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Autumn almanac

So here we again as summer enters into its final straight. Hopefully refreshed from a sunny holiday, autumn traditionally heralds a host of industry events and a frenetic period of activity for installers as we rapidly approach the start of the heating season.

With Solar Energy UK looming large in the diary, we have a bumper issue in store for you including a preview of the key exhibitors gracing the NEC in mid-October. As official media partners, the REI team will be out in force to greet readers on stand P32.

We also look ahead to September's main event – The Energy Efficiency & Renewables Awards. Proudly brought to you for the first time by REI's publisher A&D Publishing, 13 awards will be up for grabs at Kensington Roof Gardens on 26 September. The full shortlists can be found on pages 26-27.

Once again, my gratitude goes to the judging panel for their diligence and skilful adjudication of a record number of entries, our commercial sponsors and all those who took the time to enter. A full round up of winners will be provided in the next issue.

Looking even further ahead, I'm excited to think that this time next year we will be in the midst of our very own Heating & Renewable Roadshow. Formally re-launched in July, I would encourage parties interested in exhibiting to get in touch soon as the floor plan continues to fill up fast. More information is available on page 6.

And finally, it's not only the seasons that are changing as we welcome Amber Rudd to her new role as climate change minister. Although not universally popular, many were surprised to see Greg Barker step down recently as DECC's longest-serving minister.

His time in office will remain etched in our memories, not least for the reform of the Feed-in Tariff and the introduction of intrinsic policies such as the RHI and Green Deal on his watch.

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Editorial panel members


Andy Buchan, CEEC, Future Renewable Energy


Andy Boroughs, Organic Energy


Garry Broadbent, Lifestyle Heating


Cathy Debenham, YouGen


Ryan Gill, Evoco Energy


Liz McFarlane, Zenex Solar


Steve Andrews, Ecoskies


Phyllis Boardman, Green Deal Consortia


Robert Burke, HETAS


Gideon Richards, MCS

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'Plumb Center is actively trying to attract a more diverse workforce and increase the number of women in its business" Kate Gilbert p8

Events

The Renewables Event
16-17 September NEC, Birmingham
http://www.therenewablesevent.com/

Energy Efficiency & Renewables Awards
26 September, Kensington Roof Gardens
www.renewableenergyinstaller.co.uk/awards/

Nextgen 2014
08-09 October Stoneleigh Park, Warwickshire
http://ebec.nextgenexpo.co.uk/

Solar Energy UK 2014
14-16 October NEC, Birmingham
http://uk.solarenergyevents.com/

Ecobuild 2015
03-05 March 2015 ExCel, London
www.ecobuild.co.uk

Heating & Renewables Roadshows
10 September 2015 Ricoh Arena, Coventry
15 September 2015 Westpoint Arena, Exeter
17 September 2015 FIVE, Farnborough
22 September 2015 RHC, Edinburgh
24 September 2015 Event City, Manchester
http://www.heatingandrenewablesroadshow.co.uk/index.php

Gas Safety Week 2014

The fourth annual Gas Safety Week will take place from 15-21 September to bring gas safety to the forefront of people's minds.

Co-ordinated by the Gas Safe Register, gas engineers are being asked to raise awareness of gas safety issues including the risk of carbon monoxide poisoning, gas leaks, fires and explosions.

Gas Safe registered installers should help remind customers to do the following:

- Check their gas appliance every year with regular services
- Check their engineer is Gas Safe Registered
- Check their engineer's Gas Safe Register ID card
- Check for warning signs their appliances aren't working correctly
- Check they know the six signs of carbon monoxide poisoning
- Check they have an audible carbon monoxide alarm

To get involved and order materials to raise awareness of gas safety visit **www.gassafetyweek.co.uk**

UK wind hits new record high

RenewableUK says a record high of 22 percent of the UK's electricity was generated by wind on 17 August, beating the previous 24-hour record set earlier in the month

The UK's onshore and offshore wind turbines generated an average of 5,797 MW throughout the day – enough to power more than 15 million homes, according to the statistics from National Grid.

RenewableUK's director of external affairs, **Jennifer Webber**, said "(We saw) very high levels of generation from wind throughout August, proving yet again that onshore and offshore wind has become an absolutely fundamental component in this country's energy mix.

"It also shows that wind is a dependable and reliable source of power in every month of year – including high summer."

Warming up with Windhager

Scarborough-based Life's Energy has topped off a year of impressive growth with the opening of a new showroom.

Deputy leader of the Green Party, Will Duckworth, cut the ribbon for the firm co-founded by Andy Louth, Nick Beal and Bill Stephenson two years ago.

In addition to rising fuel costs and government incentives such as the RHI, the three directors attribute the company's growth to its association with Windhager, and the products and expertise it offers them.

"As an MCS accredited biomass installer we require excellent products and aftersales," said Simon Deller of Life's Energy.

"Our relationship with Windhager ticks both these boxes. With more and more people enjoying the benefits of biomass we look forward to recommending Windhager products."

Greg Barker resigns amid cabinet reshuffle

Tributes have been paid to former climate change minister Greg Barker who resigned his ministerial brief at DECC during prime minister David Cameron's summer cabinet reshuffle.

The outgoing Barker has been replaced by Amber Rudd whilst former energy minister Michael Fallon, who was appointed defence secretary, has been succeeded by Matthew Hancock.

Ed Davey, who is a Liberal Democrat unlike Conservative MPs Barker and Fallon, will remain energy secretary.

Both the Renewable Energy Association and RenewableUK have credited Greg Barker for his strong pursuit of green policy whilst in office and robust defence of the renewable energy sector.

REA chief executive Dr Nina Skorupska said: "Greg Barker was the only DECC minister to have been in post since the last election. Not only did he bring stability to the department, he also brought passion and enthusiasm. Although during his stewardship he had to make tough decisions we didn't agree with, there is no doubt that Greg was a champion for green business.

"I hope he continues to be an advocate for a low carbon economy, ensuring the UK's energy is sustainable and secure."

Maria McCaffery, RenewableUK chief executive, added: "RenewableUK is grateful to Mr Barker who, during his time as climate change minister, was a consistent advocate for renewable energy in government."

Greg Barker, who has also indicated that he will step down as MP for Bexhill & Battle at next year's election, tweeted: "It has been a huge honour to serve in pioneering 1st Cameron govt, & great privilege to represent #Bexhill&Battle."

Highly commended: Greg Barker, who has stepped down as climate change minister, has been hailed as a 'champion for green business'

GDHIF closes to new applicants

DECC has announced the immediate closure of the Green Deal Home Improvement Fund (GDHIF) due to 'overwhelming popular demand'.

The move in late July came just days after DECC had initially cut the cashback payments for a number of energy efficiency measures after exhausting the scheme's first £50m tranche of funding.

New climate change minister, Amber Rudd, said: "The Green Deal Home Improvement Fund is a world first and in a short space of time it has proved extremely popular.

"We were always clear there was a budget which is why we encouraged people to act quickly.

"As a result, thousands more families will now benefit from government help to have warmer homes which use less energy."

GDHIF opened to applications on June 2014 and allowed homeowners to redeem up to £7,600 in cash vouchers. It was designed to reward homeowners for choosing Green Deal finance and was widely credited for stimulating demand and allowing installers to directly access a cash back fund for customers without subcontracting work to a provider.

Neil Schofield, head of government and external affairs at Worcester, Bosch Group, described the decision-making process as a farce.

He said: "The scheme was supposed to last for three years and instead has been wound up after seven weeks. We were promised certainty and long-term planning and instead have received ambivalence and short-termism. The decision displays a shocking inability to demand forecast and a total lack of understanding of the dynamics of the heating industry."

Heating & Renewables Roadshow gets off to a flier

The Heating & Renewables Roadshow has hit the ground running following its official launch in early July.

Over 100 industry heavy hitters attended the launch event at Coventry's Ricoh Arena on 03 July to hear representatives from A&D Publishing present full details of the market proposition for the UK's only regional renewables exhibition.

Throughout next September, the roadshow will tour five UK venues achieving complete nationwide coverage including its first ever appearance at FIVE, Farnborough (full schedule below).

A&D Publishing general manager, Scott Masheder, said: "We have already experienced a huge volume of enquiries and an impressive number of confirmed bookings.

"We're off to a terrific start with some of the industry's biggest names on board including Stroma, Windhager, Glow-worm, Vaillant, Corgi, Kensa, Zenex and Hitachi."

He added: "We will be in a position to confirm our list of knowledge partners shortly, made up of the sector's largest trade counters and merchants."

To discuss packages available for exhibiting or sponsorship opportunities, please contact Adam Hart (07785 630380) or Jonathan Hibbert (01565 626760).

For more information and to request a media pack, please visit **www.heatingandrenewablesroadshow.co.uk/**

Dates & venues

10 September 2015 Ricoh Arena, Coventry
15 September 2015 Westpoint Arena, Exeter
17 September 2015 FIVE, Farnborough
22 September 2015 RHC, Edinburgh
24 September 2015 Event City, Manchester
*subject to change

d-RHI enjoys rapid start

Official figures from Ofgem reveal the number of households benefiting from the domestic RHI shot passed the 1,000 mark in only seven weeks following the scheme's official opening in April, beating all expectations.

Initial uptake has highlighted some interesting trends with almost half of applicants choosing to fit a ground source or air source heat pump.

Uptake was spread fairly evenly across the UK with the South East, South West and East Anglia regions leading the way.

Predictably, almost half of applicants were replacing oil as their primary heat source, although almost a third switched away from gas.

At the time of going to press, the total number of homes applying for d-RHI had risen to 7,418.

Meanwhile, under the non-domestic strand of the RHI, installed capacity of wood heating systems has broken through the 1GW mark.

Dr Nina Skorupska, REA chief executive, said: "Thousands of UK businesses have realised the benefits of biomass for delivering reliable, low cost, low carbon heating, and yet we've only just scratched the surface. We want renewable technologies to be the go-to option for all buildings and industrial processes, which will make a huge dent in our greenhouse gas emissions and greatly reduce our dependence on imported gas. To secure this, the government must take the advice of the Committee on Climate Change and commit to sufficient funding for the RHI in the next spending round."

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Girls allowed

There aren't many women working in the industry today, so REI spoke to two who are proving that it's not just a man's game

The construction industry is very male dominated. When people think about the stereotypical plumber, mechanic or gas engineer, they'll probably picture a man driving in a white van, and carrying a toolbox.

And the statistics back this up. A recent survey of 2,000 people by WaterSafe revealed that less than 1 percent of plumbers in the UK are women. However nearly a third of women (31 percent) questioned would prefer a female plumber to carry out work on their home.

The renewables industry is still (relatively) young but it's growing fast, and what is clear from speaking to Jayne and Kate, could provide exciting opportunities for both men and women.

Jayne Hall-Edwards

Jayne Hall-Edwards is the director at Plumbers, Electricians, Carpenters (PECs) LTD with her husband Ian. She has MCS certificates for PV, biomass and heat pumps, and is training to become a Green Deal Advisor.

In my experience there aren't many women in construction.

Ten years ago our company specialised in kitchens, and we would fit about 25-a-week. My husband can't be in two places at the same time, so I started helping out on site.

The first time I met a site manager he turned around to me and asked my directly: 'What do you know about kitchens?', and that's the clean version. That was my introduction to the business, but I soon had them eating out of my hands.

Some people might have the view that women are more about nails and heels than hard work, but it all comes down to who is the best person for the job.

I've seen some horrible work carried out by men, and I'm sure I've seen the same with women.

For me it's about capability. I don't mind if you're a man or a woman, tall or short, if you can do the job to a high standard that's good enough for me – we always use whoever's best.

Kate Gilbert

Kate Gilbert is the sales and events manager at Plumb and Parts Center's Sustainable Building Center (SBC). Kate co-ordinates the training programmes and open days held at the SBC, and has a great insight into the renewables industry.

I've been working with renewables since November 2010 when they were pretty new. There was no Green Deal, no RHI and the Feed-in Tariff scheme had only just launched, so it was a world away from what we have now.

The industry in general is very male dominated, although Plumb Center is actively trying to attract a more diverse workforce and increase the number of women in its business.

In my experience, there are slightly more women working in renewables than traditional heating.

I think it's because renewables are new so it's a more accessible area, and there aren't any preconceptions about what a heat pump installer should look like; it could be anyone.

Renewables also requires a lot more communication with the public. This is an area that we're seeing women grow into and we are seeing more women stepping into sales roles because they have renewables knowledge.

At the RHI events we organise, we're also seeing more husband and wife teams coming along to hear about the scheme, and the wives are usually the ones that are managing the business side.

It's exciting, the industry is brand new and it's a blank canvas. There are no preconceptions so anyone can become a renewables installer, whether it's men or women, young or old.

FiTness test

With Ofgem confirming a 3.5 percent FiT reduction on December 31 2014, **Jordan Mawbey**, marketing manager at EvoEnergy, tells PV installers how to make this degression date less disruptive than those before it

Given the 'boom and bust' effects experienced across the industry after previous reductions, solar firms could be forgiven for fearing the worst.

Figures from previous years speak for themselves. More than 32,500 installations were recorded in the week before the July 01 2013 FiT change - then less than 4,000 the week after.

The year before that, weekly installations fell from 52,000 to 2,000 in two weeks over the August FiT. And need I remind anyone about March 2012; when sales dropped from more than 120,000 to 5,000 week on week.

Unfortunately (or fortunately, depending on your viewpoint) we won't know the statistical effects of the upcoming cut in as much detail. The government no longer makes weekly installation data like this available.

And it would be unfair for me not to mention that positive steps have been taken to reduce the impact of each FiT - April 2014 was proof of this.

That said though, the industry cannot rest easy. We cannot predict the future based on past performance, but given previous experience and the date chosen for the next one, companies should take precautions now.

3.5 percent equates to roughly a £20 annual cut in return from an average 4kWp domestic installation - not a dramatic amount to take from annual average returns of around £500.

PV will still make sense financially in 2015, so incentivising installations this year ahead of the change and causing a rush of orders is no longer worthwhile.

However we all love a bargain, so customers can still be expected to push for a 2014 installation wherever possible.

More people will want to get their orders finished before Christmas, to avoid any festive disruption. This could require installers to work longer days and additional overtime at a time of year when more staff are looking to take time off.

Effective management of resources could therefore make all the difference - handling staff workloads upfront and preparing additional support to deal with an influx of orders.

The same can be said about structural reports and EPC certificates. Planning team resources, whether internal or outsourced, will be essential.

Not to be overlooked, either, is the planning that will be required to give customers the time they need to register their new systems and MCS certificates with energy providers in the run up to Christmas - ensuring they don't miss the deadline.

The 'Big Four' and others could be running skeleton crews during this period, while posting paper copies of registrations could prove a nightmare given the demands already placed on Royal Mail.

As with all previous FiTs, any likely peak in sales could be followed by a dip. Coming this time in January - already one of the slowest times for the industry - it could prove quite the festive hangover unless countermeasures are put in place.

Those businesses that do well will be incentivising customers to choose January installation dates, thus limiting any danger of FiT-induced after effects.

And lastly, just as some of history's best laid military plans came unstuck by the weather, so could this year's FiT. The unpredictability of the UK's climate might end up having the biggest impact of all.

Boom & bust: Incentivising customers to install in January will help mitigate against the logistical challenges of a peak in demand before the FiT cut on December 31 and any associated post sales slump, says Jordan Mawbey, EvoEnergy

Planning team resources, whether internal or outsourced, will be essential

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Following the crowd

Jonathan Richards, commercial solicitor in the Energy, Projects and Commerce team at corporate commercial law firm SGH Martineau, introduces the increasingly popular concept of crowd funding for community energy projects

The Department of Energy & Climate Change (DECC) has announced that crowd funding is amongst measures being considered to help resolve the funding issues that many community energy projects encounter.

Well-structured opportunities, marketed on the right online platform, to the right potential investors, ensure crowd funding is an efficient and reliable way of initiating projects, but if things go wrong it can be expensive. But what exactly is it and what does it do?

Crowd funding uses online platforms to raise investment for a wide range of projects, with typically four categories of funding:

- Equity funding – investors receive shares/an equity stake in the project.
- Loan based funding (peer to peer) – investors loan monies direct to the project.
- Reward funding – investors receive a specific reward related to a project.
- Donation funding – investors receive nothing in return (usually associated with charities).

What is a platform?

Websites attract retail investors, as well as professional and institutional investors, by advertising opportunities and forwarding any funds received directly to the project seeking funding.

Projects are typically charged platform fees of between 0.5 percent and 2.5 percent of funds raised, together with an ongoing monitoring fee and some also charge the investors.

What are the benefits?

Crowd funding is a good alternative source of finance, helping initiate projects and depending on the structure of the investment, it may avoid having to give security over its assets, or avoid a heavy dilution in the equity share capital associated with equity/venture capital investors.

Crowd funding is an opportunity for investors to diversify their portfolio, with platform fees generally lower than fees associated with managed funds and allows individuals to invest in projects that might normally be restricted to professional investors.

There is also the potential to wrap the investment tax efficiently, through the Enterprise Investment Scheme/Seed Enterprise Investment Scheme or SIPP and still claim government incentives.

What are the risks?

The Financial Conduct Authority (FCA) regulates crowd funding and suggests investors should understand what level of due diligence has been undertaken, the level of risk and value for money offered by the project (after charges, taxes and potential defaults).

Crowd funding projects tend to be relatively small and might have neither the infrastructure nor personnel to achieve the proposed returns, but if guaranteed government backed incentives, such as FITs, ROCs or RHI, are available, this risk can be reduced.

One for all: Crowd funding presents an excellent vehicle for individuals to invest in projects usually limited to professional investors, says Jonathan Richards, SGH Martinau

Although investors will usually have their investment returned if the minimum fundraising is not reached, they risk losing valuable interest if the opportunity drags on for many months. Investors should also note that depending on the platform and the structure of the crowd funding, they may have no right of complaint to the Financial Ombudsman Service and may not be able to apply to the Financial Services Compensation Scheme (FSCS).

The risks of raising capital through crowd funding are relatively low for community energy projects, unless it fails to raise the minimum investment, when the costs of using the platform and preparing the offering documentation is wasted.

Legal and regulatory considerations

Although crowd funding is relatively new and the legal and regulatory wrinkles still need to be ironed out, the advice for those looking to invest or for community energy projects seeking investment through a platform, is seek the appropriate legal, financial and regulatory advice - ideally, find service providers that have experience in dealing with these unique matters.

The show must go on

The Renewables Event returns to the NEC Birmingham on 16 to 17 September. REI spoke to **Alison Willis**, director of Renewables Event, to see what installers can expect from this year's show

Q: What, in particular, is on offer for installers?

Now in its third year, The Renewables Event in 2014 will welcome more than 7,000 visitors, 50 plus exhibitors and host more than 15 free CPD-accredited seminars dedicated to microgeneration.

In the exhibition area, installers can access the latest renewables technologies and services from companies including Siemens Financial, Solarsense, Total Gas & Power, Viessmann and Econergy. It's also a chance to research the implications of the changing legislative landscape in the seminar theatre and network with a range of industry experts.

Q: What does the seminar programme offer this year?

This year's free conference programme will feature more than 25 industry expert speakers in seminars, panel debates and practical case studies. Some of our headline speakers include Nina Skorupska, chief executive of the Renewable Energy Association and Paul Crewe, head of sustainability, engineering, energy and environment for Sainsbury's.

Topical issues to be explored will include opportunities for decarbonising onsite heat generation under the Renewable Heat Incentive, and the industry's latest legal challenges in the panel session *A guide to risk management in overcoming planning and legal barriers for onsite microgeneration*. This year's seminar programme will also shed light on the policies driving renewable energy generation, as well as the major technologies in the market, including wind, solar PV and anaerobic digestion.

Q: What about the co-located events?

September will see not just one, but four environmental shows take place at the NEC. Operating alongside the The Renewables Event is **The Energy Event, The Water Event** and **RWM 2014 in partnership with CIWM** - and all are free to attend for The Renewables Event ticket holders. This co-location offers visitors the opportunity to build their knowledge, source products and services, and network across all four sectors.

Expert advice: More than 25 industry experts will take part in the free seminar series at this year's Renewables Event, says the show's director Alison Willis

Rexel tips EV market for strong growth

Installers should 'start taking electric vehicles more seriously' as the market continues to flourish, is the message from Rexel's strategic development director, **Brian Smithers**

His advice to renewable energy installers seeking ways to diversify comes in the wake of strong uptake of the government's OLEV grant.

The Office of Low Emission Vehicles (OLEV) grants were launched in February 2013 to help homeowners with the cost of installing home charging facilities. £13.3m was set aside to provide individuals with up to 75 percent of the cost of installation.

Due to its popularity, OLEV tightened the rules of the scheme in June, and reduced the maximum funding per install from £1,000 to £900 as the government looks to further stimulate the uptake of low emission vehicles, and add to the 10,000 electric cars currently on the road.

The new scheme will run until March 2015, or until funds are exhausted.

"The R&D spend by car manufacturers in this field is significant and runs into billions of pounds every year," said Brian Smithers.

"Electric vehicles qualify for zero road tax and there's a discount available on installing domestic charging points. Last month alone there were 600 installs made using the OLEV grant fund.

"We have been a market leader in EV since 2012 and the message to installers to not to just start taking EV more seriously, but to contact us. We can guide them through the set up, explain the business model, will handle all their enquiries and offer product solutions."

Open road: Following the success of the government's OLEV grant, installers should be paying closer attention to the growing electric vehicle market, according to Rexel's strategic development director, Brian Smithers

EST survey confirms strong demand for renewables

Nearly half of UK householders claim to live in cold, damp and draughty homes with a quarter planning to install energy efficiency measures in the next year, according to a new survey from the **Energy Saving Trust** (EST)

Domestic renewables such as solar PV are considered an 'ideal' energy efficiency improvement with most respondents putting this ahead of loft and wall insulation, confirming the public's appetite for renewable energy.

The first of a series of public opinion trackers known as UK Pulse also found that 60 percent of respondents were more likely to rent of buy a property which included microgeneration.

Interestingly, the survey also exposed a gender divide with men more likely to view renewables as their measure of choice, while women preferred double glazing.

David Weatherall, energy efficiency expert and the Energy Saving Trust, said: "The research shows that living in cold, draughty and damp homes is a big motivator for people to take action and that renewable technology is the thing that most excites.

"If UK households are considering making the energy saving improvements to their home then now is the time to take action in preparation for the winter months and colder temperatures."

4Eco team plans cancer awareness skydive

Business development director at 4eco, **Jodi Huggett**, is planning a 15,000 ft tandem skydive this month to raise awareness of neuroendocrine tumours (NETs), a rare form of cancer, after being treated for the illness last year

Jodi, who has since made a full recovery, is a fitness fanatic and was surprised to be taken ill. She is now planning a skydive in Devon on 06 September with her husband Ian and 4eco's other directors - Robin Barrett and Lee Sutton.

The jump is part of Jodi's ongoing mission to raise awareness of the illness, so that it can be diagnosed early and to encourage further research into this complex form of cancer.

NETs are tumours of the neuroendocrine system; a collection of cells spread throughout the body which make hormones to regulate the workings of different organs. Awareness networks around the world have adopted the zebra and zebra stripes as their emblem and Jodi and the team will be wearing zebra stripe tee shirts donated by the NET Patient Foundation, for their jump at Dunkeswell Airfield in Honiton.

"Before being diagnosed with the illness, I hadn't heard of neuroendocrine tumours," said Jodi.

"I relied heavily on support of organisations like the NET Patient Foundation throughout to help me to understand the treatments and outcomes. After receiving the all clear, I wanted to give something back – not only to raise awareness of the rare cancer, but also to highlight the importance of early diagnosis."

Catherine Bouvier, CEO at the NET Patient Foundation, added: "We are delighted that Jodi and her team have decided to embark on this challenge. As a charity, we are working very hard to put NETs higher on the cancer agenda, both in terms of research into treatments and also to achieve earlier diagnosis for patients."

Anyone interested in donating to the NET Patient Foundation should visit the website **www.netpatientfoundation.org** or sponsor the skydive at **https://www.justgiving.com/Jodi-Huggett.**

Good cause: 4eco's Jodi Huggett will be skydiving from 15,000ft on 06 September with the company's other two directors Robin Barrett and Lee Sutton to raise awareness of neuroendocrine tumours (NETs)

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Generation meter placement and FiTs

Following discussions with Energy UK and the FiT Licensees, MCS has been made aware of an issue surrounding the placement of generation meters for FiTs eligible installations

During the two yearly physical meter reads carried out by the FiT Licensees it has become apparent that a large number of generation meters have been installed in loft spaces which would be considered a non-conformity against the MCS installation standard MIS 3002. MCS is clear in its Metering Guidance document and reference in both MIS 3002 and the PV Guide that: "The meter shall be fitted to a vertical surface and be placed in a position so that the register can easily be read by the customer without requiring the use of any equipment such as tools, ladders or a torch. Ideally the meter should be positioned adjacent to the consumer unit."

A group has been developed to discuss the placement of generation meters, as the issue is gaining momentum. The group discussed generation meters being installed in loft spaces and in other inaccessible/unsafe areas. It is becoming apparent that, despite this guidance being enforceable some installers are not following the parameters outlined in this document. This then turns into an additional cost for suppliers to read the generation meters installed in an inaccessible/unsafe area.

MCS has asked that all FiT Licensees send through a list of the addresses that have an incorrectly installed generation meter. This list will then be divided and made specific for each certification body, and the certification body will be expected to investigate each of these cases as a non-conformity with the installation company. The information found at each investigation will be fed back to each of the FiT Licensees.

The group noted that there may be a conflict between what is required in the Metering Guidance, and what the consumer has asked the installer to do. In some cases the consumer may have specifically asked for the generation meter to be installed in the roof space. The group agreed that the installer should follow the metering guidance document in all cases and should not deviate from this regardless of what the consumer asks for.

To read the Metering Guidance document, please visit the MCS Standards section of **www.microgenerationcertification.org**

Pollard's Patter

Keeping up with changes in government policies and regulations can be a full time job on occasion, which makes it rather difficult for those of us who already have a full time job.

We have seen the response to the consultation on Zero Carbon Homes 2016 which I think is fair to say, has received a mixed response. The exemption of 'small sites' from the standard will affect almost a third of new starts. Secondly, there has been the confirmation of the use of proposed design principles for allowable solutions. This will permit house builders to decide how they deliver additional savings which could include doing more on-site measures, doing more through off-site action, contracting a third party or making a payment into a fund. All this, despite the fact that 70 percent of respondents were in favour of the zero carbon standard.

The government re-shuffle led to the replacement of Greg Barker at DECC by his colleague Amber Rudd. We will all look forward with interest to see if this change in personnel will have any impact on current and new policies.

Lastly, I sense a long overdue awakening to the crucial importance of installers on the progress towards more efficient and lower carbon buildings. I have been involved in several recent events which have highlighted both the opportunities and roadblocks for installers in the renewable heating and microgeneration markets.

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Designed to empower you and your business

Four essentials for business promotion

NAPIT offers helpful advice to installers on how to make the most of your business on a budget, focusing on four business necessities; websites, social media, networking and branding

1) A Website

We are well and truly into the digital age so it really is essential to ensure your business has an online presence.

Website creation - It's not essential to pay a web designer a small fortune, there are content management systems which allow you to set up your own, perfectly suitable, website. A variety of articles can be found to guide you through the process of making a Wordpress site, making it an achievable short project to take on yourself.

SEO - Once you have your website, you need to make sure potential customers can find it. Search Engine Optimisation (SEO) is the term used for the process of increasing the visibility of a website in a search engine's results. There are specialist companies which will do this for you, should your budget allow. If you are on a tight budget there are a few basic things you can do yourself:

- Think about all the different keywords your potential customers will use to search for your service and ensure you include them all throughout your site content. If your site doesn't contain them, search engines won't find it.
- If your business has an office or headquarters, make a free Google Places account. You will then be found on Google Maps searches.

2) Social media accounts

Whichever sites you choose to work with, the following tips and advice will help you to create a positive, effective and free presence for your business:

- Keep it business – Create a separate business account or page, don't use your personal profiles, your business is more likely to be taken seriously this way.
- Engage – Don't just bombard your followers/friends with business promotion.

- Research – Know your audience and their online habits. You can use these statistics to decide the best time to post, the best platform to use, and more.
- Encourage customer interaction – Ask happy customers to leave feedback on your page, you can even offer incentives for them to do so. One way to expand your audience is to get your current followers/ friends to "like", "share" or "retweet" you posts or page.

3) Contacts and networking

We all know there's a great deal of truth in the saying "It's not what you know, but who you know".

Business owners who are not represented at tradeshows, exhibitions and conferences are missing out on many opportunities to form valuable professional relationships.

Some networking organisations encourage representatives of different industries to form relationships at regular meetings, with the aim of being able to work together through referral and collaboration.

If you don't see the benefit in meeting with business people in other sectors Trade Associations are probably more suited to you.

Online networking is another option; over thirteen million people are registered on LinkedIn, the business social media site.

4) A clear brand

A brand can be instrumental or detrimental to the success of a business.

Again this needn't cost the earth, use the following tips for branding on a budget:

- Turn your van into a travelling advert. Every company that requires the use of a vehicle should have their company name, logo, website and contact details on it.
- Give all your stationary a consistent theme through the use of your logo, colour and fonts. This theme should also be apparent on your website.
- Use branded clothing to promote professionalism and a business that takes its image seriously.
- Advertise your capability by including all applicable accreditation logos and quality marks on your branding.

TECH TALKING

Ground source, or air source? How do I choose?

Heat pump specialist **Bob Long** considers what scenarios are best for ground source and air source heat pumps

This is probably the question I am asked the most frequently and, indeed, the most difficult to answer because there are many factors to consider, and some not always obvious.

The choice does not entirely depend upon how much ground you have available, how much money you want to spend, or even how much you get back through the RHI.

Although these are all factors to consider, there are only two basic essentials to ensure. **Minimum cost of operation and maximum carbon reduction**

Assuming there is enough land available to consider a ground source heat pump (GSHP), the first step should be to complete a survey assessing the potential energy yield of the available ground. The survey should also indicate the best choice of energy collector i.e. bore holes or trenches.

Results will vary geographically, and it's essential for the potential energy requirement never to exceed the capability of the land.

I recently visited two GSHP installations where the economics of operation are currently being questioned.

In both instances the installations are 3-4 years old, and each system had performed adequately in years 1 &2, with a noticeable fall in efficiency by the third year.

In the first example, the flow and return temperature of the working fluid was -1 and +3, and in the second example, the working fluid temperatures were -4 and -1, indicating that the ground surrounding the collector is probably frozen.

Rehabilitation of frozen ground is a lengthy process, as latent heat is absorbed into the ice surrounding the collectors. The remedial process can absorb vast amounts of energy, while showing no improvement in ground temperature.

A well designed ground source collector should be capable of delivering return glycol temperatures of +5˚ C or higher under continuous load conditions, and if this is not possible, more ground must be allocated, together with a greater length of collector.

Glycol temperatures, returning from the ground collector below 5˚C will compromise the efficiency of the GSHP, and probably produce a COP lower than an air source heat pump (ASHP) at say +7˚C ambient air temperature.

A proposed installation site that cannot support all of the above needs should not proceed with the installation of a ground source system.

ASHPs are a viable alternative, only when annual climatic conditions in the intended location are suitable, and must be a primary consideration.

In certain parts of the UK, predictably severe winter conditions could make an ASHP the wrong choice, although a hybrid system with an alternative fuel source could provide the most economical mix.

The correct choice is made easier if we create a monitory value for each kW/hr. of energy, delivered by a range of sources.

The following values are rough illustrations of cost comparison: 0.12p/kWh for electric, 0.08p oil, 0.07p LPG and 0.05p natural gas.

When the ambient temperature is +7˚C and higher, a reasonably good heat pump will deliver a COP of about 3:1.

At this COP, the cost of energy per kW would be 0.4p/kWh making it the cheapest method of heating available.

However, when the outdoor temperature plummets to -15˚C, the heat pump COP is going to drop to perhaps 1.2:1 or even lower, increasing the energy cost to at least 0.10p/kWh.

Based upon fuel cost, climatic condition and COP, a hybrid heating arrangement should produce the most economical result for certain areas of UK.

For off-gas areas, a cheap bivalent energy source like LPG should always be considered, before electrical bivalent support from immersion heaters @ 0.12p/kWh.

CURRENT AFFAIRS

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

The recent announcement on the results of the 'Allowable Solutions' for Zero Carbon Homes was rather disappointing. Some of the recommendations were good but there were too many 'get out' clauses for comfort. For a number of years the definition of 'zero carbon' homes has been debated and the government has given extra finance to further the studies so there was much expectation on this consultation. The fact that now developers can purchase carbon offsets to mitigate the homes lack of carbon credentials is a licence to do nothing. Theoretically 'Allowable Solutions' should be those which are not economic but how is this going to be policed? It may well be cheaper for a house builder to pay for carbon offsets rather than make the dwelling super energy efficient. The new owner of the house will be subject to higher energy bills than would have been the case had it been constructed to be carbon zero. Who will confirm that offsets have been carried out? They could be purchased for projects on the other side of the world and presumably there will be agents and project fees to come out of the costs so are we going to get full value of these offsets or are they merely to assuage the developers' sustainability credentials? Overall a disappointing result.

The generation game

Steve Pester, BRE, lifts the lid on the NSC's latest exciting research collaboration with the UK MET Office

With three new members of the technical team, the BRE National Solar Centre is moving up a gear. In our latest project, we are collaborating with the MET Office and the University of Exeter to develop a short term solar generation forecasting tool to predict the potential yield at different localities in the UK. The project will use metrological and satellite data in combination with electricity generation data from solar PV installations across the UK. If you are interested in contributing data, we would be very pleased to receive automatically recorded generation data from any type or size of solar installation within the UK that has been operational for a year or more (contact: **nsc@bre.co.uk**).

In other projects, the NSC is providing project development support, technical due diligence for financiers, performance and fault investigations & expert witness services.

The programme for the outdoor test site for PV modules and systems has been re-scheduled for commencement in 2015, due to grant funding restrictions. However, in the mean time we are actively making progress on the required legal and planning agreements.

The flow of publications continues – the most recent titles being the 'Installation of photovoltaic panels on existing flat roofs – some lessons learned' and 'Wind loads on roof-mounted photovoltaic and solar thermal systems (DG 489 revised 2014)'. The next releases will be: 'A best practice guide for the development of solar farms on agricultural land, in association with the National Farmers Union (NFU)'; 'A best practice guide on the selection of DC isolators for PV systems'; and a series of case studies promoting the use of solar across different industries in the UK.

The NSC staff would love to meet you at the Solar Energy UK exhibition (NEC, Birmingham, 14 – 16 Oct), so come and visit our stand if you like to chat about joint research ideas or how we may support your project.

If you'd like more details on the NSC's activities, why not sign up for our newsletter by sending a request to - **nsc@bre.co.uk**

RHI – getting the right product

Robert Burke, HETAS, discuss current progress made under the domestic RHI

OFGEM has published a brief review of the first participants who are set to receive payments under the new domestic RHI.

After the scheme was launched in April there were 1,000 installations accredited in the first seven weeks. The choice of technology type was split fairly evenly between biomass, air source heat pumps and solar thermal with a smaller percentage of applicants installing ground source heat pumps. This is encouraging news for the industry with around 25 percent of applicants choosing biomass boilers or biomass stoves incorporating boilers.

The analysis of previous fuel types gives an interesting indicator of where most of the RHI applicants live. The overwhelming majority of the first thousand participants were using oil before switching to renewables, which confirms the government's strategy to target off gas main homes, predominantly in rural areas. However, other participants have switched from gas and electricity as the domestic RHI is open to domestic consumers no matter what type of heating system they are switching from. The Department of Energy & Climate Change (DECC) has also launched a domestic RHI payment calculator to help installers and prospective customers work out how much they might receive under the scheme if they switch over to renewable technologies.

Fortunately manufacturers were well prepared for the long awaited domestic RHI, and there are many approved products already available on the market. To qualify for RHI payments the installation must use a product approved under the Microgeneration Certification Scheme (MCS) and HETAS is one of the official bodies authorised by UKAS to carry out MCS biomass product certification. Biomass boilers and stoves with boilers must also have an emissions certificate to qualify for RHI payments, and HETAS maintains the database of products with these certificates, of which there are now 700 listed online at **www.rhieclist.org.uk**.

Making sure the product complies with regulations isn't just important for the RHI. Even if you're not applying for RHI payments, it's a legal requirement that any heating appliance meets the minimum safety and efficiency standards outlined in the building regulations. In practice this could be time consuming for installers to check with manufacturer's whether their products meet the required efficiency levels amongst other things. However, HETAS also operates a product approval scheme which includes appliances which comply fully with current energy efficiency and safety requirements.

The HETAS approved product logo is a mark of confidence for the installer and end user. For the installer using a HETAS approved product can save a significant amount of time as they know the product complies with current legislation. Otherwise the installer would need to check product test reports and make sure that the user instructions give the correct advice. HETAS product approval is based a CE type test report, assessment of the installation and operating instructions, assembly drawings and details of the manufacturer's quality management system.

Manufacturers of HETAS approved products can list them in the annual HETAS Guide of approved wood and solid fuel burning products, which is available online in addition to the 12,000 copies which are distributed every year. MCS approved products are also identified in the guide, and there are financial benefits for manufacturers in having their products HETAS and MCS approved at the same time. Further details of the HETAS Guide and MCS approved products can be found online at **www.hetas.co.uk.**

The HETAS approved product logo is a mark of confidence for the installer and end user

Two minutes with . . .

Who are you?
Simon Lomax, managing director of the Kensa Group and chairman of the Ground Source Heat Pump Association.

What do you do?
Established in 1999, Kensa remains the UK's only manufacturer of a full range of ground source heat pumps serving residential, industrial and commercial buildings.

Where are you?
Kensa's manufacturing facility is in Truro, Cornwall. There is a commercial office in Exeter, and installers within the Kensa Underground Network throughout the UK.

How's business at the moment?
Good. The launch of the domestic RHI, and the increase to the GSHP non-domestic RHI tariffs, have combined to stimulate increased interest plus the launch of innovative products, such as the Shoebox Heat Pump, has created significant demand in the new-build housing sector. Kensa's ability to provide expert technical support is encouraging many installers to embrace the technology, particularly now the appeal of the domestic RHI tariffs is understood.

How could business be better?
The sector is crying out for certainty from government over the available subsidy support. It was disappointing that the domestic RHI wasn't launched with more fanfare but at least there is finally a message that the supply chain can take to market. An increase in the price of heating oil (to 2010 levels) would obviously be helpful whilst all proponents of GSHPs must continue to promote the extra efficiency and durability and the technology's status as the most unobtrusive renewable.

What's the best business advice you've ever received?
My favourite business quote is from Henry Ford: "Coming together is a beginning; keeping together is progress; working together is success" whilst the best business advice is to stay focussed and place the customer at the centre of everything you do.

How are you going green?
The Truro factory is carbon neutral benefitting from solar PV panels and a GSHP installation that takes heat from the flooded mine shafts below.

Q&A

Stuart Cooper

Solfex

What have you got planned for the rest of 2014?
We intend to grow our online sales activities for most of our product groups, and with the launch of our new photovoltaic kit builder this month, customers will be able to design a PV system in six simple clicks of a button, the inverter size and mountings will automatically be matched according to the installation requirements and then the system can be ordered on the customer's account for next day delivery.

What do you see as the growth area for renewables?
The RHI should drive growth in all renewable heat technologies but I think the current trend will continue with biomass and ASHPs continuing to gain popularity. It's disappointing to see the solar thermal sector still continuing to stall despite the RHI being in place and the technology relatively easy to install with over 1000 qualified MCS registered installing businesses (which is slowly decreasing). Although competitive, the photovoltaic market should remain strong with growth in commercial roof tops, I also think the residential market will continue along at the same trajectory.

How is your company cutting its carbon footprint?
All our waste is fully recycled and space heating in one office area is provided by an ASHP.

Stuart Cooper is managing director at SOLFEX energy systems

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Talking point

Liz MacFarlane, Zenex Solar, casts her eye towards next month's Solar Energy UK exhibition at the NEC

We were sorry to hear about one of our competitors, Solar Century, moving out of UK distribution. Zenex Solar has always worked closely with them and I would say we shared the same ethos of quality product at the right price, but most importantly of great customer service.

As the two main UK suppliers of PV-giant JA Solar, we were referred to as 'The JA Solar family' and together with Wolseley Plumb Centre I think we've been instrumental in helping JA build its brand in the UK. Solar Century have installed the product on some of the largest projects in the UK and like us, supplied the network of UK installers who want a reliable bankable product. Zenex is continuing to fly the JA Solar flag and we are particularly excited to be launching their new SolarEdge embedded module at Solar Energy UK next month.

There's no doubt about it, as some of the Chinese manufacturers try a direct-sell method to our installers, we've all had to change our game plan and really ensure the value-added offering through credit terms and reliable, flexible supply is where it needs to be. Zenex must be doing something right as one of the aforementioned manufacturers has tried to poach my staff (You know who you are!). I've always said we have the best team in the industry and I hope you are going to come along and meet some of them at the expo in Birmingham.

We're also offering all kinds of domestic and commercial finance packages, plus an innovative store, pick-pack-and-deliver service to help free-up our customers' cash-flow.

The Solar Century move out of distribution is just one step in what continues to be a consolidating market. I think things can only get easier and

I believe there will be further changes through acquisition and merger, at all levels of our supply chain. See you all in Birmingham!

Energy Efficiency & Renewable Awards 2014: Shortlists announced!

The shortlists for this year's Energy Efficiency & Renewables Awards have been announced. All shortlisted nominations will go head to head in 13 categories, to be decided on Friday 26 September at London's Virgin Roof Gardens

Four of the industry's leading figures rigorously assessed the hundreds of entries received and have independently come to the following conclusions following lengthy deliberations.

The nominations have been marked by the same criteria: investment, innovation, quality and energy performance.

A&D Publishing would like to thank all those who entered this year, the judges for volunteering their time and expertise, and wish all those shortlisted the very best of luck. A full review of winning entries will be published in next month's REI

The shortlists are:

CONTRIBUTION TO ENERGY EFFICIENCY & RENEWABLES

Sponsored by NICEIC & ELECSA

Ian Burrows, NatWest
Nathan Brett, Kirklees Council
Peter Thom, Green Heat
TSG Building Services
YouGen

COMMERCIAL PROJECT of the year

Sponsored by Sustainable Energy Association

Belfast Health & Social Care Trust (Alternative Heat)
Croft House (Kensa Contracting)
Kingspan Selby (Kingspan Energy)
Matalan (Wireless Energy Management Systems)
Plas Newydd (Stiebel Eltron)
RSDCM Margate (Finn Geotherm)

RESIDENTIAL NEW BUILD PROJECT of the year

Sponsored by HETAS

Back Road (Geothermal Solar)
Kingston Heights (NHP Leisure Developments & Mitsubishi Electric)
The Project (Metheringham Construction & Viessmann)
Solar House (Caplin Homes)
Westfield Project (Wates)

RESIDENTIAL RETROFIT PROJECT of the year

Sponsored by European Energy Centre

Airey Retrofit (Aspire Housing)

Crowning glory: Over 60 shortlisted projects, companies and individuals will tough it out on September 26 at The Virgin Roof Gardens, Kensington

Lucky 13: 12 awards will be up for grabs in this year's Energy Efficiency & Renewables Awards, plus winners of the installer categories will be put forward for Energy Efficiency & Renewables Installer

Hedgerows (Wrekin Housing Trust)
Lunedale & Kildale Road (Thirteen Group)
Richmond Street (Trent & Dove)
Springwell Tarran (Gentoo & EDF Energy)
Trethomas (SERS)

GREEN INNOVATION of the year
Sponsored by YouGen

A-Class Air Source Heat Pump (Dimplex)
Altherma Hybrid Heat Pump (Daikin Europe)
Chop Cloc (The Chopping Company)
MegaFlo Eco SolaREady (Heatrae Sadia)
Shoebox Twin & District Vertical Array (Kensa)
Flexible Plug & Play (UK Power Networks)

BIOMASS INSTALLER of the year
Sponsored by Windhager

Cookes Renewables
Ecovision
JRT Plumbing & Heating
Rural Energy
Sasie
The Wood Heating Company

HIGH EFFICIENCY BOILER INSTALLER of the year
Sponsored by CORGI HomePlan

Glevum Heating
JCH London
Ocean Services
Shackleton & Wintle
TSG Building Services

SOLAR PV INSTALLER of the year
Sponsored by SMA

Carbon Zero
Evo Energy
Genius Energy
Glevum Heating
Kirklees Council

SOLAR THERMAL INSTALLER of the year
Sponsored by Centre for Alternative Technology

Duncan Renewables
Glevum Heating
Intelligent Energy Solutions
Phoenix
Sasie

AIR SOURCE HEAT PUMP INSTALLER of the year
Sponsored by Mitsubishi Electric

BSW Building Services
Finn Geotherm
Glevum Heating
Matrix Energy
Source Energy
TSG Building Services

GROUND SOURCE HEAT PUMP INSTALLER of the year
Sponsored by REHAU

Black Isle Renewables
Ecovision
Geowarmth
Green Act
HD Services

COMMERCIAL INSTALLER of the year
Sponsored by Stroma Certification

Ecovision
Geowarmth
Gilland
Rural Energy
Sasie

ENERGY EFFICIENCY & RENEWABLES INSTALLER of the year
Sponsored by City Plumbing Supplies

The winners and highly commended entries from each installer category make up the shortlist.

The judging panel

Paul Stephen, editor, **REI**
Dave Sowden, chief executive, **SEA**
Bill Wright, head of energy solutions, **ECA**
Michael Harvey, installer support, inspections & complaints manager, **HETAS**
Virginia Graham, chief executive, **REAL**





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ROCs to Contracts for Difference: A Smooth Transition?

In light of DECC's stated intention to close the RO regime to PV installations above 5MW from 01 April 2015, legal expert **James Breffit**, King & Wood Mallesons SJ Berwin, examines some of the likely impacts on project developers

Developers often each rely on a bank of key contractual documentation. These form the bedrock of a solar project. The transition away from the ROC model requires each developer to assess its own suite of documents. Early preparation will be the key. Below is a list of suggestions.

Key steps

- Assess the pipeline of projects – in particular consider the terms of your existing project package. A prudent project developer should check the terms of its standard power purchase agreement. The developer should also contact its PPA provider - has the provider drafted a form of PPA attuned to the new CfD regime? The current lack of liquidity in the PPA market continues to be of concern and DECC is considering an "offtaker of last resort" mechanism for renewable generators (guaranteeing a route to market at a fixed discount to the market electricity price). Legislation is expected later in the year. Alongside this, a DECC working group has started examining how PPAs in the future should look under the CfD regime. Of key importance to a developer will be to obtain a PPA attuned to its commercial circumstances. A developer should also consider the ability to terminate or vary the PPA (and the ramifications of this). A developer should also consider negotiating a suitable replacement PPA if the one it currently uses is inadequate (if it is attuned to the ROC model).

- Lease terms – if a developer has a lease in place with a rental mechanism pegged to the income or revenue of the development (the mechanics can become very complicated) then this mechanism would need to be considered in light of the new CfD regime. Does the relevant lease mechanism contain appropriate adjustment provisions? Does it envisage a CfD-type arrangement being in place? Mismatches should be avoided.

- A larger project requiring substantial build out costs is usually debt financed. Clearly, the shift from a ROC model to a CfD system raises important questions for any lending bank. The fundamental point is cash generation; this ties into interest servicing and principal repayment. A standard debt facility should list out 'events of default' and in some cases repeating representations or warranties as to the status of the solar project will be included. As a minimum, the developer should ensure that the terms are appropriate for a CfD-type project.

Conclusions

Ultimately, we await clarity on a host of issues relating to this general transition. It is hoped that DECC will adopt a clear, strategic approach in relation to any transition. The risk is that DECC's stated aims of simplification and efficiency will be unfulfilled due to the overlapping efforts of various working groups. Any draft guidance, and in due course, legislation, should be carefully scrutinised.

James stresses that all views are his own and specific advice should be sought in each case.

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Getting it right

Jason Hobson, managing director at Gledhill, gives his top tips for solar thermal installers on specifying the correct choice of cylinder

Increasing conventional energy costs have caused many businesses and homeowners to look for new ways of reducing their fossil fuel consumption and the old advice of turning down the thermostat a degree or two barely scratches the surface.

The change to incorporate solar thermal technology is being driven by the falling cost of solar installations too. The quality of panels has gone up while their price is now much more affordable and, with government incentives such as Green Deal and RHI to help drive take up of renewables, solar remains a hot topic.

For installers, however, it's essential to ensure that the specification meets all the property's solar needs. Rather than value engineering elements of the installation to keep costs down, the emphasis must remain on payback, performance and service life with an appropriate cylinder to meet the long-term needs of the chosen solar technology.

Vented or unvented?

Solar energy can be installed with either vented or unvented cylinders, where it is used to heat the domestic hot water. Whichever option of cylinder is selected, to maximise the performance, it is essential that the chosen model should feature a specifically designed heat exchanger for solar applications with a large surface area to enable maximum heat transfer.

Retrofit challenges

In retrofit applications where mains pressure hot water is required, designing a solar installation to the specific needs of the property may call for some creative thinking because of restricted space.

For example, in properties where installation height is restricted, selecting a solar horizontal unvented cylinder with a solar installation can maximise performance while ensuring that the homeowner does not lose any useable space in their home.

Gledhill has recently launched the UK's only NSF-WRc approved domestic horizontal unvented cylinder which has an indirect solar configuration. This is ideal for use with a solar thermal installation and enables the installer to site the cylinder in the loft so that it doesn't use up any living space at all.

Where the issue is replacing an existing cylinder in a narrow space or with restricted access, models such as the Gledhill StainlessLite Slimline Solar can provide an ideal space saving solution for smaller properties.

Thermal store convenience

It is also possible to use solar energy to contribute to both the heating and hot water system by specifying a solar-compatible thermal store. An appropriately specified open vented thermal store is the ultimate alternative energy cylinder, providing both heating and hot water on demand.

A solar-compatible thermal store can be used in conjunction with either an open vented or sealed boiler as its primary energy source. However, the thermal store must incorporate a high efficiency solar coil to maximise the input of solar energy and reduce reliance on conventional power.

Future-proofing

Finally, it's important to consider what the current and future needs of the property will be. One of the key advantages of a thermal store is that it can be used to combine energy from multiple renewable sources. So a compatible thermal store that can be used to combine the energy produced from solar panels, wood burning stoves and other uncontrolled heat sources with a full array of tappings, may be the best option.

Even if this is not something that the end user sees as a priority now, future-proofing the installation is both environmentally responsible and an opportunity to save the homeowner money in the long run.

Non negotiable: Any cylinder combined with solar should have a specifically designed heat exchanger to maximise performance, argues Jason Hobbins, Gledhill

The emphasis must remain on payback, performance and service life with an appropriate cylinder

Winning the smart metering race

From the end of 2015, the smart metering roll-out will start. **John Peters**, Engage Consulting's md, examines the huge business opportunity this presents to clean energy suppliers and installers

By 2020, more than 52 million British homes and businesses will have their old-style electricity and gas meters replaced by new digital smart meters to more accurately measure and bill their gas and electricity usage. This presents all energy suppliers and installers with a major business opportunity to acquire new customers and engage existing ones.

This is also a crucial time for suppliers to ensure they have the right business strategies, offerings, technology and operations in place to take advantage of the smart metering market. For independent suppliers in particular, there will not merely be a levelling of the playing field, but an opportunity to become 'game changers' in the market.

Shuffling the pack

You only need to look to the world of Formula 1 motor racing where recent rule changes have upset the pecking order and allowed the lower order teams to challenge the major players. Innovative F1 teams such as Force India are doing well under the new regime and the number one team, Red Bull Racing, seems to have slipped off its top perch.

Open Utility is a great example of an independent supplier already making waves. It is championing the idea that customers should be able to buy electricity directly from renewable generators in their area. It also believes that suppliers should offer customers a personalised tariff - putting their customers firmly in charge of their energy and in doing so, creating rapport, goodwill, and building trust. A common denominator in all independent suppliers is that they are working hard to differentiate – whether it is through promoting their green credentials or ethical brand values, or investing in customer services so they become well known as a 'friendly and easy supplier to deal with' – they are all trying to set themselves apart from traditional 'big six' suppliers.

Maintaining and building these 'points of difference' must be a key part of any smart metering business strategy to ensure success.

One of the biggest challenges ahead for all suppliers is consumer engagement

Back to basics

But suppliers mustn't lose sight of the underlying operational processes that underpins their business and they will also need to continue to deliver on their promises. In the next 18 months, they must get the basics right to be ready to take advantage of the smart world.

Ensuring robust business operations involves a number of key areas – all of which pose potential risks. Suppliers need good procurement processes and financing for smart meter equipment and assets; they need to select the right technology partners; and there needs to be truly robust testing and trialling.

One of the biggest challenges ahead for all suppliers is consumer engagement. Low consumer knowledge about smart metering; as well as a lack of trust and satisfaction with many of the UK's large suppliers is a major issue especially given the roll-out starts next year.

In July, Smart Energy GB launched a national publicity campaign to promote smart meters fronted by Sir Bob Geldof and introducing two cartoon figures as mascots called 'Gaz' and 'Leccy'. Making customer engagement work will ensure that the messages customers receive about smart meters from all suppliers are clear and consistent and that the benefits of smart meters are clearly promoted.

Competition is set to increase in the market too. With a greater number of suppliers operating in an increasingly commoditised energy market, it is clear that customers won't just be swayed by price; suppliers need to do even more to differentiate themselves and distinguish their brands to win the smart metering customer battle.

Starting gun: Next year's smart meter roll out will be the catalyst for smaller independent electricity suppliers to gain ground on larger 'big six' competitors, argues John Peters, Engage Consulting

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Britain's got talent

David Hunt, managing partner at Hyperion Executive Search, which recruits exclusively in the renewable energy and cleantech sectors, gives his top tips on attracting the best talent in the renewable sector

We hear a great deal about the skills shortage and the 'war for talent' in the news, relating mainly to the engineering and scientific sectors. But it has long been known that the skill shortage is very much an issue in the renewable sector, from design engineers and installers to project managers, business developers and managers. We are after all a relatively young industry, and we've had a rocky ride over the last few years.

Of course ALL companies will want an 'off the shelf' perfect candidate with perfect experience, just as well as that is what we do, help companies find and attract the top talent. Not everyone though can afford or attract the best talent in the sector. So what can you do to make sure your company has the talent it needs to thrive and grow? Here are my three top tips.

1. **Make yourself attractive.** The skill shortage means that demand for most roles exceeds the number of qualified candidates out there. It is important then that you make your company an attractive place to work. Company culture is always something we are asked about by candidates. For a start look after the employees you have, they are the guardians of your reputation in the market place. Be sure your package is as competitive as you can afford. Benchmark against your competitors.
2. **Sell yourself at all stages of the interview process.** There is still an outdated view that candidates have to do all the selling, and companies do all of the 'grilling'. Not if you want the best candidates, for them interviews are very much a two way process. The best candidates will have a choice of job opportunities, it is important to remember that. You need to attract them, engage with them, sell to them, and expect them to do the same in return. The best candidates will be able to answer your questions, and give examples of previous experience and success.
3. **Transferable Skills.** As a young industry we don't have a big resource pool of experienced candidates; experienced specifically in renewables that is. But we do have access to a significantly larger pool of talent from related sectors. We have the ability to attract them too. Who wouldn't want to move into a progressive industry of the future? A good gas design engineer can with not too much training become a good heat pump or biomass design engineer. A good project manager in construction will make a good project manager in renewables. A good sales person that knows how to sell on features and benefits can sell solar PV as well as he/she can sell most other products or services. It takes a little investment in training and development. But what is better, a great candidate with all the right attributes and skills but from another sector, or a poor candidate that happens to have a little renewable experience?

Remember it's people that make a business, not business models, no matter how good the model without the right people you can't execute your plan. Take heart, there are outstanding people out there in our industry, and plenty that would like to be in our industry. You've just got to provide them with an opportunity to grow, an environment that is positive, and the ability to earn a reasonable wage. Without question those are the three things most candidates tell me that they need to see in a prospective employer.

Transfer window: With a lack of ready made talent in the renewables sector, employers must be able to spot individuals in allied sectors, says David Hunt, Hyperion Executive Search

New kids on the block

Andrew Fawcett, business development manager at Edmundson Electrical, introduces the company's new PV and renewables identity Greentech, which launched on 1 September

REI: Can you give readers some background information on Edmundson Electrical and the decision to launch Greentech?

AF: Edmundson Electrical is a long established electrical wholesaler operating throughout the UK. We have had a PV business in the UK since the start of the Feed-in Tariff, which is successful but fragmented. We know from our core business that a joined up offering is much better for our customers. Greentech has brought an identity to the renewable side of our business and creates the only truly national stockist of PV. Rather than operating from a central distribution point, stocks will be held at 21 branches across the UK.

From 1 September Greentech will trade from 21 of our branches, geographically covering the UK, and will be extended as demand requires. Greentech locations not only stock PV but also provide technical support to installers.

How will Greentech differ from other distributors?

It's all about face to face relationships. We know the electrical trade and we know installers like to talk.

We will provide installers with local stock, a place where they can meet suppliers and our in house technical support face to face and somewhere that they can see new products and ideas. This will be backed up with our own delivery vehicles and sales team, providing a local reach to any UK location. Each Greentech has the ability to adapt instantly to local customer requirements for stock and service. If customers want a particular item stocked in their local Greentech, this can be done.

Online is fine when things go well, but as soon as something goes wrong you're in unknown territory with a call centre.

What we will not be is the supplier of every manufacturer under the sun. We will work with some of the leading manufacturers, whose products are recognised and liked in the marketplace. This will give installers consistency in pricing and continuity of supply.

We offer no loyalty schemes, just good up front pricing, service and inclusive delivery, with no gimmicks.

We value our suppliers as much as our customers – they are equally important to our business. We see this as a three way relationship with our customers, suppliers and us, giving a joined up offer.

Is Greentech's scope limited to PV?

The initial focus on a UK wide basis is for PV, but already some Greentech locations sell heat pumps, biomass and other renewables. All Greentech locations are also able to adapt to local customer demand for any products now. Other renewable products will become part of the core Greentech UK wide offer once the right infrastructure is in place for stock, training and technical support.

We already offer PV add-ons such as VO, energy storage and LED lighting through Greentech, giving installers more options to increase the value of their sale, whilst benefitting their customer.

Also, all Greentech locations are Edmundson Electrical or Electric Center electrical wholesale branches, so a full range of electrical products from leading manufacturers is available from stock.

What does the future hold for Greentech?

Greentech would like to be the leading PV distributor in the UK. Not necessarily the largest, but we would like to be known as the best and most reliable, and the easiest to do business with.

Whilst starting at 21 locations throughout the UK, Greentech can grow as demand requires. Greentech wants to be known as the local PV stockist with a fully national coverage.

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Friendly fire

Richard Hiblen of Green Square discusses why the pellet stove will always have the edge over its wood burning counterpart

With ever increasing costs of fossil fuels, and worldwide emission targets driving reductions in CO2 emissions, reliance on traditional heating sources has been an increasing source of worry by many homeowners. Taking the big step into a complete renewable solution can be costly, and logistically less than perfect for some homes.

Here, I want to test one simple solution that has seen quite a boom in recent years – the wood stove.

It's been estimated that stove sales have doubled in the last 10 years with the first boom around 2007 which gave a 30 per cent increase in that year alone. It should come as no surprise that this was the same year that fossil fuel prices started increasing prices significantly. Immediately consumers saw a product that was relatively straight forward to install (typically two days maximum) and immediately reduced reliance on their traditional fossil fuel heating system.

Before the stove boom the favourite room heater of choice was the real flame effect gas fire. Decorative, easy to install, clean and simple to control were its main benefits, and it is easy to understand why they replaced the open fire – a dirty inefficient system.

Market forces: Sales of pellet stoves will boom in large urban areas due to the environmental, economic and aesthetic benefits, tips Greensquare's Richard Hiblen

As home heating moved onto main grid fed gas boilers in the 60s and 70s, many of these were fitted into the existing fireplaces. As Gas boilers evolved into wall hung units with condensing technology, so the older 'back boilers' were removed from the fireplaces leaving a hole and chimney ready for the chosen fire; typically open fires of gas effect real flame fires.

Although wood stoves have always been significantly more efficient than open fires, and have been in common use for hundreds of years, the extra price had always been seen as prohibitive, but as fuel prices rise, so do the increased demand in efficiencies, and this is where the stove starts to benefit.

So now we look at the next stage of the room heaters development and the future of secondary heating – the pellet stove.

The benefits of a pellet stove over a traditional stove are aplenty. A pellet stove will typically have an efficiency of 93 percent plus compared to a traditional stove that operates at between 65-75 percent typically, meaning for the same amount of wood you get more heat from a pellet stove – and less ash.

This therefore makes cleaning easy as having a highly efficient burn with low moisture fuel means ash is absolutely minimal and with the large easy-to-handle ash bins, it's a very simple, quick, and clean experience.

With the controllability of a modern heating system, a clean and cheap carbon neutral sustainable fuel in wood pellets, and the ease of maintenance you'd expect of a gas effect fire, this is set to be the secondary heating appliance of choice, especially in urban areas such as London where log storage, smoke control zones and other factors make traditional wood stoves problematic.

Pellet stoves are also of a high end contemporary design, environmentally on message and operation is also much easier that the traditional stove as it's as easy as pressing one button. Better still pellet stoves are programmable and can also be controlled by an App that can be downloaded from your phone so you can set the stove from your arm chair or office.

With in-phone app controllability and that warm feeling of protecting the planet at the same time, pellet stoves which are common place in Europe are about light the way into our homes.

For the same amount of wood you get more heat from a pellet stove – and less ash

Hitting the target with Green Deal

David Macauley, business development manager at Green Deal Consortia, asks why installers are ignoring the opportunity to offer RHI packages alongside Green Deal funding to their customers

More solar PV systems have been installed under Green Deal than any other energy improvement measure. This should not be surprising. The combination of Feed-in Tariff payments and Green Deal's help with up-front installation cost helps make solar PV an especially attractive offer to customers. But on the other end of the scoring table, with only a handful of Green Deal installations between them so far, linger the renewable heating systems.

According to a recent Ofgem report, early domestic RHI uptake has been greater than expected. The underlying story here is that installers are more and more comfortable talking about RHI with customers, and the market for renewable heating systems is responding. Yet Green Deal + RHI packages have been scarce, which suggests that in spite of the success of RHI, installers are struggling to add Green Deal to their repertoire.

There are a few reasons that might explain this. Some installers are simply not aware that installations financed with Green Deal are also eligible for RHI payments (they are). Others either find Green Deal too complicated for their needs, do not understand it well enough to decide if it's right for them, or feel they do not have the network to support it.

Some installers are not aware that installations financed with Green Deal are eligible for RHI payments

However, there is one particular reason that concerns the market itself. Namely, customers who are ready to buy renewable heating systems tend to approach the installer, and not the other way round. In addition, these customers often have the funds in place to pay for the cost up front, or can afford short-term loans, some of which include a high APR.

On the other side of the coin, there is a body of potential renewable heating customers in the UK who are still waiting to be 'discovered' by the market. They are interested in renewable heating, and understand the financial case for it, but they do not have the resources to pay for a system up front.

Among the range of energy improvements available to the domestic market, renewable heating systems have traditionally been something of a niche option, better suited in rural locations lacking access to the gas grid. The argument for renewable heating has traditionally focused on clean energy and energy independence. Cost was not as persuasive in the pre-RHI past, because with the possible exception of solar water heating, renewable heating systems were (and still are) quite expensive.

With energy prices for primary heating fuels constantly on the rise, more and more homeowners are pushed to look at the cost benefits of renewable heating. Cost versus savings has always been the most persuasive argument for the majority of customers, for any energy improvement measure, and an installer who is able to frame the discussion on that subject has a real edge.

The idea behind Green Deal is to take away some of the pain of paying for costlier energy improvements up front by offering reasonably-priced finance. Up front cost is one of the largest barriers against the decision to make improvements. While Green Deal rarely covers the entire cost of an installation, if viewed as an investment a renewable heating system will begin generating income sooner under RHI than if Green Deal was not used.

First aid: Green Deal can make all the difference in selling a renewable heating system by negating one the biggest barriers to uptake – upfront cost, argues David Macauley, Green Deal Consortia

It is true that there is a steep climb for an installer to become fluent with Green Deal. However, it is a climb that becomes easier with practice and experience. The ability to use it, not as a 'silver bullet' like our industry seems so fond of searching for, but as one option of many, will add a very unique string to any installer's bow.

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Large, complex projects made easy

Simon Lomax, managing director of The Kensa Group, and chairman of the Ground Source Heat Pump Association, explains how the RHI will provide the most attractive rates of return for installations at larger residential properties

The long-awaited launch of the domestic RHI should create many opportunities for contractors offering ground source heat pump installations. That said, much work still needs to be performed by government and other stakeholders to publicise the scheme to the wider public. In the meantime, savvy installers should focus initial marketing activity on those prospective customers who are most likely to find a GSHP installation appealing. And that clearly means householders living in larger properties which are located away from the gas grid.

These substantial dwellings – especially those larger than 250m2 - benefit from DECC's rather odd decision to offer an identical RHI tariff regardless of the size of the installation. Unlike the Feed-in Tariff, which recognised that a lower tariff should be paid to larger installations which benefit from a lower cost per installed kilowatt, the RHI tariff is consistent across all eligible installation sizes and is merely varied by the presumed efficiency of the heat pump installation. That approach inevitably favours larger dwellings, especially if the properties have sufficient land to support a trench-based ground array or, better still, feature a lake which will accommodate pond mats.

More importantly, it is vital that the householder can benefit from DECC's decision to pay this tariff on the deemed energy consumption (kWh/yr) taken from an Energy Performance Certificate. This approach can be adopted whenever the heat pump can handle the property's entire heating requirement, in accordance with the latest MCS requirements, and provides a certain and appealing return. Wherever a fossil fuel boiler back-up is necessary, the heat pump's output must be metered which eliminates certainty, adds cost and requires more on-going administration. For these reasons, bivalent systems should probably be avoided whenever possible.

Of course, that may not be straightforward. Larger houses, often fitted merely with a single phase power supply, will routinely require a 16, 20 or 24kW heat pump, outputs typically beyond the capacity of most imported models. Installing two heat pumps, or upgrading the power supply to accommodate higher output three phase appliances, are possible remedies but add considerable cost. And that wrecks the rate of return. Fortunately, a growing number of manufacturers, including Kensa, are producing higher output single phase appliances. Indeed, Kensa can supply a 24kW twin compressor single phase model which offers the extra efficiency of turndown during milder conditions, a simple yet highly effective solution which has been offered for many years.

More recently, Kensa has launched High Temperature models and unique hybrid models which feature different refrigerants in each compressor circuit to create the perfect blend of a hot water optimised 'half' and a space heating optimised 'half'. This extensive range means models are available even when these large properties require higher flow temperatures into the heat distribution systems to compensate for inferior insulation and air tightness specifications. Of course, there is a resulting loss in system efficiency but running costs, per kilowatt hour, will still be favourable against oil or LPG and the RHI income will more than cover the upfront capital cost.

Great rate: DECC's decision to pay a single RHI tariff for all installations regardless of size will favour the largest and most efficient systems such as ground loop or water source

In summary, the RHI creates some appealing possibilities. Unlike the FiT-based technologies, which can only offer a projected income based upon the likely levels of sun and wind, the RHI income is certain whenever the criteria for the deemed approach is satisfied. Rates of return are enhanced by the use of low cost high output single phase heat pumps and will be especially generous if lower cost ground arrays can be used.

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The age of the 'heat pump city'

The Polish market for ground source heat pumps is growing steadily and contributing to the EU's renewable energy strategy. Here **Andrew Murray**, senior manager at Kilfrost's Speciality Fluids Division, discusses the lessons that can be learned from Poland's 'heat pump city'

There are a number of examples of innovative projects using heat pumps connected to a closed ground loop. One of these can be found in Sieniawka, a village in Western Poland.

Sieniawka now serves as the medical heart of its region. In recent years, the historic factory for war technology became a National Institute for Neuroscience. As part of the renovation of the village's infrastructure, the building has been modernised in line with renewable energy targets.

Established in the 1990s, Aspol FV Ltd has been introducing efficient technologies for renewable energy management in dwellings, residential buildings and commercial facilities across Poland. In 2012, Aspol FV Ltd introduced a ground source heat pump at the National Institute for Neuroscience, incorporating Kilfrost's Thermatrans Plus, a mono propylene glycol (MPG) based concentrate heat transfer fluid.

The National Institute for Neuroscience required a future orientated heating system in order to reduce the hospital's impact on the environment.

A modern ground source heat pump installation based on Viessmann heat pumps combined with Aspol's Energeo ground source collection system is now in operation. The five multi-story buildings are provided with renewable energy by a set of modern heat pump systems (200 - 250kW each) which combine domestic water, heating and cooling by the deployment of closed loop vertical collectors.

It was important that the system would support the hospital's energy and money saving strategy. The Energeo ground source system for heat pumps is well recognised in the Renewable Energy Sources (RES) Directive market and fully complies with stringent criteria for renewable energy technologies. The hospital also required a complete and reliable solution including glycol as part of the collector system.

Glycol is not particularly corrosive in concentrate form but when it is mixed with water to achieve the necessary frost protection, corrosion can become a real challenge for system installers. Issues such as corrosion, bacteria and scaling can lead to damage and leakages, reducing the reliability and longevity of systems and increasing the need for expensive maintenance and repairs.

Since using Kilfrost's fluids, Aspol FV has been able to reduce corrosion, bacteria and scaling within its systems

With the hospital's requirements in mind, Aspol FV specified UK headquartered Kilfrost's Thermatrans Plus inhibited heat transfer fluid. Inhibited glycol combined with water of sufficient quality is significantly less corrosive and has a number of benefits for the end user. In this case, Aspol FV made use of industry guidance, selecting the fluid as it complied with the ASTM D 1384-05 corrosion test standard. During the test, metals such as aluminium, iron, steel, brass, solder and copper, which are commonly used in heat transfer systems, are immersed in a glycol/water mixture. They are then analysed in laboratory conditions for signs of corrosion.

Since using Kilfrost's fluids, Aspol FV has been able to reduce corrosion, bacteria and scaling within its systems. This in turn reduces the need for maintenance, expensive repairs and system downtime.

Renewable technologies are developing quickly in Poland and this is just one example of the wide implementation of heat pumps in the country. As the uptake of heat pumps continues to rise in the EU, customers are looking for systems that reduce costs in the long term. However, there is still a need for a greater focus on the importance of corrosion prevention and the quality of heat transfer fluids. When specyfying heat pumps, it really is the little things that count.

Long game: Using high quality heat transfer fluid is a simple way to achieve long term savings in heat pump systems via corrosion reduction, says Andrew Murray, Kilfrost

As the uptake of heat pumps continues to rise in the EU, customers are looking for systems that reduce costs in the long term

Greywater rising

CEO of Reaqua Systems, **Stephen Bates**, explores the increasing popularity of greywater recycling among British business

Increasing numbers of businesses are turning to innovative water recycling technology to reduce their water consumption and lessen their environmental impact.

These systems enable the collection of waste-water (so called 'greywater') from sinks, baths and showers and recycle it for use in flushing toilets. A revised plumbing set-up redirects the waste-water through a filtration unit where it is automatically treated with a disinfectant. This treated water is collected in a tank and pumped on, as required, to supply all the flushing water needs for multiple toilets in a building.

Demand reduction

A diverse range of businesses, from architects to leisure centres, are now seeing the economic and environmental value of the technology, which reduces the mains water needs of a building by up to 30 per cent.

London-based, award-winning architectural practice, David Morley Architects is among an increasing number of businesses to fit the technology in their commercial premises.

Camilla Morley, David Morley Architects' environmental development consultant, said: "Our demand for hot water has increased over the past three years as we have been encouraging a cycle to work policy, supported by additional new in-office showering facilities for our staff. As a company which keeps abreast of progress in sustainable development in all areas of our work, we felt it was both economically and environmentally sensible to fit this technology and an opportunity to set a positive example to our clients.

The reAqua system reduces our water consumption by up to 30 percent by recycling the shower water on the office first floor to flush the two toilets downstairs, supporting our 'more with less' approach to design."

Logical choice

As most buildings in the UK have only one water supply, we have, until now, had little option but to put up with the confused logic of using drinking quality water to flush toilets. The costs associated with the water treatment process, both financially and environmentally in terms of the energy used, are significant and greywater reuse technology represents an immediate and simple way to reduce water demand across the UK.

With more and more employees cycling to work, and requiring a shower when they arrive, we're seeing increasing numbers of businesses turning to this technology to cut costs associated with water usage, as well as improving their sustainability profile.

A diverse range of businesses, from architects to leisure centres, are now seeing the economic and environmental value of the technology

No more rationing

Prior to the introduction of this technology, water efficiencies have been a challenge to achieve for businesses. Water rationing technology, such as low flow showers and low flush toilets, have attracted criticism. Consumer feedback has queried the value of this technology with critics highlighting disappointingly low flow rates from showers or, worse, blocked waste pipes. Research has shown that using low-flush toilets may not provide sufficient movement in small pipes to carry away solids, leading to blockages and flooding, and additional evidence suggests that these devices may act as a false economy with users running low flow showers for longer in order to improve their experience.

Breaking the cycle: Embracing greywater harvesting negates the absurd waste of flushing toilets with drinking quality water, argues Reaqua ceo Stephen Bates

Aside from reducing water consumption, we also want to be in tune with the way people choose to wash. Unlike flow restriction technology, which is often criticised for producing an increased risk of blocked sewage pipes and disappointingly low flow rates from showers, greywater reuse offers the industry the chance to make considerable water efficiencies, without relying on the end user to make unpopular adjustments to their habits. Bathing luxury with a conscience has arrived.

SEUK unveils Installer Central

Next month, **Solar Energy UK** will be celebrating its fifth year by launching a new feature area called Installer Central supported by gold sponsor Trina Solar and supporting sponsor CCL Components

Practical hub

With almost 3,000 installers operating in the solar sector, each one of them has helped the UK cement itself as Europe's largest solar market. The Installer Central feature area will serve as a practical hub for all electricians, plumbers and roofers thinking of including solar in their services. You can join daily demonstrations on integrating technologies in PV, solar thermal, energy management and storage solutions.

Already installing solar? Installer Central will offer existing solar installers the opportunity to learn about the latest industry trends and best practices.

Seminar series

This year, visitors can also pick up CPD points at any of the free educational sessions held in one of the open plan theatres. Get advice on marketing and up-scaling from domestic to commercial installations at the Solar Business Seminar Theatre or explore options for utility-scale projects at the Energy Plus Seminar Theatre and Pavilion focusing on:

- renewable heat
- energy storage
- solar thermal
- heat pumps
- smart grids & transmission
- micro-generation
- Electric Vehicle (EV) infrastructure
- energy management
- energy efficiency

The 2nd Solar Power Portal Awards Gala Dinner Ceremony will keep things moving in the evening at the Hilton Metropole NEC with host writer and TV presenter Kate Humble (Lambing Live, Springwatch and Autumnwatch). The prestigious black-tie celebration sponsored by Rexel will present the first 'Installer of the Year' award at the event.

Prize draw

Organisers Solar Media Ltd is offering readers of Renewable Energy Installer a chance to win two tickets to the Gala Dinner Ceremony. Simply register to attend Solar Energy UK. When you receive your email registration confirmation, forward it to: hho@solarmedia.co.uk and you will be entered into the draw*.

Entry to Solar Energy UK, 14 – 16 October 2014, The NEC Birmingham is FREE.

Register online at:
http://uk.solarenergyevents.com/rei

Reader competition: REI readers could win two free tickets to Solar Media's Gala Dinner Ceremony by registering online

***Competition terms and conditions:**

1) Entrants are only permitted one entry.
2) Entrants must be over 18 and not employees (or related to employees) of Solar Media Limited, Henley Media Group Limited or anyone else connected with the draw.
3) We reserve the right to substitute the prize for an alternative of a comparable value.
4) Entries received after the closing date will not be included in the competition. Solar Media Limited shall not be responsible for any entries that are not received by them for whatever reason by the closing date, whether they are lost, delayed, corrupted or otherwise, and whether or not this is due to any technical difficulties or malfunctions.
5) Entry to the prize draw is free. No purchase is necessary.
6) All entries are to be received by 26 September 2014.
7) Prizes are non-transferable. No cash alternative will be offered.
8) The winner(s) shall be selected at random from all the correctly submitted entries and will be notified on 30 September 2014.
10) Solar Media Limited's decision is final and binding; no correspondence will be entered into.
11) The name of the winner will be made available for up to 28 days after the closing date to anyone sending an e-mail to Hilda Ho (hho@solarmedia.co.uk) in a message with the subject heading 'Solar Power Portal Awards Ticket Giveaway'
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ADVANCE warning from SMA

Global inverter manufacturer SMA's UK subsidiary **SMA Solar UK** is once again exhibiting at Solar Energy UK to showcase its range of solutions for PV applications

With inverters manufactured at the only ISO14064-1 verified zero carbon scope 2 manufacturing plant in the world, **SMA** will be exhibiting its energy management system SMA Smart Home.

During Solar Energy UK 2014, SMA says its Smart Home will highlight its comprehensive solution for intelligent energy management in the home, significantly increasing self-consumption and reducing energy costs.

SMA will also be showcasing simple storage for home systems including the Sunny Boy Smart Energy, the wall-mounted large volume PV inverter with integrated storage system. SMA's residential solutions will be complimented by its service & monitoring solution available to end users to secure plant efficiency.

In the commercial solutions corner of SMA's stand will be the new Sunny Tripower 20000TL and 25000TL for large scale commercial projects. As part of its recent strategic partnership with Danfoss, SMA will also present the Sunny Tripower 60000TL, developed by Danfoss to meet the requirements of commercial self-consumption.

SMA also invites installers to visit its large scale PV power plant corner to find out more about its MV Power Stations as well as its SMA Utility Power System. The optimised systems include the new Sunny Central inverter with 2200 kVA and 2500 kVA, a medium voltage block complete with switchgear and the Power Plant Controller and DC monitoring.

SMA adds that it is keen to inform installers about its SMA ADVANCE Installer programme at SEUK which aims to deliver a trained, qualified and competent installer network to the householder and consumer. This free program provides access to information and resources to installers.

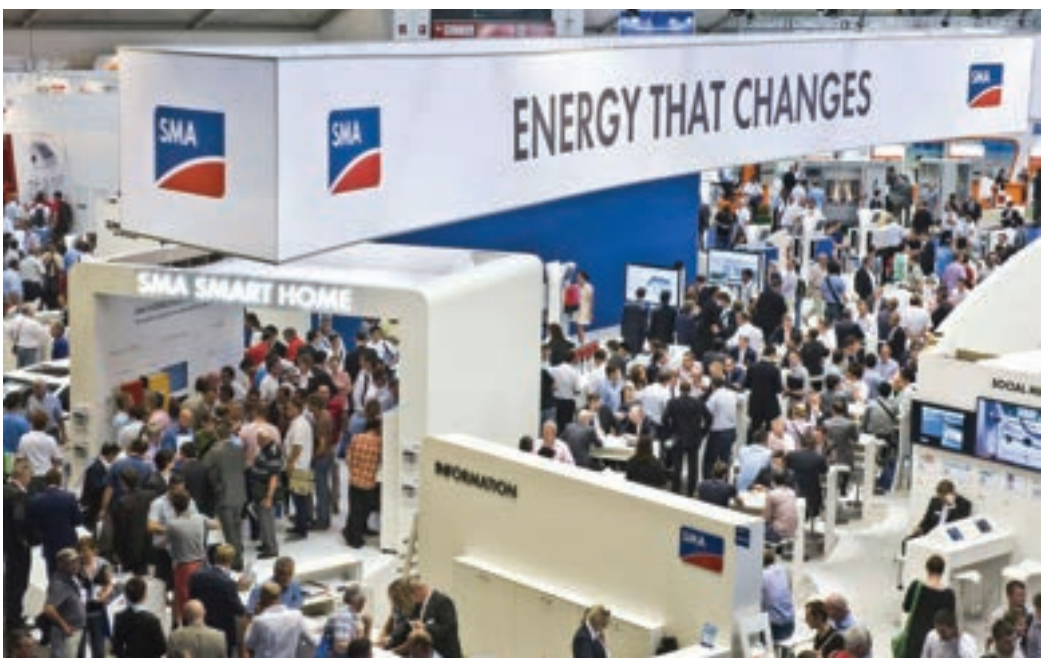
Train and gain: PV installers can learn more about SMA'S ADVANCE qualification at SEUK, a free source of information and skills

A company spokesman said: "Staying informed is critical for solar professionals and our constantly evolving and competitive industry. SMA is focused on innovation, education and community."

PV installers, who have already completed a series of mandatory SMA training modules, can begin the SMA ADVANCE installer qualification after completing the new SMA ADVANCE training module which includes system troubleshooting and maintenance issues.

On completion of the SMA ADVANCE module, installers are then required to undergo an evaluation, knowledge and skills process to ensure that competence is achieved.

In addition to the SMA ADVANCE Installer Program, SMA Solar UK's consumer portal (www.lifeshinesbrighter.com) will now feature a post code search engine where consumers can choose an SMA approved installer. In that regard, SMA Solar UK says it will facilitate UK consumer contact to SMA Advance Installers directly to discuss and quote for end users' SMA PV installation requirements. **D40**



Big deal: New for 2014 is SMA Solar's commercial solutions Sunny Tripower 20000TL, 25000TL and 60000TL

SMA ADVANCE INSTALLER PROGRAM

The SMA ADVANCE Installer Program provides you with up to date product news and is your access to exclusive training opportunities and special member events.

Join the new SMA ADVANCE Installer Program and gain unparalleled access to information and resources to help you stay ahead of your competitors.

More details at www.SMA-UK.com

SMA ADVANCE

ENERGY THAT CHANGES

SMA

Variety show

Protection and safety product manufacturer **DEHN** is using SEUK to exhibit a variety of its 4000 components in surge protection, lightning protection/earthing and safety equipment.

With a team of specialist technical, office and sales personnel employed to help customers make the correct choice for lightning and surge protection, DEHN (UK) will be on hand to help with visitors' different projects and queries having been involved in a number of prestigious projects. **P59**

Shock tactics: Head to DEHN's stand to see its range of surge and lightning protection products

Showing off: CARBOMAT UK will be a displaying an extensive range of products from a host of supply partners

Value added PV distribution

CARBOMAT will be at SEUK to feature products from long standing and new supply partners including REC, BISOL, BenQ, SMA, SolarEdge, OMNIK, SCHLETTER, RENUSOL and others.

Operating across Europe with logistic hubs in the UK, Netherlands and Belgium, CARBOMAT UK prides itself on offering value added services. Examples include e-commerce via the company's web shop, specialised logistics, project design support, training workshops and partner programs.

According to CARBOMAT, this is complemented with a high level of internal and external service and support across all regions within the UK.

A company spokesman said: "CARBOMAT has a long and proven track record across all the main PV sectors, ranging from domestic, commercial, agricultural and utility scale solar. Customers with interests in these areas should make stand C25 their first stop at the show.

"Our business approach is always customer focused, technically orientated, friendly and flexible. CARBOMAT's simple objective is to be your long term technical PV distribution partner, to help your business to grow, and to grow with you." **C25**

The art of self-consumption

4Eco is set to showcase its microgen switching device – the immerSUN – at this year's Solar Energy UK exhibition.

The 4Eco team will be present on stand G32, talking to visitors about the benefits of self-consumption. The immerSUN is 4Eco's surplus microgen energy controller, designed with ease of installation, cost savings and energy efficiency in mind.

Developed for both commercial and domestic installations, the device works in tandem with renewable technologies, such as PV panels or wind turbines, to divert green energy directly to an immersion heater, storage heater, and/or electric underfloor heating.

This prevents renewable energy from being exported to the national grid and is designed to reduce an average energy bill by over £250 annually, as well as maximising the benefits of self-generated supply.

According to the Lincolnshire-based firm, since its introduction in 2012, the immerSUN has helped over 17,000 households to self-consume the same amount of energy that a small power station would generate every year.

Numbers game: 4Eco's immerSUN has helped over 17,000 UK homes to reduce their energy bills and increase self consumption of renewable energy

"Here at 4Eco, we're committed to pushing the boundaries of capability and leading the way in highly-efficient renewable technologies," said Jodi Huggett, director of 4Eco.

"We've exhibited at Solar Energy UK every year since introducing the immerSUN to the UK market, and find it an excellent opportunity to discuss the latest eco trends with solar professionals from across the country.

"Our goal for Solar Energy UK is to talk to more people about certification standards and the importance of safety in self-consumption." **G32**

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Smart solar solutions

ET Solar says that SEUK is part of its commitment to offering optimised PV solutions to meet the needs of worldwide industrial, commercial and utility customers.

ET Solar's stated mission is to vertically integrate affiliated module manufacturing and horizontally integrate processes throughout the entire life cycle of solar power plants, including development, finance, EPC and O&M services. **C15**

Going solo: geo's newest energy monitoring solution – the Solo III – will be on show at SEUK

The best option

Green Energy Options (geo) is launching its newest product at SEUK - the Solo III.

Having produced energy monitoring solutions for the PV market since 2010, geo's latest offering picks up data on generation, import/export and household consumption. Unlike other types of systems, it does not use any fiddly-to-install, inaccurate sensors such as CT clips - the Solo III just uses a MID approved meter.

The meter acts as a standard generation meter but is wired in to detect the import, export and consumption values and is designed to give 100 percent meter accurate data. This data is visualized via a web service (and mobile phone) and via an optional, colour in home display. The meter can also be fitted with a SIM card for remote access to the data. **I28**

Top gear

Santon Switchgear is back at SEUK to demonstrate its Domestic Firefighter Safety Switch (DFS) for both new and retrofitted installations.

Santon's team will be on hand to explain to installers the benefits of choosing the DFS which include:

- Gaining valuable time in the event of a fire
- Completely isolating the PV, located directly at the panels, hence no DC cables in the building
- Auto reset, switching on the AC to the building switches on the DFS and supply to the inverter
- The world's most popular DC switch – using the X type range from Santon
- Over 80 years experiencing in safely switching DC

Huw Wigmore, managing director, said: "When a firefighter enters a building, they immediately isolate the AC supply to that building, this enables them to work safely and attend to the incident. However when there is PV on the roof, the firefighter may not know where the DC cables from the solar panels enter the building. By isolating the AC supply, the DFS automatically switches a motorised on-load DC switch in the unit which safely isolates the DC enabling the firefighter to enter in the building in the knowledge that there is no danger from the live DC cables." **P2**

Gearing up: Head to Santon's stand to see the advantages of using its Domestic Firefighter Safety Switch

Perfect partners

Sibert Solar is using its presence at SEUK to demonstrate its new partnership with Advanced Energy.

As part of its focus on the commercial, industrial and agricultural PV sectors, Sibert will be displaying Advanced Energy's range of 1ph and 3ph high efficiency inverters, including its new 40kW 3ph string inverter.

In addition to this, Sibert will also be demonstrating its range of monitoring and display solutions from its partners Siebert Solar (public display units) and 4-Noks (market-leading monitoring and control systems).

Andy O'Leary, business development director, added: "We will be on hand to discuss all other aspects of our portfolio too, an overview of which can be found on the websites **www.sibert.co.uk** and **www.advanced-energy.com/en/news_2014_08_12.html."** **E34**

Dynamic duo: Andy O'Leary looks forward to showing visitors products from Sibert's portfolio and its new partner Advanced Energy

Global gathering

Worldwide PV manufacturer **SunEdison** provides technological solutions aimed at utilities, governments, leading chip manufacturers, private companies, public administrations, investors and residential customers.

Operating in more than 20 countries across five continents, SunEdison's stated goal is to transform people's lives through innovation. It does this by financing, operating and monitoring some of the world's largest PV installations.

The company pledges to carry its commitment to innovation throughout its global sales, manufacturing and support organisations. **H34**

Living on the edge

Zenex Solar is proud to introduce JA Solar's SolarEdge embedded module, plus JA Solar Percium cell technology at Solar Energy UK.

Both products promise to improve yield, reduce install time, and save money.

Zenex Solar is the first UK distributor to carry a JA Solar module incorporating the SolarEdge optimiser instead of a standard junction box.

Liz MacFarlane, sales director, said: "This brings the benefits of JA Solar bankability, quality and reliability with the addition of SolarEdge technology to increase yield by as much as 26 percent. It also ensures greater flexibility of design and maximisation of roof space – enabling areas usually deemed as unsuitable because of temporary shading to be used in your PV design."

In addition, Zenex will be exhibiting 60-cell JA Solar 285w Percium technology with higher conversion efficiency than standard mono cells, giving more power production per unit area.

"Solar Energy UK is an opportunity to meet our friendly helpful staff, see our full range of top brands and to understand why some of the largest installers in the UK choose us to supply all their PV needs," added Liz.

"Whether that be by individual kit to site, by container-volume of panels, or by a storage pick-pack-and-deliver service anywhere in the UK." **C10**

Number one: Zenex Solar is the first UK distributor to carry JA Solar modules incorporating the SolarEdge optimiser

Next generation

Enphase Energy will be exhibiting its new M250 fourth generation microinverter.

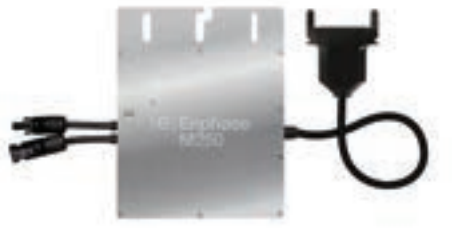
Enphase says its fourth generation microinverter continues the company's tradition of power, efficiency and reliability advancements. Built on top of the third generation platform, the M250 has undergone one million hours of pre-launch product testing.

Featuring a reduced parts count, the M250 is designed to deliver increased power and higher efficiency.

The company added: "Optimised for high power solar modules, the Enphase M250 delivers reliable, high performing systems at a great value, and the peace of mind of a 20 year warranty.

"The Enphase System is designed to get the absolute best performance out of the solar array, offering new and higher standards in safety, simplicity, reliability and energy production.

"Regardless of size and site, Enphase provides a total solution that is rapidly becoming the solar technology of choice for any system, from small arrays to mid-sized installations and commercial plants." **D22**



Forward step: An advancement of Enphase's third generation microinverter, the M250 has undergone over one million hours of testing

Quality approach

Hanwha Solar will be exhibiting its HSL poly crystalline module series at SEUK.

Hanwha Solar would like to show visitors how the modules are distinguished by reliable performance and extended durability. Backed by a 12 year warranty and a 25 year performance warranty, the HSL series offer modules equipped with 60 and 72 poly crystalline cells.

Among the latest additions to the series is the HSL 72 Poly 1500 Volt edition. Allowing more modules to be installed per string, system cost can be reduced and performance improved.

The HSL 60 Poly-Black edition combines the technical features of the HSL series with a sleek design. Its poly crystalline cells are embedded on a black back sheet and wrapped in an all aluminium frame.

Hanwha Solar has shipped 5GW of modules worldwide including one of the UK's largest installations – a 20.5MW solar park near Fareham, Hampshire. **H12**

Satisfaction guaranteed: Hanwha Solar's HSL modules come with a 12 year warranty and a 25 year performance warranty

The solar experts

Libra Energy heads to SEUK with an extensive product portfolio from manufacturers including Astronergy, Canadian Solar or Suntech modules, Mastervolt and Chint Inverters, plus Van Der Valk mounting systems and wiring.

With outlets worldwide, Libra Energy has a new UK distribution warehouse and office based in South Yorkshire, to cut delivery time and offer more flexibility. **A40**

VISIT STAND P2 AT SOLAR ENERGY UK FOR THE BEST PV SAFETY SOLUTIONS

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FROM DC DISCONNECT TO ARC FAULT DETECTION

PV systems nowadays typically are more powerful then a few years back. The increase in power also means an increase in PV related risks and thus an increase in the demand for PV safety solutions.

With over eighty years of experience in developing DC switchgear for many different applications in many different industries all over the world, Santon has proven itself to be a leading company in the development of DC safety solutions. At Solar Energy UK we will present you with our latest developments, especially developed for the PV industry.

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The most durable and flexible true DC switch available. The number one choice of leading inverter manufacturers and the most used switch in the solar market today.

ARC FAULT DETECTION UNIT (ADU)
This small DIN-rail ready unit detects arc faults within one MPPT area of an installation. The ADU gives both visual and acoustic feedback the moment an arc fault occurs.

SILIOS D
A robust and IP65 ABS plastic box encloses the X-Type Switch which results in the most compact and easy to install DC switch. Available with a red of black padlockable knob.

DOMESTIC FIREFIGHTER SAFETY SWITCH (DFS)
The DFS is thé firefighter safety switch for domestic or commercial use up to two strings. As soon as the regular AC circuit is interrupted for more than five seconds, the DFS automatically switches off.

FIREFIGHTER SAFETY SWITCH (FSS)
For large installations, the FSS is indispensable. Multiple strings can be isolated by one single FSS and multiple FSS's can be operated by one single operating panel or security system.

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Hit the ground running

Wiltshire-based PV and biomass installer IDDEA has completed a 1.3MWp ground mounted PV installation using modules and inverters supplied by **Krannich**

The system, located near Devizes, will contribute significantly to the electricity requirements of the Hopton Industrial Estate, on which it is located.

The array offers a payback of eight years and an annual CO2 reduction of 1,200 tonnes. It utilises 5,000 Azitec AXIpower AC250p modules.

Ian Dunstone, sales director at IDDEA, said: "The land at Hopton Industrial Estate was ideal for a solar installation such as this because, due to various covenants being in place and also restrictions resulting from the land's previous use, it was not possible to develop the land in any other way or use it for agriculture. The fact that the land is visible from an Area of Outstanding Natural Beauty was, however, a major consideration during the planning and design process, so we are proud to have successfully designed a system which is highly sympathetic to the surrounding land's AONB status."

Phil Ellery, commercial director at Krannich UK, added: "We have a long and successful track record of working with IDDEA and are delighted to have been involved in this exciting project. The system makes excellent but sympathetic use of land which was otherwise unusable and offers both fantastic energy generation and carbon emission savings. This type of project enables us to offer our full range of services and support – everything from market-leading products to the expert sales, technical, system design and logistics support that enables our customers to efficiently and confidently complete installations such as this."

Proceed with caution: Hopton Industrial Estate's solar farm near Devizes had to be designed sympathetically to the surrounding landscape as it is in full view of a nearby Area of Outstanding Natural Beauty

Economy drive

EvoEnergy has helped BMW build one the largest roof mounted PV systems in the UK, at the car maker's MINI production plant in Oxford

The 3MW array, which covers 20,000 square metres, is now generating the amount of clean energy needed to power 850 homes.

EvoEnergy says that the size of the job and tight schedule presented big challenges. However, the first MW (around 4,000 panels) was up and running in just five weeks. Work began in February and was completed before the end of May.

Such a large number of panels (11,500 x 260kW modules) also required an innovative loading system.

"We knew it could be done, but it required a construction method far removed from your standard domestic or commercial installations," said EvoEnergy's projects director Michael Sailsbury.

"We opted for 24,000 aerodynamic solion frames, which interlock like buildings blocks underneath the PV, to provide the ballast-free solution that was needed.

"BMW's finished array is a prime example of a business making good use of a space that was previously left empty, for the benefit of their operations and the environment."

Other sustainable technologies have been fitted at the plant including LED lighting and water harvesting.

Top gear: BMW's 3MW array will not only deliver large carbon savings at its Oxford car plant but also significant cost savings in energising 1,000 robots on the production line

At a glance

- *3MW rooftop array*
- *99 inverters*
- *11,500 260kW panels*
- *20,000 square metres*

Turkey producer meats renewable heating

Bernard Matthews has cuts its energy bills and greenhouse gases via the large scale deployment of biomass heating systems

As part of its drive to generate 100 percent of its energy supply sustainability by 2016, the turkey producer teamed up with clean energy developer Lumicity. By next month, a total of 179 biomass boilers will have been installed to provide heat for 220 sheds across 21 of Bernard Matthews' turkey farms in Norfolk, Suffolk and Lincolnshire.

The boilers, by Austrian manufacturer Herz Energietechnik, are sized at 151kW and 199kW depending on whether they provide heat for one or two sheds.

Lumicity has provided 179 pre-packaged plant rooms delivered onsite on the back of a truck which can be connected straight away to pipe work. The systems are currently set up to be fuelled by wood chip, but can also use poultry litter as fuel, further reducing fuel bills and the cost of transport to dispose of used bedding.

Bernard Matthews was previously using LPG as a fuel and paying £3.3m per year. The switch to biomass should see the company paying 50 percent less for its annual heating requirements.

The dry biomass systems have the additional benefits of reduced carbon monoxide emissions and decreased humidity levels in the sheds, improving bird health and the feed conversion rate.

Lumicity identified the sites, designed the project, advised Bernard Matthews throughout the process of tendering and negotiating, and sourced the funding from the UK Green Investment Bank (GIB) via its Energy Saving Investments (ESI) fund. The company will continue to manage the project for the next 20 years, providing maintenance for the boilers and ensuring that they continue to run effectively and efficiently over their lifetime.

Game changer: Bernard Matthews has rolled out biomass in pre-packaged plant rooms at 21 of its UK turkey farms, with the aim to become completely sustainable by 2016

Flower power

A bulb and flower business in Lincolnshire is benefitting from nearly 5,000MW hours of power thanks to a series of PV rooftop and biomass systems installed by **TGE Group**

The energy will be used to heat and power buildings at Nocton Nurseries, which comprises four blocks of staff accommodation, a gym, an estate office and over five acres of glasshouses.

Phase one involved the installation of PV providing 475kWh of energy to the site. Phase two involved the installation of two biomass district heating systems with a combined capacity of 1MW, one of which is capable of burning plant waste from the nursery.

Seeds of change: Nocton Nurseries can now boast 600kWp of installed PV capacity and 1MW from biomass to heat and power over five acres of greenhouses

Steff Munks of Munks Agricultural Contractors, who are landlords on the site, said: "The site has a huge energy requirement so we were keen to reduce costs where possible. Having audited the options available to us, TGE Group provided a scheme that would deliver sustainable heat and power for the tenants on site and generate extra revenue which will pay back the capital outlay within to benefit both us as the landlords as well as our tenants at the nursery.

"We're delighted with the results and it's very satisfying to know that we are generating our own heat and power for the site. We're also extremely proud to be doing our bit for the environment by saving 243 tonnes of carbon per year."

Matthew Evans, heat director at TGE Group, said: "Although split over several sites, the project was perfectly suited to renewable technologies. The bespoke multi-technology system installed will significantly reduce fuel bills whilst generating extra revenue through both the Feed in Tariff and Renewable Heat Incentive. The monitoring systems in place will also ensure the installation is protected and working at peak performance for the duration of its life."

Twice as nice

The County Durham-based **Bignall Group** of manufacturing companies has completed construction of what is believed to be the joint largest PV system in the North East of England

The 150kWp array is mounted on the roof of its Shildon Precision Machine Shop. Tadea installed the 620 module 12,000 sq ft system following a competitive tender process in just three weeks.

Impressed with the reduced electricity costs delivered by the PV system, Bignall Group consequently contacted Tadea for additional advice on how the company could reduce the cost of heating. As a result, Bignall Group has installed a 200kW biomass system.

Company founder John Bignall said: "As well as a way to cut running costs, we also see these systems as a valuable investment opportunity.

"I would stress for others thinking of getting similar systems installed, however, that these are long-term business investments. You must be sure that you'll be at the same address for a long period. If cash flow is tight, be aware of the slow payment initially of FiTs and RHI. I would also advise you to choose your contractors carefully. Tadea's advice was invaluable here."

He added: "Overall, this work has been excellent for us and a positive statement for our clients. Our choice to do both PV and biomass has been well received by customers, particularly in Europe."

Results business: John Bignall, founder of The Bignall Group, was encouraged to install a 200kW biomass system by the impressive performance of a 150kWp roof mounted PV system fitted at the company's Shildon premises

Leading the way

Crosshouse Hospital has joined the growing green revolution within the NHS

Based near Kilmarnock, Scotland, the Crosshouse Hospital canteen has been fitted with four Ecocent hot water production units to reduce costs and improve staff working conditions.

Manufactured by Earth Save Products, the Ecocent is an integrated air source heat pump and hot water cylinder that produces water using waste heat from the canteen kitchens.

Fan club: Ecocent heat recovery and ASHP units have not only reduced the cost of producing hot water at Crosshouse Hospital, Kilmarnock, but also negate the use of expensive extractor fans in the kitchen areas

The Ecocent technology means that heat in the kitchen can be harvested to produce hot water for the pot washer and kitchen sinks. Before the installation, hot air from the kitchen had to be extracted via fans which were expensive to run.

Once waste heat has been stripped from the air, the cool dry air which is left is ducted back into the kitchen making it a more pleasant environment to work in.

According to Crosshouse Hospital, hot water production costs for the canteen have decreased by 75 percent.

A spokesman for the hospital said: "These are early days but we're delighted with the system and so are the canteen employees. The Ecocents are saving more than we were expecting and we're still discovering more benefits.

"We are also pleased to be leading the way and are looking for even more ways to use renewable technologies. You wouldn't believe the amount of questions we are asked about Ecocents."

Coalfields Regeneration Trust reaches renewables milestone

The **Coalfields Regeneration Trust**, the organisation dedicated to supporting the coalfields communities to help themselves, has reached a key milestone, having generated 1MW of electricity from solar panels as a result of its Community Sustainable Energy Programme

Launched over eighteen months ago, the programme was designed to provide solar power energy for community organisations and charities working within the coalfields communities throughout England, reducing their bills and reliance on imported and commercial energy supplies.

Having completed 29 installations , the Community Sustainable Energy Programme has also saved 348 tonnes of CO_2 and has created lasting benefits for the organisations it has worked with, allowing them to rely on a more efficient and cost effective supply of power.

Head of property and assets at the Coalfields Regeneration Trust, Graham Wingfield said: "Putting this achievement into context a normal domestic dwelling relies on 4kWp of energy and we have reached 1MW, 250 times this amount. These organisations are stifled by high energy bills and increasing costs but with solar panels they can shift the balance and benefit from the savings they make.

He added: "It's about more than putting panels on buildings it is about giving these community groups and charities the chance to create a sustainable business model that will allow them to grow and develop in the future."

Blight fight: The Coalfields Regeneration Trust has harnessed solar power and its economic benefits to help repair deprived communities blighted by the closure of mines over 25 years ago

A greener games

ENER-G has helped play a part in ensuring that The Glasgow 2014 Commonwealth Games were a green sporting spectacular

ENER-G's CHP systems powered three of the 14 venues reducing carbon emissions by a total of 1547 tonnes per year, offsetting the carbon emissions of 516 cars.

The venues included the Elite Diving Venue, where a 230kW unit heats its one billion gallons of water. The newest ENER-G CHP unit, a 150kW system, has been powering Commonwealth swimming venue Glasgow's Tollcross International Swimming Centre since May 2013.

A similar 150kW system was switched on in 2004 at Scotstoun Sports Campus, venue for the squash and table tennis matches. During the past ten years it has reportedly reduced the elite sports centre's carbon footprint by 4004 tonnes, equivalent to the environmental benefit of removing 1335 cars from the road.

According to Manchester-based ENER-G, its CHP units achieve cost savings of 40 percent over electricity sourced from the grid and heat generated by onsite boilers. They can yield a return on investment within three to five years, providing impressive cost savings over a typical 15 years product lifecycle.

Media spotlight: ENER-G CHP is supplying green energy to Glasgow's Tollcross International Swimming Centre, a venue in this year's Commonwealth Games

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BIOMASS & SOLAR THERMAL

What: Greener heating of a large stable conversion

How: Trianco 8.4-28kW Greenflame external wood pellet boiler and Kingspan 30 tube HP400

Result: 32 percent cut in fuel bills and over £30,000 in RHI payments

Due to constantly rising energy costs and the costs of running an oil-based heating system, a Solihull-based couple recently reached out to Genius Energy to find out about the potential savings of a biomass boiler in a large green-belt residential property.

Located on the rural-urban fringe of Solihull, the property was deemed to be well-suited for such an installation and in addition, the couple decided on the installation of a solar thermal system on their large stable close to where the biomass unit would be housed.

A Trianco 'Greenflame' biomass boiler was installed to the side of the property beside a four tonne external hopper, connected by a three metre auger in the area where the old oil tanker was. This was then fed through the wall of the property to the location of the existing oil boiler and connected up to a buffer tank.

In addition to the money-saving and sustainable credentials that come with ownership of a biomass boiler, the boiler is also fuelled by carbon-neutral, locally-sourced wood pellets and is expected to yield a 32 percent cut in fuel bills, with over £30,000 of RHI payments over the lifespan.

Liquid gold: Solar thermal will contribute towards a 32 percent bill saving alongside biomass at a Solihull stable conversion, having replaced an old oil-fired boiler

The solar thermal was installed on the south facing stables roof and fed down to a boiler cupboard on the second floor where the client had the solar cylinder installed along with the control unit.

Owners Lee & Becky said: "We are over the moon with the installation and cannot wait to really see the benefits that the systems we have had installed provides. It's also an added bonus to know we are helping the environment and increasing our green credentials."

BIOMASS

What: Galcorm Castle Golf Club hosts a greener NI Open

How: BS Holdings wood pellet system

Result: £10,000 annual fuel bill saving and 50,000kg CO2 reduction

Northern Ireland's Galgorm Castle Golf Club, which hosted this year's NI Golf Open Challenge on 28 to 31 August, has announced £10,000 in savings after investing in a wood pellet modularised heating system from BS Holdings.

The 99kW carbon neutral modularised heating system also qualifies for the province's RHI.

BS Holdings installed a heating system at Galgorm Castle Golf Club's to enable the introduction of a low temperature hot water system which replaces the electric heating the club had been using, and also supported Galgorm Castle by sponsoring the NI Golf Open Challenge for 2014.

Hole in one: Galgorm Castle Golf Club, the home of Northern Ireland's Golf Open, has become one of the first of its kind to invest in renewable energy

Gary Henry from Galgorm Castle Golf Club said: "Going green really has made sense for us not only because it helps us better protect the beautiful, natural landscape that makes us one of Northern Ireland's leading courses, but we've also been able to quickly make actual cost savings that can be reinvested into the club.

"Keeping our course in shape for events like the Northern Ireland Open takes time and we invest significantly in keeping our greens and fairways at their best and the savings we've made have allowed us to do this."

Brian Hood, managing director, BS Holdings, added: "We are delighted with the savings Galgorm Castle Golf Club has made in just over a year. They've fully embraced 'going green' because it makes business sense for them. More and more clubs, companies and organisations are tapping into renewable fuel sources such as our biomass system and it is allowing them to make almost immediate savings and reduce their impact on the environment."

PV CONTROLS

What: Eco expert leads by example with renewable renovation

How: PV array with ImmerSUN microgeneration switching device

Result: Reduced electrical mains reliance and lower carbon footprint

As part of continued efforts to minimise energy bills and embrace a resource-efficient lifestyle, Ed Webb, director of solar supplier Metgen, made the decision to embark on a project to renovate his family home.

By prioritising environmentally-friendly building materials and embracing renewable technologies, Ed has since reduced utility bills by over 50 percent and ensured his property meets the highest standards of green building regulations.

"Making my home eco-friendly has always been a key priority and something I was keen to invest in," said Ed.

"Our business aims to support installers in helping homeowners around the country reduce their utility bills by specifying resource-efficient solutions, so when planning an extension to my own house in Milford, I made the decision to lead by example."

Alongside replacing the roof and fully lagging the loft and filling cavity walls with eco-friendly insulation, Ed installed ultra-efficient double glazing and LED lighting throughout the house to reduce energy consumption.

To cut bills even further, he installed a 2.5kW rooftop PV setup to self-generate his own supply of green energy and an immerSUN automated microgeneration switching device.

"The immerSUN works in partnership with our solar setup, monitoring renewable supply and diverting surplus power, which would normally be exported to the grid, to storage and space heaters," added Ed.

"In the case of our home, this means that 100 percent of PV-generated green energy is prioritised to power resource-efficient elements in the immersion heater, underfloor heating and bathroom towel rails. This reduces energy usage significantly and ensures that our solar panels are always powering our home, rather than exporting green energy back to the grid."

Trendsetter: Metgen director Ed Webb reports a 50 percent drop in utility bills since embarking on an eco-makeover of his own property

ASHP

What: Woodland home saves on bills with all-in-one system

How: F2040 ASHP and VVM320 combined water storage and controls unit

Result: First UK home with NIBE ASHP and all-in-one hot water, control and buffer store package

A rural Surrey home has become the first in the UK to fit an air source heat pump and all-in-one hot water, control and buffer store package from NIBE. The renewable heating system, which includes a F2040 ASHP and VVM320 combined water storage and controls unit, was specified as part of a major renovation project to bring the property up to much higher energy efficiency standards.

Situated in an off-grid location just 100m from the edge of the Devil's Punchbowl, space heating and hot water for the four-bedroom, two-bathroom bungalow was previously provided by an expensive and inefficient electric system. With electricity bills continuing to rise, owners Colin and Sally Taylor were looking to find a more cost-secure alternative.

The couple approached local NIBE VIP Installer Mark Freeman, operations director at Source Heat Pumps. After looking into several different options, Mark and the Taylors decided on a 12kW NIBE F2040 ASHP and VVM320 indoor unit combination, which uses heat from the outside air to provide heating and hot water.

Mark said: "The NIBE ASHP package offered the perfect solution for the bungalow, delivering readily available, cost-effective hot water that the couple can rely on, whilst taking up as little space as possible.

"We were able to site the heat pump itself in a position where it would not obstruct the garden path, using pre-insulated pipework running back to the indoor system to allow for optimum efficiency at all times. To ensure the system was set up for best results, we also advised the Taylors to fit insulation and underfloor heating, which runs at a similar low flow temperature to the F2040 package itself."

Virgin territory: Surrey-based installers Source Heat Pumps fitted the UK's first domestic NIBE all-in-one hot water, control and buffer store package at the Taylors' renovated bungalow

Figure it out

Generation tariffs for non PV technologies

Technology	Band (kW)	Tariffs (p/kWh)
Hydro	≤15	21.12
	>15-≤100	19.72
	>100-≤500	15.59
	>500-≤2000	12.18
	>2000-≤5000	3.32
Wind	≤1.5	17.78
	>1.5-≤15	17.78
	>15-≤100	17.78
	>100-≤500	14.82
	>500-≤1500	8.04
	>1500-≤5000	3.41

(Source: OFGEM)

Number of MCS registered installers per technology

Technology type	Cumulative number	Registered July 14
Solar PV	2649	27
Biomass	337	08
Air source heat pump	869	15
Ground source heat pump	711	11
Solar thermal	973	09
Small Wind	99	0
Total	3122	85

Number of MCS registered installations per technology

Technology type	Cumulative number	Installed July 14
Solar PV	574112	10910
Biomass	6226	412
Air source heat pump	30091	501
Ground source heat pump	8362	86
Solar thermal	6755	80
Small Wind	4700	03
Total	630246	11992

(Figures supplied by Gemserv)

Generation tariffs for Solar PV

Tariff band	FiT rate (p/kWh)
<4kW	14.38
>4-10kW	13.03
>10-50kW	12.13
>50-150kW	10.34
>150-250kW	09.89
>250kW-500kW	6.38
Standalone	6.38
Export Tariff	4.77

Domestic RHI tariffs

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

Tariffs apply to all eligible installations installed since 15 July 2009

Green Deal

Month	Assessments	Live GD Plans
June 14	29018	215
Total	263068	1587

Green Deal supply chain

Month	Assessor organisations	Providers	Installers
June 14	06	0	78
Total	375	151	2697

(Source: DECC)

Cost comparison of heating fuels (not including RHI payments)

Fuel source	kWh provided per unit of fuel	Efficiency of system (%)	Units consumed by house (kWh)	Price per unit of fuel (£)	Units consumed per annum	Cost per annum
Heating oil (kerosene)	10 per litre	90	25300	0.55 per litre	2530 litres	£1,392
Wood pellets	4800 per tonne	94	24300	235 per tonne	5 tonnes	£1,175
Natural gas	1 per kWh	90	25300	0.042 per kWh	25300 kWh	£1,062
LPG	6.6 per litre	90	25300	0.39 per litre	3833 litres	£1,495
Electricity	1 per kWh	100	23000	0.16 per kWh	23000 kWh	£3,680
*Air source heat pump	1 per kWh	290	7931	0.16 per kWh	7931kWh	£1,269
*Ground source heat pump	1 per kWh	360	6389	0.16 per kWh	6389kWh	£1022
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.55 per litre	759 litres	£417
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.16 per kWh	5552 kWh	£888
Dual mode system 2						
Gas boiler (30% of heat load)	1 per kWh	90	7590	0.042 per kWh	7590 kWh	£319
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.16 per kWh	5552 kWh	£888

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

RHI non-domestic rates

Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/kWh)	Tariff duration
Small biomass	Solid biomass: Municipal solid waste (inc CHP)	Less than 200 kWth	Tier 1: 8.4 Tier 2: 2.2	20
Medium biomass	Solid biomass: Municipal solid waste (inc CHP)	200 kWth and above, less than 100 kWth	Tier 1: 5.1 Tier 2: 2.2	20
Large biomass	Solid biomass: Municipal solid waste (inc CHP)	1000 kWth and above	2.0	20
Small ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	Less than 100 kWth	Tier 1: 8.7 Tier 2: 2.6	20
Large ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	100 kWth and above	Tier 1: 8.7 Tier 2: 2.6	20
Solar thermal	Solar thermal	Less than 200 kWth	10	20
A2W heat pumps	ASHPs	All	2.5	20

(Source: OFGEM)

Carbon emissions of different heating fuels

Fuel source	Carbon dioxide emitted ($KgCO_2$)	Carbon emitted (Kg)
Heating oil	5,060	1,380
Wood pellets	759	207
Natural gas	5,060	1,380
LPG	5,060	1,380
Electricity	11,500	3,136
ASHP	2,380	649
GSHP	1,210	330

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

What data would you like to see on this page?

email:

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My working week

Who: Steve Hickson, managing director, Hydratech

What: Hydratech is a specialist manufacturer of heat transfer fluids and pipework system protection products

Industry expert: Steve Hickson, Hydratech, is an active member of the STA and has worked closely with the GSHPA to develop a robust code of practice for thermal transfer fluids

A renewable future

A typical working week?
Fortunately or unfortunately I do not have a typical working week. Hydratech has been committed to the renewable energy sector since 2003, but we also formulate and supply a range of specialist fluids to several other industries. Subsequently I try to synergise the majority of my activities, planning and product development to benefit all operational sectors.

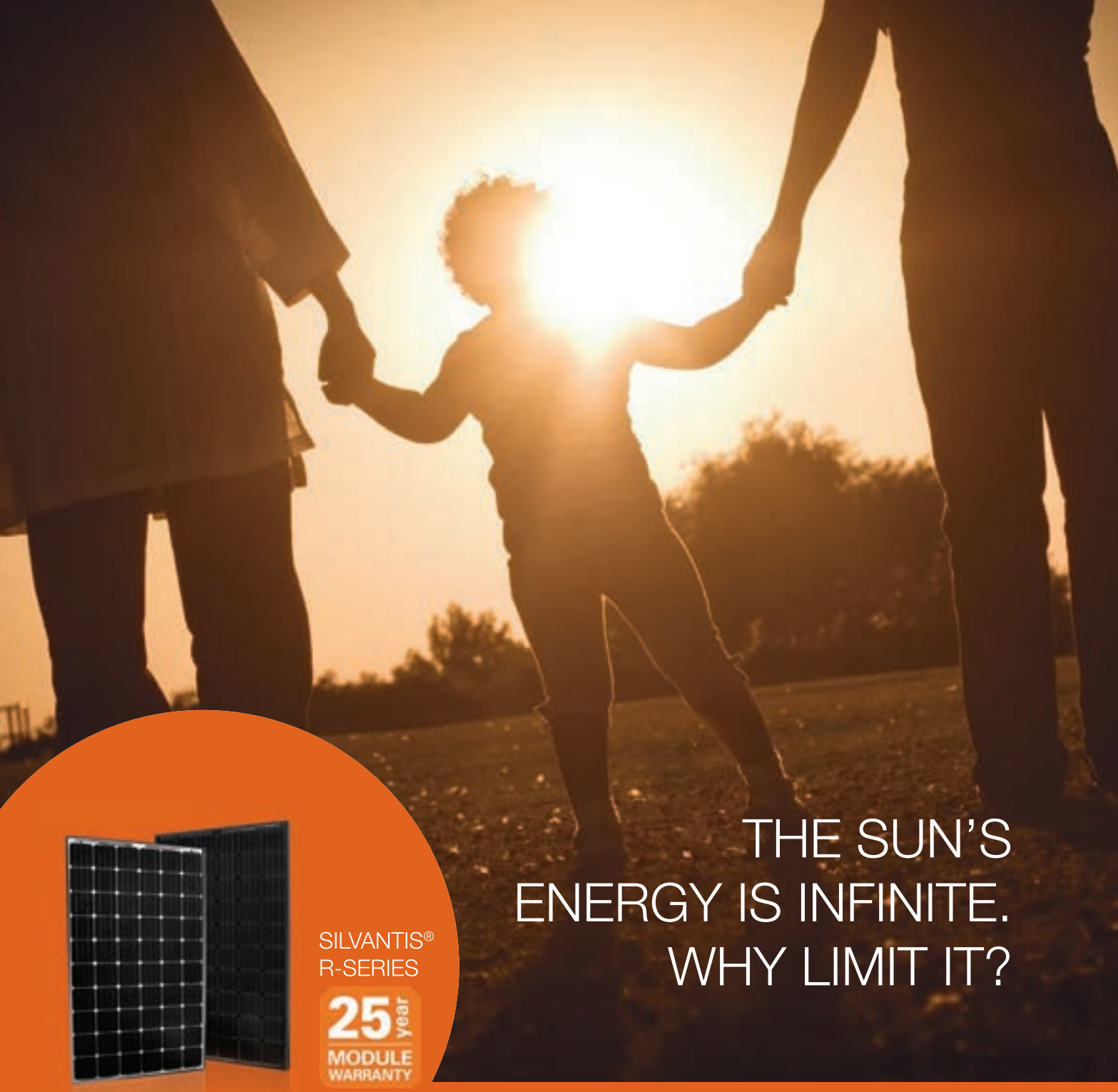
Part of my week is always spent reviewing how the renewable sector is developing and then responding to changes within that market. I think all those who have been in the sector as long as we have, will acknowledge that it's been a pretty bumpy ride. Sandwiched between the worst recession in 60 years and government policies changing with the wind direction, many good companies and customers have had to call it a day. Through weekly analysis and regular customer communications we have managed to avoid bad debts and where possible supported our customers through difficult times.

A grounded commitment
Hydratech are long-term members of the GSHPA and Solar Trade Association. Several hours a week are currently given over to assist Jake Salisbury and other members of the GSHPA in developing a detailed code of practice for thermal transfer fluids. Jake, David Mathews and other Council members have been intrinsic in maintaining the best interests of the GSHP industry through difficult times and I take my hat off to all of them. In July I attended two GSHPA meetings including the AGM, which was followed by an open conference on ground source energy. There was a good level of interest from companies and individuals wanting to better understand the industry, which hopefully bodes well for the future.

Considering the customer
Reviewing and fine tuning our marketing mix plays a very important part of my weekly activities. Like most good companies Hydratech has a detailed and long-term business development plan, but creative sales and marketing is fundamental to our continued growth – and if you're not growing then - well you know the rest! Over the last six months I have spent many hours every week working closely with our in-house design team, to develop a company image with a more customer orientated feel. Too often company websites are over focused on its 'About Us' page rather than 'About You' the customer. Hopefully the new website and literature will make it easier for our customers to find and understand the product information they are looking for.

Nurturing our assets
A wise man once said that a company is only as good as its staff and I couldn't agree more. Subsequently I spend several hours every week enquiring how everyone is and trying to maintain good levels of morale. As the company has grown we have put in place various systems to ensure health & safety, good environmental practice and personal development. Ironically none of these QA systems will work unless the teams implementing and maintaining them are motivated – and I still find a few encouraging words every day is time well spent.

Accountability
Being a dyed in the wool engineer I am not overly fond of bean counting. However as the managing director it is imperative that I maintain a daily understanding of all things financial and cash-flow. This necessity has been heighted since UK Steel Enterprise (TATA) invested a considerable sum as part of our growth program. Predictably shareholders expect to be regularly kept up to speed on all financial developments and preferably to hear of our continued expansion! So after I have finished writing this piece for REI its back to bean counting for yours truly!



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