends of the Earth, 10:10, Greenpeace and Trade Union Congress), and independent activists to form The Cut Don't Kill coalition.

Each member of the coalition has invested significant time, money and effort to raise awareness about the ways in which the cuts would impact our businesses, our employees and UK homeowners who want to go solar. Here's a recap of our insights about what we've seen in the past six weeks and what we've learned.

We started by raising funds to hire experts to help us articulate our shared voice to key media and policy influencers. Then, we mobilised our customers and encouraged UK homeowners to sign petitions to save the FiT and write to MPs.

Some of Cut Don't Kill's achievements to date include:

Materials and information: we produced lobbying packs to aid companies, employees and individuals with templates and messaging to communicate with MPs, maintain the Cut Don't Kill website, petition, and Facebook/ Twitter presence with more than 3000 subscribers, produce a regular newsletter for subscribers

MPs: We coordinated Parliamentary questions, visited MP surgeries by solar companies, met with minister and shadow minister and briefed key Lib Dem advisors and other potential allies.

Events: We organised mass lobby day on 22nd November that was attended by 400 people

Media: The Cut Don't Kill group has been featured in every national business publication and on several broadcast outlets.

Independent research: The Cut Don't Kill campaign and Friends of the Earth commissioned new independent analysis by strategic energy consultants Element Energy that further illustrates the job and revenue loss of the FiT slash to the UK government.

Bright ideas: Tony Ferenczi, Engensa, outlines a campaign designed to weather the FiT storm

As the Green Deal rapidly approaches, here at Engensa we are preparing to expand our offering to help UK homeowners with energy efficiency and whole home solutions. By diversifying we are able to absorb some of our losses from the early FiT slash and still continue to offer free solar to homeowners who need to save money on their electricity bills but may not have the funds to pay for their installation outright.

The solar industry is still nascent in the UK, and for the next few years we will still be dependent on government policy (like all energy technologies). As an industry, we need to join together and give a clear message that solar energy and decentralised generation should be a major part of the government's strategy. If you would like any more information on the campaign then please get in touch at **www.oursolarfuture.org.uk.**

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Sunny delight

The halving of the FiT does not mean the sun going down on solar PV, argues **Mark Elliott** of Energeno

Bright future: Mark Elliot, Energeno, says there are still opportunities to be had from solar PV

It was Harold McMillan who coined the phrase: 'You've never had it so good' in relation to full employment during the 1960s. Putting aside the scare stories of the potential solar PV job losses as a result of the recent government announcement on Feed-in Tariff (FiTs) levels, you could have used the same adage for the very generous subsidies that have been on offer up until now.

After energy minister Greg Barker brought forward the halving of the FiT from April to mid-December, many solar PV companies argued that the sun has gone down on their growth ambitions.

The sun has far from set on the solar PV industry. Consumers no longer blinded by cash incentives will drive demand through the savings they derive through regularly checking their levels of energy use and carbon reduction. This is not just in the home, but soon to be delivered to their smartphones as they go about their daily business.

Although the CBI announced that the government had scored an 'own goal' on its renewable ambitions because of the cost of solar jobs, my argument is that householders can now see the true value of their investment and what returns can be realised because they are no longer seduced by over-generous FiT payments. In short, the future is still bright. Instead of a sense of over-reliance on the subsidy, householders putting in PV will now have to work for their money. There is still a FiT and because the price of capital equipment is greatly reduced, the power is now truly in the hands of the consumer and the installer.

Up until now the MCS-approved installer has not really had to sell the benefits or explain how the consumer can track the performance of his system in terms of cost and carbon savings and the harvesting of energy that is returnable to the grid. Indeed for those householders keen to learn, they had to regularly monitor inverters and meters with difficult-to-understand displays often installed in lofts and outbuildings.

But technology now enables the installer to get this all-important message across in a simple-to-read – and even colour-coded format - which reveals the savings and the surplus energy, all in one convenient portable display, with no calculation required. More importantly, it is portable and rather like an ergonomic 'home hub' for the internet, can look like a design feature anywhere in the home. It can offer a digital read out of energy being produced and glows green when the system is in optimum mode - harvesting more energy than is being used in order that it can be sold back to the grid. Most importantly, those who have so far used the technology have saved an average of 20 per cent on their electricity bills.

To installers, the technology can remotely monitor the performance of the solar PV and flag up failing technology as an early warning system allowing them to add value to the relationship they have with that consumer. This is a big impact on the current one-transactional arrangement recently highlighted in the WHICH? Report that has dogged this fledgling industry to date. In future, there will be a meeting of minds between a more sophisticated and informed consumer and a more proactive and collaborative installer community eager to bring greater innovation to the renewable market.

In future, there will be a meeting of minds between a more sophisticated and informed consumer and a more proactive and collaborative installer community eager to bring greater innovation to the renewable market.

The sun has far from set on the solar PV industry. Consumers no longer blinded by cash incentives will drive demand through the savings they derive through regularly checking their levels of energy use and carbon reduction. This is not just in the home, but soon to be delivered to their smartphones as they go about their daily business.

This creates a level playing field where the customer is king and has a route to redress. Any shortfall in projected estimates can be addressed with the installer early on, whether it is down to a fault or a miscalculation. Also, through the next generation of remote monitoring, installers will be able to flag up issues and therefore be able to continue the valuable dialogue with the customer. It is at that stage that we can truly say: You've never had it so good!

December 12: The day the lights went out on the UK solar industry

Despite overwhelming and fierce opposition to the government's plans to bring forward the deadline for Feed-in Tariff (FiT) cuts for solar PV, the changes went ahead. **REI reports**

On the twelfth day of Christmas, one DECC consultation, two select committees, three Commons' debates and four legal bids could not delay the inevitable.

Six weeks of twists and turns ended with vague promises of raising the export tariff and extra support for community PV schemes but the reduction from 43.3p/kWh to 21p was rubber-stamped before the consultation period even ended.

Business leaders, unions, consumers, politicians and investment groups all lined up behind the solar industry to denounce the early deadline as too harsh - even DECC's Youth Advisory Group expressed its "deep shock and concern" with the premature cut-off date.

One of the industry's biggest players, Carillion Energy, told Renewable Energy Installer that despite the company's close government ties, the "cuts were far more savage than we anticipated".

And on the day Carillion Energy placed its entire 4,500 workforce on notice of redundancy, energy minister Greg Barker, wrote an astonishing letter to ClickGreen claiming the changes would actually create up to 10,000 new jobs in the sector.

Here Renewable Energy Installer reviews the six-weeks that will shape the UK solar industry for years to come:

- **October 28**: After days of rumour and speculation, the plans of the cuts are inadvertantly placed on the Energy Saving Trust (EST) website. The details correctly revealed the size of the cuts but said the initial deadline was December 8. The EST blamed a "technical error" for a lapse and DECC issued a statement saying the facts were inaccurate.

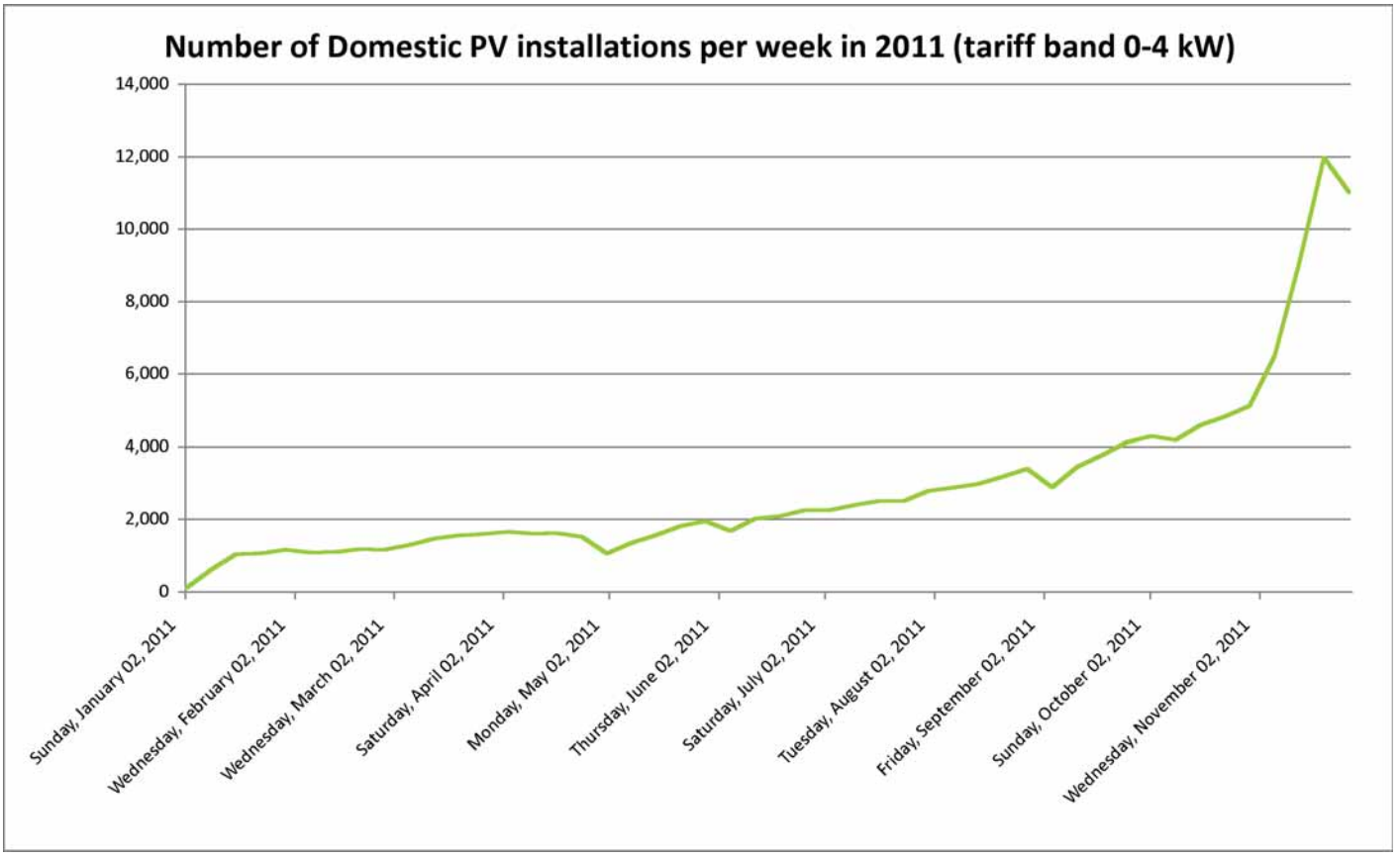
- **October 31**: Halloween horror as energy minister Greg Barker, in a written Parliamentary statement, announces the proposed solar subsidy cuts to 21p and confirms a new deadline of December 12. Shadow energy secretary used 4,000 letters of complaint over the weekend, to secure an urgent commons debate and forces Mr Barker to appear before Parliament.

- **November 1**: The first wave of job losses are announced as consumers race to beat the deadline, leaving installers and solar companies with empty order books from the end of December. Price increases and stock shortages are also reported.

- **November 3**: Scottish government calls on Whitehall to postpone the December 12 deadline and allow time for the orders to be installed and registered.

- **November 4**: The European Commission is asked to determine if the plans will lead to the UK missing its legally binding renewable roadmap targets. Green MEP Jean Lambert tables a motion calling for closer scrutiny of the cuts.

- **November 9**: The Local Government Association warns councils are pulling the plug on thousands of solar PV community projects because of the rushed and deep cuts. The LGA warns the plans could leave thousands of vulnerable families facing fuel poverty.



- **November 10:** CBI director general, John Cridland, joins in the debate saying the cuts had "evaporated all industry trust and confidence" in the government

- **November 20:** The first legal bid against the plans is launched as Friends of the Earth commences proceedings seeking a judicial review. The legal fight is supported by the likes of Solarcentury and HomeSun.

- **November 22**: The solar industry comes together as one for an impressive rally and march on Parliament. MPs are urged to vote against the plans and protesters campaign in Westminster.

- **November 23**: Despite whispers of a Lib-Dem revolt, the Commons votes in favour of the DECC proposals.

- **November 25**: The High Court throws out an application seeking a judicial review, preventing the cuts to take place until after the consultation has finished

The solar industry comes together as one for an impressive rally and march on Parliament. MPs are urged to vote against the plans and protesters campaign in Westminster

- **November 29**: Energy minister Greg Barker tells a Parliamentary select committee that his only regret about introducing an early December cut-off point for solar PV subsidy was that he "didn't do it earlier".

- **November 30**: Carillion Energy appears to be the first of the biggest companies to buckle under the pressure of the government plans and announces that it is placing its entire 4,500 workforce on notice of redundancy.

- **December 5**: The High Court allows the legal bid, spearheaded by Friends of the Earth, a fresh bid to stall the proposals. However, the date set for the hearing is December 15, three days after the cuts are to come into effect.

- **December 23:** The DECC consultation finishes, 11 days after the cuts were brought in.

As one industry commentator described to REI "It's like a manager preparing his team for an FA Cup Final. He sets out his best players and the tactics to last the entire ninety minutes to win the match.

"But at half-time when the team is one-nil down, the referee comes in and says he's only going to allow ten minutes of the second half to be played – what chance have they got of turning it around in a short space of time?"

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Fresh news

Steve Pester, BRE, takes the focus off PV and highlights the re-vamped MCS installer standards for small wind

The world has been buzzing over PV recently, so let's talk about small wind turbines. The MCS installer standard MIS 3003 has had a serious make-over. In the absence of hard data, it was known from the start that parts of the early versions of the document were based on the opinions of experienced installers, some theory and some inspired guesswork. Even so, the MCS Working Group did a great job in blazing the trail and the first release of the standard helped in raising the quality of installations and preventing over-optimistic estimates of the annual energy small machines would generate.

Swap shop: Steve Pester, BRE, switches the focus from PV to wind

However, times move on, more data has been collected, more hard work has been done by the Working Group and the recently released version 3.0 has some extra goodies (or baddies if your only focus is cost). Although the new requirements will require installers to become even more knowledgeable and professional, the new sections

The world has been buzzing over PV recently, so let's talk about small wind turbines

will also help get projects through the planning process.
The key revisions and new sections are:

- Revised method for annual energy calculation allowing better precision
- Acoustic performance estimate, very important for planning
- Method to determine likely levels of light flicker in certain zones
- Responsible siting risk assessment process defining safety zones with respect to ice throw & structural failure
- Aircraft Communications, Navigation, and Surveillance assets register – a method of ensuring any turbines will be located so as not to cause any issues for aircraft navigation systems

BRE holds lots of seminars & workshops relevant to installers, at Watford and across the UK, e.g. Smart Energy Conference in late January - details at **www.BRE.co.uk/events**

Q&A

Matthew Cody

VPhase

REI: What have you got planned for 2012?
MC: We expect to continue the good growth trajectory of 2011, working closely with social housing organisations, utility companies and electrical contractors to raise the profile of domestic voltage optimisation as a viable, proven technology that is good for installers, homeowners and social landlords – and good for the environment as well.

REI: What do you see as the growth areas in renewables?
MC: The Green Deal will generate a renewed surge of interest in renewables, making technologies more widely accessible and financially viable. Domestic Voltage Optimisation will (we hope) feature in the Green Deal and therefore be a key growth area, with 26+ million homes in the UK being suitable for the technology.

REI: How is your own company cutting its carbon footprint?
MC: We have ensured that throughout the design process of the VPhase voltage optimisation device that we have used recyclable elements wherever possible and have retained a UK base of manufacture to minimise carbon miles. Encouraging take-up of domestic voltage optimisation will contribute more to reducing the nation's carbon footprint too.

Matt Cody, head of marketing, VPhase

Wise words

It's all very well saying more installers need to get into installing renewable technologies, but for many it remains a leap into the dark. **Ian Stares**, PTS, says there are four key steps installers must take before they take the plunge

Advice column: Ian Stares, PTS, outlines the four key areas installer must pay heed to before taking the plunge into renewables

The market for domestic heating products and in particular renewable technologies, is nothing if not dynamic. Dramatic changes to the legislative landscape, such as the Renewable Heat Incentive, the introduction of new tariffs for the generation of renewable energy and technologies which fall outside of the traditional installer's comfort zone are all making significant impact.

Take the Green Deal for example. When first introduced by the government it was very much an insulation package, but over the course of the last twelve months it has gradually evolved into a more rounded package which will offer consumers high efficiency boilers and possibly renewables.

What's more, the different ways of financing renewable installations are developing all the time. The renewable installer needs to not only be able to install the technologies but also advise customers how to pay for it.

What's more the changes appear to be increasingly a part of everyday life. It is not at all uncommon nowadays to see solar panels on domestic homes as solar photovoltaic (PV) sales rocketed since the introduction of the Feed-in Tariff in April 2010.

Installers can be forgiven if they find the pace of change dizzying and it is clear that many remain uncommitted to the renewable future. There are still too few trained installers, circa 3,000 in the UK, which is clearly providing a barrier for growth of renewable technologies.

The Microgeneration Certification Scheme (MCS) is still seen in many quarters as a barrier and there have been a number of instances where even MCS trained installers have encountered problems with installations. However, it is clear that MCS is essential for installer training if the financial incentives are to be claimed.

All of this does little to encourage installers into renewables, but the key message is that support is there to help you. My view is that there are four key steps installers must take to get into renewables:

1: Get on an MCS course

Like it or not, MCS is an essential ingredient to get into renewables but it is not enough on its own. The key issue with MCS is that it gives the installer access to a range of incentives which can help the consumer finance renewable technologies. You can't access the incentives without the accreditation. Installers need to decide which technologies they will concentrate on and get the appropriate MCS accreditation.The key technologies to focus on are air to water and air to air heat pumps, solar thermal, solar PV and ground source heat pumps and biomass.

2: Get on a specific manufacturer training course

An MCS course on its own is not enough. My advice to installers is to supplement MCS with a specific manufacturer training course.

There are a number of excellent training courses from quality manufacturers. Installers should do their research and determine the key issues expected on installation of each type of technology. This is especially relevant for heat pumps where heat loss calculations are vital to ensure a well designed and properly installed system.

3: Align yourself to a merchant that offers on-going support

Merchants to some extent could be viewed as a supermarket. On our shelves are various brands from which the installer can pick and choose, but the big difference is that the best merchants will be able to offer informed advice on products and brands.

For example, I spend a large percentage of my time advising installers on one of the big issues being faced when installing heat pump technologies, namely inadequate insulation, incorrect heat pump sizing or a lack of attention being given to heat emitters, such as radiators.

The key point is to align yourself with a merchant who offers on-going support and can act a source of advice and knowledge.

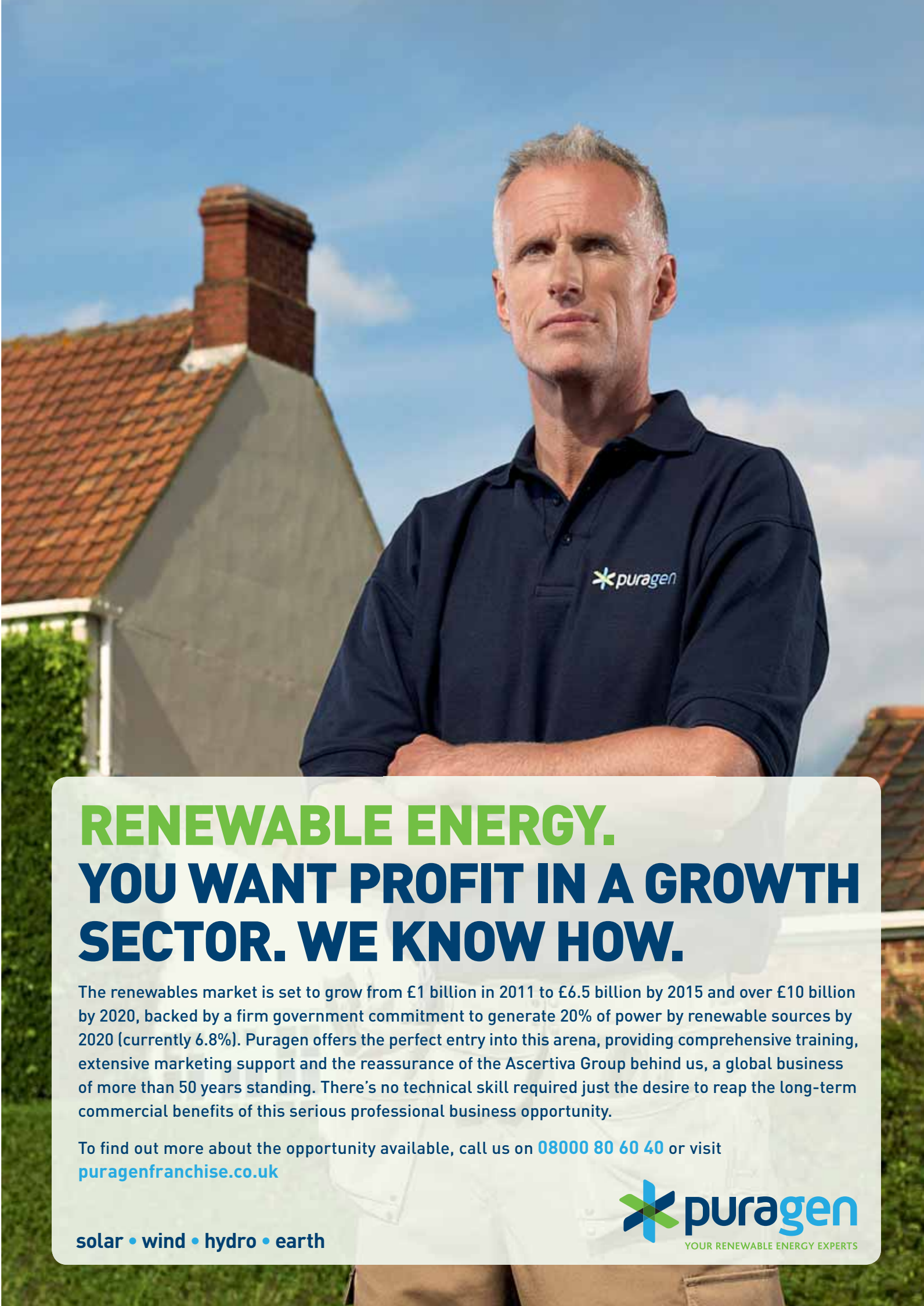
4. Go to a merchant with a track record in renewables

Different builder's merchants across the UK are at different stages of development of their renewables offering. Some, like PTS, are helping to shape legislation and are supporting installers on the ground with dedicated renewables branches like PTS Aylesford in Kent. PTS was the first merchant to acknowledge the importance of renewables and set up Aylesford to advise, inform and train installers. PTS is also rolling out a network of renewables specialist branches in strategic locations across the UK.

The best merchants are providing added-value with access to a wide range of renewables products, advice and training from a merchant who "knows what they are doing". This, in my opinion, will be a key factor in guaranteeing success for installers looking to make the move into renewables.

Conclusions

There are enormous opportunities for installers who want to get into renewables, but it is clear that you will not be able to do it on your own. Good training and on-going advice you can tap into at a moment's notice will help smooth your way, but be sure you are taking that advice from people who know what they are talking about.



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Pollard's Patter

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

Thinking about my column this issue, I was spoilt for choice. "Cut don't kill" has been the industry's overwhelming response to the Feed-in Tariff review, which came hot on the heels of the revised tariffs for biomass under RHI. As that scheme gets the green light, we're already digesting the government's long-awaited Green Deal consultation document - potentially the UK's most substantive swing towards a low carbon future.

But while the details still seem sketchy, what do we actually know?

The basic and unavoidable facts remain the same. We need many more houses to cope with a growing and ageing population. 26 million dwellings and two million non-domestic buildings need to be significantly more energy efficient. Fuel poverty has reached crisis point, and the government has to reduce carbon emissions by 80% by 2050.

This represents the opportunity of a lifetime for those who are ready to grips with renewable heating and microgeneration. At Plumb Center we are continually investing in a complete range of products that will make a difference and provide our customers with efficient solutions for a diverse range of applications. Our training centres are providing fully accredited courses in all the main technologies, for those who want to get ahead and we continue to lobby the government, ensuring that the industry's voice is heard before policies are finalised.

Help is at hand. Keep the faith!

Two minutes with . . .

Who are you?
Juan Romera-Wade

What do you do?
I am the ceo of Krannich Solar UK, a European distributor of photovoltaic equipment.

Where are you?
Not at the gym where I should be but in my office progressing with our 2012 plans.

How's business at the moment?
During the last 12 months we have been busy establishing Krannich Solar in the UK market and delivering a superb product. Given the large demand from UK installation companies we have seen huge organic growth in the last six months and have continued to expand our office and warehouse space in Reading, Berkshire, most recently with the opening of a new training facility to offer customers the opportunity to undergo comprehensive training on the function and installation of our PV systems.

How could it be better?
The announcement from the government to cut solar power subsidies for homeowners in October had a serious impact on business levels. We were fortunate that we were able to use our international network of suppliers to satisfy the high levels of demand at the end of last year as customers sought to register before the deadline.

Who do you admire in renewables?
I admire a number of installation companies (many of them our customers) with whom we share ethical business values and codes of conduct. These are mainly British entrepreneurs who have built successful businesses working in partnership with suppliers like ourselves. We admire organisations that work hard at adding real long term value to customers.

What's the best business advice you have received?
During my MBA business studies, one of our lecturers looked amused as all students in the class introduced themselves with very important job titles…he then told us to face the fact that we are all effectively administrators. For me in business it is important to keep both feet on the ground and never stop learning. Reflecting on experiences and evaluating outcomes is one of the most powerful tools available to businesses.

How are you going green?
I am fortunate to live in a new build property with all the requirements for energy efficiency. My next step is to have a 3.6kW solar system installed. I am also excited about some of the upcoming advances on energy storage technology which will allow us to start re-charging household appliances and electrical vehicles from home. The way forward has to be achieving grid parity and based on the fact that the prices of PV equipment will keep coming down in the next few years we are hoping the UK will reach this position soon.

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Talking Ten to the Dozen

Leading renewable experts reveal their opinions

What excites you about renewables in 2012?

Terry Skee, **Cleaner Air Solutions**

"The continued levels of interest and the much vaunted introduction of the Renewable Heat Incentive (RHI) will see the UK's renewables businesses position themselves to cope with more than one technology – only the fittest and best will survive this next and probably the most lucrative growth of any industry in the last 50 years – so bringing an new era in the growth of jobs within the engine of the UK's drive out of recession."

Griff Thomas, **ECA Certification**

"What aren't I excited about? There's so much fantastic work going on in the industry, the one thing that I think will shape the renewables market in 2012 will be the upcoming Renewable Heat Incentive (RHI) for domestic premises, and MCS has a big role in making sure it delivers everything it should."

Robert Markus Feldmann, **Azur Solar**

"The reduced Feed-in Tariff (FiT) will change the UK solar landscape, forcing out high risk equity speculators and unprofessional suppliers and focusing on quality, trust and advanced solutions like our unique Azur 2P coated modules that achieve 15 per cent more lifetime power, Azur Solar will still deliver 8-11 per cent return on investment and a sustainable solar future."

Adrian Troop, **Nu-Heat**

"Nu-Heat is looking forward to seeing the results of all the hard work we've put into making sure that the design of heat pump systems is spot on so we can help our installer base to successfully complete many more energy efficient installations, both for straightforward and more challenging projects."

Kevin Ley, **Redland**

"Perhaps the most important event from our perspective, as both a roofing material and solar PV company, in 2012 will be in the introduction of the MCS 012 standard. This will include consideration of the mechanical fixing method as part of solar PV product certification, something not covered by the existing MCS scheme."

Dean Walton, **EOS Energy**

"At EOS Energy, we are really excited about 2012. We see massive opportunities with BIPV (Building Integrated Photovoltaics) which fits perfectly with our main facade part of the Alumet Group. With the Feed-in Tariff (FiT) changes we believe that there will be more focus on commercial PV installations, again as the current Commercial PV Installer of the Year we are ready for this and will use our contacts built up over 20 years to lead this market."

Huw Wigmore, **Santon Switchgear**

"Providing a solution for the increasing issue of fire safety of PV installations by promoting the Santon Fire fighter Safety Switch. The FSS allows the fire fighter to remotely isolate the DC cables in an installation. It can be operated from the building entrance and is easily resettable."

Tom Craig, **Evo Energy**

"The coming year is an exciting one for our business. With awareness of solar energy at an all-time high, we're looking forward to growing our sales and cementing our position as market leader. We already have some big projects lined up for 2012 and I'm confident many more will come our way."

Toby Darbyshire, **Engensa**

"This year we're looking forward to bringing more "free solar" to UK homeowners as well as raising awareness of saving money on electricity through energy conservation. In addition to free and bespoke PV and thin film systems, we're launching our first products for customers to address whole home energy consumption."

Neil Howlett, **Solland Solar**

"2012 will be a challenging year for the PV installer with opportunities available for companies with foresight. An installer choosing the right manufacturer now, based on factors above price, such as quality, efficiency and aesthetics, will be rewarded later in the year when the domestic home market once again upturns."

TECH TALKING

All in the mix

Lee Summers, Spitfire Wholesale, continues his technical series looking at Building Integrated PV and its future in the UK

The bulk of the installations in the photovoltaic (PV) sector have mainly been carried out using the standard crystalline modules installed on commercial, agricultural and residential roof tops. Although a big supporter of this type of PV deployment, I do believe another sector is being largely overlooked. Building Integrated Photovoltaic (BIPV) could well hold the key to the long term stability and growth of the PV market in the UK.

Building Integrated facades, re-roofing and solar shading products would see PV as not just an add on to a building, but part of the building fabric itself. As an active component of the fabric, whole life costs of PV can also be significantly reduced and offset against the operational costs of the building.

The significant factor holding back mass take up of this approach is green literacy at the client and specification level. Education of this sector must be a priority for manufacturers and system integrators alike in the coming months. Focusing in on the benefits of such a technology will ensure that embedded generation can be delivered to a high aesthetic standard in the UK.

Thin film solar products are potentially the most viable option for this market place. Lightweight, aesthetically pleasing and not as dependent upon tilt angle for maximum generation are the key benefits. These factors enable thin film to be deployed in many situations where traditional crystalline technologies are not viable.

Here's to a greater mix of PV product and PV application going forward.

Clarity call

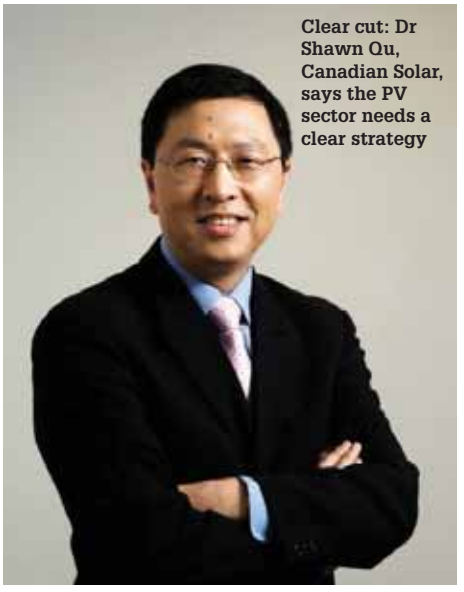
Dr Shawn Qu, Canadian Solar, discusses the recent FiT changes and the best way forward for the sector

Anyone reading today's newspapers cannot fail to see that it is a turbulent time in the UK solar power industry. The recent government announcement of a full review and consultation of the Feed-in Tariffs (FiT) has caused a lot of debate and concern throughout the whole industry. While the government has argued that the review is to ensure we don't risk the type of 'boom and bust' industry that has been seen in other countries, such as Italy and France, there is real concern amongst many of the immediate impact potential subsidy cuts will have on the growth of the fledging sector.

In a recent speech given by Greg Barker, minister of climate change and energy, at Solar Power UK, he commented that the UK should look to other countries like Germany who have made a success of their FiT. However, from what he went on to say, Canadian Solar can't see on any level where he is planning on doing this.

The government has declared the solar power industry has a 'bright future' and I firmly believe this. The solar power industry in the UK has huge potential and whilst feed-in tariffs help support this emerging industry, they are not a permanent solution.

What we need now is a clear strategy from the government on how it plans to support the so-called 'solar power energy revolution'. This certainly would go a long way to securing confidence in the market and encouraging investment.



Clear cut: Dr Shawn Qu, Canadian Solar, says the PV sector needs a clear strategy

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Need to conform?

After reading the last issue of REI which went to press just as news of the Feed-in Tariff changes hit the industry, **Kevin Carling**, Secon Solar, felt more discussion was needed on the necessity to conform to EPC level C

Talking point: Kevin Carling, Secon Solar, is concerned about the link between EPCs and incentives

Reading the latest issue of REI and following a meeting of the STA, what most of your commentators seem to have missed in all the debate about Feed-in Tariffs (FiTs) reduction is that the requirement to conform to EPC level C or above could make installation of any form of renewable technology prohibitively expensive.

Most estimates say that it would exclude 90 per cent of properties. The decision to link FiTs with EPC is just the thin end of the wedge and will probably also be extended to the Renewable Heat Incentive (RHI).

To link solar technology with EPC makes no sense at all. PV is about electricity generation and can be just as effective installed on a shed roof with no EPC.

Solar thermal is mainly for domestic hot water which again is not really affected by energy performance. In fact, usually installing a new, properly insulated cylinder can have a bigger impact on energy performance than a lot of other measures.

The industry should be resisting all measures to link EPC with incentives because most consumers, after installing some sort of renewable technology actually become more aware and will take further cost effective steps to improve insulation and draught proofing.

The industry should be resisting all measures to link EPC with incentives

Head for heights

James Johnson, CSS Worksafe, outlines the company's health and safety services available to today's installers

We offer one of the most comprehensive course choices in the UK for the health & safety industry and have trained over 15,000 installers for companies such as The Confederation of Aerial Industries. Our range of structured courses is complemented by our ability to tailor-make bespoke courses for any company and business objective. We try to maintain a realistic price structure as well as to use some of the best professional trainers in the country.

One of the areas we are currently involved in is the lack of regulation for theory or practical working at height training, even in the solar PV industry. We are trying to change this directly with the MCS by encouraging them to see how important it is to train people in real height-based scenarios.

Our ladder safety kits alone have become a standard within the industry and are being used by over 50,000 thousand installers nationwide. We have worked with the HSE on their advisory committee and are senior members of the BSIF. Setting equipment standards for installers and making sure safety is paramount for installers 'on the job' is our key objective.

We have also installed thousands of fall arrest systems over the last five years to well-known construction companies tendering for projects with local government and household brand names.

Top stuff: CSS Worksafe is encouraging MCS to see the importance of real-height based training

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Finding a solution to lenders' consents

With banks continuing to tighten their belts and becoming even more fastidious in their lending decisions, some solar PV installers involved in the rent-a-roof scheme are finding they are encountering difficulties when it comes to getting consent. **Sonya Bedford**, Stephens Scown LLP, explains how professional installers may overcome the problem

Before installation of the solar PV panels can even begin, the homeowner will need to go to their lender to get consent for the work to be carried out. Most banks will have a restriction on the homeowner's title deeds, which can often hold this process back. In order to get that permission from the lender, the installer will need to do the following to meet the requirements:

- Provide evidence of their Microgeneration Certification Scheme (MCS) accreditation to demonstrate that the panels will be installed to a suitable standard.
- Let the lender know of anything in the lease document that is likely to impact on the lender's decision to provide consent.
- Send a copy of the lease agreement to the lender.
- Confirm that they have taken an appropriate physical inspection of the property to ensure that it is suitable for the equipment.
- Be responsible for insuring all the installed equipment.
- Maintain the system and ensure that the maximum maintenance fee payable by the borrower is £60 or less per year – it is also important to note that the fee may not be increased by more than the increase in the Retail Price Index (RPI).
- Repair, at the expense of the installer, any damage to the property that is caused during the installation or maintenance of the solar PV equipment.

If professional installers get all of these things right they should not encounter any problems with the lenders

- Ensure that the lease is no longer than 30 years.
- The lease must also allow for the removal and reinstatement of equipment for roof repairs and should provide a reasonable grace period for continuous removal, during which installers are not to seek to recover from the homeowner any losses from the Feed-in Tariff.
- The lender, in the case of repossession, has the right to break the lease but only If the lender has been advised that the panels are adversely affecting the sale of the property.
- And finally, the lease has to exclude the security of tenure provisions under the Landlord and Tenant Act 1954.

If professional installers get all of these things right they should not encounter any problems with the lenders concerned. While the list is not exhaustive, it shows the installer has met minimum requirements. Once consent is received from the lender, it means they will be able to register the lease of the roof with the Land Registry and work can begin!

Legal eagle

Unfortunately, despite best efforts, there are times when legal wrangles arise. **Kinshuk Chatterjee,** lawyer at Zaiwalla & Co Solicitors, offers advice on the settlement of disputes between companies

Where there is a business, particularly one which involves cross dealings with third parties, legal disputes do arise and businessmen do get involved in legal suits. It is advisable that parties should aim at settling the claim. Not always will the claimant get every penny of his claim amount but litigation proceedings involve costs and are time-consuming. In addition, it often results in souring the relations between two business groups forever.

A legal settlement must be conducted and finalised with caution. There have been numerous examples in the past where parties have approached the court to determine what the terms of the settlement were. This negates the purpose of concluding a settlement in the first instance. The terms of the settlement should be clear and well understood between the parties, in other words the parties should be ad idem. A legal settlement is in essence a contract by itself. A promise is made by one party to the other that if the latter forgoes a legal claim, the former will suffer some detriment. It is in consideration of this promise that the party intending to litigate its dispute settles the matter.

Although a legal settlement is a contract, there is no requirement for a standard form for a settlement to be concluded. Settlement agreements are governed by principles of contract law and a chain of emails exchanged between two parties can result in legal settlement so long as the requirements of a contract formation are present.

Advice line: Kinshuk Chatterjee, provides the legal viewpoint on settling disputes in business

A legal settlement must be conducted and finalised with caution. There have been numerous examples in the past where parties have approached the court to determine what the terms of the settlement were

English courts have a strong propensity to uphold contracts. Therefore, a party who subsequently raises an argument that it was not its intention to enter into a binding agreement has to make a very strong argument in court. This can be a daunting task especially if there is no written communication to this effect. Therefore parties should make their intention very clear in writing/ correspondence that they do not consider themselves to be contractually bound. Likewise, consideration is also an important aspect whilst negotiating a legal settlement. A party should understand the value in exchange of which it will agree to relinquish its right to bring or continue its claim in a court of law. Courts do not value the consideration that moved from one contracting party to the other. In other words, a court of law will seldom adjudicate on the issue of whether the value exchanged between parties was adequate but rather whether it was sufficient to fulfil the mandates of a valid consideration under the law of contract.

English courts have a strong propensity to uphold contracts. Therefore, a party who subsequently raises an argument that it was not its intention to enter into a binding agreement has to make a very strong argument in court

Therefore parties should make their intention very clear even in informal exchanges as a simple "yes" or "no" in written communication could be said to reflect a party's intention to settle a matter.

Protecting interests

Home owners safeguard their cars and homes but what about the PV system sitting on their roofs? **Renewable Solutions** explains how PV Protect will safequard their investment and provide a welcome revenue stream for the installer

It's a little like asking why there is a need for a house alarm or car alarm. The government, OFGEM and many other organisations have recently highlighted the growing issue of fuel poverty, driven by lowering family income and ever-rising electricity costs. As PV technology gets more established in the UK, knowledge of its benefits will spread, and with it will come the threat of theft.

Other countries with more established PV markets have seen PV theft become a reality, and many of these do not have fuel bills spiraling at a rate as high as our own.

Let's not forget; the average end user has in excess of £10,000 of investment vehicle, unguarded on a roof!

There are also many large investment-based PV schemes in the UK, lots of them installed in higher-than-average crime areas. It is logical to protect these installations (and the fund's interests), especially where the tenant or occupier has not made a personal investment in the installation or is not retaining the FiT payment.

The concept

PV Protect is fully UK / Internationally Patent Pending. Most alarm systems are both visual and audible. PV Protect is neither (unless the owner wants it to be). Damage to a property from burglars often occurs after an alert is made and this increases the chance of confrontation. PV Protect works by alerting the occupier, landlord, site manager or other third party of the attempted theft, without alerting the thief. Authorities can be contacted and the culprits apprehended on site, without loss of the installation, damage to the property or confrontation.

How it works

Bespoke marine-grade pressure switches are installed to key modules on the array by a universal profile bracket (any profile will accept a PV Protect system). The moment a module is lifted from the array, a signal is sent to a central unit (inside the property). This can be programmed to wirelessly phone the property owner (or any other number), where a pre-recorded message will advise that the PV installation is being tampered with. The call is made wirelessly by GSM.

Third party alerting

Many PV installation owners are post-retirement age or elderly, having been attracted to the installation due to the high level of return on capital. These clients do not want to or cannot deal with a theft attempt. The GSM control unit at the heart of the system can be programmed to notify a nominated neighbour, friend or family member of the theft attempt, and they can then deal with it instead.

Multi-site installations

If, for example, a local authority scheme was being monitored, each property can have its house number programmed into the central unit, and all the units could be programmed to phone a site manager or security manager. This way, regardless of the number of installations being protected, the system will advise of the exact property being targeted - and all without the knowledge or worry of the occupier.

Installer benefits

There are numerous advantages for the installer, says Renewable Solutions. Firstly, every existing PV owner is a potential client for a PV Protect system, so every client can be contacted and extra revenue generated - and without any sales or marketing costs.

The company also predicts that in the aftermath of the Feed-in Tariff (FiT) reduction, it will give companies an opportunity to generate a new income stream and most importantly, utilize experienced installation teams who otherwise may be laid off.

Safe as houses: Not only does PV Protect provide peace of mind for a homeowner, it also provides benefits to the installer

A PV Protect system offered as part of a new PV installation also builds value and offers a unique selling point over a company not offering the technology.

The price is right

Units will be available in early February with a cost price of around £380. Renewable Solutions will be carrying out national marketing of the system, with an RRP of around £1200. The RRP is less than 1 years return from the FiT for an average 4kW system – a small price to pay for 25 years peace of mind, says the company. And it adds, given that two to three systems could be installed in a day (without the need to pre-survey), the revenue potential for a sales and or installation company is excellent.

Renewable Solutions plans to carry out UK marketing to raise awareness of the system. It is also in talks with major distributors to enable entry into Europe and beyond.

The company is accepting initial calls of interest, where installers can also reserve stocks pre-February launch.

It is happy to look at exclusivity in certain territories or for certain applications (ie. fund-based, multiple site, free system etc) subject to volume purchase.

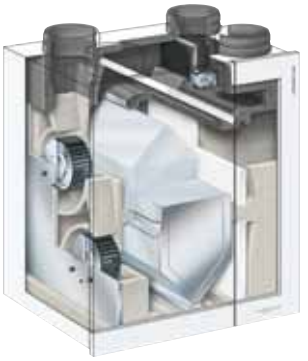
Wish you were here

Where serious insulation efforts create an airtight space, heat pumps know few boundaries. For a holiday cottages renovation project, a **Viessmann** heating ventilation recovery system complemented the match further

It is often not feasible to install heat pumps in older properties due to their potential for heat loss which can affect the heat pump's ability to operate efficiently. However, for Malcolm Patterson of EnviroEng, a designer, project manager and installer of environmentally considered houses, it made commercial sense to fully insulate a two holiday cottage complex near Binbrook, north of Lincoln, to allow the installation of two heat pumps. Efficiency has been improved further by a heat recovery ventilation (HRV) system.

Patterson fully understands his customers' requirement for quaint, quirky properties that rely heavily on modern building techniques and standards to generate the lowest possible operating costs. He opted for the Viessmann Vitovent 300 ventilation system which provides fresh air and improved climate control – ideal for the airtight property he had created – while also saving energy and fuel costs by reducing heating requirements. "Thanks to the Vitovent, and all the other measures we've included, down to eradicating letterboxes, we've managed to achieve Level 4 of the Code for Sustainable Homes which is quite a coup for an older building renovation," says Patterson.

The ventilation system works in tandem with two Vitocal 300-G 17 kW ground source heat pumps. It can recover up to 92 per cent of the heat from the exhaust air and return it to the living space. Odours, moisture and pollutants from the home are removed and replaced with fresh, clean air, for the benefit of residents and to protect the building structure. When heat demand is low, the energy recovered from the extract air is enough to keep room temperatures pleasant. The heat pump is used primarily to cover demand peaks via the hydraulic heating system; it heats DHW and cools the rooms using convectors or surface cooling.



Hot property: A Vitovent 300 heating ventilation recovery system which has been put to use in a holiday cottage complex north of Lincoln

Ground works

Winner of renewables installer of the year at the Renewables Awards, **Ground Heat Installations**, outlines one of its recent projects linking a heat pump, solar thermal and a wind turbine

Alf Rogers contacted Ground Heat in order to link a heat pump with solar thermal energy and a wind turbine on his home in North Wales. The property is an old cottage with excellent insulation and a wind turbine that is producing far more electricity than predicted from calculations.

Ground Heat installed an 8KW Vaillant Geotherm heat pump with a bespoke 200 litre stainless steel buffer engineered by Dave Thompson, technical director of the company. The buffer is fitted with a built in immersion heater. The solar thermal for hot water is backed up by the immersion, under most circumstances being operated by electricity produced by the wind turbine.

The 5KW wind turbine is perched on a 15 metre mast on the north west coast of Wales facing the sea. Ground Heat has reinsulated all of the roof spaces in order to improve heat efficiency. The ground source heat pump is linked up to the wind turbine so that when the wind blows the heat pump switches off automatically and the wind turbine feeds the immersion heater built into the buffer. This uses all of the electricity that the wind turbine produces during the winter months. When the wind turbine is not producing electricity during the winter months the heat pump automatically switches itself on.

The system can be operated through remote access via an iPad, iPhone or web browser in order to monitor and adjust settings when the property is unoccupied.

Joining up: Mr and Mrs Rogers who have linked a heat pump with other renewables

Something old, something new

A **Danfoss** heat pump is helping reduce fuel costs and provide heat at a recently renovated country cottage

A Nottinghamshire couple who have created their dream home in the leafy parkland close to Lord Byron's family seat at Newstead Abbey are enjoying the benefits of heat pump technology from Danfoss Heat Pumps UK.

Pamela and Clement Young have renovated their 1850s stone-built cottage, once a farm manager's house, within the Newstead Abbey Park. They carried out the construction work after purchasing the property eight years ago and have recently completed the project with a green energy makeover, which included solar panels and a Danfoss DHP-AQ 11kW air source heat pump.

The Youngs will benefit from the seasonal performance of the new DHP-AQ, which operates at temperatures as low as -20°C. The pump achieves this via a system which constantly controls and optimises three key parameters in the product: airflow (efficient variable speed EC fan), the refrigerant circuit (electronic expansion valve) and heat distribution (OPTI technology). It also includes defrosting technology designed to ensure full functionality even in very cold weather. The new DHP-AQ also offers low running noise and has an attractive, contemporary look.

As the Young's home is off the main gas grid, the four-bedroom home which was previously heated by LPG, became a concern due to the rising fuel costs, thus a renewable energy solution was sought. The house is highly insulated and underfloor heating was installed throughout during the original renovation, making the ideal conditions to optimise efficiency from the heat pump.

Mrs Young said: "We always planned to install renewable energy systems and we researched the choices and benefits carefully before making our decision. We chose an air source heat pump because it could be installed without the need to disturb our landscaped garden, which would have been necessary with a ground source pump."

She added: "I contacted Danfoss Heat Pumps UK, after searching online and finding their website as I liked their professional approach. Danfoss put me in touch with their approved installer in our area, 4ward Heating, who were really helpful."

Mr and Mrs Young wanted to see an air source heat pump in action before making their final decision, and were invited to view the DHP-AQ at Danfoss Heat Pumps UK's head office in Sheffield and also at a home nearby where 4ward Heating had fitted a system.

Mrs Young said: "Andrew, the installer, was able to answer all of the questions that we had and to arrange for us to view air source pumps in action, after which we felt much more confident about our decision."

Andrew Ward, owner of Lincoln-based 4ward Heating, says: "We recommended that the Youngs opted for the DHP-AQ because it takes advantage of the latest technology and has the right aesthetics for being located outside such a stunning property.

The new DHP-AQ also offers low running noise and has an attractive, contemporary look

"In terms of the installation, it is also much easier to fit than older-style heat pumps due to its 'plug and play' electrical connections which save time on site."

Ward specified the Maxi Controller with the DHP-AQ, which is an internal unit containing the control system and an integral 180 litre hot water storage tank. The internal unit was installed in the ground floor boot room and the Youngs had their old hot water cylinder removed, freeing up useful space on the first floor.

New with old: The Youngs' renovated home in Newstead Abbey Park, close to Lord Byron's family seat, includes a Danfoss heat pump

Water world: Using water as the energy source has a number of advantages when compared with air or ground source, says Kensa

Making a splash

Kensa Heat Pumps has provided ground and water source pumps at the Lee Valley White Water Centre

Lee Valley White Water Centre, a new world class venue, built in the Lee Valley, provides a much-needed white water site for canoeists, kayakers and rafters alike. Effort was sought by the developers of this project to reduce the carbon footprint of the Park's operations and maximise energy efficiency.

Two 50kw plantroom heat pumps manufactured and commissioned by Kensa Heat Pumps, a UK manufacturer of a complete range of ground source and water source heat pumps, were installed into this prestigious project. As part of the Lee Valley park development plans, a lake was to be purpose-built to provide the water into the kayak and white water courses.

A number of energy sources can be used as the heat source for heating buildings such as the Lee Valley White Water Canoe Centre. Most commonly, heat pumps draw heat from the air or from the ground. Other heat sources include water; nearby streams, lakes and other natural water bodies. Any large water source situated close to the proposed building to be heated is an ideal energy source for a heat pump. Using water as the energy source has a number of advantages when compared to air or ground source.

No digging of trenches is required, which significantly reduces installation costs from the outset. Also, the heat transfer rate from water is higher than that in the ground and the water is in close contact with the entire pipe at all times. The flow of water in the lake provides constant energy replacement and the return temperature to the heat pump is generally higher, which in turn increases the coefficient of performance of the heat pumps.

Using water as the energy source has a number of advantages when compared to air or ground source

When Kensa Heat Pumps was asked to provide a heating and cooling solution for the Lee Valley Canoe Centre, utilising the purpose-built lake as the energy source for the two 50kW plantroom heat pumps, was the most compelling solution from a cost saving and CO2 reduction point of view, for all of those involved with the project.

Kensa supplied thirty 50m long slinky ground arrays, which were buried under pea gravel in the header of the lake which feeds the kayak course. The slinkies were buried under the pea gravel to provide protection for the slinkies and to ensure they remained buried under water.

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Heat pump delights

Nu-Heat Underfloor and Renewables says it is delighted with the performance of the Hitachi Yutaki-M single fan air source heat pump, recently introduced to the company's range of renewable products.

The MCS-approved single fan Yutaki-M is capable of achieving 60°C output temperatures alongside CoP (Coefficient of Performance) values. When considering the commonly stated industry values of +7°C outside temperature and +35°C output temperature, the single fan Yutaki-M has an available output of 11kW and a CoP of 4.43. Although this value is useful for comparing products from different manufacturers, it is not representative of most UK installations. Nu-Heat recommends considering performance at typical UK design temperatures of -3°C outside temperature and +45°C output temperature. Using these values the heat pump has a favourable COP of 2.3 and an available output of 8.2kW. A typical seasonal CoP of 2.5 – 3.5 can be expected across the heating season dependant on building insulation and the heating system.

In addition to performance, the single fan Yutaki-M is a smaller unit, only 800mm in height. Nu-Heat has been working alongside Hitachi for a number of years and is pleased with the size and performance of the single fan unit. Nu-Heat has also developed a range of compact cylinders designed specifically to operate at the higher output temperatures achieved. The range features a 215 litre cylinder to store water at the higher temperatures experienced and features a heat pump coil with a large surface area. Additionally, a 255 litre version of the cylinder is available featuring a solar coil.

Big fan: The Hitachi Yutaki-M single fan air source heat pump, has recently been introduced to Nu-Heat's range of renewable products

Packs a punch

Dimplex says its energy efficient air source heat pumps are now easier than ever to specify, thanks to a range of heat pump packs containing everything required for most common domestic applications.

Whether your project requires both heating and hot water, heating only, or an especially compact installation, there should be a Dimplex air source heat pump pack to make specification and ordering straightforward.

The packs feature a choice of Dimplex's new LA MS or LA PMS heat pumps, for a range of applications. The LA MS models are designed to minimise noise emissions and with outputs ranging from 9 to 16kW provide an efficient heating and hot water solution for medium to large sized properties. The PMS range offers variable heating water flow temperatures from 35°C to 65°C, weather compensated.

For new-build properties, the Dimplex air source heat pump can be sized to supply both the space heating and domestic hot water, while in property refurbishments, the existing boiler can be retained as an additional heating resource for a flexible, responsive and economical bivalent system.

All in one: Dimplex's heat pump packs contain everything required for most domestic installation

The heat pump packs contain everything required for easy specification, purchase and installation, including heat pump; circulation pumps; buffer cylinder (and hot water cylinder, if required) or combined buffer and hot water cylinder; weather-compensating WPM heat pump manager; and controller and connection cable. And where hot water provision is a requirement, the packages are supplied with a choice of Dimplex EC-Eau stainless steel unvented heat pump cylinders or combined heat pump cylinder and buffer tank.

Intelligence source

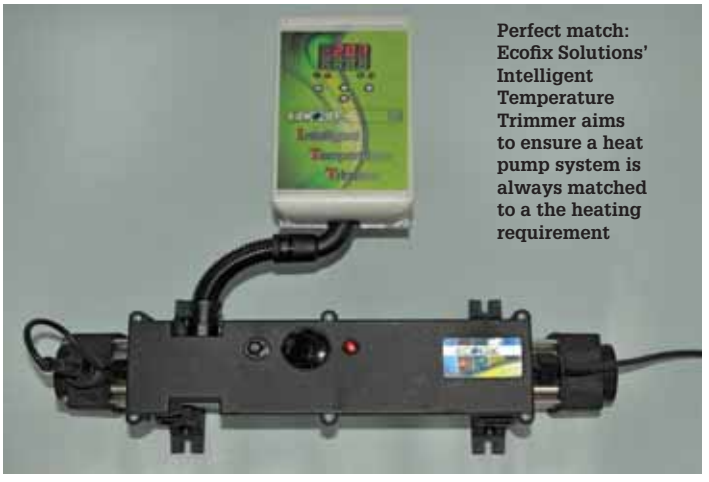
Ecofix Solutions specialises in products designed to simplify and enhance the performance of eco-friendly heating systems.

The company's leading product is the Intelligent Temperature Trimmer, designed to ensure a heat pump system is always matched to the heating requirement.

Legislation calls for heat pumps to supply 100 per cent of the heating requirement based upon a minimum climatic temperature of -2°C. With winter temperatures regularly falling below -2°C, extra energy is needed to meet heating and hot water requirements and maintain comfortable indoor temperatures.

According to Ecofix Solutions, any form of supplementary energy needs to be controlled very accurately to ensure its source does not take-over from the heat pump. Supplementary sources of energy such as gas, oil or electricity, can easily exceed the output provided by the heat pump itself, it adds.

The company says the Intelligent Temperature Trimmer is a proportional output, in-line water heater; which through intelligent circuitry provides exactly the correct amount of energy, only when needed.



Perfect match: Ecofix Solutions' Intelligent Temperature Trimmer aims to ensure a heat pump system is always matched to a the heating requirement

Driving forces

Tony Staniforth, specification sales director, Kingspan Renewables looks at the drivers that will help boost heat pump uptake

Since the announcement of the Renewable Heat Incentive (RHI) in March, air source heat pumps have been a contentious topic in the industry. Whilst their omission from the RHI's first phase is disappointing, it is important not to forget that there are other legislative and financial drivers in place that are set to impact on the uptake of air source heat pumps across domestic and commercial applications.

Leading air source heat pump manufacturers are continuing to invest in product development to ensure this technology is poised to meet growing demand in the UK. Our Aeromax Plus air source heat pumps, for example, reduce CO2 emissions by up to 50 per cent compared with traditional systems, and will also help meet strict government regulations. For instance, investing in commercial air source heat pumps can be a shrewd move for those subject to the CRC Energy Efficiency Scheme, who will need to buy allowances from the government to cover their emissions.

Despite not being currently eligible for RHI tariff support, there is also good news for domestic customers, as air source heat pumps do qualify for the Renewable Heat Premium Payment (RHPP). In fact, recent statistics have shown that air source heat pumps are currently proving most in demand amongst early adopters in the domestic market. They are set to become even more popular following recent planning regulation changes, which will see heat pumps that meet the necessary criteria (such as our 4kW and 6kW output Aeromax Plus models – the smallest, quietest and lightest units on the market) classed as a permitted development.

Leading air source heat pump manufacturers are continuing to invest in product development to ensure this technology is poised to meet growing demand in the UK

Pumped up: Tony Staniforth, Kingspan Renewables, discusses heat pumps

A warm welcome

Dimplex has welcomed the new MIS 3005 heat pump installer standard

Created with input from a number of industry bodies across a range of sectors, MIS 3005 aims to bring clarity and improve performance in three key areas highlighted in the results of the Energy Saving Trust's field trial of heat pumps, published last autumn.

With practical guidance on the correct sizing of heat pumps, the right choice of heat emitters and how to achieve adequate heat yield from ground collectors, the standard seeks to tackle some of the issues causing problems for heat pump installations.

Chris Davis, business development director at Dimplex Renewables, said: "The standard is a great piece of work that will help make working with heat pumps more accessible to more installers – and that has to be good news for the industry.

"We believe the resultant improved efficiencies will be good for the growth of the market, both in terms of inspiring confidence in the technology and in terms of really delivering the substantial carbon savings of which heat pumps are capable.

"MIS 3005 supports everything we at Dimplex have been saying for years about heat pump system design, and we are now looking at how we can best incorporate the new standard into our Logic Certification-approved installer training courses and our customer service."

Standard issue: Dimplex is pleased about the launch of the new heat pump installer standard

Play to win

David Lowen, Power-One's director of UK sales asks, is your inverter a lone striker?

The new fashion for premiership football managers is to play one lone striker. Their thinking is you can't be beaten if you don't concede goals. However your ability to score goals is reduced due to a lack of attacking options. What if you could split that one lone striker in two for certain parts of the game?

In PV terms, this is the equivalent of splitting your solar installation in two during different parts of the day. Why would you want to do that?

One answer would be if your rooftop installation faces more than one direction. This will lead to varying energy production during the day. Another reason may be areas of partial shading within your installation, by trees, buildings or other objects, which will reduce your total energy production.

This is exactly what the Aurora string inverter from Power-One can do for you.

Using its dual-input Maximum PowerPoint Tracking (MPPT), the Aurora inverter can offer you the ability of splitting your solar panels into two independent channels within the inverter to allow for separate management of both strings.

Basically it's like having two inverters in one. Dual-input Maximum Power Point Tracking (MPPT) was introduced by Power-One in 2009. Since then, MPPT has been a key feature of the Aurora string inverter. Talk to a Power-One installer and they will tell you about the flexibility the MPPT option offers for various installation design problems.

Throughout our European markets, Power-One is known as 'the dual MPPT guys'. So far, with more than 2.1 GW of product shipped globally during 2011, Power-One is currently the world's second largest manufacturer of solar power inverters.

Strong point: David Lowen, Power-One, discusses inverters

So the next time you're watching Match of the Day think about putting your lone striker on the transfer market. If you don't, you could be sick as a parrot, Brian!

Wet wet wet

The residents of Talybont-on-Usk splashed out on a **community hydro system** and the results have been considerable. The project has helped fund a range of initiatives including a cinema screen in the town hall

Talybont-on-Usk has its own community-owned hydro. All the energy generated is sold into the grid to produce income that is invested in community projects.

So far, it has funded a cinema screen in the town hall, an electric car share club, and has financially supported Talybont residents to trial a variety of energy saving measures, including an electric bike scheme, energy audits and trials of energy meters.

It all started with a public meeting in the town hall where local residents, council members and employees from the Brecon Beacons National Parks Authority met to gauge interest in renewable energy. Over 60 residents turned out.

The group obtained funding from the National Park Authority's Sustainable Development Fund to work with consultants and explore what potential there might be for generating their own electricity. A core of around 25 people emerged as active participants.

"It was terribly important to us that people in the village were behind this, it wouldn't work if people didn't think it was a great idea and want to be involved and eventually we had a core group of people who were really passionate about it," says Barbara, director of Talybont Energy and local resident.

We have this enormous drop. So we have a large volume of water and an extreme drop down to the turbine which is the perfect kind of scenario for generating hydro electricity

One of the local residents who came along to meetings was a retiree from the local waterworks and recalled an old turbine house that had previously been used to power the water treatment works at a local reservoir but had since fallen into disuse.

The turbine house belonged to Welsh Water and had been decommissioned in the 1980s and was lying derelict. But the site still had good potential to generate electricity using a hydro turbine, partly because of the regulations surrounding reservoir management - the river that feeds the reservoir must have what is called a compensation flow fed back into the river.

For the Talybont residents this meant that there would always be a minimum flow of water from the reservoir into the river which would not only protect and sustain the river but importantly, also guarantee there would be flowing water to power a hydro turbine.

In addition to this regulated flow, the location was also good as the turbine house was located at the bottom of the reservoir, creating a good distance between the reservoir and where the water would flow into the turbine. This was significant given the further water has to drop (being often referred to as "the head"), the more power it can generate.

"We have this enormous drop. So we have a large volume of water and an extreme drop down to the turbine which is the perfect kind of scenario for generating hydro electricity," says Alison, director of Talybont Energy and local resident.

Once the feasibility study had identified the potential of the old turbine house, the group negotiated a 15-year lease from Welsh Water, Dwr Cymru to use the site and install a turbine

Talybont Energy is a Company Limited by Guarantee (CLG). The group needed a legal structure to set out aims, objectives and ways of working, plus enable them to fundraise towards set up costs and then to manage the income and assets of the turbine.

Water world: The Talybont-on-Usk hydro system has funded a range of activities in the community

They chose a CLG as it limits the financial and legal liabilities for directors and enables people to be able to become members without having to put in place a system to buy shares, making it accessible to everyone and not only those who can afford to make a financial investment.

Anyone can become a member, although only those in the Community Council area, which is a local government region, can be full members with voting rights. This enables anyone to become involved with Talybont Energy but ensures that decisions and votes can only be made by those who live locally. The company is run by nine directors who are all voluntary and elected by the members.

"None of us are paid to be involved in the group. We're all volunteers. We do it because we're passionate about the project and the projects we've developed since we installed the turbine. We do it because we love doing it," says Barbara.

The installation of the Talybont hydro cost £92,000 in 2005.

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Make the most of micro-renewables at Ecobuild

Whether you're looking to get to grips with the latest technology or understand the business opportunities better, this year's **Ecobuild** at London's ExCeL on **Tuesday 20 – Thursday 22 March**, should be in your calendar

Ecobuild is the UK's biggest showcase of micro-renewables and energy efficiency products, and the biggest event in the world for sustainable construction, with over 1,500 exhibitors, dozens of live and interactive attractions, and over 130 free seminars.

Renewable energy installers will get the most out of this huge event by choosing a selection of the most relevant activities taking place over the three days. Plan to attend a selection of the Installer Connect seminars, which include sessions on everything from The Business Potential of Renewable Technologies and How Solar Technologies Can Transform Your Business to Giving Your Business the Biomass Boost and How Heat Pumps Deliver Free Energy and Increase Business.

Identify the products you'd like to see and the suppliers you'd most like to meet from the likes of E.ON, Vaillant, Plumb Center, Mitsubishi Electric, Daikin, NIBE and Solarcentury, Worcester Bosch, Alpha Heating Innovation, Dimplex, Suntech, Schueco, Saint-Gobain, Samsung, PTS, Travis Perkins and Jewson – just a few of the hundreds of suppliers of micro-renewables and energy efficiency products on display.

But most of all, allow plenty of time for the live installation demonstrations taking place on the exhibition floor in Practical Installer. Sponsored by Plumb Center, it's designed to help installers take advantage of the growing demand for micro-renewable technologies through a series of hands-on demonstrations covering the installation and maintenance of solar-thermal and PV systems, filling and flushing solar systems, understanding rainwater harvesting systems and retrofitting heat pumps.

To help make the most of your time at Ecobuild, there's even an online planner you can use to make a note of all the exhibitors, seminars and demonstrations you'd like to see while you're there.

All this, and much more, is free - get your free ticket and more information at **www.ecobuild.co.uk**

Benefits of optimisation

VPhase is particularly looking forward to the 2012 Ecobuild event because it provides a substantial platform for promoting domestic voltage optimisation technology to a huge potential audience, focused on sustainable design. The relevance of the audience, in terms of their job roles and organisations, certainly fits well with the universal suitability of VPhase voltage optimisation for all domestic properties, the company says.

VPhase plans on educating installers and specifiers about the benefits of VPhase voltage optimisation, through demonstrating its growing portfolio of case studies and independent verification of the savings achievable. For the social housing sector, it's not just the fact that VPhase voltage optimisation is low cost and maintenance free, it also represents an opportunity to address fuel poverty by saving tenants up to 12 per cent off electricity bills whilst also reducing carbon emissions, aiding RSL CO2 reduction targets, adds VPhase.

Stand N3900

Optimum opportunities: Head to the VPhase stand to see what voltage optimisation can achieve

The future from Fronius

Fronius is looking forward to discussing the future of the solar market and how its products can ensure that customers can still get the best from arrays even though the Feed-in Tariff has been halved. Fronius has developed the Fronius Energy Management Relay, a solution for optimising the private consumption of self-generated solar power. This means customers can essentially double their yield, says the company.

Customers are paid the same whether they use the electricity in their house or feed it into the grid. With the Fronius Energy Management Relay they can use all of the power they produce. The best example of this is to feed the power into an immersion heater thus storing the energy as hot water during the sunlight hours which can then be used at any time.

It allows a user defined power hysteresis to be configured for Fronius IG Plus and Fronius CL inverters. This means that switch on and switch off thresholds can be set on the inverter as units of power (Watt). If the inverter produces more than the set power (eg. 2,000 W), a relay output is activated and an electrical consumer is operated using the solar electricity generated instead of feeding power into the public grid. The relay output is deactivated if the energy yield drops below a specified value (eg. 1,800 W).

The total generation meter records the energy yield of the PV system. If the energy management relay on the inverter is deactivated, the solar power generated is fed into the public grid. If the inverter produces more than the set power, the relay switches on and the generated power is supplied to the specified electrical consumers. Power that is not required continues to be fed into the grid. The level of private consumption is derived from the difference between the total generation meter and the electricity meter.

Stand N3225

Good sign: A Fronius signal card. The company will be on hand to discuss its range of renewables solutions

Ecobuild – the perfect platform

"As the world's largest stage for sustainability in the built environment, Ecobuild really is the must-attend event of the year for us at **Kingspan**. Its growing success reflects the increasing acceptance that sustainability needs to be firmly placed at the heart of our industry – heavily impacting on the future of construction, design, installation and the products used," says Kingspan Renewables' managing director, Cameron Holroyd.

"For Kingspan Renewables, as a repeat exhibitor, the show provides the perfect platform to showcase our market-leading portfolio of solar thermal technology, high-performance hot water storage solutions and expanding range of air source heat pumps for commercial and domestic applications. Not only can we demonstrate the products themselves, we also look forward to the opportunity to network, talking to installers, specifiers and end-users about our range and the issues facing the industry as a whole. The 2012 show will be no different – we will have a whole host of experts on hand to respond to enquiries at the stand, including a team of technical, sales and marketing representatives," he adds.

Holroyd says the live installation demonstrations at the show are always a real crowd pleaser, and that last year it was great to see the success of the dedicated zone for installers, where visitors could gain a real-time sense of the ins and outs of the installation of renewables. "At Kingspan, we are dedicated to helping installers become competent in working with renewable technologies, so believe having a dedicated area at the show is a great asset," he says.

Holroyd adds that Ecobuild is also the ideal place to launch new products, and Kingspan hopes to unveil some exciting new additions to the company's offering at next year's event. "After the success of 2011, we look forward to seeing what the 2012 show has to offer," he says.

Show stopper: Ecobuild is a must attend for Kingspan Renewables, says Cameron Holroyd

Stand N2750

Pass the test

According to **Seaward Solar,** for all involved with solar PV installation, rigorous testing and reporting is crucial to ensure maximum return on investment, optimum conversion of solar energy and important operator safety for the lifetime of the array.

Seaward Solar says its range of test equipment and accessories meets these needs by providing a total solution for solar PV installation and testing.

For site surveys, the Seaward Solar Survey is a new high specification instrument that combines irradiance measurement with a digital compass, a digital tilt meter and a dual channel precision thermometer.

Electrical installation testing is undertaken quickly and effectively with the all-inclusive Seaward Solar PV100 test kit that combines a multi-function tester, AC/DC current clamp with all test probes, alligator clips, Sunclix and MC4 adaptor leads in a convenient carrying case.

The Solar Power Clamp enables power measurement and analysis on AC and DC systems for diagnostic checks.

In addition to these new instruments, solar PV test documentation and information for client handover packs can be completed using either the Seaward Solar Cert Elements software package or with the special Seaward Solar inspection test report and certificate documentation packs.

Stand N2772

Kitted out: Seaward Solar offers a range of test equipment for solar PV installations including the PV100 test kit

Targeted approach

Mitsubishi Electric's stand at Ecobuild will highlight how existing technology can be used to lower the energy bills of almost any property. The company will use the exhibition to focus on how combined solutions for heating, cooling, power generation and ventilation can help both new-build and existing commercial buildings and aid homes hit renewable energy targets.

Stand N1850

Max Halliwell, Mitsubishi Electric. The company will be at Ecobuild.

Head South

South Survey is looking forward to Ecobuild as it will provide the opportunity to meet new people and present them with the company's range of products. This includes, thermal imaging cameras, borescopes, CAD software, Leica Distos, and many more, bringing a range of the best equipment for the installer's needs.

Head to South Survey's stand where staff will be able to demonstrate how these products work and the applications they could be used for in your specified industry.

Stand N1500

Variety show: South Survey offers a range of equipment including thermal imaging cameras and borescopes. Staff on the stand will be happy to discuss its products with you

Plumb Center's triple whammy

2012 will be **Plumb Center**'s third year of exhibiting at Ecobuild and yet another great opportunity to showcase its extensive ranges of renewable technologies. The previous events have been a huge success for the company, allowing it to talk directly with customers from across the industry and engage in a positive dialogue about the issues surrounding sustainability.

As the largest sustainability-focused show in the UK, Ecobuild's visitors are forward thinking and already looking for practical solutions to improve energy efficiency and reduce carbon emissions. This makes it the perfect place for Plumb Center to demonstrate technologies such as heat pumps, solar thermal and rainwater harvesting systems and for visitors to see first-hand how they work and how they can be integrated with existing systems.

Three times as good: 2012 is the Plumb Center's third year exhibiting at Ecobuild

In 2012, Plumb Center will be growing its "Practical Installer" area featuring interactive demonstrations of how to integrate and implement a range of the products that are currently on the market. It will also tie- in to its ongoing programme of technical training and activities through both the Sustainable Building Center and its training centres across the UK.

In 2012, Plumb Center will be growing its 'Practical Installer' area featuring interactive demonstrations of how to integrate and implement a range of the products that are currently on the market, including a new heat pump installation demonstration area with additional focus on the integration of various technologies with these products. A full timetable of demonstrations for each day will be available in January.

It will also tie- in to its ongoing programme of technical training and activities through both the Sustainable Building Center and its training centres across the UK.

This year in particular, Ecobuild will play a vital role in ensuring that specifiers and installers, along with the rest of the industry, are informed and understand the scope of schemes such as Renewable Heat Incentive and the Green Deal, and how to make the best use of these incentives to contribute towards the government's carbon reduction targets. With a comprehensive product range spanning the most innovative brands and efficient products on the market, Plumb Center is ideally placed to help its customers find the most profitable integrated solutions to meet the growing demand from homeowners for help to cut fuel bills and reduce carbon emissions.

Stand N2210 N2440

Solfex's top spot

Solfex Energy Systems will be showcasing a brand new stand concept for Ecobuild 2012. The 120sqm stand will feature an exclusive elevated first floor roof terrace bar and coffee lounge.

Entrance to the roof terrace bar is ticket only and open to all existing customers and prospective new customers but access is limited and Solfex Energy Systems is currently taking reservations for meetings at the event and access to the lounge. For further details contact marketing@solfex.co.uk or your local sales representative.

Managing director Stuart Cooper, commented: "Ecobuild is certainly the focal point renewables exhibition of the calendar and gives us a chance to meet all our customers from all over the UK. It also gives us the chance to exhibit our new exciting products we will launch for 2012.

"After a successful 2011 and as a thank you to all our customers, we have invested further in the Ecobuild 2012 stand concept where our invited guests can relax in a prominent elevated position overlooking the show."

Solfex Energy Systems is optimistic that despite the reduction in FiT the photovoltaics market will continue to grow in 2012 and it also expects the solar thermal market to gather pace with the introduction of the RHI. **Stand N2920**

Lofty ideas: Solfex Energy Systems will be showcasing its new stand concept at Ecobuild which features a roof terrace and bar area

Leading light

Since its launch to the UK market in 2010, **Krannich Solar** says it has firmly established its position as one of the leading providers of PV systems, both here and across Europe, by delivering a product portfolio of high quality modules, inverters and mounting solutions.

The last twelve months of operation have been exceptionally busy for the Reading-based company. In addition to establishing partnerships with a number of leading brands, including SMA, Suntech, Samsung and Bosch, it has also formed alliances with key industry bodies such as PV Cycle - the European PV cell recycling scheme – and the British Photovoltaic Association - a move, says Krannich, that will enable it to continue to lead the solar power market in Europe.

This March, Krannich Solar will build on its previous success at the 2011 event by returning to Ecobuild. Commenting on its forthcoming attendance, Krannich Solar UK ceo, Juan Romera-Wade said: "Ecobuild provides an ideal opportunity for us to demonstrate our knowledge and expertise, as well as network with industry peers and customers – both new and existing.

"Certainly these are changing times for this very dynamic industry and it is imperative that we respond effectively to continue to meet customers' demands. The seminar programme will provide a valuable insight into the challenges, as well as opportunities and developments, that the industry is experiencing. It is important to develop a stronger understanding of these insights so that we can fully utilise the opportunities for growth. In particular, I am looking forward to attending the conference and learning in more detail about the key issues surrounding sustainability, construction and the wider renewable energy agenda."

Stand N3821

Opportunity knocks: According to Krannich UK's Juan Romera-Wade, Ecobuild will provide an opportunity to demonstrate the company's knowledge and expertise

The perfect balance

Sibert Solar supports solar PV system designers and installers with a range of Balance of System (BoS) products. As technical procurement specialists, the company has fostered partnerships with a variety of principal manufacturers to provide customers with the right product for their application, at the right cost.

Technical expertise, flexibility and a 'customer-first' ethos are just some of the company's key core values. Sibert Solar says it is looking forward to the opportunity of working with visitors and invites you to come and see its stand at Ecobuild,

Stand N3367

Pumped up: Kensa Heat Pumps offers a range of heat pump technology

Heat pump expertise

According to **Kensa Heat Pumps**, there are a number of large properties with single phase electricity, where the upgrade cost to 3-phase supply can be extortionate. This rarely happens on the continent as 3-phase supplies are readily available, so importing manufactures have had no need to develop large single phase heat pumps, this is why most current UK suppliers can only provide units up to 11-12kW.

Kensa Heat Pumps manufactures heat pumps in the UK and understands this issue. The company has developed a product range to suit, featuring single-phase twin compressor heat pumps from 16 to 24kW, the largest single-phase units in the market.

For large buildings with single-phase electricity alternative suppliers may be tempted to provide an undersized heat pump. The danger here is that under peak conditions they rely on a direct immersion to supplement the peak heating load, in turn this means when you need the most energy the unit is at its least efficient.

Stand not yet confirmed

A fresh approach

With a very knowledgeable team lined up for the event, Ecobuild is a great opportunity for **Secon Solar** to showcase its range of renewable products and components and the perfect opportunity to speak to existing and potential customers one-to-one. The company will also be launching its brand new look and feel for Secon Solar, taking a fresh approach to the specialised renewable market.

The company adds that Ecobuild 2012 will be a fantastic platform to unveil the extensive, new and updated range of well packaged renewable Ecokit products, that are very competitively priced. The specialised kits are available at plumbers and builders merchants nationwide. Secon Solar says that Ecobuild will give it the perfect opportunity to engage with existing and potential customers. The company invites visitors to come to its stand and see how easy the kit products are to operate as well as to see its live and operational displays.

Stand N1615

Show and tell: Head to Secon Solar's stand to see a variety of renewable products

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whatever the future holds.

Waxman's showcase special

Waxman Energy, specialist in the design and distribution of solar PV will introduce new associate company Waxman Renewables at Ecobuild 2012.

Waxman Renewables specialises in the design, consultation and supply of biomass boilers and solar thermal systems. It offers pellet stoves and boilers from Red 365, the biomass arm of Italian stove giants MCZ, and solar thermal systems from Austrian firm TiSun, Turkish manufacturer Ezinc and Swiss company AMK.

Waxman Energy will be showcasing its design and technical expertise as well as its extensive product portfolio which includes PV panels, mounting systems and inverters from some of the world's leading solar manufacturers. The company is also introducing an exciting range of solar modules from LG Electronics.

Richard Waxman, chairman of the Waxman Group said: "We are delighted to add further renewable technologies to our portfolio and wish to send out a clear message of our intention to become a leader in the field with the launch of Waxman Renewables.

"Our stand at this year's Ecobuild will be very comprehensive indeed. It will effectively be split in half, with one side focussing on our solar PV offer and the other on renewables.

"We look forward to welcoming visitors onto our stand at the show, where we will have experts on hand to answer any questions and where they will be able to find out more about our commercial partnerships with some of the world's most well-respected renewable energy technology companies."

Waxman Energy and Waxman Renewables distribute nationally from The Waxman Group's 40,000 sq ft warehouse complex in Elland, West Yorkshire. Both businesses benefit from the Waxman Group's 50 years' experience in the distribution industry.

Stand N3610

Perfect partner: Waxman Energy will be introducing Waxman Renewables at Ecobuild 2012

Libra scales the solar ranks

Libra Energy, an international player in the field of solar energy systems, was formed in the Netherlands in 2007. Now with a stock holding facility in Doncaster in UK, Thomaston, USA and in the Benelux countries, the company says it has a highly skilled and qualified sales and service network covering northern and southern European countries and strategic companies in central Europe, all offering a first class service to all our partners.

Libra boasts that its team has many years of experience in international business. At present it works with 20 dedicated colleagues with different specialisations. The company's added value and therefore its focus, lies in technical support and system development.

From its central warehouse and headquarters in Castricum, Libra exclusively offers business to business customers complete solar systems for grid-connected applications, micro-grid systems, hybrid power generation and project based complete autonomous installations.

On request, Libra Energy supplies complete installation kits comprising of solar modules, inverters, mounting systems, wiring, etc. As a distributor it specialises in supplying system components. Internationally it works closely with its network of professional installers and represents brands such as: Canadian Solar, Suntech, CSUN/CEEG, Solvis and Asola on the modules and Mastervolt, PowerOne and Chint on the inverters, for the mounting material the company works in close partnership with Van der Valk and Montavent.

Stand N3460

Up on the roof: Van der Valk flatroof system, available through Libra Energy

Double the expertise

It's an exciting time in the world of renewables with new developments and incentives arriving across all sectors. As a company, **Cleaner Air Solutions** has specialised in solar PV since 2006 – first exhibiting at Ecobuild in 2010 with a small stand at the edges of the hall. For 2011 the company took a stand three times the size, which turned out to be a great success with representatives from companies such as Click-Fit, SolarEdge and IATS giving technical support and advice to clients.

As a result of the success in 2011, the company has booked a stand that is over twice the size again.

Cleaner Air Solutions expects to be unveiling an exclusive new range of products for commercial and domestic solar PV installations at Ecobuild and hopes to build on existing relationships with clients as well as attracting new ones.

As an exhibition, Ecobuild presents several opportunities to an exhibitor, with members of the general public in attendance as well as buyers and specifiers of large scale renewables projects, says the company.

Naturally there is a large attendance of industry insiders and Cleaner Air Solutions says it has achieved a great deal of new business on the wholesale/distribution of solar PV, based on its expertise, massive stock availability and high customer service.

Double up: Cleaner Air Solutions' stand at last year's Ecobuild. Its stand this year will be twice the size

Stand N3430

Cool customers

CoolSky will be displaying the Apricus product range at Ecobuild. The company says that the Apricus collector is a well-established global brand and a recognised market leader in regions such as the USA, Australia and New Zealand. "It adds that the product is known to be reliable, efficient and to offer value-for-money. As the Apricus partner for the UK and Ireland, CoolSky provides a design/specification service for domestic, commercial and industrial applications as well as technical support to installers and distributors.

Stand N1973

Working well: Recently installed 1100m2 Apricus system at the Hospital Son Espases, Majorca, producing 70 per cent of the daily hot water requirement

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SOLFEX energy systems

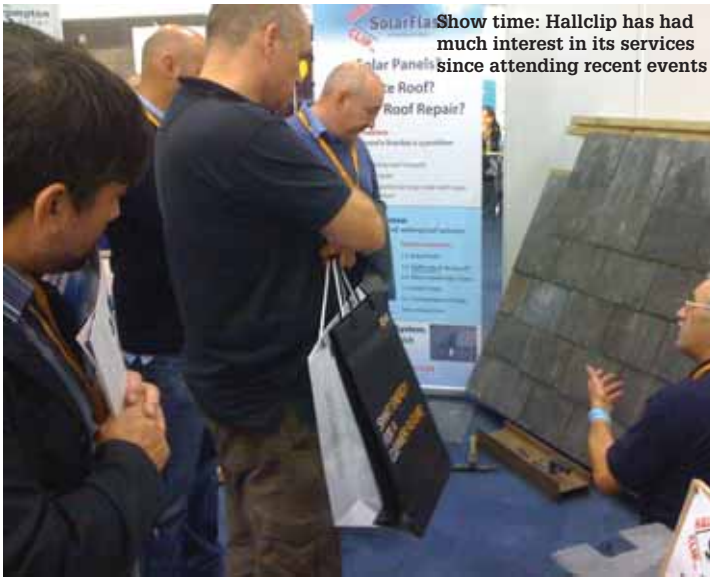
Slate/tile roof flashing solution

The nightmare of fixing solar panels to slate roofs has gone, says **Hallclip**. The company says that 40 years slating experience has solved the problem of mounting panels to slate roofs. Many installation technicians are not experienced roofers and therefore, are not able to offer a quality repair/long term guarantee. The cost of employing a roofer is cost prohibitive.

High flyer: The nightmare of fixing solar panels to slate roofs has gone, says Hallclip

The SolarFlash system is designed to create a waterproof solution to refitting slates/tiles around the bracket. The existing method of dressing lead is fundamentally flawed, says Hallclip. This is because the lead is in contact with the bracket, which is a moveable projection from the roof. This bracket must be allowed to move. By dressing lead around the bracket, any movement in the bracket will cause movement in the lead. Being interwoven with the slates/tiles, there is potential for the lead to damage/crack the slates.

The SolarFlash system includes the company's slate fixing hook; the Hallhook, a necessary hook to secure the final slates into position.



Show time: Hallclip has had much interest in its services since attending recent events

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Guiding hand

Consumers are becoming increasingly knowledgeable about the benefits of renewables. Despite recent press reports concerning the cutting of Feed-in Tariffs, the merits of renewable energy, should not be dismissed. Solar PV is still a technology worth investing in – many installers have reduced their prices so the rate of return on a system, is still attractive. Add to this the fact that electricity prices are continuing to climb, and there has never been a better time to look at producing your own power within the home.

A recent survey carried out by Engensa, a solar energy company, in November 2011, found that 60 per cent of respondents view their rising energy bills as a sign that utilities are overcharging, with nearly one in five correctly attributing the majority of energy bill rises to the costs of fossil fuels. Utility prices have risen by 14 per cent in 2011 and are continuing to rise by an estimated 12 per cent each year.

The survey also found that 89 per cent of respondents felt it is important or vitally important to generate electricity from sources such as solar, wind and hydropower in the next five-to-10 years. Seventy-seven per cent of respondents support the idea of producing free energy from renewable sources in the next five-to-10 years rather than from fossil fuels from utility companies.

Renewable Energy Installer has been at the forefront of the renewable and microgeneration sector for the last three years, getting to grips with the issues and technologies as they develop and grow to become part of the mainstream energy mix. With that in mind, we have put together a guide to help you, the consumer, find the right technology for your home's needs.

Lu Rahman
Editor, Renewable Energy Installer

Glowing report

Ground or air? For a homeowner considering installing a heat pump, what exactly do you need to know? Heat pump expert **Nu-Heat**, explains

A ground source heat pump is the most efficient of the heat pump family as it has the highest Coefficient of Performance (ratio of units of heat output to units of electricity used). Outside space approximately 2.5 times the internal floor area of the property is needed for the pipes to be laid in horizontal trenches. The alternative is to drill boreholes, dependent on geological conditions. The heat pump and system components need to be housed in a plant or utility room. An air source heat pump extracts available warmth from passing air rather than the ground. This type of heat pump is relatively simple to install as it requires no groundwork or building work. The only space required is beside an outside wall, although the other system units will need to be housed inside the property.

How do I choose the model?

Heat pumps can be bought 'off the shelf' but this may be risky as the design of a heat pump system is essential to its performance. A design and supply company like Nu-Heat will handle the necessary complex calculations which include insulation levels, double glazing, floor area and heating method. Once heat loss has been assessed, Nu-Heat uses specialist software to run a simulation of performance over an average year, based on local, monthly weather data and taking account of the changing seasons, enabling the correct model to be specified. When a heat pump is to be retrofitted, design is even more crucial as insulation levels are not likely to meet the necessary standards and may have to be upgraded.

What about the heat emitter?

Underfloor heating is an ideal partner for heat pumps and when additional tubing and more efficient floor constructions are used flow temperatures of 35oC – 45oC can be achieved. Conventional radiators can be used although these will have to be oversized - but the latest high efficiency radiators with output boosters are a more practical choice.

You can find out whether your project is suitable for a heat pump by using a specialist calculator like Nu-Heat's heat pump tool.

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REAL

The Cotswold Energy Efficient Centre (CEEC), has been installing renewable energy systems throughout Gloucestershire for over five years. The company boasts an impressive showroom and having picked up five national renewables awards in five years, really does know its stuff. The company's **Andy Buchan** outlines the merits of solar thermal

Here comes the sun

A solar thermal hot water system can typically provide all of your hot water requirements during the summer months and a good proportion throughout the rest of the year. It can be installed in your home or for larger applications, such as swimming pools.

Solar is a clean energy source. The biggest bonus is the knowledge that you are heating your hot water for no cost! There is also less stress on the back up fossil fuel supply resulting in reduced running costs and appliance servicing. There is also very little maintenance with solar and it only requires a health check (always comply with manufacturers requirements).

In a nutshell, solar thermal is the choice for you if you want

- Hot water throughout the year: the system will work all year round (but you'll need to heat the water further with a boiler or immersion heater during colder months).
- To cut your bills: after you've paid for the installation, sunlight is free!
- To cut your carbon footprint: solar hot water is green and clean!

Types of solar

There are two main types of solar in the UK - flat plate collectors and evacuated tubes. Both systems use the same tanks, pipe work and controls to collect both defused and direct energy. The evacuated tubes, however, incorporate a parabolic mirror which generates more energy in poorer light conditions so they perform better in the winter when there is less daylight and when the sun is lower.

What to expect

A normal domestic installation with a tank change fully commissioned would take approximately three days. As with all renewables, it is important to engage an MCS accredited installer who will only use quality products and is competent for the work.

For the end user there are no controls to set or adjust. The temperature differential controller (TDC) works on a temperature difference between the collectors and tank and is an automatic operation requiring no other adjustments.

Our experience at CEEC

We at CEEC have completed about 200 installations of solar thermal systems, ranging from light commercial businesses (football clubs, laundry rooms, hotels, swimming pools) to residential properties.

From our experience we know the more work solar has to do, the quicker the payback on the install price. For example, a two bed house with a shower/ basin and kitchen has little hot water demand. The approximate price for a solar installation (two panels, new tank etc) would be £4,000. The energy saving in fuel cost would be £100 per annum, giving a payback of 40 years.

However, a 50m² swimming pool with summer running fossil costs of £2,300 would require 16m² of collectors. This is likely to give a payback of only 4 years.

Therefore the more water to heat, the better the investment. The two examples go from one extreme to another. With the proposed Renewable Heat Incentive (RHI) tariff this will make solar thermal a more attractive alternative to producing hot water as we can rely on our sun as a renewable and sustainable source unlike burning fossil fuel which has no future!

Richard Page from Gloucester had two Worcester Greenskies Solar Panels installed in 2006 on his three bed semi detached home. He says: "Andy, of CEEC, gave us an honest rough estimate of a 12 to 15 years payback. While it's difficult to accurately estimate the savings on our fuel bills, the energy usage has reduced dramatically. By comparing two one-year periods (01-02 and 06-07), I roughly estimate a payback of 13 years, which is likely to increase further as gas prices increase."

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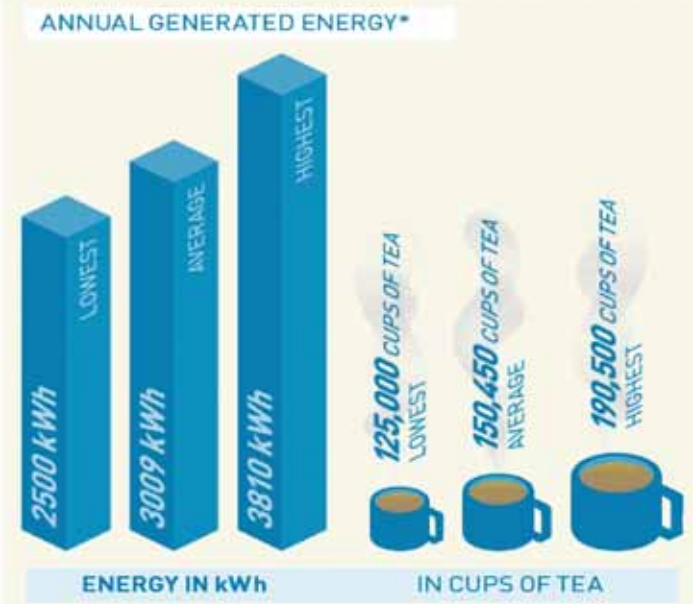
43p, 21p, rates of return and payback are being bandied about like there's no tomorrow. But what does it all mean for the consumer? For anyone looking at renewables, and solar PV in particular, wading through the facts and figures can be confusing to say the least. **Ploughcroft** has come to the aid of the consumer with some clear, concise, graphics to highlight what it all really means

With so much in the press talking about payback times and rates of return, Ploughcroft has created a set of easy-to-use graphics, from a solar panel customer survey, highlighting the facts that consumers are most interested in knowing. The statistics are based on feedback from real Ploughcroft Solar customers. The solar panels have been installed for 12 months and are all south facing panels – none are in the shade. All customers have between 11 and 22 panels and all system sizes are between 2.02 and 3.7KW.

Ploughcroft has been trading for 14 years as a roofing contractor. In 2005, the company added solar installations to its portfolio, with much success. The company boasts that it was instrumental in designing the solar roofing NVQ QCR298 and has extensive knowledge of the solar PV market.

As well as an NVQ-accredited training centre, Ploughcroft is the chosen supplier for British Gas, Plumb Center and nPower, amongst others. It also boasts accreditations from MCS, REAL and ISO.



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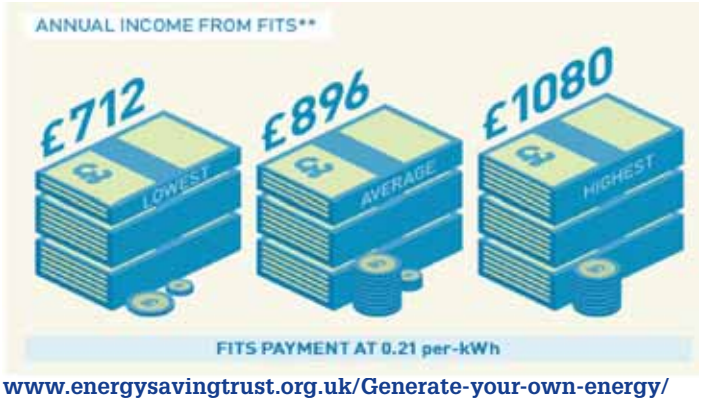

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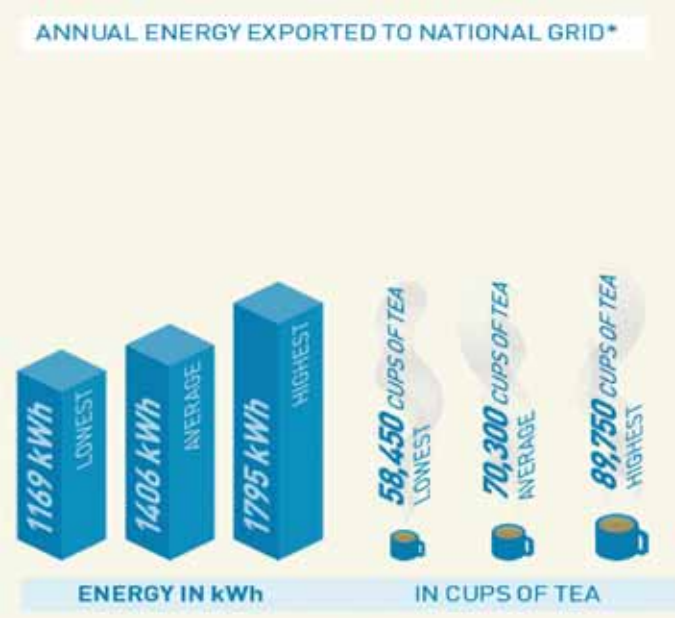

Top it off: A Ploughcroft solar installation. The company has a range of advice for consumers thinking of installing solar

Top advice

The benefits of solar PV are becomingly increasingly well-known. But with the myriad of companies out there extolling the virtues of this technology, it can be hard to know what's really important. **Ploughcroft** offers some pointers to the consumer thinking about solar PV

Ploughcroft has years of experience in the solar and renewable energy field. As well as being the trusted installation partners for Vaillant, Wolseley (Plumb Center), and Scottish & Southern Energy, Ploughcroft has an onsite renewable energy training centre accredited by CAA and Logic Certification.

By choosing to have solar panels fitted to your home, not only will you be lowering your energy bills, increasing the value of your house and doing your bit to combat global warming, you can also make money by selling any unused energy back to the National Grid.

Sunny side up

There are a couple of factors that go into whether your home is right for solar. The best roofs for solar are free of shade and oriented towards the south, east or west for maximum sun exposure. However, solar panels have been designed to be efficient so they work even when it is cloudy. It's important to remember that solar power depends on intensity of light, not necessarily direct sunlight, meaning even when it's overcast your solar panels will still be producing electricity. Also, from 1 April 2012, all homeowners who are interested in having solar PV panels installed will need to take part in the government's new domestic energy efficiency assessment.

Prices for solar systems vary depending on the size and type of the system, the panels used and also the structure of the building. A typical installation on a three-bed semi will cost less than £9,000 Ploughcroft selects panels from a variety of sources, according to the needs of the installation.

Custom fit

It is important that a survey is completed for your own roof, rather than going with what your neighbours have had installed. We carry out comprehensive surveys on all our installations to ensure the roof is suitable (checking structural integrity and the material it's made out of) and that you are getting the very best from your investment. We want to make sure that solar makes sense for your budget.

Experience counts

Make sure you ask what roofing experience the solar panel system installer has. Many solar PV companies have no roofing expertise at all and this is a crucial skill to have. Ensure that your installer is MCS-certified, otherwise you can't join the feed-in tariff scheme, and also a member of REAL, the consumer code for renewable energy. If you choose a solar installation company that offers a free system, there are a number of loop holes and it can be extremely confusing for homeowners to understand if free really means free. Sometimes things are too good to be true!

Mr Buckley, a Ploughcroft customer from West Yorkshire says: "I could tell Ploughcroft were true experts when it came to the install of my 4Kw solar system as they took the extra step of fixing brackets under the tiles for added security. The lads were on time, clearly love their job, and did everything as they should have done. Perfect!"

What's the incentive?

With the Renewable Heat Incentive (RHI) set to come into play in October this year, the RHI Premium Payment scheme is now available to those wishing to take advantage of the scheme in the interim period. **Neil Schofield**, head of external and governmental affairs at Worcester, Bosch Group, gives an insight into how the scheme can be accessed, as well as the advantages it offers to those with an eye on renewable technologies

Like the highly popular Boiler Scrappage Scheme, the RHI Premium Payment scheme offers a one-off sum for those installing solar thermal, biomass or heat pump technology. Claims need to be made to the Energy Savings Trust by the end of March 2012 and will be issued on a first come, first served basis with a set period to cash it in. With £15 million set aside for this, it is expected that around 25,000 homes will benefit from the grants.

All properties can benefit from the one-off grant towards solar thermal panels to provide hot water for the home. Yet for other technologies, emphasis has very much been placed on the 4 million households in the UK not on mains gas, to help reduce reliance on higher carbon forms of heating.

The one-off voucher payments available are as follows:

- £300 towards a solar thermal hot water system (for homes both on and off-mains gas)
- £850 towards an air source heat pump (for those with off-mains gas heating only)
- £950 towards a biomass boiler (for those with off-mains gas heating only)
- £1,250 towards ground source heat pump installations (for those with off-mains gas heating only)

However, those wishing to take advantage of the scheme will need to ensure their homes have basic energy efficiency measures in place before applying. So make sure loft and wall insulation are up to standard before starting on the process.

More good news is that it is not a choice between the full RHI and the Premium Payment. Homeowners opting for the Premium Payment and installing the technology in the first instance could also be eligible for the full RHI when it is available, as long as they meet the criteria of the scheme when it is introduced.

Those who opt for the Premium Payment will also be asked to give feedback on their experience through a number of surveys to give the government a better understanding of renewable technologies, the saving that can be made and the real energy use figures being found.

The ideal 'halfway house' solution

For those interested in taking advantage of the improvements a renewable heating system can offer, solar thermal technology can be installed alongside a condensing boiler to maximise both energy efficiency and value for money. By converting energy from the sun into useable heat, a well-sized solar system can provide up to 60 per cent of a home's annual hot water requirements.

Team work: Worcester, Bosch Group offers a range of solutions for consumers allowing them to incorporate solar thermal technology with condensing boilers

With a range of intelligent solar thermal systems now available, homeowners can use solar thermal panels as a primary source of hot water, with their boiler only called upon to top-up the hot water supply when required. This subsequently reduces the demand for fuel, which has a significant impact on domestic energy costs.

It is advisable for homeowners with an eye on renewable technologies to future proof their domestic heating system by investing in a modern twin-coil hot water cylinder, which ensures that the benefits of solar thermal panels can be taken up in years to come.

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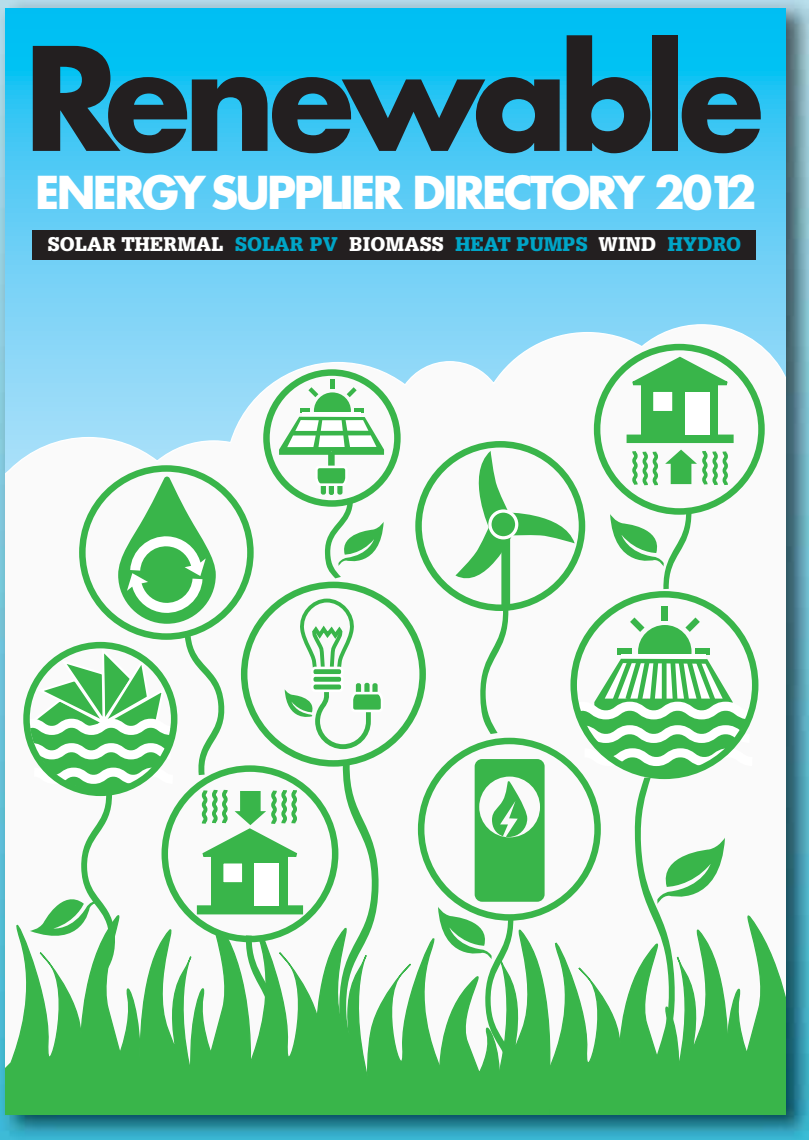

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Growing demand

The **Cotswold Energy Efficient Centre** outlines the merits of biomass – both environmentally and economically – as a renewable source for the consumer and a carbon neutral way to invest in the future

Producing energy from biomass (eg. wood pellets) has both environmental and economic advantages. Although it produces carbon dioxide, it only releases the same amount that it absorbed whilst growing, making biomass a carbon neutral fuel. It can be used in a stove to provide space heating or in boilers to provide central heating and hot water.

Biomass is one of the sustainable systems that Cotswold Efficient Energy Centre (CEEC) installs. Having won five national renewable rewards in the last five years and with over 40 years experience in the heating and ventilating industry, CEEC brings much expertise to every biomass installation.

Where biomass can be installed and what to look out for

Biomass is a great choice for listed buildings where insulation values are poor, as it produces high temperatures to keep the house warm. If you are considering biomass, CEEC would advise that you:

- talk to people who have had a system operating for a full year
- choose an installer who is accredited and registered with HETAS
- make sure your biomass system will be accredited for the Renewable Heat Incentive (RHI) tariff

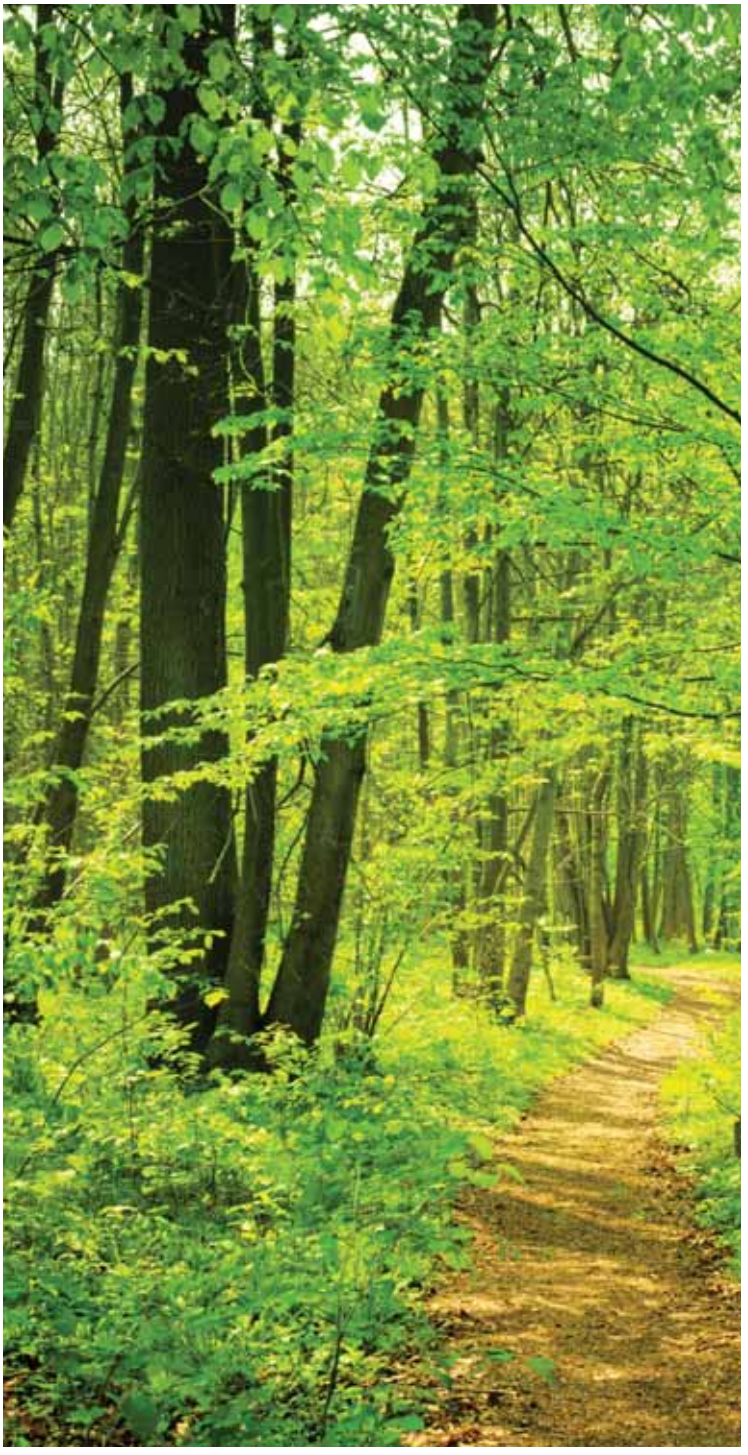
You will need space for either bagged or blown storage (dry pellet storage or a silo) and the wood pellet boiler and hopper would ideally be installed in a purpose built plant room or part of a garage.

What's the cost?

The typical installation cost of a 15kw pellet boiler and hopper with a bagged system connecting to existing heating and hot water system would be £8,000 plus VAT.

CEEC has installed biomass in a number of listed buildings, some more famous than others - like The Rectory Hotel at Crudwell. This beautiful period house suffered from a troublesome hot water supply. That was solved by CEEC and the installation of biomass.

Jonathan Barry, one of the owners, was delighted. "Now we have improved water pressure, no risk of running out of hot water, reduced utility bills along with the knowledge that we are helping the environment - win win! We were also impressed that the cost of installing this system was not dramatically more than the cost of replacing the oil boiler like for like," said Barry.



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Warm front: Solar thermal represents a cost-effective green solution for the UK, says Kingspan Renewables

Solar system

More and more homeowners are becoming aware of just how cost-effective solar thermal systems can be. **Kingspan Renewables** offers some helpful pointers to the consumer thinking investing in this technology

Solar thermal represents a genuinely efficient and cost-effective green solution for the UK. A well-designed solar hot water system can deliver savings of up to 70 per cent for a domestic building, as well as having a positive knock-on effect to its CO_2 output.

When it comes to choosing a solar thermal heating system, often the first question to consider is whether to opt for flat plate or vacuum tube collectors. Flat plates continue to dominate the market in terms of popularity and price. They provide a cost-effective solution and will deliver excellent levels of efficiency and performance. They are robust, hardwearing and flexible in installation. However, to work at optimum performance they need to be south facing and positioned at a 30-45˚ inclination.

Vacuum tubes, on the other hand, are the most efficient solar thermal technology.

the first question to consider is whether to opt for flat plate or vacuum tube collectors

They deliver an unrivalled conversion of solar energy into heat, making them up to 50 per cent more effective than traditional flat plate panels. The vacuum inside each tube provides perfect insulation by protecting the system from outside influences, such as cold, wet or windy weather, resulting in quality performance all year round. Kingspan Renewables' Thermomax tubes for example, are specifically tailored for Northern European climates and deliver up to 70 per cent of hot water requirements throughout the year.

Unlike flat plate panels, vacuum tubes can be installed on the vast majority of roofs, even if a property is not south facing. They can also be installed on flat roofs or façades.

The system

Whether you opt for flat plate panels or vacuum tube solar thermal collectors, it's vital to ensure you have a complete system solution that is fit for purpose. This includes selecting the correct hot water cylinder size to meet the hot water demands of your property, determining your solar system type, size and of course, positioning for maximum efficiency.

The design and installation of the system are just as important as the quality of the technology. We at Kingspan Renewables recognise this, so right from free initial advice, through to bespoke design, installation and technical support, we aim to provide customers with the ultimate solar solution that works best for them.

Solar heating – one site, one solution

Solar thermal systems are now regarded as a key part of the microgeneration market. No longer is it a niche offering – it is now established and very much accepted throughout the heating and hot water industry. Contractors must now look towards complete, integrated systems and adopting a one-stop shop approach to gain the greatest rewards from solar heating, as revealed by the recent EST field trial findings, say **Pippa Wibberley**, Glow-worm

Solar thermal has come a long way in a short space of time – five years ago it was seen as being in the realm of the energy conservation enthusiast and not destined for the UK mass market. After a succession of gas and electricity price increases and strong government commitment to green energy generating new incentives to make it happen, solar thermal is starting to be considered in a new light.

Today, the market is taking solar thermal seriously as a viable addition to conventional heating fuels. A well designed system based solution should be able to contribute up to 60 per cent of a homeowner's annual domestic hot water bill. The findings from the recent Energy Savings Trust (EST)report; – 'Here Comes the Sun: a field trial of solar water heating systems' backs up this claim, but some systems were found to be delivering as little as nine per cent, mainly due to inadequately insulated systems or ones that were incorrectly configured or being used improperly. Get it right, and the end user will reap the benefits.

It is not too extravagant a claim to say that solar thermal has entered the mainstream of domestic and commercial heating systems. The consumer, contractor, developer and local authorities are all convinced by the proposition of solar thermal solutions as a viable and cost-effective choice, especially in today's economic climate.

The EST trial highlighted that of all the end users questioned who had solar thermal systems installed, 84 per cent were satisfied or very satisfied with their system. The reason for this, one can assume, is that the benefits of solar thermal are real and tangible. Showering in water that has been heated purely by the sun provides a certain 'feel good' factor, as opposed to PV which sits silently on the roof.

Contractors as well as one-off installers have been quick to grasp the potential of this fast developing market as a way of increasing their skill base and their own portfolio of services to differentiate them from their competitors. For sure, the attraction of RHI will provide stimulus to this market, but gaining the MCS accreditation is a must for installers wanting to make the most of this new incentive.

Many established manufacturers can assist with both product training, such as BPEC or Logic courses and MCS training to guide installers through what will soon become the minimum requirement to access grant funding.

For a contractor there are clear advantages of standardising one simple supply route for all component parts. One supplier should be able to offer one single delivery and point of contact. Additional logistical and administrative work will be reduced by avoiding multiple sources for solar collectors, cylinders and controls. Sourcing from multiple suppliers can also provide difficulties with additional parts often needed, to adapt seemingly cheaper system components, to ensure the full system is compatible.

A single supplier can ensure all components that make up the system will be designed to work as an integrated system (eg. intelligent control that can hold off a boiler during periods of solar gain, despite the boiler being timed as being 'on' therefore maximising efficiency and the solar yield).

The field trial report also highlighted insufficiently insulated cylinders in some installations. Installers and specifiers should check the specification of the insulation on the cylinders they are proposing to use, and compare heat loss figures to get the best from their solar thermal installation.

Bright light: Pippa Wibberley, Glow-worm, discusses the valuable position of solar thermal in the renewables market

All safety devices, also, should be included when sourcing from a single, approved supplier, such as an adequately-sized expansion vessel and protection vessel for the solar circuit. Requirements for unvented storage water heating systems and their installation are laid down in Part G3 of the UK Building Regulations. These regulations state unvented hot water storage systems with a storage capacity greater than 15 litres must be safely installed by a 'competent person' who holds a current Registered Operative Identity Card. G3 unvented training is available through colleges and manufacturers who may be able to combine this with product-specific training.

It is important to work with established manufacturers who offer complete, integrated systems, backed up by a nationwide service organization or network, should any issues arise. As we head into a new generation of microgeneration products, there are huge 'solar' gains to be made. Integrated systems, from one manufacturer, are the way ahead.

Fluid funds

Noel Shapton, Hydratech, provides a review of high performance fluids for solar thermal installations whilst conveying some facts and dispelling a few myths associated with solar fluids

In solar systems significantly higher demands are made of the fluid compared to geothermal and air source. Stagnation and boil-off within solar panels exert tremendous thermal stress on the fluid.

Fluid life can be maximised through good system design, facilitating rapid evacuation of the panel during stagnation, and the use of Reversibly Evaporisible Inhibitors (REI).

Non-RE inhibitors distil from the fluid and get baked onto the tube walls by the sun, leading to degradation of the fluid and corrosion of the system.

The most common antifreeze added to solar fluid formulations is propylene glycol (PG). Hydratech has been supplying Solaris PG Concentrate to solar panel manufacturers, merchants and installers for many years.

Solaris PGC contains a proprietary REI package and has proven exceptionally reliable in the field. An independent panel manufacturer carried out extensive trials using Solaris PG20 and Tyfocor LS (both ready-to-use solutions) and reported that Solaris PG20 proved more durable.

PG is not the only antifreeze that can be used in solar systems and more thermally efficient alternatives are available. The primary reason for selecting PG, until now, has been its low toxicity rating. Following extensive toxicity tests by an EPA certified laboratory, Hydratech now manufactures DTX, an alternative non-toxic fluid. The DTX range is based on the more thermally efficient ethylene glycol (EG), blended with the patented DeTox neutralising additive. Solaris DTX also contains the same REI package as used in Solaris PGC.

EG based solar fluids are well proven, having been used for many years prior to PG gaining favour, due to toxicity concerns. There are no regulations preventing EG based fluids from being used in a solar system and significant documentation exists to corroborate their use.

Fig.1 provides useful comparison data for EG and PG based fluids.

To summarise, the benefits of Solaris DTX over PG based fluids are;

- More efficient heat transfer = heats up the hot water more quickly.
- Easier to pump, especially at low temperatures = reduced electrical demand.
- Less volume required to achieve the same freeze protection = cost reduction.
- Costs less per litre = even more cost reduction.
- Even lower toxicity.

**The Prandtl Number is a dimensionless number that is calculated using a fluids density, specific heat, thermal conductivity and viscosity. It provides a quick point of reference when comparing the overall heat transfer efficiency of a fluid. The lower the Prandlt Number the more efficient the fluid.*

Fig.1

Fluid Versus Physical Data (at 20OC)	Boiling Point @ Atmos Pressure	% v/v needed to provide -20OC protection	Prandtl Number*	Dynamic Viscosity mm2/sec	Thermal Conductivity W/mK
Water	100OC	n/a	7.0	1.0	0.6
Solaris DTX	>155OC neat	35%	20 at 35%	2.2 at 35%	0.45 at 35%
Solaris PGC	>150OC neat	40%	41 at 40%	4.5 at 40%	0.39 at 40%
Propylene Glycol	>155OC neat	39%	40 at 39%	4.2 at 39%	0.40 at 39%

SOLAR PV

What: One farmer's investment in solar PV panels

How: Using kit supplied by SCCI Energy

Result: An expected profit of £650,000

David Tory, a dairy farmer who farms 600 acres near Blandford Forum in Dorset is investing around £135,000 by installing four solar PV systems supplied by the renewable energy equipment designer, SCCI Energy at his farm at Tarrant Crawford.

His investment in solar PV installations is expected to yield around £850,000 in energy savings during the next 25 years despite the changes to the Feed-in Tariff (FiT) scheme and he is expected to make a profit of around £650,000 giving an annual return on his investment of around 16 per cent.

The government announcement of a 50 per cent cut to the FiT took many in the solar power and farming industries by surprise as to the speed and severity of the cuts.

However, Tory says that despite the cuts, solar PV installations are still a worth while investment for farmers to make."I expect my solar PV system to start paying for itself within five and a half years, I have looked at all the costs involved and with reductions in manufacturing costs for solar PV panels it is still a viable investment. In fact, with expected rising energy costs in the future it's a bit of a no brainer not to do it. As long as you install a high quality system with a reputable supplier, you should enjoy a good return on your investment."

The four solar PV systems which include 250 solar panels are being installed on the roofs of farm building to supply the farm with 62,000 kwh per year.

Tory says that making the decision to invest with SCCI Energy was easy to do as it has proved to him that it is one of the best companies on the market:

Bright idea: One of David Tory's solar PV panels at his Dorset farm

HEAT PUMPS

What: An eco-friendly refurbishment of a village hall

How: Incorporating air source heat pumps

Result: The provision of heat and hot water as well as a saving on fuel bills

The 17th century Messing Village Hall in Colchester has undergone a substantial eco-friendly refurbishment, boasting two air source heat pumps manufactured by Stiebel Eltron.

Colchester based installers Blueflame Services completed the installation which will heat the building as well as providing hot water.

Blueflame installed two products – a WPL18e air source heat pump for space heating and WWK300 air source heat pump for domestic hot water. Messing Village Hall, which includes an extension built in the 1950s, has been fully insulated and also now boasts an underfloor heating system.

The WPL18e heat pump was installed internally with air ducts to fit in with planning restrictions of the listed building.

As well as saving fuel bill costs, the decision to match the listed building with current green standards came after visitors complained it was cold and uncomfortable.

Geoff Jackson of the Messing Village Hall committee said: "It was always our intention that the project, with the help and co-operation of planning officers, should become a showcase of what can be done with a listed building in a conservation area.

"The project development and sustainability study that was commissioned showed that by employing high standards of insulation and renewable methods of heating we could make significant savings of carbon dioxide emissions. These savings also make a contribution to the hall's finances and are thereby helping to ensure the hall's sustainability.

"We have already had a lot of interest from community groups and organisations from across the area wishing to use our building."

Messing Village Hall is situated in an off-gas area and was previously heated by oil, which proved both expensive and inefficient.

Warm glow: Messing Villlage Hall now benefits from heat pump technology

HEAT PUMPS

What: An energy efficient heating solution in Norfolk

How: Using Vaillant ground source heat pumps

Result: Anticipated lower running costs

As part of a recent renovation and sustainable energy project at Postwick Village Hall, Norfolk, two Vaillant geoTHERM ground source heat pumps (GSHPs) have been installed. The heat pumps will provide the building with an environmentally friendly and energy efficient heating solution. The installation is the first Vaillant geoTHERM cascade system in the UK.

Doug Johnson, technical director at RenEnergy installers, stated: "The Vaillant system in this particular case was better suited and more cost effective than similar heat pump products. We have used this system in village halls before and were more than happy to work with Vaillant products again."

The ground source heat pump consists of 25mm PE pipe buried approx two metres below ground covering an area of 650 square meters. In the village hall's plant room, two geoTHERM GSHPs have been connected to one 300 litre hot water cylinder and one 400 litre buffer cylinder, as well as 13 low flow temperature radiators, adapted for a 'cascade' operation. This means that the staff at the village hall will be able to choose whether they want to use one - or both - ground source heat pumps at any given time.

As part of the sustainable energy project, Postwick Village Hall has also installed a 15ft mast wind turbine alongside the Vaillant GSHPs, which will hopefully bring the village hall closer to energy self-sufficiency.

"The staff at the village hall are happy with the new system and we anticipate far lower running costs compared to the old oil system. There should also be healthy savings to their heating bills for years to come," Johnson added.

Vaillant geoTHERM GSHPs provide the most advanced technology for heating, hot water and cooling. The products are ideal for heating homes and light commercial applications, as they can be connected to a suitable high performance hot water cylinder for domestic hot water or an underfloor heating and/or radiator system for space heating.

Community spirit: Vaillant's GSHPs helping reduce running costs at Postwick Village Hall

WOOD PELLET BOILER

What: An eco-building programme at a dog-care charity

How: Incorporating an Energy Box – a complete heating system delivered ready for installation

Result: A substantial cut in energy consumption

The UK's largest dog-care charity has chosen renewable heating company Organic Energy to provide a green energy system at its £5 million centre in Shropshire.

A wood pellet boiler has been installed at the Dogs Trust Shrewsbury site to provide the canine eco-home with its heating and hot water.

The charity has completed an eco-building programme at the centre, in Roden, which includes super wall insulation, triple glazing, rainwater harvesting and recycling and solar PV panels on the roof of the home.

Organic Energy has supplied an Energy Box for the site - a complete heating system delivered ready for installation which can be connected to the heating system within a matter of hours.

The Energy Box, which is lowered onto a concrete base, is a complete plant room designed and pre-fabricated by Austria-based ÖkoFEN which represents the very latest in renewable, sustainable heating technology.

The timber box houses a 56 kw ÖkoFEN Pellematic wood pellet boiler as well as a fabric fuel store, flue and ash compression system.

Andy Boroughs, managing director of Organic Energy, said the installation could also provide an income stream for the charity, with the government's Renewable Heat Incentive (RHI) offering a payment for green energy installations.

He said: "We have carried out many large installations, in hotels, schools, on farms and for charities, but this is the first for a dogs' home. The ÖkoFEN Energy Box complements the numerous sustainable building techniques and renewable energy solutions which are included as part of the build."

The charity was spending about £500,000 a year on heating and lighting bills for its 18 centres across the UK. Specifically, the Roden centre has been consuming energy comparable with a luxury office development. Following the project's completion, the target is to cut energy consumption to less than 150 kWh per square

ECO PROPERTY

What: Making new homes eco-friendly

How: Using Ice Energy expertise and technology

Result: RHI-qualifying properties

Renewable energy expert Ice Energy Technologies has been selected to specify, supply and install energy-efficient products and systems for a new development of eco-friendly homes near Bridgnorth, Shropshire.

The Oaks, a cul-de-sac of seven, four and five bedroom homes built by ADS Developments at Alveley, qualifies for the new Renewable Heat Incentive (RHI), the government-sponsored incentive which rewards homeowners who adopt renewable energy products with a series of fixed income payments over a twenty year period and aims to provide a 12 per cent return on investment.

The properties feature a number of energy saving measures including a high level of insulation and filtered rainwater tanks capable of reducing water usage from the mains by up to 50 per cent. They also include under-floor heating throughout and the latest air source heating, both of which have been supplied by Ice Energy.

Home front: ADS Development's new homes contain a range of renewable technology courtesy of Ice Energy Technologies

Ice Energy managing director, Andrew Sheldon, said: "We are delighted to be involved in such a flagship development which is a fantastic example of what developers need to consider for the future. With the rising costs of utilities, developers are duty bound to understand the needs of prospective buyers and address those within the build process which is exactly what ADS has done to their credit."

David Thompson, spokesman for ADS Developments, who specialises in building high quality energy efficient homes to a superior specification, said: "We chose Ice Energy as a supply partner because we saw them very much as leading the market in renewable technologies. This is our first development with Ice but we have been extremely pleased with the high level of service they have provided.

"Having homes that qualify for the RHI is a key differentiator for us within a tough market. Because the products and expertise supplied by Ice Energy have helped to meet that qualification, we can promote these properties as not just homes but long term, environmentally friendly investment opportunities which is obviously a very positive message."

metre – 62 per cent less than a conventional building.

Dogs Trust project surveyor, Paul Wass, said the ÖkoFEN Pellematic wood pellet boiler system fitted well with the scheme's sustainability agenda.

"Throughout this project, we have looked for effective, cost-efficient solutions for our energy needs which are considerable at the Dogs Trust Shrewsbury centre. The centre previously was using energy at a rate of around 400 kWh per square metre and we are aiming to cut energy consumption to less than 150 kWh per square metre following completion.

"The Energy Box provided by Organic Energy was the perfect answer, being able to house an ultra-efficient and low carbon 56kW ÖkoFEN boiler and a large enough wood pellet store to ensure we will only need perhaps two or three deliveries of pellets a year."

Premier position: Andy Boroughs, Organic Energy. The company's Energy Box at the Dogs Trust Shropshire, is a first

Who: Chris Hopkins, founder and managing director of Ploughcroft in Brighouse.

What: Ploughcroft was established in 1997 as a traditional roofing firm by Chris and his father. In 2005, Chris had the foresight to move into the solar roofing installation sector and became the first roofing contractor in the UK to achieve Microgeneration Certification Scheme (MCS) accreditation. The company has installed more than 5,000 solar PV panels and is now one of the country's leading solar PV installers and renewable energy trainers with eight training centres across the UK.

Winning ways: Chris Hopkins, Ploughcroft, highlights a typically busy week at his company

FiTs, keeping fit and fitting in the Dragons

The last 18 months have been a life-changing period for me and the company. Since the launch of the Feed-in-Tariff back in April 2010, homeowners' interest in solar PV panels have gone through the roof and Ploughcroft has expanded significantly to handle customers' demand for solar. On the back of this consumer demand has come a huge surge in interest from companies wanting to get into the renewables industry and get the right training.

My appearance on the BBC's Dragons' Den programme a few months ago has also had a massive impact on the business and our goal to become the UK's number one solar PV panel installer is now becoming a reality.

Monday

As a former body-building champion, I believe that it is crucial for me to look after my body as well as my business. Training at the gym every morning ensures I have a clear head and am filled with vigour each and every day. As soon as I walk into the office I see there is a local homeowner who has made an impromptu visit to our Eco Roof Visitors Centre and is looking to find out more about the benefits of solar power. I show them around the centre and explain the excellent return on investment which solar brings. It's then time to catch up on emails and prepare for my meetings which are taking place later in the week.

Tuesday

Today I'm having lunch in London with Deborah Meaden and Theo Paphitis, the two Dragons who are investing in Ploughcroft. We've got a lot to discuss about our plans for 2012 and new ways to market the Ploughcroft brand. This is sandwiched in between two meetings at the House of Commons. I've been selected as a member of the new Green Building Board and so need to provide input for the group's first meeting, and then I'll be going to sit in on the British Photovoltaic Association's latest seminar.

Wednesday

Back in Yorkshire and it's time to prepare for a presentation I'm doing at the The Green Organsiation's Green Apple Awards later in the month. As the longest running environmental awards in the world, it's a real honour to be asked to talk about solar energy at this prestigious event. It'll be a great networking opportunity too. Just as I'm about to get my head down, the phones are ringing off the hook and so I need to make sure all the calls are being answered. I spend the next half an hour talking to a current customer about their new system and a potential customer who would like to organise a survey.

Thursday

Sharing our knowledge of the renewables industry with other businesses and organisations is extremely important to me and so I like to be involved with all the key education bodies. I'm heading over to the City of Guilds Green Skills National Advisory Committee meeting today to provide input for their plans for the government's new Green Deal initiative.

Friday

Friday is team meeting day. I'll be having three meetings covering off the solar, training and roofing divisions of the business. We'll be going through any issues that have arisen through the week, discussing sales targets and ensuring that we're all on track with our strategy and deliverables. And then finally, it's family time.

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