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Lost in transmission

Storage, storage and more storage was the most emergent theme from my visit to Intersolar Europe in Munich last month.

It may perhaps seem unremarkable to a great many readers given the inexorable rise in importance of self-consumption, and PV's continued trajectory away from being a purely financial instrument incentivised exclusively through generation tariffs.

The potential for affordable energy storage is obvious as the intermittency of solar power is negated by the ability to bank it for later use, minimising the expense of buying power back from the grid. And its virtues do not end on a domestic scale. Whilst a single 10kWh battery will do little to meet the energy needs of a nation, 20,000 fully charged units operating in sync, and on standby to inject power into the grid in an instant, places the homeowner in the midst of a fully fledged power station.

What was significant at Intersolar was the sheer number of manufacturers already bringing battery storage models to market, or at an advanced stage of development. Judging by the number of selfies being taken with Tesla's much-vaunted Powerwall unit, interest will not be lacking once the product hits our shores and the treadmill of forthcoming trade shows.

Domestic storage is likely to remain a nascent technology in the UK for the short term at least, but being in Germany affords us a glimpse at where we might be in just a few years, once our cheaper wholesale electricity prices reach the same levels as many of our European neighbours.

We have much to look forward to.

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"I wouldn't be surprised to see RHI cast aside before summer 2016"
Neil Schofield, Worcester, Bosch p8

Events

NAPIT EXPO On the road
02 July Regency Park Hotel
07 July Brands Hatch
09 July Vale Resort
14 July Newton Abbot Racecourse

Heating & Renewables Roadshow
10 Sept 2015 Ricoh Arena, Coventry
15 Sept 2015 Westpoint Arena, Exeter
17 Sept 2015 FIVE, Farnborough
22 Sept 2015 RHC, Edinburgh
24 Sept 2015 Event City, Manchester
heatingandrenewablesroadshow.co.uk

Solar Energy UK
13-15 October 2015 NEC, Birmingham
http://uk.solarenergyevents.com

Ecobuild 2016
08-10 Mar London, ExCel
http://ecobuild.co.uk

Rural Energy seeks new partners

Rural Energy is actively seeking biomass installers to join its growing network of regional partners

The Leicestershire-based company has already supplied biomass technology to over 1,300 installations and is targeting strong growth in the sector.

Established in 2002, Rural Energy offers dedicated sales, technical design, project management, servicing, commissioning and maintenance departments, in addition to a large practical training suite featuring working boilers from Herz.

Rural Energy offers three tiers of partnership, starting at bronze and progressing to gold with multiple benefits including tech support, training and leads.

According to managing director Paul Clarke, Rural Energy's USP to installers is both its forward thinking, and lengthy heritage in providing solutions from the domestic market right up to 10MW, meaning there is very little its technical specialists have not experienced before.

"Our track record in providing technical support across the whole spectrum gives installers confidence in tackling any biomass problem," he said.

"We try and partner with installers in the long term and our strategy is to have a single strong partner in each region. This allows us to support them better so we are very selective on partners."

He added: "We're also looking at biogas and other biomass solutions coming out which puts us in a good position to flex with the market. I would therefore encourage anyone looking to join our Partner Network to contact us now."

Imminent changes due for RHI

In just a few months' time all biomass participants in the RHI will have to use fuels that meet sustainability criteria or risk their payments being stopped, reminds TEAM's RHI industry expert Justine Grant.

As the renewable heat market grows, Ofgem is using the new rules to make sure that biomass meets the government's carbon and environmental targets.

This will affect domestic and non-domestic RHI participants as well as producers and suppliers of biomass fuels. Whilst systems 1MW and over are already required to report on sustainability of fuel and feedstock, from October new criteria will also apply for smaller systems.

Ofgem is contacting all RHI participants to warn them of the changes, but if they don't comply RHI payments would have to be stopped. This would be a disaster for the reputation of renewable heat, the RHI scheme and the participants. Don't get caught out!

What are the new criteria?

- Biomass fuel for RHI must meet a lifecycle greenhouse gas emissions target of 34.8g CO2 equivalent per MJ of heat generated
- Biomass fuel will need to meet certain land criteria
- Woodfuel criteria are outlined in the UK Timber standard for Heat and Electricity
- For other types of biomass, land criteria are planned to correspond to the Renewable Heat Directive for transport biofuels and bioliquids

In order for fuel to become or remain authorised, the supplier must comply with Sustainability and Land criteria. The easiest way to comply with the new rules is to purchase fuel from suppliers listed on the Biomass Suppliers' List (BSL), which show approved suppliers that meet the new RHI criteria.

Worcester reward environmental excellence

Worcester, Bosch Group has unveiled the winners of its annual Environment 2020 Awards, rewarding individual contributions to tackling climate change via high efficiency heating technologies.

The awards, now in their 15th year, highlight best practice from installers who are making strides to conserve the environment by embracing the environmental potential of domestic properties.

Six installers and three specifiers from across the UK received their prizes from the event's special guest, Andy Bradley, Director at Delta – Energy & Environment, at a ceremony held at Worcester, Bosch Group Headquarters in Worcester.

Drawn from well over 100 entries, selected winners include:

- Greenstore and Greensource heat pump installation: Darren King – K Lewington Heating & Gas Specialists Ltd, Leicestershire
- Total system solution installation: Paul Lammond – Streetly Gas & Plumbing Ltd
- Greenspring instantaneous water heater installation: Doug Hawkins – Town & Country Plumbing & Heating Ltd
- Housing Association specification: Broadacres Housing Association, North Yorkshire
- Housebuilder Specification: Grace Homes Limited, Northants
- Local Authority Specification: London Borough of Barking and Dagenham Council

Worcester also took the opportunity to recognise the artistic efforts of young people up to the age of 16 whose artwork has been inspired by energy efficiency and climate change.

Six year old Finley Crookes from Merseyside, 11 year old Jasmin Walker from North Yorkshire, and 14 year old Mohommed Rafique from Kent were each presented with £500 of shopping and leisure vouchers for their efforts.

Thumbs up: This year's winners of Worcester, Bosch's annual Environment 2020 Awards

Carl Arntzen, Worcester's managing director, said: "The Environment 2020 awards are our chance to celebrate the industry's champions of efficient and renewable technologies. The fact that so many are committed to protecting our planet for future generations is inspiring, and year on year I am impressed by the calibre of the entries we receive."

Wind subsidy hits the doldrums

The government has confirmed that the Renewables Obligation will be closed to new onshore wind developments from April 01 2016, a full year earlier than was expected.

A grace period is being offered to wind projects which already have planning permission and a grid connection offer, allowing an estimated further 5.2GW to be deployed.

Energy secretary Amber Rudd said the move was consistent with the government's policy of making maturing technology viable without overreliance on public subsidy. She also stressed that enough projects have, or will, be built to meet the UK's 2020 renewable energy targets.

However, industry reaction has been predictably fierce with many deeply concerned that a premature withdrawal of funding will not just cost investment and jobs in the green energy sector, but force up consumer bills as potential new onshore wind capacity is substituted for more expensive alternatives.

"The government's decision sends a chilling signal not just to the renewable energy industry, but to all investors right across the UK's infrastructure sectors," said Renewable UK chief executive, Maria McCaffery.

"It means this government is quite prepared to pull the rug from under the feet of investors even when this country desperately needs to clean up the way we generate electricity at the lowest possible cost – which is onshore wind."

Juliet Davenport OBE, founder and chief executive of Good Energy, added: "Today's announcement will undermine growth, investment and jobs in a sector which is helping to introduce more competition and new players into the energy market.

"Onshore wind developers, including many British companies, have invested millions of pounds in good faith based on the government's original timetable. This decision is transactional government at its worst."

Wind supported by the Feed-in Tariff remains unaffected by this announcement.

Gassing about energy

For installers struggling to convince homeowners to make the leap to a fully renewable solution, LP Gas could be considered a complimentary fuel source, argues **Rob Shuttleworth**, chief executive of LP Gas trade association UKLPG

Consumer watchdog Which? has recently criticised UK housing policy for leaving too many consumers living in energy inefficient homes. Not only does this mean people are sometimes paying higher bills than necessary, it also has significant impact on both the quality of life and long term health of the occupants.

Indeed, there is enormous potential for alternative carbon reduction technologies fuelled by LP Gas to make an immediate impact on bills.

The market opportunity

Heating accounts for 50 percent of energy use in the UK and 30 percent of carbon emissions. An increasing environmental awareness since the late 1990s has resulted in a steady uptake of LP Gas as a fuel source, especially in off-grid areas, due to its low emissions, convenience and minimal environmental impact.

Looking at the renewable sector, the latest figures from the Department for Energy and Climate Change show that renewable energy generation now makes up 17.9 percent of gross electricity consumption, an increase of 4.1 percentage points on 2013's share.

However, while renewable installations continue to grow, the ageing profile of UK housing stock means that it can be challenging to install a fully renewable solution. Certainly, the UK's two million off-grid homes, which are in rural locations, offer up rich potential for installers looking to investigate the benefits of hybrid renewable and LPG systems.

Hybrid technology

With confusion over the many different energy sources available, homeowners are turning to installers for guidance. Heating professionals need to be able to recommend the right specification and products to suit an individual's needs. It can be quite a leap for a homeowner to jump straight into a full renewable system. Initial set-up costs can also be a challenge. However, the versatility and convenience of LP Gas makes it a reliable energy as part of a hybrid renewable heating and hot water system.

Already highly efficient, LP Gas technology has been even further enhanced by the emergence of performance-optimising technology such as condensing boilers and renewable/LPG hybrid systems. In addition, the emissions credentials of LP Gas stack up for consumers looking to lead lower carbon lifestyles, with its combustion emitting 33 percent less carbon dioxide than coal and 15 percent less than heating oil.

Furthermore, a number of the new hybrid heat pump and boiler combinations are eligible for the Renewable Heat Incentive payments, which could be in excess of £600 per year. By taking a combination LP Gas boiler and an air source heat pump, installers can ensure householders are able to access instant heating and hot water all year round. The LP Gas boiler acts as a back-up, while the heat pump delivers all of the benefits of renewable technology without the potential risks.

Next steps

UK energy cannot take an 'either or' approach to renewables. Increasing air pollution means we are still not achieving the best results possible with the resources given and technology available. Hybrid heat pumps offer a mix of low-carbon technologies and could deliver sufficient carbon savings.

As a complementary fuel to renewable technologies and as a low-cost, low-carbon fuel in its own right, LP Gas has a significant role to play as a fuel of the future.

Do you agree? Please send your views to the editor by emailing: paul@andpublishing.co.uk

Added option: In older less-efficient properties, or for homeowners reluctant to completely lose a fossil fuel boiler, LP Gas is the perfect bedfellow for a renewable hybrid system, according to LP Gas trade association UKLPG

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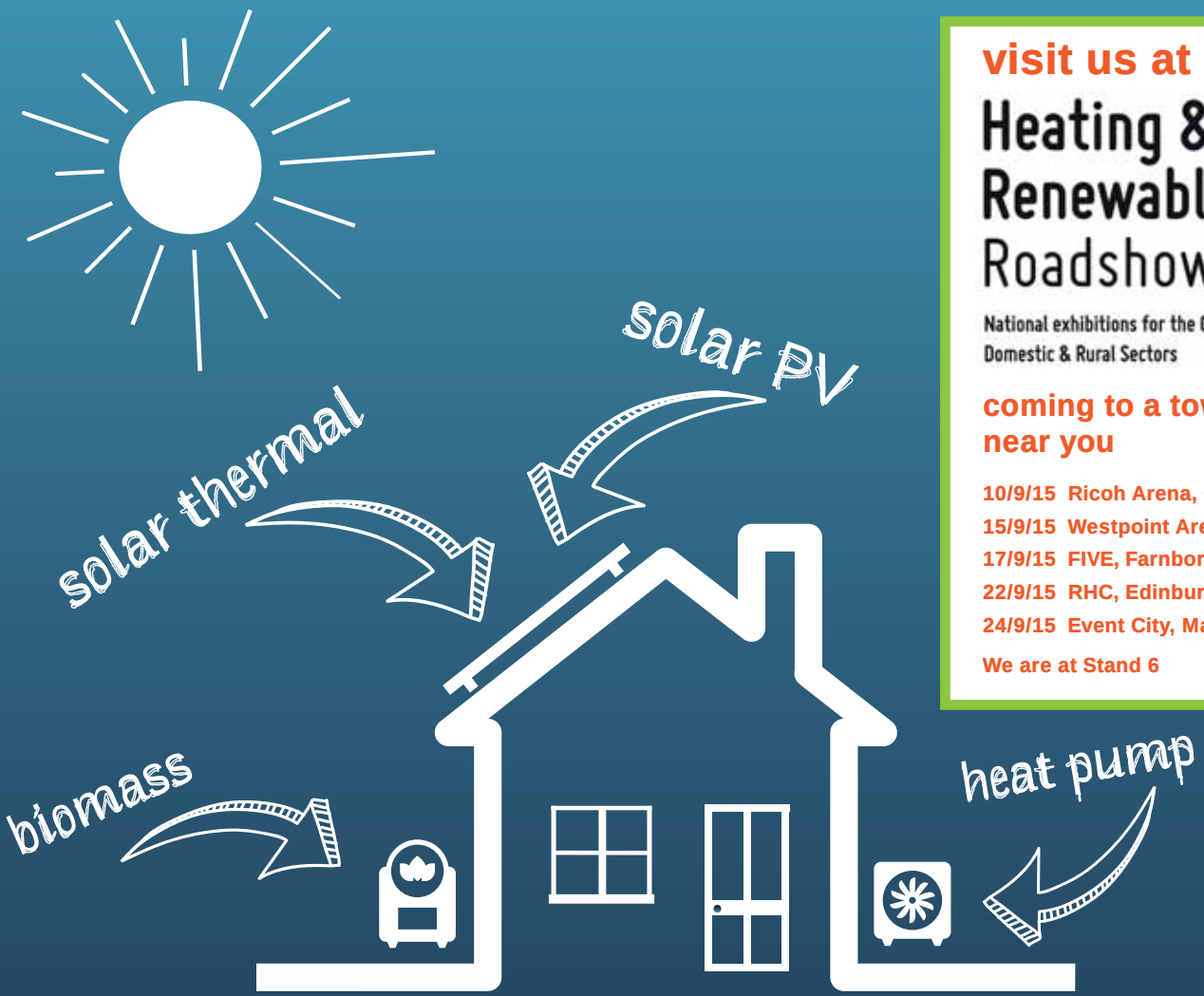

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Election reflection

With the dust now settling following the conclusion of this year's General Election, **Neil Schofield**, head of external and governmental affairs at Worcester, Bosch Group, offers his views on what the outcome could mean for the future of the renewable heating industry

The outcome of May's General Election means that we now have a majority Conservative Government for the first time since 1997. Regardless of your political preference, the nation's decision gives us a degree of continuity and certainty, which should be seen as a positive.

As things stand, the RHI appears to be under threat. The scheme appears to have distorted the market and has reduced the markets for solar thermal and heat pumps by 15 per cent year on year rather than boosting them. In its current format, the only real winner in the RHI is biomass, which is only practical for properties which are large and off mains gas – representing a very small proportion of the UK's housing stock. With the initiative up for review in Spring of next year, I wouldn't be surprised to see it cast aside before we reach the summer of 2016.

One of the biggest challenges we face at present is the basic fact that we simply don't know exactly how efficient – or inefficient – our existing homes are. If every home in the country had some form of energy efficiency assessment to create a national bank of data, that would be a fantastic starting point. We would then be in a position to propose mandatory improvements to band G properties before working our way up the scale over a period of several years.

The Conservative party has long stated its ethos is business friendly and now is the time for its members to prove it. As an industry, long-term certainty over energy efficiency is something we need. Let's hope it's something we get.

Time's up: The new government could withdraw the RHI in less than 12 months time, warns Neil Schofield, head of external and governmental affairs at Worcester, Bosch

Policy conundrum

David Hunter, energy analyst at Schneider Electric, muses on the challenges new energy secretary Amber Rudd will face in negotiating the UK's energy trilemma of supply, security and sustainability during the course of the next parliament

The energy landscape is changing rapidly and with it comes complex challenges. Each policy decision must be considered in the context of the UK's energy trilemma, and much needs to be done to hit the sweet spot in balancing these three goals.

Sweet spot: New energy secretary Amber Rudd will have a tough job meeting conflicting demands in energy policy

Security of supply

The UK's ageing infrastructure poses a major challenge. Rough, the UK's most important gas storage facility, has been contending with operational issues. Given it accounts for 70 percent of the UK's existing storage, plans must be put in place to address any winter supply risk. Renewables brings a very different dimension to the ageing grid and investment is urgently needed to better connect renewable power, and ensure the system can flex to cope with intermittent wind and solar supply.

Affordability

The removal of the energy price freeze from the policy landscape (due to Labour's electoral defeat) could help consumer budgets as there is evidence that major suppliers limited recent price cuts due to the risk of not being able to raise bills later, if costs rose. Domestic bills could now fall by 3-4 percent. In the long term, infrastructure investment and renewable support will place upward pressure on bills.

Sustainability

Wind power has put the UK in a good position to meets its 2020 clean energy goals. The knock on challenge is how the UK handles intermittent supplies. New energy storage technology has been welcomed as a vital piece of the decarbonisation puzzle. There must be support for a virtuous cycle of energy efficiency, green power, storage and demand response as clean-tech develops.

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Triple whammy

There has been much progress made since October 01 2014, when a Tripartite Agreement between DECC, the MCS Administrator (Gemserv) and the MCS Service Company (MCSSCo) was signed.

The Tripartite Agreement can be found on the MCS website (www.microgenerationcertification.org) should you wish to read it however the key points to note are as follows:

- A clear path is now established for the MCS Service Company to be developed into its enduring legal entity structure
- Four key projects to support and maintain the robustness of the scheme
- Novation of MCS Licence Agreement across to the MCS Service Company from DECC
- Greater clarity of the Scheme's purposes and objectives
- Clear timetables with key actions to be delivered to progress this work

Following on from this Tripartite agreement the MCS Steering Group agreed in February that it wanted to establish an MCS Charity with oversight of the MCS Service Company. Since then, the MCS Steering Group Chairman and MCS Administrator have been busy establishing the Microgeneration Certification Scheme Charitable Foundation (MCS CF), with the aim of the charity to provide both confidence and trust in renewable energy and low carbon technologies and those providing and maintaining it, with a particular focus on consumer and environmental protection.

The MCS CF will be focusing on key areas. They will look to support those looking to research improvements and developments for both current and innovative products and systems to improve health and safety issues, environmental and carbon savings and consumer understanding. They will provide support to consumers and the environment through education, knowledge transfer, skills and competency development and raising awareness in the renewable energy and low carbon technology sector. They also plan to support the development of industry standards and guidance in this sector.

In establishing the foundation, the charity will be registered with the Charity Commission by the end of August 2015.

Prior to registration, the charity will look to appoint the first full board of Trustees, to steer and guide the charity through its initial establishment and implementation following successful registration. These Trustee roles are hoped to be in place by early August, as national adverts were run during the month of June, with suitable candidates being shortlisted and interviewed in July.

Updates regarding the status of the MCS CF will be published on the MCS website.

Pollard's Patter

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

DECC has now published its Quarterly Domestic RHI forecast. As a result, the degression 'super trigger' for biomass has been passed. This means the current biomass tariff will be reduced by 20 percent for all new applications made from 1 July 2015. Similarly, the small-scale biomass tariff in the non-domestic scheme will degress by 25 percent from the same date.

We have seen from previous degression announcements that the rather predictable market reaction is that forward demand is accelerated to ensure householders get the higher tariff and the month following the announcement sees a resultant dip in demand.

The news of degression is a double-edged sword. Of course, the risk to consumer confidence and demand is obvious. On the other hand, degression must mean demand has exceeded the original forecast which is good news.

Perhaps most encouragingly, the latest figures for uptake of solar PV have recently been published; a market which has seen the same roller coaster experience of regular degression. Overall, solar PV capacity at the end of 2014 stood at 5,095 MW – an increase of 79 percent compared to the end of 2013.

This rather shows there is life after degression, as long as degression is manageable. I know that direct comparisons between PV and renewable heat have to take into consideration the differences in complexity and competing technologies but nonetheless, I feel the PV experience is relevant.

Two minutes with . . .

Who are you?
David Cowburn, managing director of NAPIT Certification

What do you do?
NAPIT are a certification body involved in Competent Person Schemes for Building Regulations, MCS and Green Deal. I work with multiple industry and government committees through which I promote NAPIT's commitment to high standards and safe work, influencing industry standards and the way NAPIT deliver them.

Where are you?
All over the place, engaging with government and industry. My office is in Mansfield where NAPIT has a head office and training centre. We also have training centres in Oldham and Bristol, as well as staff throughout the UK.

How's business at the moment?
Very good. With over 10,000 registered installers, NAPIT is one of the leading scheme operators in the country.

How could business be better?
If government and industry could knuckle down and really address the detailed concerns in the building services and renewable energy sectors. We have released a number of NAPIT campaign infographics which outline certain aspects of policies which could be improved to benefit the industry.

Who do you admire in renewables?
I'm going to give a nod in the direction of a man who taught me and who passed away last year, Professor Peter Dunn of the University of Reading. He was writing about and championing renewable energy when it was so unfashionable that the phrases 'alternative' and 'intermediate' abounded. He would be delighted at the move into the mainstream we are now seeing.

What's the best business advice you've ever received?
Never stop improving. If you've done something badly, fix it – if you've done something well, look to do it better.

Q&A

SIMON BAGGLEY

Enphase Energy

REI: What are Enphase's plans for the UK in the next 5 years?
SB: Enphase has gone from strength to strength in the UK market since its entry back in 2012.

Our quality microinverter is increasingly becoming the preferred choice for UK installers and PV owners. We're also seeing string inverter manufacturers start to develop microinverters. This trend will continue in the years to come but Enphase plans to expand its market share through the distinction of our product.

We're also looking to make the Enphase system compatible with even more roof systems as we explore roof fixing methods and frame mounting.

While the residential market has traditionally been our core customer base, we are keen to capitalise on the burgeoning commercial rooftop and social housing markets too.

What would be top of your wish list from the new government?
In a word, our biggest ask of the new government would be stability. The UK solar industry has come a long way in recent years and current policy is favourable.

Now some in the industry are wary that the government could pull the rug from beneath our feet if the FiT digression is too rapid or sudden. Businesses in the industry, Enphase included, are open about the fact that the FiT cannot and should not last forever. We just call for a stable transition so the industry can stand on its own two feet in a subsidy free era.

TECH TALKING

Summer season maintenance

Summer may not be a time when we want to remember cold winter weather, but it's certainly the best season to service heating systems, explains heat pump specialist **Bob Long** in the first of two parts

Heat pumps must maintain a high level of performance to deliver their economic saving. Defects that will reduce performance can invisibly occur, while outward signs appear normal. Annual examination is therefore essential, and starts with a few visual checks, after turning the power off and safely isolating the unit of course!

Air source

A visual examination begins with particular focus on the overall condition of the unit's enclosure, and surfaces showing evidence of corrosion. The fins should be tightly fitting to the horizontal tubes. Corrosion of the fin material can eventually cause the fins to come loose from the pipes resulting in reduced thermal conductivity between the fin and the refrigerant pipe, and compromised efficiency.

An ASHP is usually designed to draw air through the fin/coil block and in doing so, garden debris such as leaves and grass cuttings can attach to the outer surface and cause a severe fall in efficiency. This fault is common so it's important to suggest to owners that they make periodic checks throughout the year.

It's important to suggest to owners that they make periodic checks throughout the year

The evaporator fan should be checked for corrosion and treated as necessary. Examine the fan blades for evidence of metal fatigue cracks and try to move the fan-motor drive shaft from side to side, checking the motor bearing for any excessive movement up, down and laterally. If available, the correct lubricant should be applied. Check the insulation on all interior and exterior pipes, water and refrigerant, and repair any places where the insulation is suspect.

Ground source

GSHPs also have a number of essential checks to carry out regarding the cold-side of the system comprising the ground-loop, header tank or expansion diaphragm, working fluid circulating pump, flow filter and evaporator.

The flow filter should be inspected and cleaned, and the ground loop circuit checked for fluid leaks. Where a pressurisation diaphragm is fitted, an indication of any leakage can be gained by observing the standing pressure in the closed circuit. Where a system is fitted with a header tank, the fluid level should be noted and observed over a period of time for any losses.

If leakage is suspected, the cause must be found and remedied before continuing any further. The working fluid is probably going to contain a freezing point depressant such as glycol, and the concentration should be checked to meet with the manufacturer's recommendation. Hand held refractometers are quite reasonably priced and a great way to obtain an accurate reading.

To complete the testing for the low temperature side of the system, the flow rate of the working fluid circulation pump should be measured and compared with manufacturers' requirements. Centrifugal pumps do ware out and this is evidenced by a reduced pumping efficiency, causing a reduction in flow rate. If there is evidence of this, and the pump shows signs of ware, it should be replaced.

The flow and return temperature of the ground loop should be noted and compared with the previous year's reading. This will provide a good indication as to the ground's ability to yield energy without a fall in operating temperature. If an annual reduction in operating temperature is noted, it is possible that the system is in fact mining energy rather than collecting from a renewable resource.

Bob Long will discuss servicing requirements in emitter circuits and calculating outputs in his next column.

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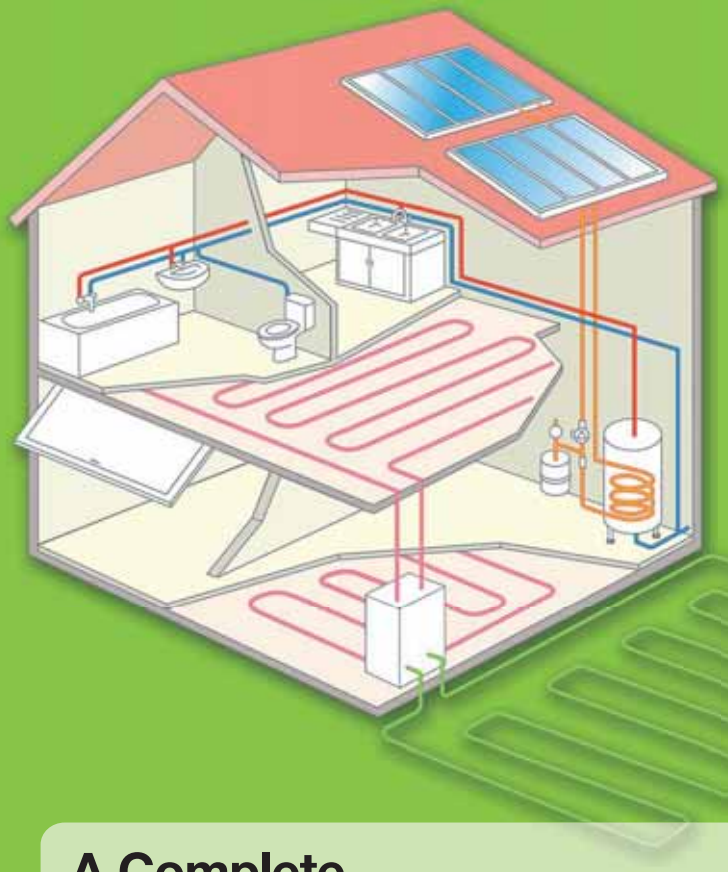

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Renewable energy prospects post-election

Gordon Moran, writing for the European Energy Centre (EEC), forecasts the new UK majority government's agenda for the renewable energy industry

A lot has been said about the newly elected UK government, with feverish speculation as to which party or parties might form the next administration. This has led to some anxiety in the renewables industry over what this might mean in terms of government support and funding. Now that the dust has settled and a new government has taken office, we can begin to see the sorts of policies it looks set to prioritise.

The Conservative party have had a mixed record on environmental matters but support the UK's current commitments to reduce carbon emissions, including the use of renewable energy technologies. Though the new government is strongly supportive of conventional hydrocarbon energy production and potential new sources such as fracking, they have also shown keen interest in supporting low carbon options such as tidal lagoon technology. The one clearly negative commitment from the new government is to completely remove the subsidy for onshore wind power, the most cost effective form of low carbon energy generation.

However, there are a number of mitigating factors that make this less likely to happen than may immediately be apparent. The Conservatives have a relatively slim majority, making it harder to pass legislation that does not have cross party support. This, combined with calls from the Scottish National Party for consultation before the removal of any subsidies, may well lead to the government watering down its proposals or at least providing a framework for funding at a regional level.

To learn more about renewable energy and energy efficiency through learning courses visit **www.EUenergycentre.org**

Talking point

Liz MacFarlane, Zenex Solar, looks back on a productive time spent at Intersolar Europe

I'm always gobsmacked by the sheer scale of Intersolar, and it was no different this year. One of my Segen colleagues recorded 13 miles in a day on her pedometer! And I wished I'd opted for trainers rather than heels.

As the world's solar decision makers, procurers and manufacturers descended on Munich, the UK took a leading role from the very start of the event. While many parts of Europe were reporting a stilted market, seminars examined how the UK is leading the way as the largest growth market.

There was much emphasis on developing the commercial and residential rooftop space, and there are more and more financial solutions in the offing to suit all type of commercial applications.

While I would say there was less innovation among the wider exhibitors, Segen Zenex's own manufacturing partners had many new products in the offing.

For example, Fronius and SolarEdge are two of our partners to be working with the Tesla Powerwall, a stylish home battery which they expect to be ready early next year, and already with a waiting list of people eager to get their hands on one.

LG Solar got ready to launch their new Cello design black module, with 12 thin wires replacing three busbars for enhanced power and reliability, and with 12 year product warranty as standard; and Solis were proudly showing their commercial range of inverters, each boasting quad MPPTs and the same wide-voltage flexibility as their domestic range.

I'll always remember how I used to be amazed by the amount of solar on view below me as I flew in to Germany. This year, the view seemed as full of solar as I flew back in to the UK. Satisfying to say the least.

Summertime and the living is busy

Bruce Allen, HETAS, sheds light on how installers can promote their business and services in a quiet summer period

Traditionally, summertime is a less busy time for heating installers. Whilst cash flow and maintaining income are critically important, the quieter summer months can serve to be a great opportunity to think about all those things that you put off when struggling with the busy winter workload.

In terms of general housekeeping and keeping up with legal requirements, take the chance to look at the things we all tell ourselves we will get to later. Tidy the stores and do a stock check – you may find out that you have more of some things than you thought and less of others. Catch up with the latest products and technological advances. Is there anything that can save you money, make work easier or expand the range of services you currently offer?

Additional training at a quiet time can set you up for a great future business opportunity

For those of you installing combustion appliances, is your training/assessment up to date? Should you take other new assessments to increase the earning potential of your business; for instance a qualified gas or oil installer can take a week long course to find out the differences between the heating systems they are used to and biomass. The RHI scheme is driving the domestic biomass sector hard and there is much growth in the manufacture of biomass appliances and installation in customers' homes. Contrary to popular belief, biomass is not only for schools, hospitals and stately homes. RHI statistics show that 22 percent of biomass applications are for semi-detached houses and 18 percent for bungalows. Additional training at a quiet time can set you up for a great future business opportunity.

Don't forget that we are all bound by health and safety legislation. Is your office safe? Is your van MOT'd and have you cleaned it out lately? Have you calibrated your instruments or bought the new screwdriver that you keep promising yourself?

What about standard forms? These make life so much easier. Taking the time to create safety check forms, servicing forms and warning notices will save time in the long run. Look at your advertising. It is a very competitive world out there. Some registration schemes will give you free promotional leaflets or guidance leaflets for your customers. It only takes a phone call to find out more.

With so many consumer shows revealing the bad traders, it is essential to present your company as a good trader. Have you got your registration scheme sticker on your van? Do you use their logo on your paperwork? Are you using standard well written contracts? Are you giving yourself time to be the great customer service driven business that you want to be?

The quieter times are sometimes worrying, but spending time doing positive things that make your business stand out against others can never be time wasted.

Having given some attention to your business and how you run it, there is no better way to serve your existing customers than with a courtesy call checking if they need a service on their appliance; is there any maintenance that needs doing? It's surprising how well people take to these extra initiatives. Everyone likes to a see a business trying hard and providing a great service. Spending the summer servicing and maintaining is a pretty good way to make a living and the spin off jobs are always worth having.

Maybe that quiet time won't be quite so quiet after all.

For more information on the RHI and HETAS technical services, visit **www.hetas.co.uk**

Spending time doing positive things that make your business stand out against others can never be time wasted

CURRENT AFFAIRS

Bill Wright, head of energy solutions at the ECA, reflects on a positive month for the renewable industry – which is set to benefit hugely from cheaper energy storage

My letter to the new energy secretary obviously fell on deaf ears last month as there is now great uncertainty over onshore wind power, proven to be one of the most cost effective forms of renewable energy. Is this going to be the shape of the coming years with uncertainty the norm?

Anyway the good news is that energy storage is now firmly on the agenda with the announcement by Tesla of their battery packs for PV systems. The Powerwall for domestic premises is competitively priced and my initial calculations, based on a domestic price of 15p per unit, was that the pay back was well within 10 years, in the same timescale as domestic PV systems. Tesla has announced that due to criticism of the low capacity and output power of the unit that they will double these at no extra cost. Deliveries start this year but they have orders which will be delivered in 2016. It has not been announced when the system will become fully available in the UK but it could prove very popular. Mercedes Benz have now also got in on the act by announcing that they too will be marketing storage batteries based on the EV battery technology. It looks like the electric vehicle is proving to be the springboard for energy storage.

The marketing will have to very careful not to give the impression that by fitting these batteries that the owner will be immune from power outages from the local electricity network. The inverter has to be of a suitable type and there has to be isolation complying with the Distributor requirements.

PV on tin sheds

With recent government policy shifts towards putting PV on large roofs, it is vital that installers are familiar with the mechanical issues that can arise on typical large commercial roofs, explains **Steve Pester**, BRE

The design loads of 'tin shed' buildings (e.g. steel-clad warehouses) often leave very little margin for extra roof loads to be imposed. The BRE National Solar Centre has seen a number of situations recently in which not all of the relevant factors had been taken into account, leaving roofs vulnerable to damage, or failure.

In general, the services of a structural engineer will be needed to assess the strength of non-domestic roofs, but not all structural engineers are comfortable with calculating anything more than the static loads imposed by solar panels, so it is extremely important that installers understand which other factors must be taken into account.

By way of reminder, there are both static loads (PV system weight and snow loads) and dynamic loads (wind) that must be accounted for.

Most structural engineers will be able to calculate the static loads, but care should be taken to make sure they have included components such as cabling, as well as panels and mountings.

The wind loads are a little more involved – the BRE document DG489 gives some good guidance. However, the installer should make sure that both uplift and downward wind loads have been considered because the combination of the static and wind loads can sometimes exceed the design load of the roof.

After all loads have been taken into account, a safety factor of 1.35 is usually applied to allow for uncertainties and exceptional events, such as storms and maintenance operations.

Once the total loads are known, the number and distribution of array fixings can be calculated from the published strength of each fixing and structural engineer's advice on the strongest fixing points.

Book your table at the Heating and Renewables Awards!

Join us on 10th September at the Ricoh Arena

The eagerly anticipated Heating and Renewables Awards will be a night to remember; providing unrivalled networking opportunities, entertainment and the chance to see hard-work and expertise being recognised. Comedian, television presenter and actor, **Jason Manford**, will be hosting this black-tie ceremony which celebrates the successes of your industry. Reservations are now being taken for tables, don't miss out!

Book now by contacting:
team@heatingandrenewablesroadshow.co.uk
Tel. 01565 653283

Heating & Renewables
AWARDS 2015
Rewarding best practice. Celebrating success.

Stand and deliver

The clock has started counting down until the first Heating & Renewables Roadshow at Coventry's Ricoh Arena on Thursday 10 September. Traveling to five strategically located venues across the UK, the renewable industry's only regional exhibition series will be rolling into a town near you in only a few week's time.

Exhibitors

Stand space is 100 percent sold putting installers in touch with many of the sector's leading merchants, suppliers and manufacturers. The Roadshow offers a full spectrum of renewable and low carbon technologies including practical demos bringing products and solutions to life.

Big name brands on board include: Viessmann, Glow-worm, Sharp, Baxi, Daikin, NAPIT, Worcester, Bosch and many more.

But that's not the only reason why you should complete your free registration now (**heatingandrenewablesroadshow.co.uk**).

"This is an excellent opportunity to interact locally with our installers around the country while making new contacts"
John Kelly, marketing manager, Airflow

Knowledge theatres

A comprehensive and stimulating seminar series has now been confirmed, brought to you in association with the Roadshow's four key Knowledge Partners REHAU, Stroma Certification, Edmundson Electrical and Sustainable Building Solutions.

With added theatres, maximum industry participation and more speakers presenting their considerable expertise, never has there been more compelling educational content and hands on demonstrations for Roadshow visitors.

From understanding what the General Election result might mean for you, to advice on heat metering and certification, there is something for everybody wanting to understand the big issues and the latest technology.

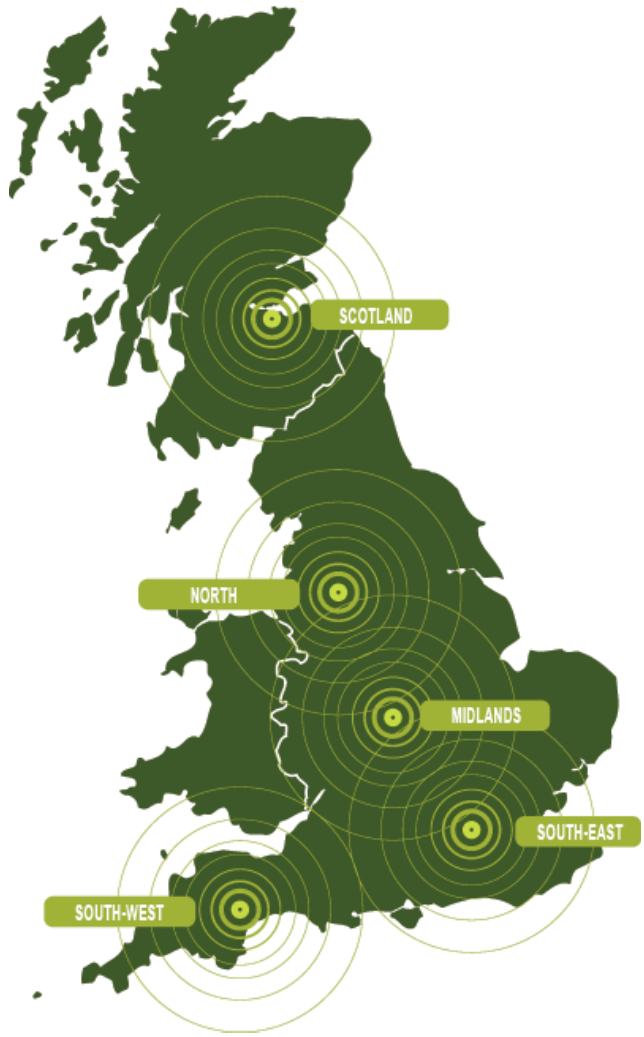
Supporting Organisations

The Heating & Renewables Roadshow has the support of an impressive range of trade associations and industry bodies including HETAS, MCS, SEA and BPVA - many of which are providing valuable input into the seminar programme.

Awarding excellence

A big part of the Roadshow is the Heating & Renewables Awards. Now closed for entries, tables can be booked for this unmissable night of entertainment (Ricoh Arena, 10 Sept) by contacting Adam Hart – **adam@andpublishing.co.uk**

"With the addition of heating, this now brings a wider section of the installer community under one roof. We are delighted to be able to support the Roadshow once again"
Chris Valance, sales & marketing director, Salamander Pumps



So register for free today at a venue near you:
www.heatingandrenewablesroadshow.co.uk

For more reasons why you should register, and a first look what some exhibitors will be presenting in September, check out the blog at: **http://heatingandrenewablesroadshow.co.uk/blog/**

Theatre content: A first look

Knowledge Partners Theatres					Product showcase	
10.15	Compliance from paperwork to practical – Holistic design services for new build projects		Common myths of underfloor heating		10.30	NICEIC - The Power behind your business – Benefits of registration
10.45		Enphase – Microinverters Vs String inverters		B&ES – Understanding heat metering	10.50	
11.15	HHIC – ErP & Benchmark		Pre-insulated pipe – The installer's choice		11.10	Viessmann - ErP labelling: Your obligations; Our tools
11.45		ECA – Smart Energy: Integrating renewables into the grid		3D house design: Best practice	11.30	
12.15	Compliance from paperwork to practical – Digital efficiency and business support		GSHPA – Sustainable heat beneath your feet		11.50	Gas safe - The work of Gas Safe Register and you - Technical and operational seminar
12.45		Sharp – Battery storage		Becoming MCS registered. From interest to accreditation	12.10	Gas safe -The work of Gas Safe Register and you - Technical and operational seminar
13.15	SEA – TBC		Ground source pipework – is it all the same?		12.30	Kensa - Get connected with ground source: Dig deeper into your potential
13.45		TBC		Building regulations made easy. Specifying new build	12.50	
14.15	Marketing masterclass		HETAS – TBC		13.10	Windhager – The benefits of biomass
14.45		Solaredge – Optimising PV systems		MCS – Overview/update	13.30	
15.15	Compliance from paperwork to practical – Meeting QMS head on		Refreshments		13.50	Airflow - Installer benefits of Ventilation with Heat Recovery and 'zero leakage' air ducting
					14.10	
					14.30	Viessmann - Explaining fuel cell mCHP and gas adsorption heat pumps

Subject to change

REI catches up with three Roadshow speakers to find out what lies in store for show visitors

Michael Harvey, training & technical support manager, HETAS

The Heating & Renewables Roadshow will provide installers with a great opportunity to meet the HETAS team and discuss everything biomass and solid fuel, from training and registration through to technical enquiries. I will also be speaking in the REHAU theatre about how to get involved in installing biomass and solid fuel, and answering technical questions on a range of industry topics.

Steve Richmond, business team manager, REHAU Renewable Energy

As a Knowledge Partner, our priority will be to ensure the seminars make a day spent at the Roadshow really worthwhile. As well as hosting the GSHPA and HETAS presentations on our stand, we'll be delivering our own useful seminars dispelling some of the common myths which still surround the installation of underfloor heating systems, and giving practical demonstrations of things like jointing.

John Prydderch, marketing communications manager, Stroma

Stroma Certification is looking forward to presenting our seminars at the Heating & Renewable Roadshows as a Knowledge Partner. Delegates can hear our experts from Stroma, and our partners at Greenworks, explain the certification process from paperwork to practical while dismissing some of the common financial and operational misconceptions. The seminars will involve a varied range of content– they're not to be missed!

Heating & Renewables Roadshow 2015

IT'S BACK THIS SEPTEMBER

- Coventry - 10th Sep (Ricoh)
- Exeter - 15th Sep (Westpoint)
- Farnborough - 17th Sep (FIVE)
- Edinburgh - 22nd Sep (RHC)
- Manchester - 24th Sep (Event City)

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B&ES Building & Engineering Services Association

BPVA

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HETAS

ECA

G8HP association

Sustainable Energy Association

Gas Safe Register

OFTEC

MCS

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Ian Draisey,
Managing Director BayWa r.e. Solar Systems Ltd

Parc y Scarlets Rugby Stadium, Llanelli

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Corridors of power

Energy storage was the main discussion point at Intersolar Europe last month, with an entire hall at the exhibition given over to displaying advances in battery systems and other innovations, reports REI editor Paul Stephen

Taking place from June 10-12 at Messe Munich, participants felt the event was slightly smaller than previous years but visitor numbers remained impressive and back up the claim of the organisers that the event is becoming increasingly international.

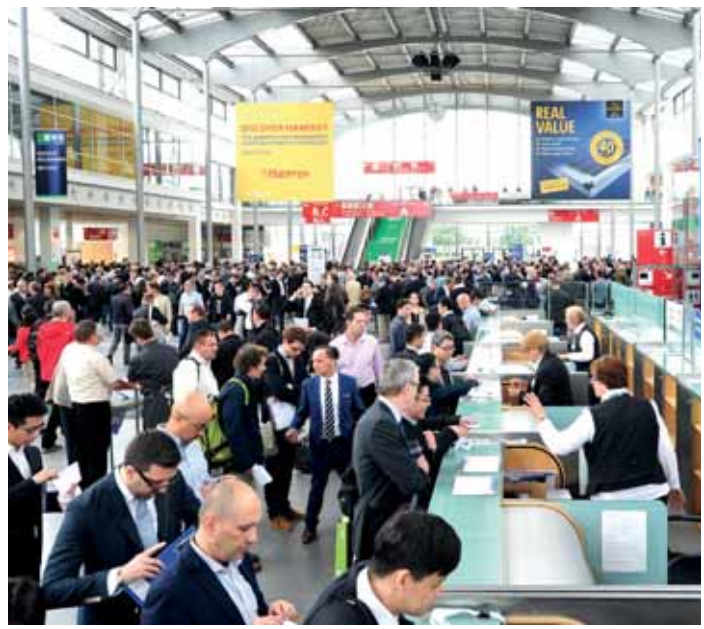
Occupying seven halls, the contraction in exhibition space seemed to be largely appreciated by visitors who had struggled to absorb the prodigious amount of technology available in previous years.

This year's show still boasted more than 1,000 exhibitors from 42 countries and attracted more than 38,000 visitors. The majority of exhibitors came from Germany, China, Austria, France and Italy whilst around 50 percent of visitors travelled from outside Germany.

A lot of those visitors made their way to ees Europe in Hall B1, which was the energy storage exhibition running concurrently with Intersolar.

Energy efficient and battery storage systems have come on leaps and bounds as increased onus is placed on self consumption amid falling tariffs and technological advances across the continent. The total number of exhibitors in this area rose from 250 in 2014 to 330 this year. Price reductions are helping to move the market forward with domestic storage systems with capacities of up to 10kWh estimated to be 26 percent less expensive than they were 12 months ago.

Tesla has attracted a lot of headlines in the last few weeks for its push into the battery storage area and a lot of attendees wanted to get their photos taken next to the company's aesthetically striking Powerwall. Although specifics about the product are still in short supply, the company deserves credit for bringing the issue of storage to the forefront and creating a powerful narrative for the renewables industry. With the significant number of manufacturers exhibiting prototype storage systems, competition looks set to be stiff in this area.



Flag flying: 38,000 visitors descended on the Munich Messe between June 10-12, with 50 percent from outside Germany

Climbing high: Intersolar Europe recorded a 33 percent rise in energy storage exhibitors from 2014, driven by falling costs and the growing importance of self consumption

The message from several sessions in the adjoining seminar theatres was that if storage can be made to work effectively at an affordable price, then it could provide a huge boost to the industry – especially in areas that had previously flatlined such as the domestic German market. But away from all the hype, the business models that will make storage work still need to be refined, especially in the UK where wholesale electricity prices remain lower than in many other European nations.

Over a dozen electric cars were also on display, alongside EV charging stations.

Other innovations focused on how power supplies are becoming intelligent. Modern energy management systems are being developed to connect small and large generators to create virtual power plants, which combine the outputs of individual installations and sell the collective yields. Battery and energy storage devices are also becoming connected in this way to optimise their potential as so-called 'swarm storage systems'.

There was the usual smattering of new panels of increased efficiency, inverters of greater capacity and even a PVT panel launch.

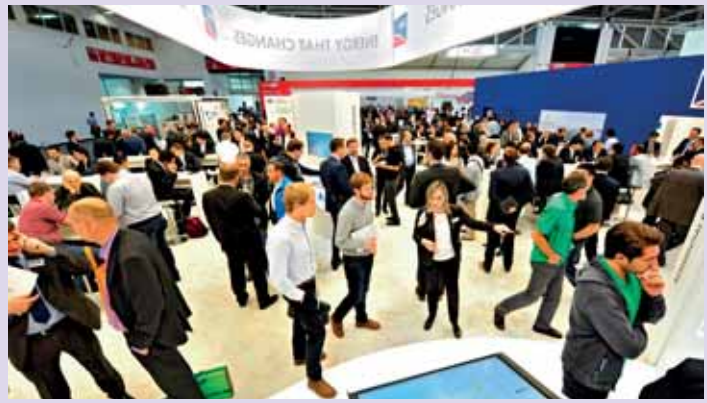
Room with a view

A round up from the exhibition floor

Dominique Le Baron, marketing and project manager, SAFT

This is the most important tradeshow for us as it is a huge platform for solar and attracts a large international audience. Also, no other show has had so much emphasis on energy storage, which is what we supply. The feedback from visitors has been very positive, and we see an ever-growing interest in storage and our products. The storage hall here has been very busy. Two years ago visitors were focused on self-consumption, today they are looking at what storage can do. We will be here next year for certain.

Jan Van Laethem, regional manager Western Europe, SMA



We have a complete portfolio of new announcements to make at Intersolar, and I see a lot of genuine interest in our solutions. Intersolar remains the place to be if you are a manufacturer. This is where you see the new trends, which this year is battery storage. Having more storage is good news for us, as it confirms that this technology is the way of the future.

Hadas Rozen, marketing director, SolarEdge

We've had a fantastic year both product and business-wise so we have a larger stand than last year. We are also different as we are now definitely a commercial player, in addition to residential. Intersolar is better this year due to the growth in traffic, and there is a more informed audience – we are educating installers less as the market matures. SolarEdge strongly believes in serving local markets and attending national shows, but Intersolar must be attended as the only truly international show in the solar market.

Martin Hackl, head of the Solar Energy Division of Fronius International

We'll be going home satisfied and proud of what we've achieved. Our stand was busy from beginning to end and the level of interest shown in our new products and solutions has never been so great. Fronius is moving closer to achieving 24 hours of sun, our vision of a reliable energy supply for the future using 100 percent renewable energy. To make this a reality, we need technologies and solutions that generate, store, distribute and consume energy in an intelligent and cost-efficient manner. Our customers and partners also know that we're on the right track, so they support and trust us. Something that has once again been obvious at this successful trade fair.

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A year in the making

REI catches up with Edmundson Electrical's business development manager **Andrew Fawcett**, almost 12 months since the launch of its PV and renewables identity Greentech

REI: Greentech's aim a year ago was to become the leading PV distributor in the UK. How successful have you been?

AF: The last 12 months have flown past. Since the official launch in September 2014, we have experienced substantial growth. Greentech locations stock, or have readily available all the major PV brands and many others as well. Across all 24 locations, Greentech probably has the most comprehensive UK PV stocks. We are more concerned with providing good service, reliability and support, which will help us develop and grow going forwards.

How important has providing a local supply been as a differentiating factor against other suppliers in the market?

Installers seem to be keen on the local supply element of the Greentech offer. Having local specialists and local stocks has given installers confidence to know that the service levels will be good. Full PV systems, extra products, replacement products and so on can be easily collected any time or delivered same day if necessary – at no additional charge. Being local provides a level of flexibility that cannot be achieved from a central warehouse.

How else do you provide added value to PV installers?

Local free design, free delivery and site visits are additional services we offer, but in addition to PV products, each Greentech is also a normal electrical wholesaler. Installers can offer to their customers other energy saving products such as LED lamps and new heating controllers, and then easily obtain these with their PV system.

Is Greentech still exclusively a PV distributor or does it now offer other renewable technologies?

Greentech offers a full PV range from stock at all 24 locations. As well as this, the Greentech locations in Scotland now also stock biomass and heat pumps. Over the next 12 months, most of the other Greentech locations will follow this. We also see energy storage as being a significant technology, and all Greentech locations currently stock battery-based energy storage units. Whilst already selling in small quantities, we believe that this sector will grow in the future.

What are Greentech's aims and priorities for the next 12 months?

Over the next 12 months, Greentech will be contacting and visiting as many installers as possible to present Greentech to them. Greentech would like for itself to be known throughout the installer base, and would like the opportunity to demonstrate its service levels to as many installers as possible. The priority is to ensure that Greentech continues to develop and adapt to installer's needs so that it truly earns the position of the UK's leading PV and renewable products distributor.

Future proofed: In addition to leading PV module brands, all Greentech locations now stock battery-based energy storage units – a technology tipped by the company for a significant growth in demand

Standing out from the crowd

Simon Ayers, chief executive of TrustMark, encourages installers to join the government-endorsed consumer protection scheme and quality mark

It can often feel as if you're on your own struggling to develop your business, with too many people competing on price for the same piece of work. So how do you stand out from the crowd to win more customers in this difficult environment? And where do customers go for support and advice, given the plethora of online directories and findanyoldbuilder.com websites these days?

With the full support from government and industry for the last nine years, TrustMark is a scheme which has helped millions of homeowners across the UK to find reliable and reputable local tradespeople to work in and around the home. It has now become a dependable source for consumers, providing them with choice, confidence and protection when looking to have work carried out inside and outside of their homes.

But what's in it for heating installers and renewable firms?

In short, TrustMark is the only scheme which provides official recognition to tradespeople working to government-endorsed standards for all trades in and around the home. TrustMark checks all three cornerstones of quality – trading practices, customer care and technical competence – and is the only 'find a trader' scheme that requires qualified inspectors to do onsite visits, as well as background checks on its trading records and financial status. All TrustMark-registered firms undergo more rigorous, independent expert checks than any other kitemark scheme.

A not-for-profit organisation and a registered Social Enterprise, Trustmark is being promoted much more vigorously to the private homeowner market. Last year the TrustMark website gave out more than 7.2 million referrals to the public in search for a good tradesperson, of which 763,128 were for heating engineers, plumbers and solar panel installers – a 68 percent surge in demand from homeowners from the previous year looking for reliable and reputable installer firms and tradespeople to work on their properties.

The public is increasingly using our database of over 12,800 firms, including heating engineers, plumbers and renewable installers, as their main source of information in finding fully inspected and insured local tradespeople from 38 different trades.

The vast majority of TrustMark-registered firms are SMEs and micro businesses, and as well as the marketing boost and competitive advantage that comes from the scheme they also value the fact that they are not being fleeced to support an advertising directory or a website that just sells leads to the highest bidder.

There is also very strong support from industry bodies such as the Building & Engineering Services Association (B&ES) which has been with TrustMark since it was founded.

Important new consumer protection

With important new consumer protection legislation coming in from this autumn, we will be working closely with consumer organisations, including trading standards experts, to help raise awareness of what heating and renewables firms should be doing to ensure compliance with the new laws and to boost customer satisfaction.

In particular, we will be bringing the TrustMark scheme to the Heating and Renewables Roadshow in September as a way of encouraging more good firms to get recognition for their technical skills, good trading practices and customer service ethos. We will also be there to support all visitors who need to understand the new consumer rights and business responsibilities being brought in this year.

Please come and see us at the Heating and Renewables Show on Stand 65 and see how TrustMark can help your firm.

For further information and to stay up to date with developments at TrustMark, visit **www.trustmark.org.uk**

Rogue traders: TrustMark exists to prevent consumers falling foul of unscrupulous and incompetent tradespeople, explains chief executive Simon Ayers

Last year the TrustMark website gave out more than 7.2 million referrals to the public for heating engineers, plumbers and solar panel installers

Wood Vs pellet: Why opt for a biomass stove?

Phil Lowe, head of sales and marketing at Specflue, discusses how opting to install a pellet stove rather than a wood burner can provide the same cosy atmosphere, without a lot of the hassle and the mess

Most customers turn to wood burners because they want to recreate the flame and cosy atmosphere that memories of an open fire bring to mind. However, the wood burner has many of the same disadvantages as having an open fire; something the nostalgic memories seem to have conveniently forgotten!

The wood burner needs to be tended to keep it alight and there is no control on the temperature and when the heat is released. It is also messy and doesn't fit into the clean lines of today's contemporary living.

The alternative is to look at pellet stoves, as the technology around these appliances has moved on dramatically in recent years and they can deliver the following benefits:

Storage

Storing wood can be a real issue, especially if you don't have a lot of space in the garden. Storing pellets however, is much neater and easier in comparison. The pellets come in bags and can be stored in a shed or garage quite conveniently. Also, many pellet stoves have a hopper, which feeds the pellets into the stove so it needs filling less frequently.

Controllability

Unlike wood burners, most pellet stoves on the market today have an automatic ignition to light the pellets electronically and can be programmed to come on and off automatically using a timer. The programs are easy to set and the remote control is as easy as using an electronic thermostat on a central heating system. Also technology now allows you to control your pellet stove from your hand-held smart devices. But, one of the most notable differences to householders that have owned wood burners is that with a pellet stove, they can wake up in the morning and not have to put a log in the stove to get warm.

The technology around pellet stoves has moved on dramatically in recent years

Ambience

Historically, the main drawbacks to pellet stoves have been the flame (which is very different from the real flame of a wood burner) and the noise from the stove when the ventilation is on. But, there are appliances on the market that have overcome these problems. For instance, MCZ uses its 'still' technology on some of its models such as the 'Tray'; breaking down vibration to eliminate noise and using braziers that are longer and more narrow, to give the impact of real flame.

Modern world: Pellet stoves are more conducive to cleaner and flexible contemporary living than wood burning counterparts, argues Phil Lowe of Specflue

Cleaning and maintenance

The pellet stove requires less than 20 minutes every three days to clean the glass and sweep up any mess. Also, maintenance is quick and easy, but what you need to do and how often you need to do it will vary depending on the model and the quality of pellets you burn.

With the added benefits of low power consumption and high efficiency, as well as their compatibility with the RHI, the advantages of choosing a pellet stove are now beginning to outweigh the disadvantages, so the decision has never been easier to go the pellet route!

Finance options to help businesses meet growing green goals

With the impending ESOS deadline in December, **Ryan Davis**, managing director of GHE Solar, examines the finance options available to businesses considering purchasing renewable technologies

The Energy Savings Opportunity Scheme (ESOS) was introduced in 2014 with the aim to cut carbon emissions by requiring large businesses to identify energy reduction measures.

The scheme requires that all qualifying businesses undertake comprehensive assessments of energy use at least once every four years, and has set a deadline for the first compliance period for 5 December 2015.

Many businesses will therefore be hoping to identify affordable ways to benefit from microgeneration technologies, which can prove to be an excellent investment opportunity.

Commercial hire purchase

The perceived high cost of renewable energy and microgen technologies can be off putting for many businesses, as they feel the initial costs outweigh the benefits. Without any prior knowledge or experience regarding the renewable energy sector, handing over large amounts of cash for relatively unknown technology may seem all too risky.

Hire purchase schemes offer a more cost effective alternative to purchasing technology outright with cash. With hire purchase, a business can fix the cost of acquiring an asset, spreading the payments of cash over time; it's an on-balance sheet solution for funding microgen projects for the benefit of a business.

With many companies struggling financially, this option allows businesses looking to benefit from the ESOS scheme to invest intelligently in microgen technologies before the December compliance deadline. Hire purchase mitigates risks, allowing a business to reap the rewards of renewable energy without the initial high costs.

Operating lease

Businesses may believe that owning microgen technologies outright poses various risks. The initial costs of the technology, alongside the cost of maintenance, begin to seem more hassle than it's worth. Leasing is an option that keeps both costs and risks to an absolute minimum.

An operating lease is a contract that allows a business the use of an asset, without owning the asset outright. An operating lease makes sense financially, as it is not capitalized. The microgen technologies are accounted for as a rental expense in what is known as off-balance sheet financing.

For the lessor, the technology being leased is accounted for as an asset, and is depreciated as such. Operating leases have tax incentives and do not result in assets or liabilities being recorded on the lessee's balance sheet, in turn, improving the lessee's financial ratios.

Leasing therefore offers a relatively risk-free, affordable alternative due to the absence of large upfront costs. Funding in this way ensures that companies can still experience marked savings on their energy bills, as they continue to become more sustainable. There is a further opportunity to improve the reputation of a company as an environmentally friendly and sustainable business.

Renewable Heat Incentive

By increasing the generation of heat from renewable energy sources, as an alternative to fossil fuels, the RHI helps the UK to reduce greenhouse gas emissions, whilst meeting the targets for reducing the effects of climate change.

The non-domestic scheme is open to the majority of UK businesses with eligible installations and to producers of biomethane. A non-domestic installation, in this context, is a renewable heat unit that supplies large-scale industrial heating to small community heating projects. Since the scheme was opened in 2012, 1GW of installed capacity has now been accredited with figures set to increase even further.

Funding options under the RHI

In conjunction with this government initiative, companies such as GHE Solar are offering financing solutions for both consumers and businesses looking to take advantage of the RHI. GHE Solar offer the following financing options approved by the Green Deal:

1) 100 percent stock funded for installations with a value of £1 million and above for multiple same owner sites.

This is helpful for businesses that may be struggling financially, yet still want to benefit from financial incentive schemes such as the RHI. There is no cost to your business, as the microgen technology is owned entirely by a third-party. Businesses also have the opportunity to benefit directly from the technology, reducing energy bills dramatically. Using carbon neutral fuel also poses as an excellent PR opportunity, improving your reputation as an environmentally friendly and sustainable business.

2) 100 percent secured finance for installations with a value of £25,000 and under for domestic B2C customers.

For domestic customers looking to install a cost effective renewable energy solution, this scheme limits the amount of cash needed, as there are no initial upfront costs. This scheme allows the customer to benefit financially, receiving RHI payments directly. Furthermore, the energy user will markedly reduce their energy bills with savings across

Numbers game: Leasing microgeneration technologies can have balance sheet and tax advantages, as well as avoiding high upfront capital costs

gas, oil and electricity of 60 percent or more.

3) Paid for/partial finance for any value installation

This option can be used by both domestic and non-domestic customers, as there is no limit to the value of the installation. Customers pay a one-time figure and then continue to benefit from the regular RHI financial incentive payments. There are further energy savings across gas, oil, and electric and a 100 percent first year tax allowance.

4) 100 percent secured finance for installations with a value of £25,000 and under for commercial B2B use

This option is again helpful for businesses that may be sticking to a tight budget, as there is no upfront cost. A business is able to benefit financially from installing the microgen technology, receiving regular RHI payments for the energy produced onsite. There are energy cost savings as a direct result of the microgen technologies – 60 percent or more could be saved on your electricity bill, for example.

An efficient and cost effective financing solution

A finance scheme has been negotiated between Omni Capital and GHE Solar, allowing domestic customers to purchase microgen technologies with little or zero financial outlay.

Domestic energy users who want to install a heat pump or biomass boiler can apply for a loan through an online system, which will accept or deny their application within six minutes. If the customer's application is accepted, an account is set up which will show a balance. RHI payments will be paid directly into this account on a quarterly basis, which are then used to pay off the loan.

GHE Solar will purchase the equipment from a reputable manufacturer and pay the installer within days for the installation work, meaning there is a quick turn around and no delays in getting the microgen technologies up and running. Customers can opt to put down a deposit, thereby reducing the time taken to pay off the loan.

The scheme therefore offers an efficient and stress-free alternative solution, whereby customers can benefit from RHI financial incentives, whilst receiving a quality and fair service. With the installation of renewable technology seeming like a stressful and long haul process, this scheme makes things a lot easier for domestic customers.

Summary

Both businesses and consumers should consider installing microgen technologies in order to combat rising energy prices and reduce their carbon footprint. With the variety of finance options available, these technologies have now become more affordable across the board.

Different way: There are many attractive alternatives to outright purchase for businesses conscious of cashflow, or nervous about renewable technology, says Ryan Davis, MD of GHE Solar

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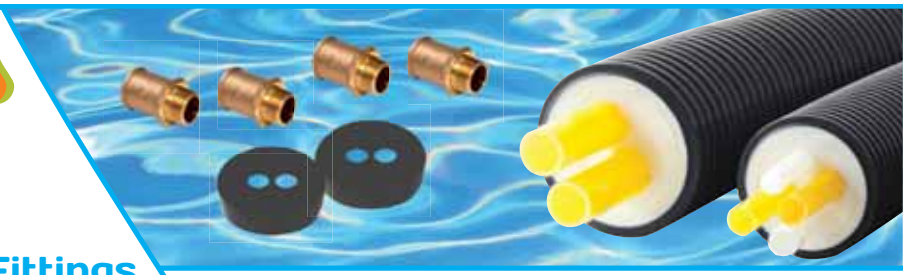

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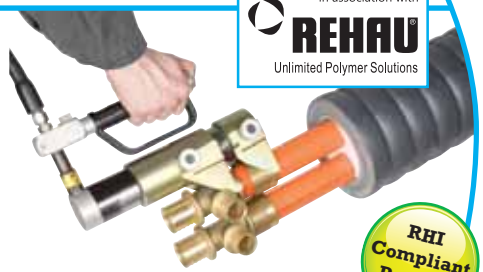

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Market fluidity

Dr Philip Gray, speciality fluids technical manager at Kilfrost, reviews the factors that installers should allow for when considering heat transfer fluids

Does it have advanced glycol inhibitors?
Glycol itself is not particularly corrosive, however when mixed with water to achieve frost protection, corrosion can become an issue. As a result, it is important to choose a heat transfer fluid that has advanced glycol inhibitors, which can limit corrosion within a system when mixed with water of a sufficient quality.

Corrosion, bacteria and scaling have the potential to impact the life span and reliability of systems considerably, leading to a greater need for maintenance and repairs. Downtime, outages and the failure of systems can be extremely damaging within a range of industries, especially the processing industries.

Is it ASTM tested?
An international standard known as the ASTM D 1384 corrosion test standard is playing an increasingly important role within the industry. All Kilfrost's fluids adhere to this standard, but it has not been embraced by everyone in the industry and currently remains voluntary. Greater adoption of the standard is needed, as without the presence of a mandatory test standard, it is difficult to gauge the extent of a fluid's protection.

The test works by assessing the impact of heat transfer fluids on typically used metals. This involves analysing metals used in heat transfer systems such as aluminium, iron, steel, brass, solder and copper after they have been immersed in an inhibited glycol/water mixture under aerated conditions at 88˚C. At the end of the two week test period, the extent of any corrosion is determined by the weight loss of each metal. This gives system installers greater confidence by demonstrating how the fluid minimises the onset of corrosion.

Is it environmentally friendly?
Many companies are looking to lead the way in their sector by managing their impact on the environment and choosing products that will reduce their carbon footprint.

Using a sustainable glycol in the manufacture of heat transfer fluids can reduce carbon footprints and greenhouse gas emissions. It is possible to develop heat transfer fluids using corn-derived inhibited glycol, which is sustainable and biodegradable with low toxicity levels. This sees a significant reduction in carbon footprint, consuming 40 per cent less energy, from cradle-to-gate during the production of the base fluid. Greenhouse gas emissions are also reduced by more than 40 per cent versus petroleum based propylene glycol fluids.

Best practice Installation
In addition to selecting a quality glycol-based heat transfer fluid, best practice with respect to installation is also critical to ensure an efficient system. Installing a well inhibited glycol-based heat transfer fluid into a contaminated system is self-defeating. Systems should be cleaned and sanitised prior to installation of the heat transfer fluid to remove existing scale, sludge and biological contamination. To maximise reliability and high system efficiency, on-site fluid testing is also strongly encouraged.

No matter how well a product is formulated, if it is poorly installed, at the incorrect dilution or into an already contaminated system, issues with fluid degradation and corrosion can arise. Early detection of such issues will prevent damage to the operating system. For this reason, Kilfrost offers a simple to use Thermal Fluid test kit, which when used as part of a regular maintenance schedule will help to ensure maximum system efficiency and longevity.

In conclusion, it is important to consider all of the above when deciding which heat transfer fluid to use within a system.

Pound saver: Despite a relatively low initial cost, a poor quality heat transfer fluid can end up becoming the most expensive part of a system, warns Kilfrost's Dr Philip Gray

Commercial

Maximising windpower, minimising water

Chris Graham, sales director at **Sykes Pumps**, discusses the challenges of managing water levels at a wind farm installation in Essex

It's in the nature of wind farm projects that they are in remote locations where capacity can be maximised due to increased wind velocity. Often however, the optimum conditions for power generation present challenging conditions for turbine installation and that was certainly the case when VolkerFitzpatrick erected 10 wind turbines for RWE npower at a wind farm in Bradwell-on-Sea, Essex.

Challenging site

Bradwell-on-Sea is located on a flood plain in an area of arable farm land at sea level. The site for the wind farm is just 300m from the sea wall in places and the construction team were aware before the project even began that flooding was a potential issue for both the site of each turbine and the 4.5km access road that was essential for bringing personnel, materials and equipment to the wind farm during construction.

The wind farm was designed as a 20.5MW project to meet the energy needs of 12,000 homes. To achieve this, VolkerFitzpatrick's remit was to erect 10 turbines with a 40m x 25m crane platform adjacent to each one to provide a permanent, stable surface that could be used during installation and for future maintenance.

The foundations for the turbines themselves were constructed using pre-cast concrete piles and a 330m3 reinforced concrete base at levels below mean sea level. The turbines were then installed in sections, with an 8m hub supporting three 40m long blades for each turbine.

Close proximity: The potential for flooding is significant as RWE npower's 20.5MW Essex windfarm, sited just 300m from the North Sea

Pumping strategy

Heavy rainfall prior to work commencing on site significantly increased the ground water, and VolkerFitzpatrick turned to Sykes Pumps as a pump hire specialist to advise on a pumping strategy involving supply and installation of pumps on site and provision of maintenance throughout the programme.

Following a site survey, the Sykes Pumps team initially investigated using submersible electric pumps but a lack of power supply and the possibility of losing an untethered pump in the boggy ground meant that this approach was not viable.

Instead, the Sykes Pumps team opted for a diesel pump strategy but this also involved significant challenges. The team had to specify pumps that were sufficiently powerful to enable VolkerFitzpatrick to dig the 2.5m foundations for each turbine and keep the haul road safe and operational. However, the pumps also had to be sufficiently light to cope with the ground conditions on both the road and each turbine site.

Flood mitigation: Sykes Pumps were tasked with protecting the Bradwell-on-Sea wind farm during its vulnerable construction phase, and thereafter

In response to these conditions, Sykes Pumps provided up to five 6" diesel pumps for the project at any given time and these were moved around the site throughout the 18-month programme to manage the water levels in the areas where work was taking place.

The pumps were used to extract water from the excavation sites for the turbine foundations, the crane platforms and the 1.5m deep cable trenches. The water was transferred via hoses through a series of sediment tanks to the drainage dykes to ensure that no sediment from the ground-works was pumped into the dykes. These dykes were then drained by the permanent Environment Agency pumps over the sea wall.

Hestercombe House chooses biomass solution

The newly restored 18th century Hestercombe House estate in Somerset features a biomass powered district heating scheme, installed using REHAU's RAUTHERMEX flexible polymer pipework

650m of heat main in REHAU RAUTHERMEX has been laid to connect the buildings on the estate with a new centralised plant room, which is located in the estate yard where it houses both a 200kW and 150kW biomass boiler.

The main includes a 350m run from the plant room to the main house and art gallery and a series of shorter runs connecting the visitor centre and the other estate buildings. The largest diameter RAUTHERMEX Duo 63mm pipework has been used throughout, laid at a depth of around one metre.

The installation was completed by Dunster Biomass, based in Taunton, which designed and specified the whole district heating scheme.

REHAU RAUTHERMEX was chosen for its thermal efficiency, delivered by its PE-Xa carrier pipe surrounded by closed cell polyurethane foam which has a lambda value of 0.0216W/mK.

Dunster's lead engineer on the project, Joe Waller, said: "RAUTHERMEX is a quality solution which meets all of our requirements in terms of performance and efficiency. It's easy to lay and the jointing rigs supplied by REHAU make it really fitter friendly."

Pipedream: Hestercombe House, Somerset, has ditched an ageing 60kW oil fired boiler for a biomass district heating system, utilising pipework from REHAU

The biomass installation forms part of a planned refurbishment of the house which has been the headquarters of Somerset County Fire Brigade for over sixty years and was eventually gifted by Somerset County Council to the Hestercombe Gardens Trust in November 2013.

Renowned for its Lutyens and Jekyll designed gardens, Hestercombe House officially opened to the public again in 2014 and now features a number of visitor attractions including an art gallery, a restaurant and a music school.

Travis Perkins goes regional with PV

Building merchant Travis Perkins has had solar panels installed by Solarlec to power its new regional distribution centre near Warrington, Cheshire

The Travis Perkins Group chose Solarlec, which has offices in Burnley, Carlisle and Exeter and operates nationwide, to complete the installation after the company fitted solar panels onto one of its Wickes stores in Sutton last year.

Solarlec designed and installed a 157.5kW PV system on the new purpose-built distribution centre, which serves all 16 of the Travis Perkins Group's companies and a total of 1900 UK sites, using Solfex Enhance solar panels.

The solar panels are predicted to save the Travis Perkins Group £9,862.30 on energy bills over the next 12 months alone, securing £11,823 in Feed-in Tariff subsidies over the course of their first year.

Cashing in: Travis Perkins' 157.5kW PV system at its Warrington regional distribution centre is expected to yield combined FiT income and bill savings of almost £1m over 25 years

Over the next 25 years, the system's combined benefit is predicted to be around £907,161.21.

Haydn Young, group energy manager for Travis Perkins, said: "It's my job to look at ways the group can reduce its energy consumption and carbon emissions. As a group we pay large carbon levies so the choice of solar will reduce our total energy costs and therefore reduce our carbon emissions."

The solar panel system at the centre is set to save 1.5 million kg of carbon dioxide over the next 25 years.

Solarlec's national sales manager, Darryl Redhead, added: "Commercial companies like the Travis Perkins Group choose solar because it's an easy install with no moving parts and it's virtually maintenance-free.

"Of course, you've got the added bonus that your roof is going to produce an income and ultimately substantially reduce energy bills."

Figure it out

Generation tariffs for non PV technologies

Technology	Band (kW)	Tariffs (p/kWh)
Hydro	≤15	17.17
	>15-≤100	16.03
	>100-≤500	12.67
	>500-≤2000	9.90
	>2000-≤5000	2.70
Wind	≤1.5	14.45
	>1.5-≤15	14.45
	>15-≤100	14.45
	>100-≤500	12.05
	>500-≤1500	6.54
	>1500-≤5000	2.77

(Source: OFGEM)

Number of MCS registered installers per technology

Technology type	Cumulative number	Registered Apr 15
Solar PV	2535	39
Biomass	409	13
Air source heat pump	844	19
Ground source heat pump	681	12
Solar thermal	912	12
Small Wind	86	0
Total	2893	106

Number of MCS registered installations per technology

Technology type	Cumulative number	Installed Apr 15
Solar PV	693231	11218
Biomass	12739	119
Air source heat pump	36930	666
Ground source heat pump	10137	217
Solar thermal	7679	87
Small Wind	4880	0
Total	765596	12307

(Figures supplied by Gemserv)

Generation tariffs for Solar PV

Tariff band	FiT rate (p/kWh)
<4kW	12.92
>4-10kW	11.71
>10-50kW	11.71
>50-150kW	9.63
>150-250kW	9.21
>250kW-500kW	5.94
Standalone	4.44
Export Tariff	4.85

Domestic RHI tariffs

Technology	RHI rate (p/kWh)
ASHP	7.42
Biomass boilers	7.14
GSHP	19.1
Solar thermal	19.51

Tariffs apply to applications submitted after 01/07/15

Green Deal

Month	Assessments	Live GD Plans
May 15	13938	1070
Total	559742	8887

Green Deal supply chain

Month	Assessor organisations	Providers	Installers
May 15	0	-05	-52
Total	390	181	2168

(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	0.39 per litre	2530 litres	£987
Wood pellets	4800 per tonne	94	24300	257 per tonne	5 tonnes	£1,285
Natural gas	1 per kWh	90	25300	0.041 per kWh	25300 kWh	£1,037
LPG	6.6 per litre	90	25300	0.38 per litre	3833 litres	£1,457
Electricity	1 per kWh	100	23000	0.14 per kWh	23000 kWh	£3,220
*Air source heat pump	1 per kWh	290	7931	0.14 per kWh	7931kWh	£1,110
*Ground source heat pump	1 per kWh	360	6389	0.14 per kWh	6389kWh	£894
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.39 per litre	759 litres	£296
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.14 per kWh	5552 kWh	£777
Dual mode system 2						
Gas boiler (30% of heat load)	1 per kWh	90	7590	0.041 per kWh	7590 kWh	£311
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.14 per kWh	5552 kWh	£777

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 and other sources.

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: 4.40 Tier 2: 1.17	20
Medium biomass	Solid biomass: Municipal solid waste (inc CHP)	200 kWth and above, less than 100 kWth	Tier 1: 5.18 Tier 2: 2.24	20
Large biomass	Solid biomass: Municipal solid waste (inc CHP)	1000 kWth and above	2.03	20
Small ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	Less than 100 kWth	Tier 1: 8.84 Tier 2: 2.64	20
Large ground source	Ground source heat pumps, water-source heat pumps, deep geothermal	100 kWth and above	Tier 1: 8.84 Tier 2: 2.64	20
Solar thermal	Solar thermal	Less than 200 kWth	10.16	20
A2W heat pumps	ASHPs	All	2.54	20

(Source: OFGEM)

Domestic RHI deployment

Technology	Accreditations (since Apr 14 - May 15)	% of total
ASHP	15021	43
GSHP	4684	14
Biomass	8547	25
Solar thermal	6372	18
TOTAL	34,624	100

(Source: DECC)

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What's next for solar financing?

REI picks out five key trends in solar financing to emerge from the Solar Finance & Asset Management conference, held in London on 03 June

The first trend to emerge from the event, organised by Solar UK and held at the Kensington Close Hotel, was the move away from ROCs to CfDs for installations above 5MW.

CfDs take out price variability and reduce risk from a financier's perspective, but there is still a lot to learn about their usage, amid few PV projects being given the green light in the first round of auctions.

The second trend is the advance of YieldCos – a publicly traded company that is formed to own operating assets that produce a predictable cash flow, commonly used to protect investors against regulatory changes.

"I'm struck by how prevalent YieldCos are in the solar financing landscape," said speaker Louise Shaw, assistant director, energy corporate finance at Ernst & Young.

The third trend is the historically low cost of bank debt and the fourth is the role of direct institutional investors, who are starting to invest more in infrastructure. Contrary to what is usually thought, Shaw cited a Moody's study showing that infrastructure bonds have a lower level of default than corporate bonds.

Big deal: YieldCos have made large inroads into the world of PV project financing, says Louise Shaw of Ernst & Young

Finally, the advancement of asset management is: "One of the most interesting trends we will see in the next five years". Over the next 20-30 years asset management companies will look at how to drive value in these assets.

Shaw finished on an optimistic note by saying that, although it has become more difficult to build solar projects than it has been in the last 20 years: "We are creating a fantastic asset class for long term investment".

Renewable Energy Installer is planning to produce a Finance Focus in its November edition.

Please contact Jonathan Hibbert for details: **jonathan@andpublishing.co.uk.**

Knowledge: Case studies

SOLAR THERMAL

What: Climalife SolRnett brings solar thermal system back to life

How: Effective removal of degraded glycol

Result: Prolonged lifespan of solar thermal equipment saving money

Griffiths Air Conditioning, which also specialises in renewable technologies, was appointed by Sir Robert McAlpine to look at a solar thermal system on a private house that had been experiencing some problems.

The engineer found degradation to the MPG based fluid in the form of a sticky tar like residue. This can occur when solar systems filled with traditional MPG suffer accelerated ageing due to stagnation and inactivity. Once the fluid goes above 150°C, degradation can become irreversible.

In this system Griffiths found that the purge pump used on installing this equipment had been insufficient and the fluid had stagnated due to air pockets, causing the pump to be ineffective.

Life of grime: Griffiths Air Conditioning turned to SolRnett to comprehensively clean a solar thermal system suffering from degradation

Until recently, a common solution to systems with this type of problem had been to completely replace the panels and other system parts – a costly exercise. This system was cleaned using SolRnett from Climalife, enabling a recharge with fresh fluid using a suitable purge pump to ensure no air locks were contained in the system.

SolRnett has been formulated to clean solar thermal systems where the fluid has degraded or caramelised. According to Climalife, it can remove tarry deposits and return a system to use, quickly and very cost effectively.

Matt Young, technical manager at Griffiths, said: "SolRnett was very easy to use, we first flushed with water which came back clear, not moving any of the residue, we then followed the SolRnett product data sheet and as soon as it was added to the water the solution turned black, so we knew it was working really well. We would definitely use SolRnett again."

BIOMASS

What: Somerset venue profits from renewable heat solution

How: Eco Angus Orlan Super 130kW Log Gasification boiler

Result: £662,500 net financial gain from RHI and bill savings

Located at the foot of the Mendip Hills in Somerset, Aldwick Farm & Vineyard is a popular venue for weddings, wine tasting and other occasions. Heating was previously provided by expensive and inefficient oil boilers.

It was necessary to provide heating and hot water to the whole farm including farmhouse, visitor centre, function and event rooms, offices and a flat.

Blake Ecotec installed a high powered solution capable of providing heating and hot water across the entire site. A barn was constructed to house an Eco Angus Orlan Super 130kW Log Gasification boiler, 10,000 litre Akvarterm accumulator tank and the NOVA stainless steel flue.

Numbers game: Aldwick Court Farm's switch to biomass will lead to a 90 percent cut in carbon emissions and impressive financial gains of over £600,000

The boiler's 130kW heat output and large loading capacity means it is capable of burning logs with moisture content of 15-20 percent, up to 100cm in length. The solution is designed to work at 91 percent efficiency and burn for up to 12 hours continuously.

The new system is compliant with the non-domestic RHI and Aldwick Farm will receive payments of 8.8p per kWh of heat generated over a 20 year period, being a total of approximately £403,900.

Add to the estimated £258,636 savings made on fuel, and the project will gain approximately £662,500 in additional income over 20 years. The RHI payments and the fuel cost savings will see the initial outlay paid off in just over one year.

The new system will also reduce the site's carbon footprint by 36 tonnes of CO2 per year, a 90 percent reduction.

HYDRO

What: Historic mill revisits past to harness clean energy

How: Hydroelectricity from adjacent river

Result: Over 50 percent of onsite energy needs met renewably

An 18th century cotton mill on the banks of the River Bollin in Cheshire has taken inspiration from its past to produce cleaner energy.

A new hydro-electric scheme installed at Quarry Bank near Wilmslow will be switched on as the National Trust takes another step forward to achieve its ambition of generating 50 percent of the organisation's energy from renewable sources by 2020.

Quarry Bank was founded in 1784 by Samuel Greg, an entrepreneur of the early Industrial Revolution. Greg saw the benefit of harnessing the power of the Bollin to drive the huge water wheel which would in turn power his mill looms. In 1801 he constructed a weir on the river which remains a key feature in Quarry Bank's landscape to this day.

More than two centuries later and the National Trust, working in partnership with the Environment Agency, is taking Greg's water power scheme in a new direction.

Instead of servicing long silenced mill looms, the Bollin now powers a Kaplan turbine installed 30 metres downstream from the weir. The turbine generates over 55 percent of Quarry Bank's onsite energy requirements.

Alongside the turbine house, the Environment Agency has constructed a fish and eel pass that has opened up more than 10km of the Rivers Bollin and Dean, upstream of Quarry Bank, to a range of fish.

Patrick Begg, rural enterprises director at the National Trust, said: "This is a transformative scheme. I couldn't be more delighted that Quarry Bank, with its history of harnessing the energy of natural resources, has taken such a strong lead in converting to clean energy."

Current affairs: Quarry Bank near Wilmslow, a former cotton mill, is using the River Bollin to generate electricity, rather than turn the looms it powered in the 18th century
Image credit: National Trust Images & Andrew Butler

SOLAR PV

What: Devon pub landlord successfully negotiates PV export limit

How: Sibert Solar Export Management System

Result: 100kW PV system and full compliance with DNO requirements

Waie Inn is a very popular countryside pub owned and run by the Burrow family. It opens throughout the year and offers both B&B and self-catering cottages along with restaurants, bars, function rooms, an indoor heated swimming pool, play areas and squash courts.

Geoff Burrow had been considering Solar PV for some time and has secured the use of some land adjacent to the complex. When he found himself in a position to be able to finance the 100kW system he needed, Western Power Distribution had restricted his export to just 11kW due to local grid capacity issues. The Waie Inn have a 21,000kWh demand profile per month so it was very clear that they could easily utilize the majority of the electricity generated by the 100kWp system planned.

Source Renewable was assigned the task of designing and installing the planned 100KWp ground-mount PV array, to provide sufficient yield to reduce the site's daily demand, and also meet the DNO's requirements for limiting the amount of reverse energy sent back to the grid.

With system design and supply support provided by Sibert Solar, a 99.84kWp array using 260Wp REC solar PV modules, Advanced Energy (AE) inverters and Sibert Solar's EMS (Export Management System) power management solution was installed, resulting in a system that takes full advantage of the customer's location in South-West England, but also provides compliance with the DNO's requirements.

Projected yield is just over 101MWh/year with a normalised energy ratio of 1015kWh/kWp and performance ratio of 91 percent.

No limits: Geoff Burrow, owner of a 100kW ground mount PV system, was able to comply with a strict 11kW export limit via an innovative solution from Sibert Solar

Who: Paul McCullagh, CEO of UrbanWind

What: Based in Glasgow, UrbanWind plans, constructs and finances onshore wind projects across the UK

In a spin: The rise in fully funded wind solutions has seen UrbanWind enjoy a healthy rate of growth

Revolution in the air

Monday

I start the day with our weekly UrbanWind management team 'look forward' meeting to ensure we are all aligned on key operational and business prioritise for the week. Before the usual packed schedule of meetings and site visits, this morning we have a real buzz around the office as we are being loaned a brand new, fully electric BMW i3, liveried up in the UrbanWind colours and logo. Kindly provided by Harry Fairburn of Glasgow, it will allow us to showcase renewable energy technology and innovation, as well as helping to reduce our carbon footprint even further as we visit clients, partners, investors and suppliers around the city.

Tuesday

This morning there's a key project review with our Ops Team, then I'm supporting supply chain partners to review progress against our current delivery pipeline as we reach critical stages of our delivery. The team have a very healthy but demanding pipeline at the moment across the 100 – 500 kWp range throughout the UK and are working hard and focussed on delivering what we need for the business and investors. We have great support from our supply chain which works collaboratively with us to deliver real value. As a Chartered Surveyor, where possible I like to be on site as it really brings the projects to life.

Wednesday

Today I have a resource review with our team including assisting in interviews for potential new permanent staff to support our growing project management and business needs as we expand our operations further.

Our success as a business is very much down to the strength of our people and it's exciting to be looking to recruit additional people, who can bring real passion and talent to the organisation. We are going to outgrow our office soon at this rate – a nice challenge to have!

Thursday

The day starts with an update review of current tender opportunities with our supply chain team that we will be looking to support. We are finding ourselves in a fortunate position where we are able to capitalise on a number of B2B opportunities to explore tailored solutions of reducing energy costs, reducing carbon emissions and surety of supply concerns in volatile and uncertain market conditions.

Later, I have a further review with the team of potential new consented site opportunities that we can look to fund and operationally deliver for prospective clients, allowing both parties to achieve their desired commercial realisation of the projects.

Friday

Another busy but enjoyable day of meetings, working through the checks and processes that my team carry out before a wind turbine is to be successfully commissioned.

I have also kindly been invited to speak to Thrive Energy for Business in Glasgow, one of Scotland's leading B2B networking organisation, which is taking place today. It proved to be a great event, which really illustrated how dynamic the renewable UK industry is and how important a role onshore wind plays in the current and future energy mix.

I was able to explain to delegates that there are options available that do not involve the significant initial financial outlay generally associated with a renewables project and that a fully-funded tailored solution can be made to work for almost any company.

Following this, I head over to St Ambrose School in Coatbridge, where I am privileged to be the business advisor for their fantastic Young Enterprise team. I am a firm believer in this support, and UrbanWind are proud to be a corporate sponsor. The Young Enterprise team show so much potential and confidence for the future.

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- Edinburgh - 22nd Sep (RHC)
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