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Show your hand

As you read these comments, we shall be only a matter of days away from choosing the make up of our next government.

Already it is clear what we, as an industry, are putting at the top of our collective wishlist – policy certainty, and a pledge to apply a consistent approach to the renewables sector across the entire five year term of the next parliament.

Full comment can be found on p12, but the unmistakably strong message to emerge is that the steady growth of the sector will be severely hampered without this stable policy background.

Although REI is a politically neutral mouthpiece, it cannot be ignored that the Conservative manifesto is the most lacking in this department, of the three major parties.

The party's commitment to 'halt the spread of onshore wind farms' has been self-styled as providing value for taxpayers' money, but shows a shockingly anti-renewable stance from a prime minister who invested so much personal capital in demonstrating his green credentials only five years ago.

The domestic RHI, barely 12 months old, is also in need of prompt political support if the marketplace it is creating is to flourish beyond the end of guaranteed funding in 2016. The next few months will be no time for poker faces from whoever gains power.

In brighter news, we have seen a strong uptake in The Heating & Renewables Awards since it opened for nominations on 01 April. Readers have until 30 June to participate, and I would encourage you to enter what is shaping up to be the most competitive year ever.

More information and the full list of categories is available at:
http://heatingandrenewablesroadshow.co.uk/awards/

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"Some have called social media a sad indictment of modern life, but for small businesses it can be a gold mine" Julie Mclean, Plumb Center, p25

Events

Installer 2015
12-14 May Ricoh Arena, Coventry
http://www.installer2015.com/

NAPIT EXPO On the road
16 Jun Sedgefield Racecourse
18 Jun Burnley FC
23 Jun Birmingham FC
25 Jun Center Parcs, Elveden Forest
30 Jun Chesterfield FC
02 Jul Regency Park Hotel, Berkshire
07 Jul Brands Hatch, Kent
09 Jul Vale Resort, South Wales
14 Jul Newton Abbot Racecourse

Intersolar Europe
10-12 Jun Messe Munich
www.intersolar.de/en/home.html

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

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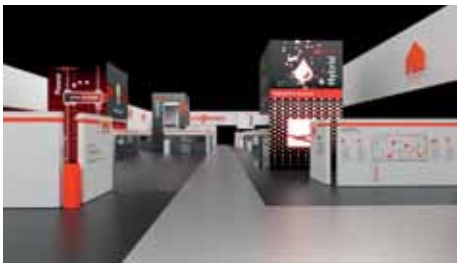
Stealing the show



Up in lights: Hybrid-Connect-Power was Viessmann's show message at ISH 2015

Viessmann was out in force at ISH 2015 by boasting over 40 new products at the Frankfurt Messe in March.

The German headquartered heating manufacturer's stand accommodated over 200 members of staff to show visitors the company's latest renewable innovations.

Dominating the main heating hall, towering graphics were present to illustrate the company's show message 'Hybrid-Connect-Power'.

Latest technical advances included Viessmann's new Power-to-gas system, which converts renewably-generated electricity into hydrogen via electrolysis, and then methane by adding C02. This can then be exported to the national grid, as demonstrated by the fully functional facility at Viessmann's HQ in Allendorf.

A new family of hybrid heat pump systems was also unveiled at ISH, which are 'smart grid ready' to quickly react to changing electricity prices. Viessmann's other headline product was its Vitovalor 300-P fuel cell heating system, said to be the first such system manufactured for the domestic market.

Darren McMahon, Viessmann UK's marketing director, said: "Renewable power storage was at the heart of the Viessmann stand. The company presented Power-to-gas, and Power-to-heat: decentralised, short term storage in buildings that have heat pumps installed.

"To that end, Viessmann presented a new range of superior controls and hybrid heating systems. Both in principle and forthcoming products, the direction is being set for how society will increase renewables substitution, while using existing infrastructure and technologies more efficiently."

Specflue sets out wood pellet mission

Specflue has declared its mission to firmly establish a wood pellet heating market in the UK, via its partnership with MCZ.

Specflue has been distributing biomass and pellet-fuelled stoves and boilers built by the Italian manufacturers to the UK market since 2011.

Although sales under the partnership have grown substantially in only four years, the UK market remains small compared to its European counterparts.

Specflue is also keen to extol the virtues of using pellet-fuelled appliances in the UK, as opposed to other wood burning products.

This is where MCZ's expertise and knowledge of its native Italian market, where it annually sells 20,000 units, can be used to great effect, believes Specflue's head of sales and marketing Phil Lowe.

Italian job: Specflue has been distributing wood pellet boilers, manufactured at MCZ's 200,000m² facility near Venice, since 2011

"The wood burning market is big in Europe, but still relatively unestablished in the UK. We hope to jointly pioneer a change in that. MCZ is a quality brand like Specflue, and we both share the same ethos – that quality is paramount, rather than being engaged in price wars."

He added: "There are a number of reasons we believe that opting for wood pellets is better than other wood burning options. Not least that fuel calorific value is guaranteed, boilers can be reloaded less frequently and efficiencies are higher."

No large scale solar for 2015/16

The Contracts for Difference (CfD) register has been released by scheme administrators The Low Carbon Contracts Company (LCCC), confirming that neither of the two solar projects that won CfD contracts for the next financial year will now go ahead.

With the RO now closed to >5MW solar farms, and no CfD projects going ahead for the next year, there will only be a handful of large-scale projects built under grace periods for the RO.

The Solar Trade Association's head of external affairs, Leonie Greene, said: "This confirmation shows that what everyone in the industry was saying was right: the £50/MWh bids wouldn't get built. That no large solar farms will be built in the next year under either the RO or CfDs is a tragedy, as we predicted these types of projects could be cheaper than gas in just three years with stable policy support."

This confirmation means that only 60 percent of the solar projects that won will go ahead (3 of 5) at all. This contrasts with the onshore wind sector, where 100 percent of the projects that won were signed (15 of 15).

Greene added: "British solar SMEs are now having to rewrite their business plans, again. For an industry that is predicted to be the dominant global energy source by 2050, the UK's rollercoaster policies are not helping its position. We hope that the new government looks at this technology with fresh eyes to develop a fairer and more sensible approach."

Heating & Renewables Awards host announced

Big name: Jason Manford will host The Heating & Renewables Awards at The Ricoh Arena on the evening of Thursday 10 September

Entries opened on Wednesday 1 April for the prestigious Heating and Renewable Awards; boasting 17 categories that look to celebrate and share best practice across the industry.

Plus, as organisers, we are pleased to announce a top personality for the all-important role of host of the ceremony on Thursday 10 September: the one and only Jason Manford.

Paul Stephen, at Heating and Renewable Awards and REI editor, said: "The awards have always been a hugely important date for the industry and this year is no exception. The fact that we have managed to lure one of the most popular and well-liked comedians is a sure sign of our commitment in making the awards the most enjoyable and successful ever.

"There is so much talent and hard work in the heating and renewables sector and we want this effort to be recognised in the best possible way. The awards are free to enter and we have expanded the categories available to 17 – ensuring there is even more chance to learn from and recognise new achievements."

There is also a respected line up for the judging panel with Bill Wright (ECA), Dave Sowden (SEA), Michael Harvey (HETAS) continuing their roles from last year's awards, whilst Richard Hughes-Lewis (NAPIT) is a new addition for 2015.

From projects and innovations, to training initiatives and apprentice of the year, the categories span across the heating and renewable sectors offering a chance for everyone to enter from the beginning of April – for free. The nomination period runs until June 30 to allow the judges to deliberate throughout July, with shortlists to be announced prior to the awards ceremony on Thursday 10 September.

To see the categories and for nomination packs please visit: **http://heatingandrenewablesroadshow.co.uk/awards**

Itron reports doubling in heat meter failures

New research from Itron finds that 72 percent of heating engineers are being called back to address problems with heat meters, in a marked increase from the 29 percent recorded this time last year.

With the figures coinciding with the first anniversary since the launch of the domestic RHI, Itron is calling for extra guidance for installers in order to protect the credibility of the industry.

Although not currently mandatory for the domestic RHI, unlike its commercial counterpart, Itron attributes many of the problems to the significant growth of the industry experienced since last April.

"There are a few factors contributing to the rise in call backs. The introduction of the domestic RHI is largely responsible, plus DECC has only recently made training in this area a priority," said Bernard McWeeney, Itron's water and heat manager.

"This is a relatively new industry to the UK and installers have only been installing heat meters in anger for the last three to four years, so it will take time for installers to get used to installing new kit.

"At Itron's Heat University we are taking positive steps to address this issue, which sadly is not going away."

According to McWeeney, the skills shortage is only part of the problem with the survey also revealing a lack of clarity on RHI standards. For instance, 79 percent of installers find elements of installations which require inhibitors confusing.

He added: "What is definitely showing is the lack of clarity around regulation itself. In this year's survey we added a new question and a large number of people seem to find RHI regulations confusing.

Bad press: Itron's heat meter survey has found a worryingly large number of devices installed with errors, for a second consecutive year

"Clarity must come from DECC on all aspects of domestic and non-domestic installations and concise information is urgently needed."

New trade show comes to Midlands

Installer2015 is a new national trade show – designed to let renewables installers, heating engineers and plumbers get hands-on with the latest products from over 70 exhibitors, reports Installer magazine's publisher Eoin McManus.

Created for installers by Installer magazine, the trade show will be running for three days (12-14 May) at the Ricoh Arena in Coventry – bringing a national event back to the Midlands again.

Featuring a wide range of exhibitors, products and services, Installer2015 aims to be a truly interactive event where visitors will be able to get hands-on with new products as well as gain valuable insight into how the latest technologies and services can have a positive impact on their businesses.

As well as providing the chance to get a first look at some brand new products, Installer2015 will feature demonstrations from leading manufacturers, business insight from key industry organisations and even the option of test driving some of the latest vans.

As a trade show that aims to rewards its visitors and make attending worthwhile, there will also be special show-only offers, on-stand giveaways and plenty of free-to-enter competitions.

Installer2015 will focus on hard facts rather than hard sell, and all exhibitors will give heating engineers, plumbers and renewables installers the perfect opportunity to get to grips with the latest developments – alongside technical experts who can answer any questions.

With ample free parking and easy access from many of the UK's major motorways, the Ricoh Arena is an ideal venue for installers from the Midlands and beyond.

REI will be exhibiting on stand P250.
For more information, free tickets and a registration gift, visit
www.installer2015.com

REI partners with Intersolar Europe

Renewable Energy Installer is delighted to announce that it has secured a media partnership with Intersolar Europe, taking place in Munich from June 10-12.

REI joins a select group of the world's most well-respected trade titles as a Bronze Partner, for the first time.

Editor Paul Stephen said: "Having for many years enjoyed ongoing media partnerships with the industry's largest domestic exhibitions such as SEUK and Ecobuild, it's wonderful to secure this added presence on the continent.

"Not only does this benefit the brand and our advertisers via increased circulation in the international arena, but we will be bringing the key news and product developments from this tradeshow direct to our valued readers."

For advertising opportunities and to benefit from REI's bonus distribution at Intersolar, please call Jonathan Hibbert on **01565 626 760.**

Opportunities lie with ESOS

By December 05 this year, all businesses in the UK employing over 250 people or with a turnover in excess of €50m (£38,937,777), will have to conduct an energy audit, identify possible savings and register on the Energy Saving Opportunity Scheme (ESOS), writes **Tim McLeman**, technical director of Wood Energy

ESOS is driven by a new piece of European legislation, and is mandatory, affecting over 9000 large organisations. Worryingly, many of these companies have not yet taken action to meet the deadline, and seem unaware of the benefits that could accrue from reviewing their energy usage and working to become more efficient.

There are likely to be problems as December approaches, with the limited supply of energy assessors (less than 500 at the last count) leading to companies scrambling to get their energy audits completed in time. The pressure of demand for Lead Assessors could potentially drive costs up, giving early adopters of the scheme a clear advantage. The audits can take up to three months to complete once the data has been collated, which in itself can be a complex and time consuming task. The audit then has to be repeated every four years, so this scenario could be repeated unless businesses wake up to the logistics of the process.

Red tape and bureaucracy?

Another issue that has been identified in a recent poll carried out by business energy consultants, Inenco, is a lack of engagement by senior managers. This is hardly surprising, given the weight of regulatory requirements already in place, and the fact that this could easily be viewed as just another piece of unwanted red tape coming out of Europe.

Rather than viewing ESOS as yet another cost and drain on resources, it should be taken as an opportunity to save costs and reduce carbon over the long term

The industry should be highlighting the fact that this legislation is already in place, that it must be complied with, and that there is a timescale issue. More to the point, it should be talking to large organisations about how it can help. Rather than viewing ESOS as yet another cost and drain on resources added to the requirements of the CRC Energy Efficiency Scheme and Climate Change Levy, it should be taken as an opportunity to save costs and reduce carbon over the long term, creating a positive impact on these other requirements at the same time.

For example, upgrading an outdated heating system with a biomass boiler could reduce carbon emissions, reduce energy usage through greater efficiency, reduce costs in the long term and could even generate income through the Renewable Heat Incentive (RHI).

Bright future

If capital outlay is perceived to be an issue, new boilers can also be installed under an Energy Supply Contract, or ESCO (not to be confused with ESOS). ESCOs are particularly suited to high energy users. Anybody currently on oil or LPG using over 450,000 kW/hrs of heating energy per annum would make significant cost savings, with a fully funded and maintained boiler to boot.

Like it or not, ESOS is here to stay, and is mandatory for large organisations. The whole purpose of the scheme is to drive greater efficiencies and save energy – surely something that every business should welcome in order to support sustainable growth. Treating it as a tick box exercise defeats the object and simply adds to the burden of management. By raising awareness, highlighting opportunities and positioning the scheme in a positive light, the renewables industry can help to shape strategy, drive custom, and ultimately benefit all parties.

Fully funded: Complying with new ESOS regulations needn't be costly as renewable technologies can be supplied and maintained by Wood Energy with no upfront capital cost thanks to ESCOs, says the company's technical director Tim McLeman

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Powering What's Next in Solar Technology

Preparing for energy labelling

Collin Timmins, associate director at BEAMA, reminds installers how they will be affected by new ErP regulations coming into force from September

It is important that installers are aware of the new regulatory requirements that will apply to them when the EU energy labelling requirements come into force in September this year. This is likely to mean that some changes to working practices are needed, though ultimately these should lead to householders relying even more on installers as the trusted source of advice on how to lower their energy bills.

From the 26 September 2015 all space heaters up to 70kW will come with an energy label showing the energy rating of the product on a scale from A++ down to G. This label will allow customers to directly compare the efficiency of gas and oil boilers against an equivalent heat pump, and it will be the responsibility of whoever sells the appliance to the end customer to inform them of this efficiency rating. In many cases this will be the installer, who will also have the responsibility to provide the customer with a further label indicating what the system efficiency will be when this space heater is combined with a temperature control or solar heating.

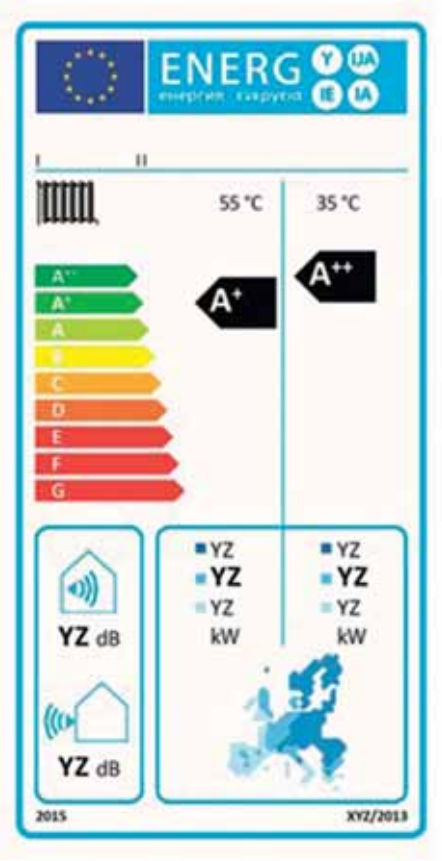
From the 26 September 2015 all space heaters up to 70kW will come with an energy label showing the energy rating of the product

The introduction of this regulation is all part of the European Commission's intention to improve the design of appliances and remove the least efficient from the market (the 'ecodesign' directive), while at the same time allowing customers to make informed choices about what will be the most environmentally friendly option (the energy labelling directive.) Regulations covering space and water heaters are just the most recent to be introduced, reflecting the complexity of negotiations required with industry, Member States and other stakeholders to bring these into being.

One unique aspect of the regulation for space heaters is that it includes a 'package' label that applies when the product is combined with other system components such as solar thermal or temperature controls. The package label must be produced even if the products are simply combined by an installer as part of an installation, and it can therefore become the installer's responsibility to calculate the system efficiency and to produce a bespoke label for the installation.

The process of producing a package label is quite straightforward for temperature controls as these will include information to show which class of control they belong to (from class 1 to class 8) as well as the percentage improvement that this class of control will make to the space heater efficiency (anything from 1 to 5 percent). Simply adding the efficiency effect of the control to the stated efficiency of the space heater will give you the efficiency of the package. There will even be a worksheet with the boiler documentation to guide you through this simple calculation. When solar heating is combined with a space heater then the calculations are a bit more complex but again the calculations required will be detailed in the technical documentation that comes with the boiler.

A package label can be generated by entering the final details of the calculated package efficiency into a form on the European Commission website. This will automatically produce a label that you can then print off and give to the customer. It is almost certain that other solutions will start to filter onto the market such as mobile phone apps to make this process even more convenient and allowing it to be done easily when on-site.



Efficiency drive: From September 26, installers must ensure that space heaters up to 70kW are provided with an energy rating label

BEAMA, together with HHIC, have also produced a website to guide all members of the supply chain through the requirements of the energy labelling regulations and to hopefully address any confusion. This website is **www.energylabelling.org.uk**.

General election countdown

To mark the nation going to the polls on 07 May, **REI** speaks to a selection of manufacturers and suppliers to find out what items are top of the industry's wishlist for the next government

Tim McLeman, technical director, Wood Energy

Whilst government incentives might be expected to give business a boost, one of the biggest issues to dog the renewables industry is uncertainty. The Feed-in Tariff is a prime example of good intentions gone wrong, resulting in a culture of suspicion rather than optimism in the industry.

Then there was the Green Deal, which was badly thought out, poorly publicised, and so prescriptive that it became a damp squib rather than the energetic kick start the retrofit sector so badly needs.

The RHI has been approached more thoughtfully and steadily, establishing the rate of demand in the non-domestic sector first, before rolling it out across the board. However, with degression already squeezing the margins, and a general election on the cards where all the bets are off, the industry could be forgiven for feeling a bit twitchy about the future of the incentive driven market. Perhaps it's time to look for a more reliable platform for growth.

Guy Winterbourne, director, Eco Angus

Potential renewable energy customers will be looking for a consistent approach to the renewable heat marketplace. Many product suppliers and installers feel that the marketplace has only just started to gain momentum and feel that, if there are changes to relevant policies following the general election, it will send out confusing messages. If clients are considering installing renewable heat products basing their decisions on seven year tariffs (the domestic RHI) or 20 year tariffs (the commercial RHI) they will require the comfort of knowing that these policies will remain in place over the relevant time periods.

If the renewable energy targets for 2020 and 2050 are to be achieved then there will be no place for short-term decision making. It seems that each year we are faced with more and more irrefutable scientific evidence of global warming so we need to take the opportunity to change things now.

Phil Hurley, managing director, NIBE

With the general election – and the prospect of a new government – just around the corner, the big question for all of us in the renewables industry is: 'What does this mean for the future of the RHI?'.

As a Labour initiative which was carried through to fruition by the coalition, the RHI is in the strong position of having cross-party support from all three of the big political players. Now that the dRHI is in full swing and uptake is steadily on the rise, at NIBE we're confident that it's here to stay – regardless of the outcome in May.

That said, at the moment budgets for the scheme have only officially been confirmed until April 2016, so the task for the next government is to provide clarity on financing and tariff changes beyond then. Depending on the outcome of a consultation that's currently underway, this may include the introduction of a new funding initiative, where third parties would cover consumers' upfront installation costs – receiving their RHI payments directly in return. The RHI as it stands is a positive short-term driver, but third party financing would make it more accessible and widen its appeal even further.

Keeping it in the family

Louise Bishop, marketing manager of Krannich Solar UK, pays tribute to company founder Kurt Krannich as the PV distributor celebrates its 20th anniversary

2015 is a milestone year for PV distributor and solar specialist Krannich Solar, as the owner-run family business celebrates its 20th anniversary. Since founding the company in 1995, Kurt Krannich's innate passion for the concept, technology and benefits of solar energy has driven him to nurture his business from humble beginnings in Germany to international renown and success.

With branches throughout Europe – as well as in Australia, Japan, Mexico and the USA – the company also exports to Africa and South America, meaning that Kurt Krannich really has 'got the T-shirt' when it comes to supplying solar systems and support in different markets, economies, geographies, climates and political environments. This international diversity, coupled with 20 years of experience, affords the Krannich group an invaluable level of stability and resilience to the pressures, volatility and challenges of individual markets, as well as an enviable strength of centralised purchasing capability.

Despite the company's impressive growth and success, Kurt has maintained absolute focus on the stable, long-term development of his business and this strategy, plus Krannich Solar's continued self-funded status has once again earned them the CrefoZert creditworthiness seal. This prestigious certification, awarded by Creditreform Stuttgart, recognises the company as having an exceptionally high credit rating, an achievement accomplished by just 1.7 percent of German businesses. For Kurt, this financial stability sends an important signal to his stakeholders: "The continuing bankruptcies in the solar industry unsettle customers at home and abroad, as well as suppliers. Especially for our customers, it is extremely important to award their contracts to companies that are stable in the long-term."

Alongside this intrinsic commitment to the company's strength and longevity, Kurt also places huge emphasis on the importance of top quality products, technical expertise, high quality service and effective logistics, all delivered on a local, personal basis by each of his branches.

Within the UK, this is the task of COO Kim Mann and his dedicated team. He adds: "We're proud to offer PV installers and our other trade customers the best of both worlds, by delivering products, support and solutions that are tailored specifically for the UK market but which have the value, strength and solidarity of the Krannich group behind them. This delicate yet vital balance of local autonomy and international power means we have the flexibility to respond to local demands when the UK market is good but also the stability to remain strong when market conditions are more challenging.

"This key structure has been integral to Krannich Solar's steady but strong growth over the last 20 years and I'm confident that this will continue to be the case as we look ahead to the next 20."

International diversity, coupled with 20 years of experience, affords the Krannich group an invaluable level of stability and resilience

Steady hand: Geographic reach plus offering financial stability to all stakeholders has allowed Krannich Solar to take the rough with the smooth in the turbulent PV market over the last 20 years, says founder Kurt Krannich

Kurt's vision for a future powered 100 percent by renewable energy drives him to continue nurturing his business with the same focus and passion which inspired him 20 years ago.

Immune to the common trappings and distractions of success and status, Kurt's head may be in the boardroom but his heart is undoubtedly in the more hands-on areas of his business. In another 20 years he will most-likely still be found analysing products and performance data, while enthusing his staff with the same passion for solar energy that inspired him to found Krannich Solar and steer it so successfully through its first 20 years.

Find a fuel

The government has recently approved legislation relating to the fuel to be used by claimants of RHI for woody biomass, reminds the MCS.

From 05 October 2015, all RHI claimants must demonstrate that the woodfuel they are burning has been produced in a legal and sustainable manner, and falls within certain greenhouse gas limits. Claimants of domestic RHI do this by sourcing from an approved list of authorised fuels, of which the only one currently recognised by Ofgem is the Biomass Suppliers List (BSL). Non-domestic claimants may also choose to source from the BSL, or they can make other arrangements, but in that case they must provide additional information directly to Ofgem and submit to an annual audit.

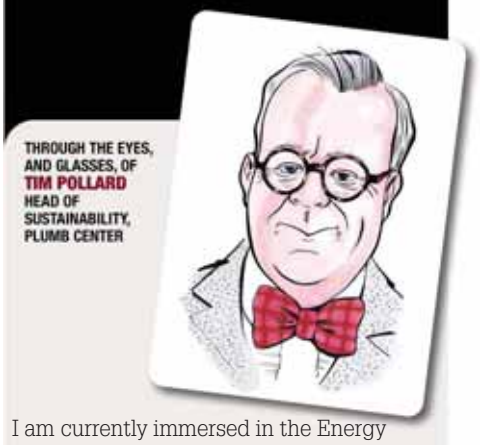
The fuel types that can be authorised under BSL are woodchip, briquettes, firewood and pellets. These might be made from virgin raw materials, waste or a blend of both. The BSL does not include non-woody biomass such as straw or miscanthus.

Companies apply to have their fuel authorised via an online portal. The BSL gathers information about the lifecycle of a fuel, from raw materials through processing, and then selling onwards via traders and retail outlets to the customer. Activities are divided broadly into production and trading, and companies apply to have their fuels authorised in either or both category. Domestic customers must buy authorised fuels from traders, and they can search for fuels and traders in their area on the BSL Find a Fuel site: http://biomass-suppliers-list.service.gov.uk/find-a-fuel

If your customers want to start or continue claiming domestic RHI for woody biomass from 05 October 2015 onwards they need to be purchasing BSL authorised fuel. For further information on claiming RHI you can direct them to Ofgem's website:
https://www.ofgem.gov.uk/environmental-programmes/domestic-renewable-heat-incentive

Opinion

Pollard's Patter



I am currently immersed in the Energy Related Products (ErP) directive. You may know that from 26 September it becomes mandatory for most heating devices to be ErP compliant and to carry an energy label. This includes air source, water source or ground source heat pumps. Furthermore, where a defined set of components are installed together, then there is a need for a 'Package Label' which could include a solar thermal device.

Now I know that some will see this as yet another regulatory burden, although by far the greatest impact will fall onto manufacturers. However, energy labelling has become widely understood in other sectors, most notably in white good and home appliances.

In addition, since heat pumps are likely to be rated as either A+ or A++, it makes it a whole lot easier to explain the benefits of choosing a renewable heating device and the concept of cost of ownership. I think that awakening consumer interest may even be instrumental in changing the view of heating selection from a painful necessity into an aspirational exercise. This is further enhanced with the role out of smart meters and the internet of things, or 'widgets with digits' as I call it.

We think that it is so important that we are about to launch in to a 40 venue tour of the UK to explain the basics of ErP and labelling to our customers and what it means to manufacturers, merchants, installers and consumers.

Transitioning from RO to CfD

Gordon Moran, writing for the European Energy Centre (EEC), examines the impact of the Contracts for Difference (CfD) market on the sector so far

Last year the UK government introduced Contracts for Difference (CfD) to replace the Renewables Obligation as the primary financial support mechanism for the large scale renewables industry in the UK.

In short, the scheme works by distributing support in the form of a variable additional payment on top of the wholesale electricity price, up to the limit of a pre-demarcated strike price. The strike price is based on a CfD with generators; they will receive a top-up when the average wholesale price is below the strike price and revenues will be capped at the strike price to avoid overcompensation.

The first round of CfD was held recently and there has been some criticism of the initial roll out of the scheme with some technologies, such as solar, receiving relatively little support. This has led to concerns that larger projects with larger economies of scale from more established technologies may win a disproportionate number of contracts. However, consideration has also been given to more fledgling technologies: the more established technologies compete in a common auction and start up technologies are initially to receive allocated budgets to promote research and development.

In addition, the funding for the measures is provided via levies on energy producers rather than out of general taxation, which means that funding should remain secure for the long term. The strategic importance and long organisational timeframes of energy infrastructure development mean that whatever the stripes of the next UK government, it is unlikely to substantially alter the regulatory framework further and renewables should receive strong support for the foreseeable future.

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

Commercially minded

Liz MacFarlane, Zenex Solar, identifies a number of barriers to increasing PV deployment in the commercial market

I've had a fascinating insight this week in to the potential for some really innovative PV installations. It's easy to get lost in our daily supply of PV equipment for standard domestic, commercial and ground mount schemes and to forget how entrepreneurial we've had to be to grow the market where we can.

From motorway verge PV, flotillas of solar on our reservoirs and the growing car-port market, it's all going on.

Of course, we still need to focus on the commercial rooftop arena, which is still under-represented. It's not difficult to see the potential here and also to recognise some of the barriers to entry.

The government's 'lift and shift' idea which enables the owner to take their system with them and continue to benefit from their investment should they move premises goes some way to tackle the issues around landlord/tenant complications on commercial property.

Our market is very different to that of our foreign counterparts with a large amount of UK commercial sites being landlord held. This leads to all kinds of issues around tenancy agreements, length of tenure and value of PPA. Then there is the general nervousness of landlords after disappointment in other investment, and the perceived issues around repairs and maintenance. And finally, there's the basic confusion around some of the solar supply-chain politics.

If commercial roof-space is an area you're trying to break in to, then my one piece of insight is this; The people who are succeeding here seem to be speaking to the whole sphere of influencers, as well as the decision makers. They are keeping the process simple, providing a holistic service and keeping some of the background market politics away from their customers.

"Wind energy is able to make a bigger impact on reducing carbon than almost any other technology" Stephen Bradley, UrbanWind, p28

CURRENT AFFAIRS

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

We have to accept that nothing is going to happen until the new energy minister is in post but the message that has to be given to whoever takes that position is that the industry needs stability and long term incentives. The current 'stop–starts' are no good for the industry.

The solar farm tariffs are a prime case. Solar farms were first encouraged with a 1.4 ROC subsidy for those ' farms' over 5MW. This encouraged many applications and the countryside in some areas has many such solar arrays. This has now been curtailed and the encouragement is being given to rooftop solar. Rooftop solar is good in itself and recent announcements by M&S that they had constructed the largest single roof solar power system is encouraging. The government is saying that they have insufficient funds to keep this level of subsidy. In the rush to beat the deadline over 1GW of solar farms were completed. Does this remind you of another subsidy rush a few years ago?

The list of stop start policies goes on –on and offshore wind farms, is another example where local councils have policies against them in many areas whilst central government tries to encourage them but the system ends in an impasse.

The message for the new minister must be stability, long term polices and sensible incentives so that long term investment in renewable technology can be made.

A burning issue

Steve Pester summarises some of the real fire risks seen on PV installations

The BRE National Solar Centre has recently been called out to sites and been sent photos of PV installations with melted or burnt-out DC components. It goes without saying that this type of failure carries significant fire risk to life and property. The main culprits appear to be DC connectors and DC isolators. Whilst good product design is essential, the limited (often anecdotal) evidence that exists seems to point to installation practices being a significant factor.

Recent examples include IP-rated DC isolators mounted outside with cable glands that are either incorrect for the type of cable, or pointing upwards, so that any seepage through the glands allows water into isolator casing. A short circuit inevitably follows, often culminating in a fire.

Another concern is 'MC4-compatible' DC connectors – to the casual eye, one 'MC4' looks much like another and connectors from different suppliers are often all assumed to be compatible. They are not. Slight variations in design, materials and dimensioning means that it can be dangerous to mix and match these connectors if they are not from the same manufacturer and of the same product range.

The MCS guide for PV installers requires laboratory proof of compatibility, where connectors from different manufacturers have been mated together. The forthcoming IET Code of Practice for Grid-connected Solar PV Systems is even stronger on the subject and bans the practice of mixing and matching different manufacturers' connectors altogether – even if they are apparently 'MC4-compatible'.

Installers often need to make up (or buy) DC cables for linking strings etc – what connectors will you use for this if you have no idea what type are fitted to the modules? Insist on knowing – your supplier can find out.

The NSC will be offering training on the CoP this summer.

TECH TALKING

Bad experiences endanger industry growth

Negative issues prevailing within the heat pump industry look certain to be detrimental to the growth of this sound technology, argues **Bob Long**, heat pump specialist

Going about my daily business, I have had many meetings with large installers of renewable energy systems. At one such meeting, where I was hoping to fuel enthusiasm for a district heating system, I was told: "Our local housing association will not entertain heat pump technology as valid option."

Further investigation indicates that this opinion is not isolated, having been influenced by reports of poor operational economics over a number of sites and, not least, the often-negative content of online heat pump forums.

Quantification of performance is not easy, as very few heat pumps actually display their operating-economics in a manner that is meaningful to the user, which means that any criticism of this technology is usually based upon perception rather than fact.

I have banged the drum on the merits of heat metering on many occasions in my column, but the importance of accurate monitoring cannot be over emphasised.

Generally, heat pump systems have no easy-to-read visual indication to display their operational economics, and the adverse effect of system faults, component mismatches or other defects, can remain without diagnosis for long periods of time, causing costly negative impact for the bill payer.

Repeatedly, I find a number of prominent factors contributing to consumer complaints regarding heat pump installations:

1. Over enthusiastic sales force overstating the economics of operation
2. Heat pump system efficiencies adversely affected by bivalent energy
3. Heat pump undersized for the application
4. Insufficient water flow rate

The effect of bad news travelling fast puts growth of this industry under constant pressure.

The bad news influence is particularly evident in a number of housing associations where heat pumps have failed to deliver the anticipated economic goals. Adverse results are often made more visible by tenants who are on a low income and thus, more vulnerable to unexpected high heating bills.

Before this valuable technology is completely discredited, we need to create remedies quickly. If problems of this nature are unaddressed, I fear the market, and perhaps even the UK government, will abandon support for this useful technology.

In the UK we have the availability of natural gas at very attractive prices, and the network of supply is significantly more comprehensive than our European neighbours.

Because of this, heat pumps operating in UK, are tasked with meeting more stringent economic goals, created by our superior gas supply network and reinforced by keen prices.

Heating requirements vary significantly with lifestyle and the limitations of heat pump technology should be understood before installing a heat pump.

For off-gas districts a well-balanced heat pump installation generally represents good value for money, and further enhanced by the RHI payment, although operational limitations must be understood.

There are many more factors to consider, over and above the points I have raised here and the principles of low carbon energy delivery through heat pump technology are completely sound.

In our evolving world of renewable energy, the common denominator is of course electricity, as evident from the output of wind, solar, hydro and tidal.

A heat pump represents the most economical of technologies available in converting electrical energy into thermal energy, and represents the only renewable energy source available completely on demand.

The domestic RHI – one year on

With biomass responsible for over half of all new dRHI applications, installers needn't wait any longer to start offering these products to their customers, says **Robert Burke** of HETAS

It's just over 12 months since the domestic Renewable Heat Incentive was launched.

Since the launch we have been pleasantly surprised by how much funding has been allocated to support biomass users. Over half of accredited installations have been for biomass. It was always felt that the big market for biomass would be off-gas grid and in areas where oil and LPG were seen as expensive options and high carbon solutions. At the time of the launch the general feel within the renewables industry was that solar thermal, heat pumps and biomass would each take a reasonable share of the domestic RHI money.

But the RHI is open to everyone to apply, not just those in off-gas areas, and heat pumps could be an option for urban areas with town houses where there is not so much space. However they do present certain installation challenges including limited hot water temperatures which could require larger radiators on an existing system. There's also the issue of using electricity from a grid that is not yet low carbon. Solar thermal has its place and is often seen as a great partner for biomass so that summer and winter conditions can be met with a combination of low or zero carbon solutions.

Whilst the original commercial RHI for larger installations supported mainly biomass with something like 95 percent of RHI money supporting this technology, we didn't initially think that domestic biomass would get anywhere near that sort of percentage. The latest RHI report from DECC which includes figures up to December 2014 says that 56 percent of new applications for domestic RHI have been for biomass with 53 percent approved at that time. For all heat-pumps the figure was 32 percent and for solar thermal it was 13 percent. The figures for legacy applications present a very different picture with heat pumps leading, solar thermal next then biomass. This shows that once the details of the scheme had been announced formally and regulation was adopted, biomass became much more popular.

So what about the appliances and the installers. At the time of the last official figures there were 5147 biomass installations. Today there are 814 MCS approved biomass products and 804 approved MCS installers. Not all of the installers are very active in the market whilst others are very busy. As biomass becomes the more popular choice a small number of installers are struggling to cope with an increasing demand. For gas and oil installers wanting to take advantage of the growing market, now is the time to take the training to convert existing skills to biomass and to get their MCS certification.

Many installers are having great success by seeking support from Easy MCS and from the specialist MCS schemes that concentrate on being really focused on one or two areas of the market. It is also proving very

successful and increases the chances of a great installation where installers get trained by specific manufacturers who also help with installation design. These sort of collaborative relationships reduce errors and increase the likelihood of poor installations or unhappy customers.

As for fuel the Biomass Suppliers List (BSL) has now been established and suppliers are able to register and sell fuel that proves the customer is buying sustainably thus meeting a requirement of RHI. There is still some work to do on the BSL but progress is being made and much good work has already been achieved.

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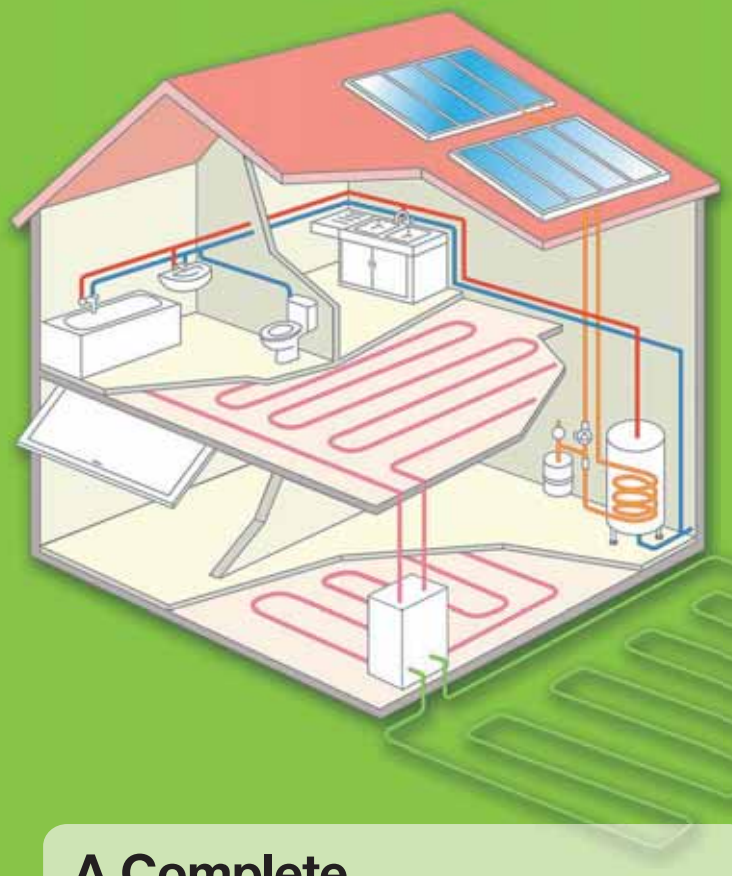

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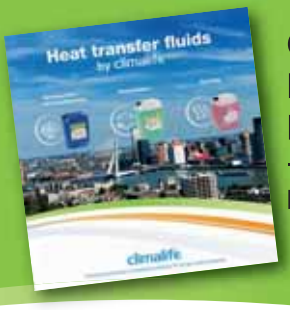

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Two minutes with . . .

Who are you?
Stephen O'Hara, managing director of Elmhurst Energy

What do you do?
Elmhurst Energy provides first class software, accreditation, training and technical support for over 6,000 energy assessors. We also provide training and hold a register for those undertaking ESOS audits.

Where are you?
Our headquarters is in Lutterworth, Leicestershire.

How's business at the moment?
Business is good, we have recently launched new energy assessment software apps with a broad use across apple and android devices. We're also excited about our new tool for GDIPs and our ECO2 software.

How could business be better?
Everyone in this industry would benefit from a more consistent strategy from government on tackling energy inefficiency and fuel poverty. We have created our own manifesto which outlines how energy policy could be improved. You can find a copy on our website at **www.elmhurstenergy.co.uk.**

Who do you admire in renewables/energy efficiency?
There's no one I admire more than those small businesses on the ground whose job it is to go out there and sell the vision whilst working within a restrictive framework. They've seen many changes in this industry and know that policy can take them in a new direction at any time. I hope one day this will change.

What's the best business advice you've ever received?
Never stop listening to your customers. They only need you if you can make life better for them.

Q&A

ADRIAN WRIGHT

Happy Energy

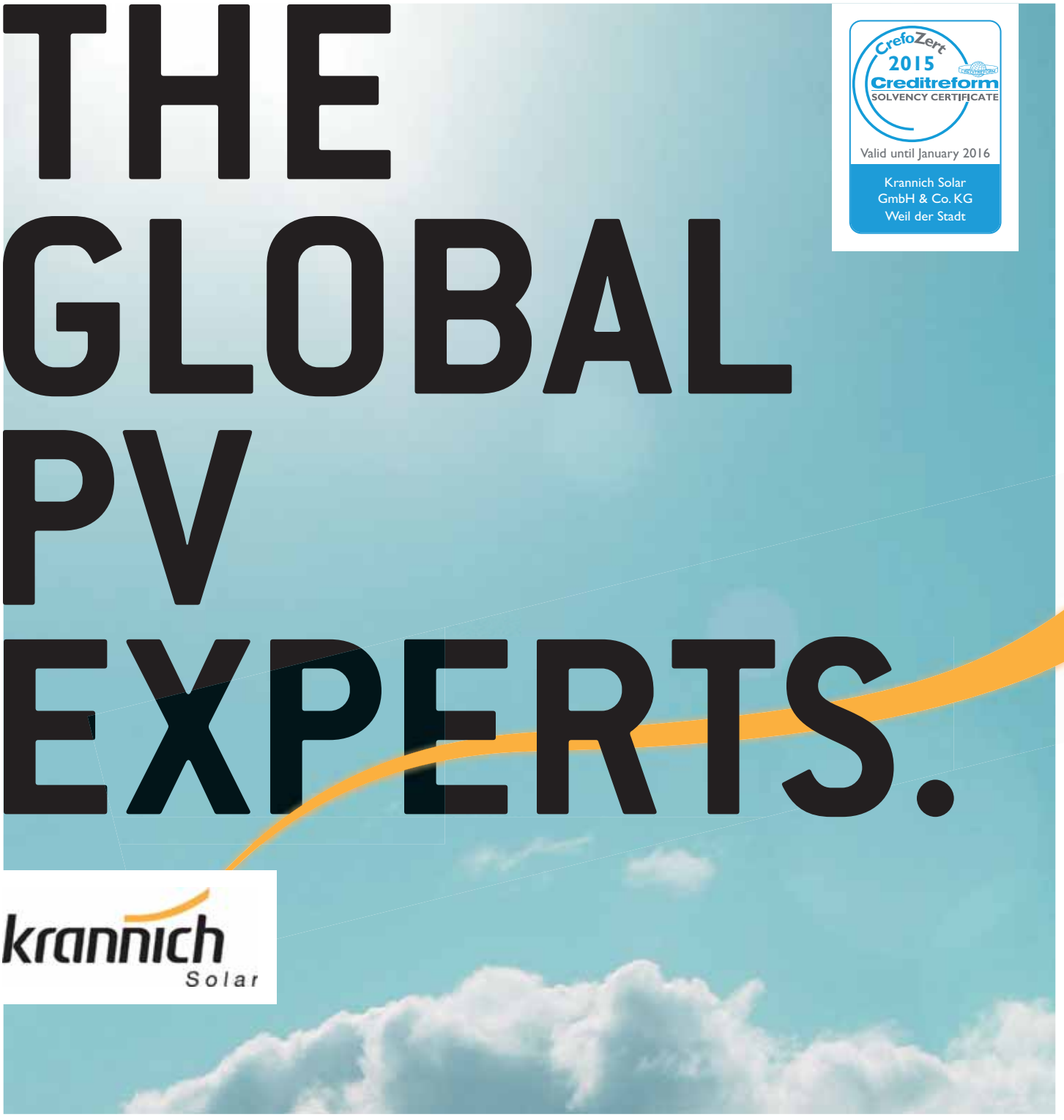
REI: What have you got planned for 2015?
AW: A particular holy grail of ours is to offer whole house upgrades such as LED lighting, insulation, biomass, solar PV and solar thermal to our customers rather than focus on one or two measures. We will be looking to continue to drive this offer and also expand our renewable energy offer, looking at new ways of packaging up finance for products to give a new type of offering to our customers.

What do you see as the growth area for renewables?
I can see biomass demand dropping off fairly quickly as the tariff continues to be reduced through degression but, as we witnessed with solar PV, this may make way for lower cost boilers to come onto the market making biomass a more affordable proposition given the lower returns that will be provided through the RHI.

How is your company cutting its carbon footprint?
Our head office here at Pool Innovation Centre in Cornwall has been designed and built to the BREEAM Excellence standard, and uses 60 percent less energy than a conventional office building.

In addition to this our installation depot in Perranporth has been fitted with our own biomass boilers to become energy efficient and reduce our carbon footprint. The office is largely paperless thanks to the use of safe and secure online systems to process and store much of our administrative 'paperwork'.

Adrian Wright is CEO at Happy Energy



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Carry on cutting carbon

Non-domestic biomass technology has received criticism of late in the media for its seeming under performance and lower than expected efficiencies. So let's step the biomass industry up a notch and get things right to ensure efficiencies in excess of 90 percent, insists **Simon Holden**, co-founder of Euroheat

The non-domestic sector has seen huge support for biomass technology since the RHI kicked off, with figures from the Renewable Energy Association (REA) revealing that biomass accounted for some 90 per cent of energy generation through the scheme between 2010 and 2012. Clearly a front-runner for the business savvy, biomass has staked its claim as a major player in the renewables market.

Sadly, of late, biomass has come under the spotlight following a study by DECC, which claims that non-domestic installations are showing up lower than expected efficiencies.

What is not addressed in the report are the key issues with the UK's biomass market at present, issues which are huge contributory factors in why some installations are falling down on efficiency. Many substandard boilers are being fitted (at the moment there is no equivalent to the MCS quality standard for units over 45kW capacity) by installers who do not have the appropriate product knowledge, experience or support. In addition, many end-users are using sub-standard fuel, which has not been properly seasoned and holds too much moisture.

Highest quality: Far from viewing the DECC report as negative; it provides the biomass industry with an opportunity to ensure that every boiler is working to its optimum efficiency, stresses Euroheat's Simon Holden

Fuel issues

This autumn will see the introduction of new 'fuel rules' for non-domestic RHI installations. Under the legislation, fuels must meet sustainability criteria in order to continue receiving RHI payments.

This will apply to all existing and new participants – even those already receiving RHI payments. In order to prepare for the changes, the simplest way to meet the criteria is to use sustainable fuel bought through the biomass suppliers' list, which lists approved suppliers of wood fuels that meet RHI sustainability criteria.

Logs and woodchips

In general, moisture must be 20 per cent or less in the case of log and woodchip, to ensure optimum boiler performance. Seasoned logs will have a higher energy value, providing more heat and fewer emissions. It is important that logs are split and left to dry in a well ventilated area for 18 months or more for the most efficient results. Storing logs and wood chip is ultimately the end users' responsibility to make sure they are kept accordingly, but it is vital that installers fully explain the fuel to their customer, ensuring they have a handle on buying quality and maintaining quality wood fuel in large quantities.

Pellet power

Wood pellets are more stable and should be delivered in the correct state if purchased from a reliable source. With pellets, boiler efficiency is the responsibility of the installer; if commissioned correctly, a quality biomass boiler with the right fuel will burn at the efficiencies of 90 per cent or more.

Selecting a trustworthy biomass installer is a vital, too. We pride ourselves on delivering loyalty and first class support to our installer partners, and we're 100 per cent confident in the quality of manufacture and efficiency of our boilers; the technology really is cutting edge. In addition, we only allow approved installers – partners who have been properly versed on our products – to fit each unit, with our experts carrying out nearly all commissioning.

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Anti-anti-social

Many people may not like it, but social media is everywhere, it's here to stay, and installers can take advantage of it to promote their business. REI spoke to Plumb Center's head of marketing, **Julie Mclean**, about the positives of getting online

It's a digital age, and the growing power of the internet and social media seems to have encouraged people to document their lives in all sorts of public forums like Facebook or Twitter. Some have called this a sad indictment of modern life, but for small business it can be a gold mine.

Facebook

Facebook is the most recognisable outlet available. People mainly use it to stay in contact with their friends – but for a savvy business owner it can be so much more.

Facebook allows businesses to create pages that are different to a user's private profile page. A Facebook business page provides installers with the opportunity to get their customers to follow their business by 'liking' the page. Customers can review a business on the page, making it a great way to promote a company through good feedback on a platform with millions of users.

Twitter

Twitter is the fastest and most precise of all of the options out there. Users can only send tweets that are up to 140 characters long – which is perfect for getting out swift responses, that don't ramble on. It's important with all social media, and especially Facebook and Twitter, to get to the point. By their very nature social media sites are designed to be lightning fast methods of communication – short nuggets of information are the best way to go.

Twitter is brilliant for networking. Most companies or organisations that installers work with, whether they be plumber's merchants or say, the Health and Safety Executive, have Twitter accounts. Tweeting one of these accounts is an easy way to get quick advice when on the hoof.

Plumb Center's own Twitter account @TradeOnTap is a great source of information for installers. It's also a great forum for heating and plumbing professionals to discuss the issues, changes and breakthroughs of the industry.

Switched on: Social media is the new word-of-mouth for installers seeking customers and advice, says Julie McLean, Plumb Center's head of marketing

LinkedIn

LinkedIn is a much more business focussed area of social media. The personal pages are used very much like an online CV. Users can add all of their work experience as well as connecting with people they have worked with, or for, in the past.

The site is invaluable for a small business owner. If an installer is looking for a new member of staff, they can see if they have LinkedIn to find out their work history and skills – as well as who they've worked for, which can be a massive boon as the candidates previous employers often will have verified the skills on their page if they are factually correct.

The best of the rest

Google has recently got in on the act by releasing Google+. The main difference between Google+ and other social media outlets are Circles. Users declare their interests when they sign up for a Google+ page and are put into Circles based on them, which basically allow users to interact with others with the same interests – excellent for the installer that wants to network.

Another great way of networking is through online forums. Posting on forums like the ukplumbersforums.co.uk are great ways of getting advice for jobs, talking about the best products and generally engaging with other installers. They can be a great way to get work as well – as customers are also able to post jobs they need doing.

Is marketing getting it RHI-ght?

Jason Hobson, managing director at Gledhill, discusses the latest RHI application and accreditation figures and their implications for the renewables sector

What a difference a year makes! Just 12 months after the renewables sector finally welcomed the much anticipated domestic RHI scheme, we're now in a position to take stock and see just how much impact it's had.

Target demographic

The latest government figures reveal that South West England and Scotland have seen the largest numbers of accreditations (18 per cent and 16 per cent respectively).

We can surmise that this is due to homes in rural locations being less likely to be on the gas grid, prompting more homeowners in these areas to embrace renewables as an affordable, price-stable alternative to oil or LPG.

The appeal of renewables for off-gas properties reveals a lucrative potential market for installers. However, it's important that the sector still takes a customer-focused, benefits-led approach to marketing renewable technologies to these customers, ensuring that energy sources are installed as a complete solution with an appropriate cylinder that will help to maximise carbon reduction and running cost savings.

Thermal stores

Thermal store technology will play a critical role in the efficiency of renewables installations as it contributes to both the domestic hot water and heating system in the property.

Products like Gledhill's Torrent GreenHeat range enable households to capture energy when it's available and store it for use when needed. The water held in the cylinder is then used to deliver the heating to the property, whilst the mains pressure domestic hot water is heated via a plate heat exchanger.

Thermal stores can be specified for use with individual renewable technologies or with a combination of solar, heat pump or biomass installations. Specifiers should ensure that they select a thermal store that has been specifically designed for use with the energy source or sources installed.

Cashing in: Jason Hobson, Gledhill, expects dRHI applications to start picking up speed once third party finance regulations come into force in the near future

Unvented cylinders

For hot water-only installations, an unvented cylinder is often the most appropriate choice to maximise the energy from a renewable source.

It's essential to select a model that has been specifically designed for use with the particular type of energy source installed. For example, the StainlessLite range from Gledhill includes a solar model incorporating a high performance solar coil, a heat pump model with a specially designed coil to increase that flow rate and maximise the lower temperatures generated by heat pump installations. The solar HP model has both a solar coil and heat pump coil to combine both energy sources within one cylinder.

Biomass growth

The latest RHI data also provides some interesting statistics on the most popular renewable technologies, and biomass systems accounted for 56 per cent of applications and 53 per cent of accreditations for installations during the April-December 2014.

However, it is possible that recent changes in the Feed-in Tariff may affect the popularity of biomass going forward after the domestic biomass tariff was reduced by 20 per cent from April 01 2015.

Looking ahead

Just a year in, the RHI initiative is already being developed and refined. Changes introduced in February include the removal of social landlords' obligation to have a Green Deal Assessment (GDA) to be eligible for RHI and the inclusion of high temperature heat pumps in the scheme.

To help homeowners with their initial investment in renewable technology, the RHI launched a six-week call for evidence on 28 January 2015 to seek information and evidence, which will inform the development of policy to amend regulations allowing additional financing options into the domestic RHI.

It will be interesting to see how the market continues to develop going forward but, tentatively a year in, RHI appears to be gathering pace.

Wind survives FiTness test

Flying high: The business case for wind energy has become even more compelling despite a reduction to the Feed-in Tariff, says Stephen Bradley, business development partner at Glasgow-based UrbanWind

Despite a five percent cut to the Feed-in Tariff for onshore wind coming into effect on April 01, potential adopters of the technology needn't worry if the sector can still offer the same levels of benefit it did previously, argues **Stephen Bradley**, UrbanWind's business development partner

The issue of energy is increasingly becoming a key talking point in many boardrooms, and onshore wind remains one of the best options available to combat a looming energy 'trilemma'. This consists of rising costs, concerns over security of supply and the growing need for us all to reduce our carbon footprint.

As we have seen over the last 12 months, the cost of energy is profoundly linked to the vagaries of international events. In March we saw gas prices jump more than 10 percent on the back of the Russian annexation of the Crimea. Towards the back end of 2014, we saw oil prices collapse, dragging down what had previously looked like a strong recovery from recession and robbing it of much of its momentum.

A 500kW wind energy project could save 17,200 tonnes of CO2 over the 20-year lifespan of the turbine

Price protection

The ability for a business or landowner to generate their own electricity provides an invaluable cushion, protecting your business and productivity against the volatility of global energy and commodity prices. The owner of a well-sited, well-maintained turbine can ensure that their energy costs are both substantially reduced and consistent, and that their access to enough power for all of their needs is never jeopardised by a sudden upheaval in the global market.

Unexpected shutdowns of a number of British nuclear power plants in 2014 saw the possibility of brownouts or blackouts begin to be taken very seriously, with energy-intensive businesses particularly at risk. A wind turbine ensures that even if a brownout or, worse, blackout was to happen, you are protected by a consistent supply of clean, cheap power on your own terms.

Carbon reduction

As well as the threat of rising costs and uncertain supply, wind power is at the forefront of helping businesses and the UK, as a whole, reduce its carbon footprint and help to combat the potentially devastating effects of climate change. The IPCC meeting in November 2014 confirmed that measures to cut carbon emissions are urgently needed to prevent widespread, severe and irreversible damage from climate change. However, this stark warning was tempered by the acknowledgement that the technology needed to combat climate change is already available – and affordable.

Wind energy is able to make a bigger impact on carbon footprint than almost any other technology. To illustrate the possible impact of an onshore turbine, a 500kW wind energy project could save 17,200 tonnes of CO2 over the 20-year lifespan of the turbine, the equivalent of taking 200 cars off the road for the same period of time.

Good investment

Onshore wind also remains a compelling and attractive option to investors, despite the erosion of the Feed-in Tariff. Uncertainty over renewable energy policy and disappointing dithering from the government over providing clarity has shaken some confidence, but wind's value as a source of power, and starring role in meeting our carbon reduction targets, means that it continues to present a strong case for investment.

As our rapidly growing order book for 2015 demonstrates, businesses across a wide variety of sectors are recognising that small and medium-wind turbines stack up as a viable, productive investment by themselves, with or without the added benefits of the Feed-in Tariff.

Wind sector blasts Conservative manifesto

Bad news: The wind sector has been left angered by the Conservatives' election pledge to stop the development of new onshore wind farms

The Conservative party's election pledge to halt the development of new onshore wind farms has been branded 'idiotic' and 'illogical' by members of the UK wind sector

The party's 2015 manifesto argues that cutting carbon emissions 'as cost effectively as possible' would be a new Conservative government's chief driving force whilst nuclear and gas generation capacity would be expanded significantly.

It also argues that halting the spread of wind farms is justifiable due to a lack of public support, and an unpredictability of supply to the National Grid.

These claims have brought a barrage of criticism from the sector and claims from trade body RenewableUK that the Tories have glossed over numerous reports which point to high levels of public support for the technology.

"The Conservatives' manifesto spectacularly fails to recognise the high level of support among ordinary voters for onshore wind, which stays consistently at two-thirds of the British public," said deputy chief executive, Maf Smith.

The Tories are proposing to deprive voters of one of the most effective means of keeping all our electricity bills down

"They're seriously misinformed in their suggestion that wind power can't provide firm capacity – the experts at National Grid say there's no problem in taking maximum advantage of wind whenever it's available, which can now be predicted with pinpoint accuracy."

Pushing up bills

He added: "Onshore wind is one of the cheapest of all sources of energy, so by turning their backs on it, the Tories are proposing to deprive voters of one of the most effective means of keeping all our electricity bills down. So when the Tories claim in their manifesto that they intend to cut carbon emissions as cost-effectively as possible they're being breathtakingly illogical and therefore idiotic."

Ian Marchant, chairman of Infinis Energy Plc, on behalf of the British Wind partnership of independent generators and suppliers, agreed that failure to support an already low cost technology would not be a cost-effective strategy leaving taxpayers to subsidise more expensive forms of generation.

"Failing to harness the full potential of onshore wind will be bad news for British billpayers, costing hundreds of millions of pounds every year in more expensive alternative technologies.

Costly mistake

"Onshore wind is already the cheapest large-scale renewable generation source in the UK and industry is committed to reducing costs further.

"It is supported by 70 percent of the public, an approval rating higher than any of the political leaders or parties.

"It adds more than £600 million to the British economy every year while employing more than half of those working in the renewable sector; and supports projects in local communities through millions of pounds of funding every year."

Recipe for disaster

Greenpeace UK chief scientist Dr Doug Parr also delivered a stinging assessment of the policy announcement pointing to apparent double standards over the party's contrasting receptiveness to local opposition over renewables and fracking.

He said: "The Tory manifesto pledge on energy is a recipe for higher consumer bills. Onshore wind is the cheapest form of low-carbon power. Stopping it whilst also committing to cutting carbon emissions only means we'll have to invest in more expensive sources of clean energy, driving up bills.

"The Tories' double standards and ideological bias are embarrassingly obvious. They'll champion localism when it comes to wind farms, but they'll run roughshod over local people's concerns when it's about fracking."

Making an entrance

Electrical and plumbing contractor Huttie has just expanded into renewables. REI caught up with **Jim Harvey**, the company's new director of renewable energy to find out more

REI: Why has Huttie decided to branch out into renewables?

JH: Huttie is expanding into renewables to build on it's existing work and develop new business in this expanding market. Building on an existing reputation as a first class heating, plumbing and electrical installer, Huttie will now offer customers the most comprehensive service to date. The renewable energy market's capacity is increasing as architects, businesses and homeowners get to grips with the benefits of the technology, and despite changes in financial incentives and a General Election this year, popularity is still on the rise.

What services does Huttie offer to installers?

Huttie will offer design, installation and commissioning of biomass, air source heat pumps (ASHP), solar PV and solar thermal systems, as well as conventional heating, plumbing and electrical installations.

What makes Huttie unique in a competitive marketplace?

Huttie is unique in the renewable energy marketplace because it's clients come back time and time again. With exceptional customer service and delivery, a friendly team, thorough knowledge and understanding of renewable energy, and competitive pricing for quality installations, Huttie's service is second to none. All staff are highly experienced and qualified and by working with the best manufacturers and suppliers Huttie is able to offer outstanding value for money.

Please tell REI readers what makes you so very well qualified for your new role as director?

As the new director of renewable energy, I am delighted to bring my extensive experience and knowledge of the UK renewable energy market to such a first class company as Huttie.

Green revolution: Heating, plumbing and electrical installer Huttie is a new entry to the renewables market

I plan on putting this experience to good use in order to grow the business.

Previously, I was head of market intelligence at DECC and head of renewable energy at the Mark Group, holding senior roles in renewable energy and low carbon for over 15 years. I am a Royal Institution of Chartered Surveyors (RICS) qualified surveyor, a qualified industrial BREEAM assessor and ran my own company, so I understand the renewable business, and it's challenges and complexities, very well.

Can you tell us more about your role at DECC and the policies you were involved with?

I was head of market intelligence at DECC working on RHI policy work. I was involved primarily with analysing the UK renewable energy market, advising on policy implications, setting up market intelligence resources and disseminating business analysis throughout DECC. I also provided industry information, attitudes and financial business analysis from individual companies and trade bodies such as the Heat Pump Association and Solar Trade Association to support the development of the RHI, specifically the domestic RHI. My role also included development of rates and criteria for RHI support, industrial uptake and market analysis, business growth modelling and application of technology to meet the aims of the growth of low carbon and renewable energy support by DECC.

What are your predictions for the sector throughout 2015?

In a year with a General Election, predictions are tricky. I believe that the UK renewable energy market will continue to grow, especially if political and financial factors provide the certainty for investment and development. I think there will be a strong focus on biomass, heat pumps and wider commercial work. The need for energy will not change, but certainly the innovations in new energy and energy efficiency will.

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Heat metering – a guide for installers

Heat meters are an essential element in many renewable installations to claim payments under the RHI, but much confusion persists over their usage. **Mark Krull**, director for Logic Certification, explains the types of applications where heat meters are required

For the most part, homeowners receive RHI tariff payments based on estimated heat use or generation. In instances where it is not possible to estimate this, the scheme requires a heat meter, which regularly submits readings to work out how much the customer is owed.

Heat meters measure the heat output from the renewable technology and any back-up heat system. In the case of heat pumps and electric back-up heaters, electricity consumed is also measured.

Heat meter applications:

- If the heating system is bivalent, combining a heat pump, for example, with a fossil fuel system, like a gas boiler, within the same product.
- If a biomass boiler or stove has an installation capacity which does not provide 100 per cent of the space heating requirement.
- If the property was occupied for less than 183 days of the previous year.
- If there is a back-up space heating system in the property, i.e. an eligible renewable heating system installed alongside another fossil-fuel space heating system. You don't need metering, however, if your back-up heating is an electric heater controlled by the same system as the renewable system.

If two of the same renewable heating systems are commissioned at the same time (e.g. two air source heat pumps) that is considered to be one heating system, so will not require metering.

Metering and Monitoring Service Package (MMSP)

The MMSP is an optional extra, similar to a service contract. Designed for owners of biomass pellet boilers or heat pumps, heat meters and temperature sensors are connected to a software package that monitors and records the system performance. The MMSP provides information for DECC, in order for the effectiveness of the scheme to be evaluated, so recipients receive additional funding to cover the MMSP set-up.

Alternative metering requirements

There are certain instances where the installation requires an alternative heat metering arrangement. These scenarios include:

- Where the metered output includes heat from an additional ineligible technology. This might be where a heat meter has been installed after a standalone DHW cylinder that uses some form of supplementary input (electric immersion heater or a twin coil cylinder with the secondary coil fed from a gas or oil boiler); or where an ineligible heat source is simply contributing to the metered heat output.
- A heat pump used in cooling mode during the summer months. This will reduce scheme payments due to the additional metered electrical consumption.

Heat meter installer checklist

- Label all heat meters so the customer understands what each bit of kit does.
- Provide the customer with a signed and completed paper copy of the 'Installer Metering Questions' (IMQs), including the first meter reading so they can receive RHI payments. End users need this information to complete the metering questions in their RHI application – ideally, you should help them fill this in.
- Show your customer how to read the heat meter so they can take future readings.
- Provide photos of the meters, showing their labelling, Measuring Instruments Directive (MID) compliance and initial readings.

Domestic bliss

With biomass dominating the early dRHI installation figures, **Richard Hiblen**, MD of Green Square, reasserts the case for solar thermal

Recently OFGEM released a report on the first 10,000 domestic RHI installations which publicised that biomass technology has had the largest uptake. But not many people are aware that the second is solar thermal, and with good reason, especially when mixing with other renewable technologies.

Solar thermal is a simple system, and although it is often confused or looped together with solar PV, not only operates in a totally different way, but delivers a totally different kind of energy. Where PV panels are generally around 15 percent efficient, solar thermal is over 80 percent efficient – which means significantly less panels for the same amount of energy (as measured in kilowatts).

Another positive for solar thermal against PV is the storing of energy. PV needs to be used at point of generation (i.e. when the sun is out) whereas solar thermal can store its energy for later use via a thermal store ensuring the homeowner maximises on the free energy it produces.

Hidden gem: Although often overlooked in favour of other renewable technologies, solar thermal offers high efficiencies and simple installation, says Richard Hiblen, MD at Green Square

Therefore, for a like-for-like sized system (in kW output terms) they should both produce approximately the same amount of annual energy, however with solar thermal you would generally use 100 percent of the free energy produced whereas PV depends on home occupancy at the time and what appliances are being used at the time. Add to this the capital cost difference – solar thermal is typically half the cost of PV – and it becomes clear why solar thermal is becoming increasingly popular.

Furthermore, if you mix solar thermal with another renewable technology the financial benefits from the RHI increase further.

On a domestic installation, the RHI currently pays 19.2p per kWh produced. If we assumed annual generation of 2500 kWh p.a. then the repayment would be £480 per year. In addition you would obviously save on your primary fuel bill as the main boiler wouldn't be required. This is especially relevant in the summer as not only do solar thermal panels produce around 80 percent of the domestic hot water requirement, but during the summer season traditional boilers are also quite inefficient. High efficiency gas boilers in a traditional system typically run at around 57 percent efficiency during the summer.

In addition, if you were to use a biomass boiler as your primary heat source, not only would this barely be used during the summer months, but the RHI financial payments on the biomass boiler is deemed as if it were. In effect, you receive double payments on this element of the energy requirement. This was introduced as an extra incentive to homeowners to increase the take up of more than one renewable technology. And when you consider the work required to replace a traditional heating system, adding in solar thermal at this stage is much lower cost compared to a stand-alone solar thermal retrofit installation as a singular piece of renewable technology.

So once the financial incentive has been established and the decision to install solar thermal has been decided, you now have to choose the best system and design for the property and its owners. With solar thermal still in its relative infancy in the UK, opinions and examples vary from installer to installer, but we are personally fans of the flat plate, pressurised, glycol filled system. It works every time, the capital cost is generally better and there is very little to go wrong.

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Winning combination

The ribbon has been cut on **RWE Innogy's** Markinch biomass CHP plant in Glenrothes, Fife – the UK's largest such installation

Opened by Scottish minister for tourism, energy and tourism Fergus Ewing, the plant replaces the former 1950s coal and gas-fired CHP power station on the site of paper and board manufacturer Tullis Russell.

The new facility is already supplying all of Tullis Russell's electricity and steam requirements, and is set to reduce C02 emissions by 250,000 tonnes per annum.

As a large addition to the Scottish government's aim for a more sustainable future, the project was part financed with an £8.1m Regional Selective Assistance grant. Forestry Commission Scotland has secured a long term contract to supply 750,000 tonnes of timber to the plant over the next 10 years.

Paul Coffey, COO at RWE Innogy, said: "RWE has taken biomass combined heat and power technology in the UK to the next level. The Markinch plant is providing Tullis Russell with a state-of-the-art low carbon power source, and exporting enough energy into the local network to power around 45,000 homes.

Sound investment: Fergus Ewing MSP (right) opens the UK's largest biomass CHP plant in Fife, part financed by a £8.1m Scottish government grant

"With a multi-million pound investment and over 2.6 million man hours spent constructing the plant, we're delighted it is fully operational and has surpassed efficiency targets for energy production and emissions."

Chris Parr, chief executive of Tullis Russell Group, added: "This has been a major project for Fife and for our business, the importance of which cannot be overstated. The plant delivers a modern, economical and sustainable source of renewable energy for Tullis Russell, reduces our carbon emissions by 72 percent and helps safeguard the future of 500 jobs at our Markinch base."

Going bananas for PV

The shipping company responsible for handling 95 percent of the UK's banana imports is now being powered by a 1.16MW rooftop array installed by **Evo Energy**

MMD Shipping Services, which imports more than half a million tonnes of produce each year, now boasts a 4,500 panel array on its vegetable import facility in Portsmouth.

The 7,000 sq m system is generating 3,000kWh per day on average, and could save up to 600 tonnes of C02 per annum.

Working without scaffolding 15 metres above ground, Evo Energy's installation team completed the work within six weeks without disrupting MMD's operations.

Rich pickings: Now powered by solar, MMD imports 95 percent of the UK's bananas via its facility at Portsmouth International Port

Evo Energy project manager, James Sutton, said: "Because of the nature of the building's use, with dozens of forklifts and vehicles moving in and out, it would have been impossible to use scaffolding here. Planning in downtime simply wasn't an option for a company like MMD.

"So drawing on our experience of delivering commercial projects for customers working in busy, fast-paced industries, we devised a solution that would get the panels up-and-running quickly with minimal disruption to their day-to-day operations."

John Clink, technical and facilities manager at MMD, added: "The installation process was very good indeed. I've been impressed with Evo Energy's performance throughout and the people working for them did their jobs brilliantly.

"They didn't interrupt our business, they stayed out of the way and their health and safety practices were spot on. I would recommend them to any other company considering solar for their business to cut costs and reduce their carbon emissions."

Around the houses

Arch, the company responsible for economic regeneration in Northumberland, has turned to micro inverter technology from Enphase to drive down the energy costs of its housing residents

Arch commissioned Saving Energy Renewables North East to examine green energy options for bringing its most vulnerable tenants out of fuel poverty by reducing their fuel bills.

Arch's housing project brought several design challenges for a solar solution. Almost all of its houses in the Ashington Hirst area of the county had a 70 degree variance from south, and many had extension roofs in addition to the main roof construction.

Saving Energy Renewables North East believed that this would create a challenge for traditional string solar designs, as it meant installing and linking two separate arrays on a single property. Additionally, shading from surrounding trees made it imperative that available daylight was optimised.

Enphase's M215 micro inverter system was selected for the job with its Enlighten monitoring platform displaying the 1MW system's generation data and reporting on the performance of Arch's investment.

With the safety of residents a principle concern, Kris Laver, Saving Energy Renewables North East's PV operations manager, said: "The safety of DC ending above the roof, not in roof, provides complete peace of mind for the client."

Feed-in Tariff revenue will be re-invested into replicating residential installs onto Arch's commercial buildings.

Home front: Social housing residents in the Ashington Hirst area of Northumberland have cut their living expenses via the installation of solar PV and Enphase micro inverter technology

Liquid gold

Avington Park in Hampshire has reduced its energy costs and carbon footprint with a water source heat pump from **Ecovision Renewables**

As well as being a family home, Avington Park is a venue for parties, weddings and corporate functions. Owners Sarah and Charlie Bullen wished to replace three ageing and increasingly expensive oil and LPG boilers.

The inspiration for a renewable solution came from reading an article about the owner of Castle Howard, who halved his annual energy bill by extracting energy from his lake.

"We had been led to believe that it was not feasible to use this type of renewable energy in an historic house such as ours, but it worked in Castle Howard," said Sarah Bullens.

Imitation game: Avington Park, Hampshire, has installed a water source heat pump following the success of a similar installation at Castle Howard, Yorkshire

"It was clear from the article that Simon Howard completely believed in his WSHP system and that he was a great advocate of the technology. He told me that Ecovision had worked closely with him and that he highly recommended its team."

To extract heat from a tributary of the river Itchen, Ecovision placed 24 x 200 metre loops which sink to the bottom of the river. A 120 metre trench was dug from the plant room housing the heat pump to the loops in the lake. The Dimplex 130kW WSHP is connected to Avington's existing radiator system.

"Our annual RHI payment will be around £6,500 a year and combined with the significant savings we are making on oil costs, it will pay for itself in six and a half years," added Sarah.

"We are really thrilled to bits with our renewable energy solution. The house has a constant temperature and we, and our tenants, are now warm all of the time."

BIOMASS

What: Somerset couple switch from oil to wood heating

How: Angus Orligno 200 40kW boiler

Result: Almost £3,000 per annum of fuel bill savings and RHI income

Richard and Tracy are now enjoying the benefits of a wood boiler having found it increasingly expensive to heat their five bedroom house and office with oil, and an AGA.

Many other challenges faced them in order to keep warm including single glazing and solid walls in the 1914-built house. It also stood exposed on the top of a hill.

Some preliminary measures were taken to improve conditions including the installation of double glazed windows, an electric cooker and solar thermal.

After talking to Eco Angus, the couple decided to have a Angus Orligno 200 40kW wood boiler installed. They preferred being able to source wood fuel from a wider range of sources than a wood pellet option offered.

Delighted with the boiler's performance, the couple likened it to owning a horse.

"There are many different ways to do things. It can take a while to get to understand the best way. We took a little while to really get to grips with it but now understand it well, especially with the Eco Angus videos which we found very informative and helpful.

"It is a lifestyle choice. It's a lifestyle which we enjoy, sourcing wood, going in the woods, chopping the wood, feeding the boiler. It's like a hobby."

In addition to achieving a warm and comfortable house, the financial savings have been impressive. The cost of oil was £2,000 per year whereas the ten tonnes of wood burned yearly costs half that amount.

Based on this figure plus the £1,848 average yearly payments they receive under the RHI, the boiler will pay for itself in just under five years.

Cold calling: Richard and Tracy's large off-gas Somerset house and home office posed a number of challenges to keep warm, now overcome with an Eco Angus wood boiler

BIOMASS

What: Welsh Presbyterian Church ditches oil for wood-fired heating

How: Two x 56kW OkoFEN wood pellet boilers

Result: £12,000 cost savings and RHI income per annum

The Capel Coffa Henry Rees is a 100 year old stone chapel in Conwy, Wales which had been heated by oil. Having reached the end of its useful life, a committee of members reviewed all sustainable and cost effective alternatives to the oil boiler, before settling on a biomass system supplied by Organic Energy.

After a competitive tender, the installation contract was awarded to Menai Heating. The OkoFEN 112 cascaded boiler incorporating two 56kW pellet boilers and a 1500L buffer tank was chosen as the best solution for the chapel with a heat exchanger to keep the boiler's wet system separated from the existing plumbing.

Chapel secretary, Rhys Dafis, said: "We researched all options open to us – oil, LPG, electricity, air source and biomass – and having taken the advice of a consultant we decided that a wood pellet boiler would suit our needs now and in the future.

"Both the chapel and vestry are warm even in the coldest of weathers – this isn't something you can always say in old stone buildings like this. The heating is maintained at a set level 24/7 and the condensation problems that we had faced in the past are now, thankfully, a distant memory."

Lee Maher of Menai Heating added: "Probably the biggest challenge we faced was matching the granite used on the building where the pellet store was to be located so that it was in keeping with the original materials used. We successfully did this and the whole team at Menai Heating views this project as one of the most satisfying that we've worked on."

Heaven sent: The Capel Coffa Henry Rees stone chapel in Wales can look forward to a nine year payback on its new biomass heating system

SOLAR PV & THERMAL

What: Met Office scientist fights climate change

How: Solar thermal, PV and biomass

Result: 1,420kg annual C02 reduction

Global warming specialist Jeff Ridley is practising what he preaches by installing solar PV and thermal on his home.

He has recently followed this up by opting for biomass to ensure all his winter heating and hot water needs are met by renewable sources.

The Met Office scientist says that he was so impressed with SunGift Energy's PV installation on the Met Office's energy centre, he asked the company to design and install the biomass system at his home, reducing his carbon emissions by 1,420 kg per year.

"I wanted a heating system that is not only carbon neutral but also provides all the heat and hot water that my house needs throughout the winter," said Jeff.

"Sungift provided the ideal solution – a Windhager 10kW BioWIN 2 pellet boiler – and I'm already seeing huge benefits. My solar panels generate more electricity than I use and my solar thermal panels provide me with free hot water in the summer months."

Mark Howard, SunGift's biomass specialist, said: "Wood pellets are locally-sourced, clean, low in moisture, and sourced from sustainable forestry, so they are very efficient and have no carbon footprint.

"Jeff also receives a payment of 10.98 pence per unit of heat his boiler generates. As gas and electricity prices continue to be volatile, the price of Jeff's wood pellets will remain steady."

Home comforts: Met Office scientist Jeff Ridley has applied his vocational fight against climate change to his home environment with multiple renewable technologies

BIOMASS

What: Cold off-gas family home heated with biomass

How: Windhager FireWIN Klassik 12kW boiler

Result: Fuel cost saving and additional income stream

A Windhager FireWIN Klassik 12kW boiler has replaced a family's AGA as the primary heat source for their home on the Scottish island of Orkney.

Providing central heating and hot water to the property, the homeowner now spends £1,300 on wood pellets each year, compared to the £1,450 she previously spent on oil. The RHI will also net her £14,000 over its seven year term.

The FireWIN Klassik has been designed to replicate a wood burning fire with a visible flame. Requiring just 0.37 sq m of floorspace, the FireWIN is designed so it can be placed in a variety of rooms in any house.

Available in a number of colours, the FireWIN claims to be easier to integrate with colour schemes in the home.

Homeowner Lindsey Taylor said: "With my working background in the environmental sector I recognise the importance and sustainability of biomass which prompted my decision to convert to a Windhager boiler.

"I was advised on the products by local installers Firefly Energi Orkney as being the best and most reliable biomass boilers on the market and I am pleased with eco-friendly benefits of my new FireWIN boiler. The reduced energy costs alongside the domestic RHI payments have made this installation very affordable."

Warm front: An off-grid family home in Orkney has ditched its inefficient oil boiler for the multiple benefits of biomass

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 Feb 15
Solar PV	2577	42
Biomass	389	10
Air source heat pump	861	12
Ground source heat pump	698	05
Solar thermal	938	02
Small Wind	88	0
Total	3000	82

Number of MCS registered installations per technology

Technology type	Cumulative number	Installed Feb 15
Solar PV	662641	9249
Biomass	10694	291
Air source heat pump	35071	538
Ground source heat pump	9717	130
Solar thermal	7452	46
Small Wind	4819	04
Total	730394	10258

(Figures supplied by Gemserv)

Generation tariffs for Solar PV

Tariff band	FiT rate (p/kWh)
<4kW	13.39
>4-10kW	12.13
>10-50kW	11.71
>50-150kW	9.98
>150-250kW	9.54
>250kW-500kW	6.16
Standalone	6.16
Export Tariff	4.85

Domestic RHI tariffs

Technology	Legacy applications (p/kWh)	Applications submitted from 1/04/15
ASHP	7.3	7.42
Biomass boilers	12.2	8.93
GSHP	18.8	19.1
Solar thermal	19.2	19.51

Tariffs apply to all eligible installations installed since 15 July 2009

Green Deal

Month	Assessments	Live GD Plans
Feb 15	28239	658
Total	501906	5964

Green Deal supply chain

Month	Assessor organisations	Providers	Installers
Feb 15	-7	0	-54
Total	393	177	2343

(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	0.042 per kWh	25300 kWh	£1,062
LPG	6.6 per litre	90	25300	0.37 per litre	3833 litres	£1,418
Electricity	1 per kWh	100	23000	0.16 per kWh	23000 kWh	£3,680
*Air source heat pump	1 per kWh	290	7931	0.16 per kWh	7931kWh	£1,269
*Ground source heat pump	1 per kWh	360	6389	0.16 per kWh	6389kWh	£1022
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.39 per litre	759 litres	£296
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.16 per kWh	5552 kWh	£888
Dual mode system 2						
Gas boiler (30% of heat load)	1 per kWh	90	7590	0.042 per kWh	7590 kWh	£319
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.16 per kWh	5552 kWh	£888

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

RHI non-domestic rates

Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/kWh)	Tariff duration
Small biomass	Solid biomass: Municipal solid waste (inc CHP)	Less than 200 kWth	Tier 1: 5.87 Tier 2: 1.56	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 - Feb 15)	% of total
ASHP	9328	38
GSHP	3816	15
Biomass	6612	27
Solar thermal	5010	20
TOTAL	24766	100

(Source: DECC)

Who: Nick White, technical manager, Vergnet UK

What: Vergnet is a French-headquartered manufacturer of medium scale wind turbines, with a 25-year track record and 900 installations worldwide, 28 of which are in the UK

High standards: Vergnet UK devotes much resource to maintaining the maximum performance of its turbine portfolio as part of its customer guarantee, says technical manager Nick White

Completing the spin cycle

Monday

It's a typical Monday morning in the office, clearing through emails, checking each of the turbines via our SCADA system and having a conference call with our headquarters in France. This week, we are starting installation on our newest turbine in the UK, as well as implementing a schedule of upgrades to all our customers' turbines to optimise efficiency and maximise generation.

Planning today includes a schedule for a number of upcoming six month services, then preparation of Service Packs to ensure each visit has all the consumables and equipment required to complete the work.

Tuesday

To kick-start the upgrades, I liaise with each landowner and farmer to confirm our visit and check our SCADA system, which remotely alerts us to any issues, which we can then fix on-site.

Today, our SCADA highlights an intermittent issue with one of our turbines. Due to our performance guarantee and commitment to our customer, it is important for us to prioritise this.

I spend the afternoon sourcing the parts necessary to fix the issue and rescheduling our upgrade itinerary, so we can visit the site with the issue first and solve the problem whilst implementing the other planned upgrades.

Wednesday

Following the notification, the team and I travel to the turbine with the correct parts to solve the problem. We undertake a general inspection of the turbine, address the problem and complete the upgrade package. The team then travel to our other turbine sites in the area and continue to rollout our upgrade strategy. I make my way to Birmingham for the beginning of the new installation.

Thursday

At the installation site, it is important for me as technical manager to be familiar with each turbine from its inception. I will remain on site for the next two weeks to oversee the build and start to initiate customer relationships, as my team and I will become the main point of contact following the installation. On site, the roadways, cabling and foundation work has been completed by a local civil engineering contractor, and we oversee the delivery of the Vergnet GEV MP-C turbine components. Right on schedule our crane is on site and rigged, paperwork completed and a toolbox talk for all staff involved is attended. Four major component deliveries arrive evenly spaced throughout the day, the lay down area plan is followed and everything is ready to begin construction tomorrow.

Friday

The weather is on our side today and after an early start we complete the tower installation by mid-afternoon. With room now cleared in the lay down area, the last delivery arrives – the turbine's blades. The installation schedule plans completion in 12 days' time, always weather dependent in this industry, but the forecast is good and I am confident we will deliver a commissioned turbine to the customer on time.

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