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SOLAR THERMAL SOLAR PV BIOMASS HEAT PUMPS WIND HYDRO May 2016

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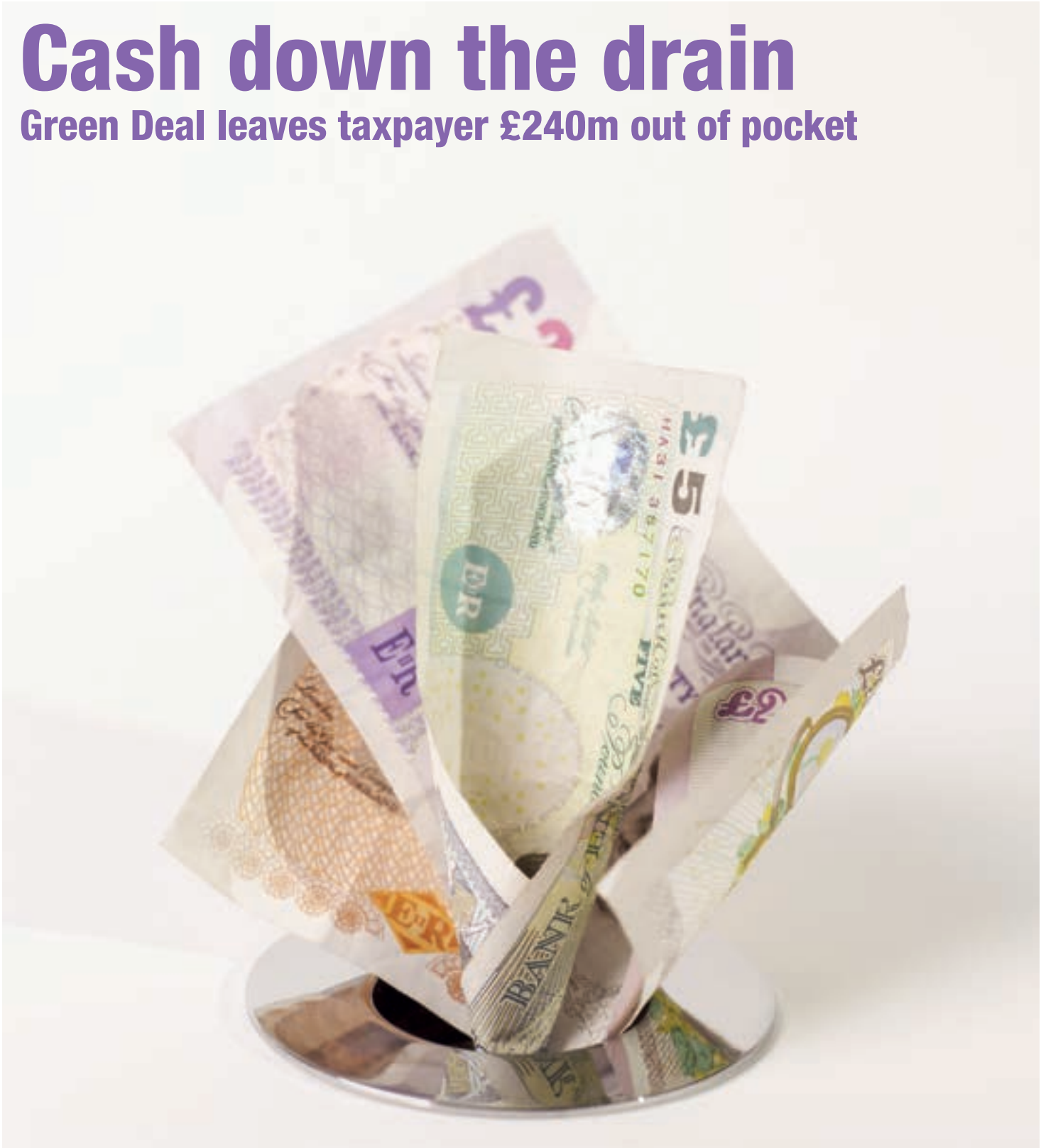

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Is it green for go?

In the wind-up to the EU referendum on June 23, it was interesting to read a recent BPVA report on the likely consequences of a 'leave' vote on the UK renewables industry.

The conclusions paint a mixed picture for the market as the EU Renewable Energy Directive is the primary driver behind the Government's support for the rapid expansion of renewable power generation so far. Recent policy changes such as scrapping the zero-carbon homes target show that energy efficiency is not quite on top of the political agenda right now. However, a Brexit appears unlikely to actually make a difference to UK energy policy – because the country's own unilateral Climate Change Act imposes even tougher requirements for cutting carbon emissions.

The BPVA briefing points out that EU funding is useful for community energy projects, which also sets good examples of these projects. On the other hand, EU directives had also caused the community energy sector some problems and there are some cons from association with the EU, such as complicated EU State Aid rules, which take a very long time to make, and minimum import prices of solar panels.

One analyst pointed out: "It's a huge paradox that Brexit could result in a system where it is easier to develop renewables infrastructure in the UK, but no strong incentive to make it happen." The UK's relationship with product standards development would almost certainly evolve and could be of significantly reduced influence.

Our commitments in the Climate Change Act and Carbon Budgets originated in the UK, so we might expect future UK Governments to focus on cost-effectively reducing emissions, rather than renewables.

The industry faces pros and cons whether the country ultimately decides to leave or remain – only the future will tell.

Editorial panel members

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In brief

European Centre of Technology launch
The European Centre of Technology (ECT) has arrived in the UK, bringing over 40 years' experience of education through knowledge-sharing and best practice in Engineering, Management and Finance. Working alongside the United Nations (UNEP), its twin organisation the European Energy Centre (EEC) and leading universities, the ECT provides training courses, qualifications, conferences, publications, European projects and global partnerships, and awards the highly regarded, internationally recognised Galileo Master Certificate.

Wolseley opens graduate scheme
Wolseley UK, the world's largest trade distributor of heating and plumbing products, has launched a sales graduate programme that offers young people training and hands-on experience with market-leading brands, like Plumb Centre, Parts Centre and Pipe Centre, serving workers in the construction industry with energy efficiency products.

Solar on the go
Swedish solar energy expert Midsummer, a leading provider of equipment for manufacturing flexible CIGS thin film solar cells, has received funding from Mistra for the development of lightweight solar modules on vehicles. The new solar panels will be integrated into body panels in a Clean Motion Zbee ultra-light electric vehicle composite roof.

Demand for green gas
A survey conducted for Biomethane Day has shown that 84 percent of people in the UK would like to switch to using green gas in their homes. The event, organised by the REA, revealed how the UK now leads the world in green gas production. Biomethane injected into the gas grid has been used for industry and transport, but is now also available to domestic consumers in their homes.

UK's first transparent solar bus shelter opens in the capital

The UK's first solar power generating bus stop has been opened in Canary Wharf, London. Designed by Polysolar, it is made with transparent photovoltaic glazing, which captures the sun's rays even in low light.

The shelter was unveiled last month outside the HSBC building in Canada Square by London Mayoral candidate Sian Berry.

It can generate up to 2,000kWh per year of renewable electricity, enough to power the average London home, which will be used to run smart signs and infrastructure on the estate and help reduce carbon emissions.

Polysolar was commissioned to create the shelter by Canary Wharf Group after winning its Cognicity Challenge and it worked with hard landscaping and street furniture supplier Marshalls on the pilot scheme.

It now hopes to use the same technology for cladding on new buildings on the estate in the future.

Surge in renewable generation

New statistics released by DECC reveal significant increases in the installation of renewable electricity capacity, over a period in which overall electricity generation fell.

Renewable electricity in 2015 made up 24.7 percent of all electricity generated in the UK, a record-breaking achievement and a 28.8 percent rise from 19.1 percent in 2014.

Solar PV showed strong growth, 86 percent up from 2014 with total generation of 7.6TWh.

The Government understands that it needs to reach a target of 30 percent renewable electricity by 2020 to meet its legally binding targets. Given present growth rates it appears likely that this will take place.

However, analysis by the REA suggests this may not be enough. The legally binding 2020 renewable energy targets include both heat and transport, two sectors where the Government is currently set to miss its decarbonisation targets – something acknowledged in government committee hearings by groups such as the Committee on Climate Change. Thus to meet the overall binding target the electricity sector will have to go even further, hitting 44-45 percent sourced from renewables by 2020.

2015's renewable electricity growth rate of five percent would need to continue year-on-year to achieve this and recent policy changes make that unlikely.

Solar kits donated to colleges

Solar energy company PROINSO is donating equipment to 16 United World Colleges (UWC) to assist students in comparing renewable energy data from different parts of the world.

PROINSO's first donation has been made to UWC Atlantic College in Llantwit Major, South Wales. The equipment will be set up in the college's 'Valley', an on-site kitchen garden. It will primarily power a greenhouse run by students, which houses a range of vegetables and plants while allowing experiments with different food growth techniques.

The aim is for students in Wales to compare renewable data with peers around the world, to see how different climates impact on energy usage at schools in countries such as Canada, China, Costa Rica, Norway, Singapore and Swaziland.

At UWC Atlantic College, students split their week equally between their IB studies and co-curricular activities, with the college's mission stating that environmental responsibility forms part of its overall goal to make education a force for peace in the world.

Students also play an active role in the college's Sustainability Council. The Council works continuously to develop the Sustainability Charter, which regulates on everything from day-to-day student activity to assessing green credentials for school suppliers.

EU VAT reforms could prevent solar hike

The European Commission published an Action Plan on VAT last month that the solar industry hopes will support Ministers' indicated intentions to apply a reduced rate of five percent VAT on solar PV and solar thermal panels.

The European Commission intends to give national governments "more autonomy" in how they grant lower rates of VAT. The EU executive has put forward two possible options: The first is to set a broader EU-wide list of products to which reduced rates can apply; the second is simply to give, within a set of general principles, governments the power to set their own reduced rates of VAT. Both will result in greater flexibility.

Last month a cross-party amendment to the budget led to statements from senior Ministers, ahead of EU VAT reform, suggesting the UK would retain the low five percent rate for solar.

Leonie Greene, Head of External Affairs for the STA, said: "What we need now is a clear statement from Treasury to confirm the industry can count on the positive statements already given by Ministers. It would be a nonsense to impose VAT on solar at 20 percent while retaining five percent for grid electricity, gas and oil."

The Commission's communication says the EU VAT Directive is "becoming obsolete" and has led to the Commission having to take over two-thirds of EU countries to court in "unnecessary litigation".

'Stunning Solar' campaign launches

The Solar Trade Association has begun a new push to promote more widespread awareness of how the latest in rooftop solar technology can produce beautiful and aesthetically pleasing installations.

A combination of inspired design, building integrated products and mounting systems that sit flush with the existing roof are creating more and more sleek and attractive solar rooftops on both domestic and commercial properties.

Paul Barwell, CEO of the Solar Trade Association, commented: "First impressions are everything, and that applies to houses just as much as people. Stunning Solar shows that solar can increase the 'kerb appeal' of a home, as well as making it cheaper and more eco-friendly to a household or business."

Two East Anglia PV firms in liquidation

Eco Juice and Absolute Renewable Energy (UK), both based in Norwich, have blamed Government solar subsidy cuts after going into liquidation.

Absolute Renewable Energy (UK), based near Norwich airport, went into liquidation in February after amassing debts of about £800,000, although around half of this was to its parent company, Avonside Group Services.

Liquidator Dean Watson, partner at Begbies Traynor Insolvency Practitioners, said the firm employed 25 people and also contracted about 40 self-employed sales people. "The firm got to the New Year and the order book was drying up," he said.

Eco Juice, founded five years ago, also ceased trading in February, citing lack of business as a result of reductions to the Feed-in Tariff. Director Peter Fleetwood said he was forced to let two workers go, but said solar panels were now a "hard sell" due to the Government's cut back.

Liquidator Jamie Playford, of Leading Corporate Recovery, said the company had accumulated creditors of about £43,000.

The Solar Trade Association said that although there had been an 80 percent reduction in solar panel installations since last February, the market was evolving with new ideas including solar set-ups with home battery systems, enabling consumers to reduce their dependence on the grid.

Renewables now generate 57% of Scotland's power needs

New figures reveal that Scotland generated the equivalent of over half its electricity needs from renewable sources in 2015, surpassing the 50 percent target set by Ministers.

Based on the latest consumption figures from 2014, renewables now generate the equivalent of 57 percent of Scotland's power needs. The new statistic, published by DECC, means Scotland is now more than halfway towards its target of producing the equivalent of 100 percent of its electricity from renewable sources by 2020.

Jenny Hogan, Director of Policy for Scottish Renewables, said: "This is another important milestone and shows renewables are now a mainstream part of our power sector. There is still a huge amount of potential for future growth, if the industry is given the right backing by government."

However, she warned: "Despite having enough projects in the pipeline, recent changes to government support, and hold ups in the consent process for offshore wind farms, have set us on a path to fall short of the 2020 target."

The approximate statistics will be confirmed once the consumption figure of electricity in 2015 is available later this year.

Earthmill expands with new operation

Yorkshire-based renewables specialist Earthmill, the UK's largest agricultural wind turbine firm, has expanded with the launch of a dedicated turbine service and maintenance division, to help farms maximise returns from wind power.

The £15m turnover business, which has installed more than 250 'farm-scale' turbines since it was launched out of Managing Director Steve Milner's garage in 2009, has invested in new staff and technology in response to the high demand for assistance from turbine owners whose initial service warranties have expired.

Earthmill has won more than 20 new service and maintenance contracts in the last few months and expects to have gained at least a further 50 by the end of this year.

With a 14-strong team of engineers deployed nationally, and further recruitment anticipated, Earthmill has also invested in a new on-site high-tech control centre at its Wetherby head office. The technology provides a detailed, real-time report of local wind speeds and power outputs of each turbine as well as pre-empting and instantly logging any technical problems.

Milner said: "When something goes wrong with a turbine, speed and technical expertise are essential to avoid costly downtime for turbine owners, who need their machine to be producing power at every opportunity. This investment in technology allows us to gather the levels of data necessary to ensure our clients are constantly getting the maximum out of their wind turbine investments."

Green Investment Bank streamlines energy efficiency funding

The UK Green Investment Bank plc (GIB) has provided a Green Loan to help Stirling Council save £31m over the next 30 years by installing energy saving streetlights.

Stirling Council is borrowing £9.87m from GIB and will use it to install light-emitting diodes (LEDs) instead of traditional sodium light bulbs in 12,000 streetlights over four financial years.

The council will also replace 4,000 of the columns (or lampposts), marking a major investment in infrastructure for the county.

Stirling is expected to cut its streetlight power consumption by 63 percent and reduce its greenhouse gas emissions by the equivalent of 14,400 tonnes over the lifetime of the project. The energy saved each year would be equivalent to the total electricity consumed by over 850 homes.

GIB launched its Green Loan for local councils to help them reduce their streetlight electricity bills by up to 80 percent. The Green Loan offers UK local authorities a low, fixed-rate financial arrangement over a period of up to 30 years. It has been specifically designed to finance public sector energy efficiency projects where repayments are less than the savings realised.

The UK currently spends about £300m a year powering its seven million streetlights, with fewer than one million lamps so far using low-energy LEDs.

Worcester gives installers star treatment

Leading manufacturer of heating and hot water technologies, Worcester, Bosch Group has launched a new initiative aimed at loyal installers of its award-winning product range.

The Greenstar Rewards promotion runs from 6th April to 31st December 2016 and offers installers the chance to collect points that can then be redeemed against a number of rewards, ranging from Worcester branded clothing to Bosch professional power tools. Those eager to develop their skills can also use their points on selected training courses at the company's network of Training & Assessment Academies.

To collect points, installers must sign up to the scheme and register a Greenstar i, Greenstar Si Compact boiler or Greenstore cylinder via the new log in area of Worcester's website.

Apprentice winner signs up with NICEIC

The Apprentice winner Joseph Valente has signed up with NICEIC, the UK's leading voluntary regulatory body for the electrical contracting industry.

Valente was named the winner of hit BBC show *The Apprentice* last year. That victory earned him the backing of Lord Sugar and he is using his support to expand his plumbing, heating and electrical business, Impra Gas.

"It has been full on since winning *The Apprentice*, but it is a great platform for my business," commented Valente.

"The investment and support has allowed us to explore new areas and we just want to get going now and grab the opportunity."

Part of that development includes gaining NICEIC accreditation. As the nation's leading and most recognised certification body, Valente admits NICEIC approval was vital to expanding his business.

"Having specialised in the heating and plumbing sector I was well aware of NICEIC and it was the only brand that people really spoke about. We used to sub-contract out all of our electrical work but winning *The Apprentice* means we have been able to take on two fully qualified electricians and start doing that work in-house.

"Being an Approved Contractor with NICEIC means we can now offer a full electrical service to our clients including consumer unit changes and electrical reporting and testing."

Valente is also keen to capitalise on the growing trend for smart technology around the home.

Continual developments in technology in recent years have transformed the way we work. They are also increasingly changing the way we live in our 'connected' homes – something Valente has identified as a specialist area for his business.

"I think smart homes and the Internet of Things (IoT) is the way the industry is going," he stated.

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Financing solutions for energy efficiency are driving heat pump sales, explains **Richard Baker**, Sales Manager, Siemens Financial Services Energy Financing

As UK legislation aiming to reduce carbon emissions focuses on increasing the energy efficiency of buildings, heat pumps provide a viable alternative to conventional oil, gas or electricity powered heating. The Energy Efficiency Regulations 2015 require that from 1 April 2018 privately let commercial and domestic properties meet a minimum energy efficiency standard. Landlords must ensure that their properties achieve an Energy Performance Certificate (EPC) rating of at least grade 'E' before granting a lease to new or existing tenants. This rating is based on the assessment of a building's impact on the environment in terms of CO2 emissions. Buildings account for 37 percent of total UK greenhouse gas emissions, with direct emissions due to the burning of fossil fuels for heat comprising almost half (45 percent) of this figure. Increasing the energy efficiency of space and water heating systems in properties therefore has the potential to contribute significantly to the UK's carbon targets.

Against this backdrop, renewable heat generation technologies such as air and ground source heat pumps offer a sustainable option to decrease the environmental burden caused by heat production in buildings. In 2014, the reduction of CO2 emissions from heat pump stock in the UK amounted to 0.47 megatons; though the savings potential for the same year may have been much higher. The European Heat Pump Association estimated a potential reduction of just under 20 megatons in CO2 emissions if heat pumps were used more broadly. Indeed, an improved energy rating is not the only benefit of renewable heat generation. Air and ground source heat pumps generate 3kW of heat output for every 1kW of energy input, which means they have the potential to supply more power than they consume. As a consequence, they harbour significant potential to reduce spending on electricity and fuel. Replacing conventional electric or central heating with air source or ground source heat pumps can thus be a cost-effective means of delivering heat with low or zero greenhouse gas emissions.

As convincing an argument as this might be, in a financial and environmental sense, acquiring the necessary funding for the installation of renewable heat generation technologies can be a

challenge for landlords. Financing solutions designed to make renewable technology affordable therefore provide an opportunity for heat pump suppliers to unlock business opportunities and create sustainable value for their customers.

One such example is Energy Financing from Siemens Financial

Services Limited (SFS). With the aim to provide alternative financing for organisations looking to acquire energy efficient, green equipment or technologies, SFS Energy Financing makes a practical connection between the expected savings in energy costs and/or income from energy generation to the financing arrangement's monthly payments. Effectively, through SFS Energy Financing, organisations can benefit from a financing solution that can make the investment zero net cost or even be cash positive if the savings are greater than the monthly financing payment.

This helps landlords make carbon-friendly investments since SFS Energy Financing provides customers with an affordable alternative to outright cash purchase. The convenience of combining technology and finance removes the need to seek funding for equipment acquisitions externally. As payments can be customised to suit each client's requirements and budgets, suppliers can focus their efforts on providing the best solutions without customers' capital budget restrictions. They also benefit from improved cash flow as payments for the financed installations are typically made by SFS direct to suppliers within 24 hours of receiving correct documentation. By helping remove the financial obstacle to acquisition, suppliers of renewable heat generation technologies secure themselves a competitive advantage to close deals faster.

The use of air and ground source heat pumps can be an attractive option to cut a building's running costs, energy consumption and carbon emissions. Installing renewable heating technologies has the potential to not only deliver financially in the long run but also make an important contribution to achieving the 2050 climate change targets.

As energy efficiency requirements become more demanding, heat pump suppliers can help facilitate necessary investments through the offering of a solution that incorporates the best-in-class technology with an affordable financing plan. In doing so, they are also in a position to distinguish themselves from their industry peers by providing their customers with an added value that goes beyond technical expertise and equipment knowledge.

Horses for courses

When considering installing a heat pump, within a new build or existing property, the array of available products can be confusing. *Here Richard Paine, Product Manager for Domestic Heating and Renewables at Daikin UK, discusses which application is best for each product...*

With proposed changes to the Renewable Heat Incentive including the introduction of 'tariff guarantees' for heat pumps, the demand for this innovative technology is set to continue to grow. As a cost-effective solution for providing heating and hot water, it is becoming increasingly popular in both new build and retrofit properties.

To ensure the most suitable product is chosen, there are several initial influencing factors. For example, how well insulated is the property? This impacts on how to calculate the heat load of the building. New properties will have this information in the building designs, but if the property is older, a heating survey is required to establish the maximum amount of heat it will require. As over or under-sizing of a system can significantly impact on its energy consumption and efficiency, the heat load of a building is essential for choosing the correct heat pump. For example, a poorly insulated older property would require a larger capacity heat pump to ensure a smaller unit is not overworked.

How the heat will be distributed also needs to be considered, as this affects the temperature the heat pump will need to operate at. The ideal distribution method has a low flow temperature, such as an under-floor heating system. However, if radiators are used, their size is crucial to optimising the system's performance.

With access to the latest design technology from manufacturers, expert installers have detailed knowledge of the specification process, and consequently it is best to seek their advice.

To meet the specific requirements of each application, leading renewable heating manufacturers have produced diverse product ranges. The Daikin Altherma range comprises four unique solutions. The easy-to-install Daikin Altherma Low Temperature (LT) Monobloc is best used where space is an issue. The all-in-one unit is installed outdoors and only requires a domestic hot water cylinder. Designed for larger properties, the Daikin Altherma LT Split is guaranteed to perform in temperatures as low as -25°c so ideal for harsher climates. Installing a split system does require F-Gas qualifications, as refrigerant pipework is needed between the outdoor unit and the indoor hydrobox.

For less thermally efficient homes and retrofit projects, the Daikin Altherma High Temperature Split system connects to existing pipework and radiators and delivers flow temperatures of up to 80°c. The hot water tank can be placed on top of the indoor unit to save space. For the 'best of both worlds' the Daikin Altherma Hybrid is a renewable heating system combined with a traditional gas-condensing boiler. Significantly more efficient than a boiler alone, the unit automatically selects the most cost-effective heating method for the property.

Partner organisation
MCS presents its regular column for REI

Important new update to MCS solar Standard

On 5 April 2016, MCS published MCS 012 Issue 2.1 (a minor update to MCS Issue 2.0 regarding the implementation timeline for MCS 012 product manufacturers), which is available for reference from the date of publication.

The important update to the Standard relates to A5.1.1 on page 24 of MCS 012. It clarifies the requirements on the external spread of flame when installing in-roof solar panels, and has introduced three routes for a product to comply with MCS requirements and building regulations. These three routes are shown below:

- *A specific fire test and rating with a specified PV module;*
- *A test and rating that is achieved independently of a PV module; and*
- *An installation method that achieves a fire rating that is independent of the solar installation. The MCS Contractor can use a substrate with an independent fire rating (for example a roofing membrane with AA rating) beneath a roofing kit/ module combination that does not have a declared fire rating.*

MCS Solar PV Contractors must commence working in accordance with this issue of the standard from **02/05/2016**.

MCS Solar Thermal Contractors may also choose to use MCS 012 products as a means of complying with relevant Building Regulations (please note that both solar thermal and solar PV installations must continue to meet all relevant Building Regulations).

Useful Links:
MCS 012 v2.1
http://www.microgenerationcertification.org/images/MCS_012-Issue_2.1_Product_Certification_Scheme_Requirements_Pitched_Roof_Installation_Kits.pdf?dm_t=0,0,0,0,0

Important information on MCS 012 Issue 2.1 for MCS Solar Photovoltaic and Solar Thermal Contractors
http://www.microgenerationcertification.org/images/MCS_012_Issue_2.1_Important_Information_2016.04.05.pdf?dm_t=0,0,0,0,0

Opinion

The potential effects of a Brexit on the UK renewable energy sector

Gordon Moran, writing for the European Energy Centre (EEC), considers the prospects of the renewables sector should Britain vote to leave the European Union

A great deal of progress has been made in the UK in recent years to improve energy efficiency and promote renewable energy to reduce carbon emissions. Much of the legal and political impetus to implement this has come from EU legislation, such as the EU's 20-20-20 climate targets. However, in the event of a Brexit, the UK could potentially renege on such pledges. But even if the UK left the EU and reneged on 2020 EU carbon targets, it is highly unlikely any UK government would repeal the UK Climate Change Act 2008 to reduce carbon emissions by 80 percent by 2050.

Subsidies for various renewable energy technologies have recently been reduced in the UK. However, Government support remains strong for certain technologies, such as offshore wind, with additional funding allocated for energy storage technology research. Within the UK there are also levels of support from the devolved nations as well as on a regional level.

It is uncertain whether the UK would have achieved as much low carbon development without the impetus of the EU. However, if the UK voted for a Brexit, alternative arrangements could be put in place to sustain carbon emission reductions. For instance, the next British government after 2020 may be more supportive of the renewable sector. Additionally, whatever strategy the current or future governments opt for, they will still need to reduce carbon emissions by 80 percent by 2050, which cannot be achieved without further development of renewable energy technologies across the UK.

Alternatively, if the UK stayed in the EU, it would help raise investor confidence and minimise the risk of major projects being mothballed as a result. The influence of the EU would also be constructive in maintaining the political will to pursue ambitious long-term environmental goals.

To learn more about Renewable Energy and Energy Efficiency through training courses, visit www.EUenergycentre.org

CURRENT AFFAIRS

Bill Wright, Head of Energy Solutions at the ECA, urges UK business to grasp the potential of storage

Renewable energy is becoming more popular – on the other side of the Atlantic at least. Apple has found a way to draw 93 percent of its energy from renewable energy sources, and the company's latest centre in Nevada is fed from solar arrays – welcome news at a difficult time for the renewables industry.

It is to be hoped that this will set a precedent as, where Apple goes, others tend to follow. Companies who follow their example and aim towards 100 percent renewable energy sources can boost their 'green' credentials and enjoy a degree of energy security – as long as the system has been configured to run 'off grid'.

Despite the lack of sunshine in the UK we should be looking for companies to do something similar by owning and operating their own renewable supply sources. The Co-op Group has made inroads in this area by building wind farms on their land. Although these are not directly connected to their buildings, they will give them some degree of contractual independence from the main energy providers.

Of course, one issue this raises is what to do when there is little wind – and, in the case of PV, what to do overnight. This is where energy storage comes in. Tesla have given a tremendous marketing boost to electricity storage systems in recent years – even though they have very few systems in the UK – and this could be the year it finally takes off at a building and even grid level.

Energy storage is an area where the UK could apply real leadership and actively encourage firms to take it up – and the seeds might have been sown with the Chancellor's pledge to allocate £50 million to innovation in the storage and associated areas in his Budget. Let's grab this opportunity and use storage to encourage further take-up of renewable energy – we don't know how many more of these chances will come our way!

Looking to the future after SunEdison

SunEdison Inc just filed for bankruptcy protection after a two-year, $3.1 billion acquisition binge that "drove its debt to unmanageable levels and sent investors running for the exits". Bloomberg New Energy Finance's Head of Solar, **Jenny Chase**, provides an oversight for the rest of the industry...

- SunEdison's bankruptcy says more about the company's strategic decisions than about the solar industry as a whole. Comparable companies SunPower and First Solar have managed a develop-and-sell business profitably over the past three years.
- What has distinguished SunEdison has been the relentless and unfocused pursuit of growth, in which it has invested vast amounts of borrowed money. Not all of its ventures succeeded, which is inevitable in the project development business, but SunEdison's win-to-loss ratio was evidently insufficient. It borrowed a lot of money and lost it – or at least tied it up in projects at various degrees of completion, which it needs to sell to realise the gains and pay back creditors. On the eve of the bankruptcy filing, these projects were for sale.
- There is plenty of value in the project pipeline, which ultimately comprises cash-generating assets not linked to the continued existence of SunEdison. However, investors will take time to do the due diligence to value these projects correctly before handing over cash for them. Some projects, like the portfolio in Andhra Pradesh, India, at the lowest-ever tariff of INR 4.63/kWh ($70/MWh), may be difficult to build at a profit due to the extremely competitive prices they were bid at.
- Bloomberg New Energy Finance suspects that if yieldcos are to make a return, they will need to have a management team that is not directly affiliated with a developer, and which investors trust to serve their interests exclusively.
- Ultimately this makes no difference to Bloomberg New Energy Finance's new build forecasts, although it might prompt developers to be less ambitious with their assumptions when bidding in solar tenders. This may mean a temporary end to the stream of records for 'lowest tender price bid' as companies try not to offer solar electricity below cost.

Government auditor blasts DECC over "wasteful" Green Deal spending

Taxpayer to lose £240 million after incompetent handling of Green Deal scheme

The taxpayer is set to foot the near-quarter of a billion pound bill following the bungled administration of the Green Deal scheme, according to a damning report published last month by the Government's own auditors.

The National Audit Office (NAO) concluded that the Department of Energy and Climate Change's Green Deal had "not achieved value for money". The scheme, which cost taxpayers £240 million including grants to stimulate demand, has not generated additional energy savings.

The audit report claimed that the Government's flagship energy-efficiency scheme failed because DECC's design and implementation did not persuade householders that energy-efficiency measures are worth paying for.

The NAO report, 'Green Deal and Energy Company Obligation', also found that DECC's design of its Energy Company Obligation (ECO) scheme to support the Green Deal actually added to energy suppliers' costs in meeting their obligations.

This reduced the value for money of ECO, but the Department's information is not detailed enough to conclude by how much. Suppliers have met their obligations for saving carbon dioxide (CO_2) and reducing bills.

The report finds that while the Department achieved its target to improve one million homes with the schemes, this is not a direct indicator of progress against the objective of reducing carbon dioxide emissions. This is because different types of energy-efficiency measures save different amounts of CO_2.

The schemes have saved substantially less CO_2 than previous supplier obligations, mainly because of the Department's initial focus on 'harder-to-treat' homes, as its analysis showed that previous schemes had absorbed demand for cheaper measures. The Department expects the measures installed through ECO up to 31 December 2015 to generate 24 megatonnes of carbon dioxide ($MtCO_2$) savings over their lifetime, only around 30 percent of what the predecessor schemes achieved over similar timescales.

Demand for Green Deal finance had fallen well below the Government's expectations, with households only funding one percent of the measures installed through the schemes with a Green Deal loan. The schemes have not improved as many solid-walled homes, a key type of harder-to-treat home, as the Department initially planned.

As part of changes to ECO in 2014, the Department enabled suppliers to achieve their obligations with cheaper measures, moving away from its focus on harder-to-treat properties. ECO has generated £6.2 billion of notional lifetime bill savings to 31 December 2015 in homes most likely to be occupied by fuel-poor people. Beyond this, the Department cannot measure the impact of the schemes on fuel poverty.

According to the NAO, there are significant gaps in the Department's information on costs, which means it is unable to measure progress towards two of its objectives: to increase the efficiency with which suppliers improve the energy efficiency

The numbers at a glance

£240m
Department of Energy & Climate Change's spend on the Green Deal between 1 April 2011 and 31 March 2015 (including grants to stimulate demand)

£3bn
Cost to energy suppliers of meeting their Energy Company Obligations, 1 January 2013 to 31 December 2015

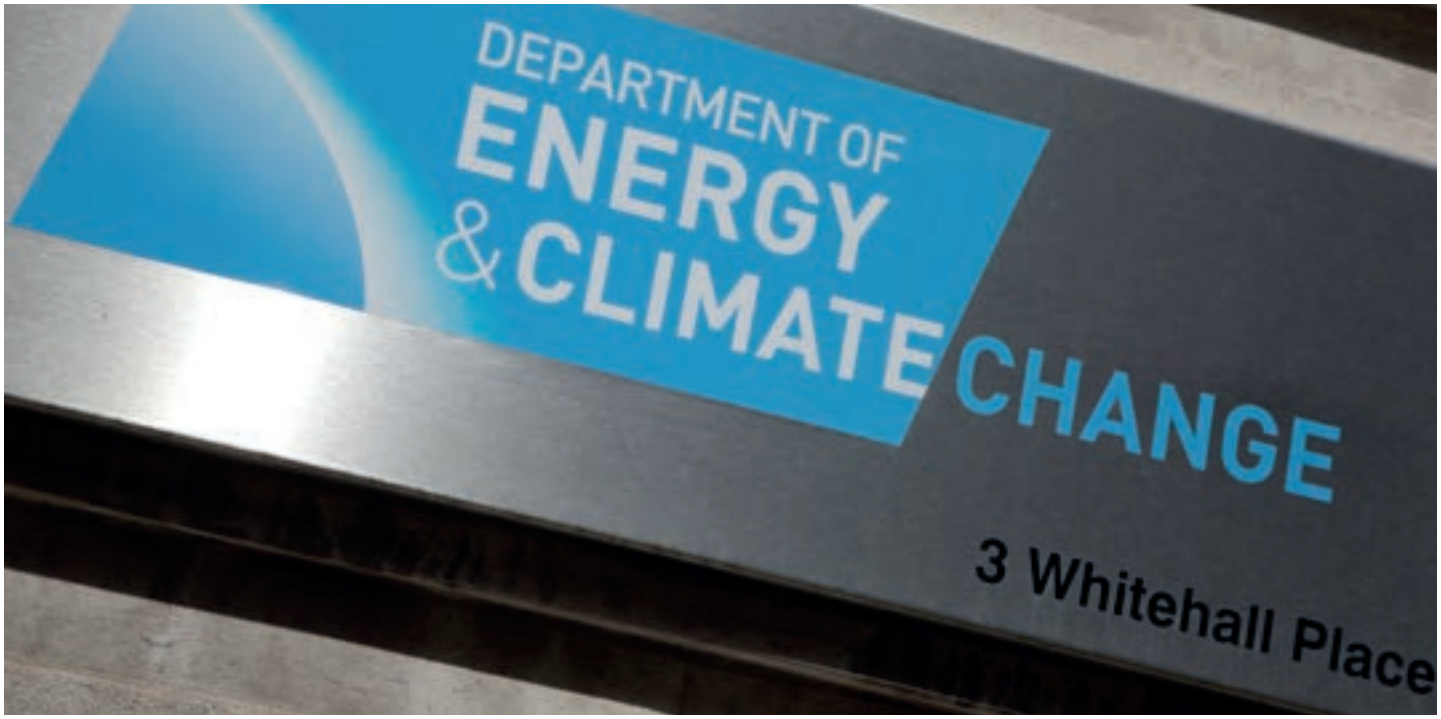
£94
Overall cost per tonne of carbon saved by the schemes (excluding energy suppliers' administrative costs), compared with £34 for the previous set of schemes

2.3m
Number of fuel-poor households in England

£6.2bn
Estimated notional lifetime savings on energy bills resulting from the installation of Energy Company Obligation (ECO) measures in low income and vulnerable households by 31 December 2015.

50,000
Homes made more energy efficient with direct subsidies from the Department of Energy & Climate Change, worth £170m (Green Deal cashback scheme and Green Deal Home Improvement Fund)

12m
Approximate number of homes lacking wall insulation in 2015 (cavity-walled and solid-walled homes that could be insulated)



of harder-to-treat houses, and to stimulate private investment. The lack of consistency in the Government's approach during the schemes could increase the long-term costs of improving household energy efficiency.

In the NAO's accompanying investigation into DECC's loans to the Green Deal Finance Company, also published last month, it found that the Department expects that it will not recover its £25 million stakeholder loan to the finance company, plus £6 million of interest that has accrued on it.

The Department based its stakeholder loan on forecasts of significant consumer demand for Green Deal loans. But demand for Green Deal finance was lower than the Department forecast from the outset, meaning the finance company could not cover its operating costs. The Department agreed a second loan worth up to £34 million in October 2014, of which the finance company has drawn down £23.5 million. The Department still expects to recover this loan in full as it will be repaid before other investors in the finance company.

Amyas Morse, Head of the National Audit Office, said: "Improving household energy efficiency is central to Government achieving its aims of providing taxpayers with secure, affordable and sustainable energy.

"The Department of Energy and Climate Change's ambitious aim to encourage households to pay for measures looked good on paper, as it would have reduced the financial burden of improvements on all energy consumers. But in practice, its Green Deal design not only failed to deliver any meaningful benefit, it increased suppliers' costs – and therefore energy bills – in meeting their obligations through the ECO scheme.

"The Department now needs to be more realistic about consumers' and suppliers' motivations when designing schemes in future to ensure it achieves its aims."

David Thorpe, independent consultant and author of several books on energy efficiency in buildings, commented: "The Green Deal was an example of a 'pay-as-you-save' type scheme, where loans are taken out to pay for the energy efficiency measures, and repaid over time from the financial savings created by these measures.

"It seems like a no-cost solution and an obvious winner. But not the British government's version of it. One of the reasons for this failure was pointed out right at the start by critics, but ignored by Government officials responsible for designing the scheme.

"This was that the seven to 10 percent APR interest rate on the loan to householders was too high – in fact several percentage points higher than ordinary loans available on the high street. It was simply not affordable.

"It also made many measures unaffordable within its own context – the 'Golden Rule'. This rule was embedded into the legislation and stipulated that the savings generated by energy efficiency measures must lie within the cost of the measures. The Green Deal was initiated in 2013 under the 2011 Energy Act.

"It came with no target or grants. It combined accredited energy advice and installation with finance to be repaid in a period up to 25 years. Finance was attached to the property, and recouped through extra charges on the electricity bill (even if the savings were made on a different fuel, say gas).

"The result? 300,259 total Green Deal assessments resulted in only 1,815 'live' plans – a conversion rate of just 0.6 percent.

"Contrast this with the 'EnEv' programme in Germany, implemented from 1 February 2002 then amended in 2007 and 2009, and replacing the flagship CO2 Building Rehabilitation Programme. Here, the interest rate on the loan of up to € 50,000 from the public bank KfW for the replacement of the heating and domestic hot water systems of a residence (and ventilation and cooling systems installed earlier than 2009) was between one and four percent.

"The goal here is to use public policy to refurbish the entire housing stock and all public buildings in Germany by 2030. A million old homes have been retrofitted and 400,000 new highly efficient homes built (this is not just a retrofit scheme). Annual energy consumption was reduced by 900GWh as well as energy costs of participating companies by €150 million per year."

Round-up of all the latest green gadgets and innovation to hit the market

ProductNews

Calorex

Pro-Pac heat pumps

Heat pump for pools

Recognised as the most sustainable way to dynamically heat swimming pool water, the new Calorex Pro-Pac 22Y unit has been chosen by Bespoke Swimming Pools for its latest project to keep energy and operating costs to a minimum.

Designed and manufactured in the UK under ISO9001 compliance, the highly innovative Pro-Pac heat pumps are specifically designed for swimming pool heating and are capable of providing a pool with up to five units of absorbed heat for every one unit paid for.

Pro-Pac X heat pumps are ideally suited to outdoor pool heating or pools with a semi-permanent enclosure to extend the usable period of a normal outdoor pool, when temperatures are above 5°c. Pro-Pac Y pumps, on the other hand, are intended for use heating indoor or outdoor pools all year round and can operate in temperatures as low as -15°c.

Switch2

Incontro

New 3-in-1 smart billing technology

Heat metering and billing specialist Switch2 has launched a stylish new three-in-one smart pay-as-you-go billing and energy management system for community heating schemes.

Incontro helps developers and landlords to manage costs, reduce debt risk and improve environmental performance, while making it simpler for residents to pay for their energy and control and monitor their energy usage.

The UK designed and manufactured technology takes smart metering to a new level. It is an advanced multifunctional energy system that combines either prepayment or credit billing with monitoring household energy usage; simple to use multi-zone thermostat, time and temperature control, and an in-home display.

Incontro enables developers and landlords to comply with building regulations, new Heat Network regulations, and the Code for Sustainable Homes (worth up to 2 points). It is also compatible with the new CIBSE Heat Networks Code of Practice and Heat Trust scheme

The technology builds on the success of Switch2's award-winning G6 pay-as-you-go system, which is transforming energy prepayment in over 25,000 homes connected to district housing.

Venture Lighting

VLED Filament Lamps

Lighting up energy efficiency

Venture Lighting Europe has launched its first range of VLED Filament Lamps for domestic and commercial markets.

As the trend for classic filament lamps in bars, restaurants, hotels and homes following an industrial or vintage theme returns, Venture has created a highly efficient, low-energy alternative to the classic lamp using the latest high-performance LED technology.

Designed as a direct replacement for halogen or incandescent lamps, the stylish VLED Filament Lamps are A+ rated and can help owners save up to 90 percent in energy and significantly cut carbon emissions.

These latest additions to Venture's growing range of VLED lighting solutions can be selected in a range of traditional or alternative styles and a choice of outputs to suit any application. The VLED Filament Lamp is available as a GLS, candle, golf ball, globe or squirrel bulb, all offering a 300° multi-directional beam angle for a wide distribution of light. The LED technology means the lamps reach the correct level of lighting instantly to avoid lengthy 'warm up' times.

Schiedel Chimney Systems

Ignis Protect

Safe flue for timber-frame buildings

Schiedel Chimney Systems' new flue system for timber framed buildings, Ignis Protect, has been installed for the first time in an eco-home in Leicestershire, enabling the luxury building to enjoy a wood-burning stove, safely and efficiently.

Single wall flue penetrations through a timber frame are always a concern, but Ignis Protect is CE approved and can be used in both interior and exterior timber-frame walls, available in both 90° and 45° versions, up to the temperature class T600.

Applied Energy Technologies

Rayport-B

Bifacial solar system

Applied Energy Technologies (AET), one of the top 10 solar racking companies in the US, has expanded its ECO range with its Rayport-B ECO Prism Ballast System for Prism Solar Technologies Bifacial Solar Panels.

Prism's bifacial glass modules generate more energy per watt by utilising the light reflected from a white or reflective commercial rooftop surface. AET has a history of innovation and was selected by Prism to custom design a racking solution for this product line.

Maincor

Overboard

Easy Overboard

Maincor has introduced Overboard for retrofit underfloor heating applications. Ideal for projects such as extensions, kitchen refurbishments or upgrading domestic heating systems, it is quick to install, offering an energy efficient solution and a comfortable internal environment for building occupiers. The underfloor heating pipes are laid within the 18mm thick pre-routed Overboard panels, giving a low-profile solution that lends itself to situations where minimal floor height adjustments are desired.

Overboard is installed directly over existing floor surfaces without the need to disturb floorboards. The system is a dry alternative to wet screed systems, cutting down time on site and benefiting the build programme. The result is a system that is quick to install with minimised disruption to occupiers.

Funding offered to bring energy to local communities

Twelve groups around Bristol have been offered a total of £53,193 to undertake a range of energy projects in local communities. The grants will be awarded by the city council through its Bristol Community Energy Fund, an initiative encouraging local solutions for community specific energy challenges.

The successful projects were picked from 32 submissions by a judging panel made up of Bristol City Council representatives and community leaders, along with local energy partners such as Bristol Energy Network, Age UK Bristol, Bristol Disability Equality Forum, Black South West Network, Bristol Energy Co-operative, UWE and Quartet Community Foundation.

The newly formed panel met for the first time last month and local projects were chosen on the basis of their potential to support local people to:

- Reduce energy use
- Move towards cleaner and renewable sources of energy
- Take measures that can help meet their energy needs affordably.

The grant programme is targeted at not-for-profit organisations based and working in the Bristol area. Non-energy related groups are encouraged to apply to broaden the reach of energy projects to new communities, resulting in applications from numerous equalities-led groups, community groups and even a primary school.

The judging panel prioritised submissions by equalities-led groups or organisations working in partnership with them, as well as proposals by groups representing communities most affected by energy issues, such as fuel poverty, older or disabled people, BME and migrant communities. These are groups which have historically been under-represented in the energy movement.

One of the first projects to receive funding is being led by Bristol Playbus, a local charity that will add solar panels to its 'Sensory Truck', a mobile sensory environment for children with a disability or life-limiting illness. The solar panels will mean that the equipment on the truck can work without the use of diesel generators and help the young people to get a better understanding of renewable energy while also reducing carbon emissions.

Mareike Schmidt, Energy Service Manager at Bristol City Council and chair of the judging panel, said: "We're working hard to create a community energy movement in the city – an inclusive approach to support and enhance the activities of the local energy scene. Energy is still considered a distant issue for many people but affects us in different ways – whether it's fuel poverty or a desire to use cleaner energy. The role of community groups is so important in addressing the specific needs of particular groups and this is why we're so pleased to see such a broad range of groups engaging with energy efficiency and renewable energy projects through the Bristol Community Energy Fund.

"We've had so many excellent projects put forward across the city that it was really hard to decide between them. We'll be running another round of funding in the coming weeks to give those projects that were unsuccessful a second chance to develop their bids further and try again. We hope to see lots of new groups apply too as there's so much potential to improve the lives of our communities through their relationship with energy."

Bristol City Council launched the fund in November 2015, calling for a first round of project proposals in February 2016. Local groups were encouraged to submit applications by the end of March to receive grants of up to £10,000.

Another key element of the Bristol Community Energy Fund currently in development is the offer of loans for the development costs of new renewable energy projects. The council will be announcing the loan offer later in 2016.

Seed-funding was provided by the Department of Energy and Climate Change to kick-start the Bristol Community Energy Fund. One of the next steps for the council will be to reach out for additional contributions to grow the pot of money available for local projects. The council is working towards becoming a model for national best practice for community energy. This includes the development of an online platform for sharing tools and techniques and a national conference to engage and support other local authorities in establishing community energy movements elsewhere across the country.

DONG Energy to launch new £10m East Coast Community Fund

A £10 million fund is being launched by DONG Energy to help local community projects on the UK's East Coast over the next two decades.

The East Coast Community Fund is being set up to ensure that local people gain something tangible from the operation of two of the company's offshore wind farms – Race Bank and Hornsea Project One – which are both now under construction. The fund will distribute around half a million pounds a year to support local initiatives for each of the next 20 years.

"We believe local people should get a chance to benefit from the construction and operation of offshore wind farms, which are some of the UK's biggest energy infrastructure projects," explained Brent Cheshire, UK Country Chairman of DONG Energy.

"Although our wind farms are located offshore, their transmission connections require onshore facilities and our construction and operations bases are very much a part of local communities. This fund is a practical way in which we can say thank you for the fantastic support we get."

The East Coast Community Fund will be managed and administered by an independent grant-making charity to be appointed shortly. One of its early tasks will be to launch a public consultation on how and where the funds can be distributed most effectively.

Race Bank is a 580MW project being constructed off the North Norfolk coast that will be capable of meeting the electricity needs of over half a million UK homes when it becomes fully operational in 2018.

Construction of the onshore substations and installation of around12 kilometres of onshore cable, from Walpole to a point north of Sutton Bridge, has been ongoing since last year, and work will soon begin offshore. A vital part of the project will be the installation of two export cables in the area of the sea defence and the salt marsh. This is due to start in early May.

Hornsea Project One, a 1.2GW offshore windfarm to be built about 75 miles off the Yorkshire coast, will be able to generate enough electricity to supply over one million UK homes. It is due to be fully operational in 2020.

'Crucial' finance package for energy projects around the UK

A corporate finance company from Swindon has helped to fund an early stage, major renewable energy project and complement the team with several highly skilled individuals.

Watersheds secured the funding from active private investors for Suffolk-based Farm Renewables, which will see eight new sustainable energy projects over five sites in Yorkshire, Lincolnshire Leicestershire, Sussex and Kent.

The money will be used to help get the sites 'shovel ready', including obtaining planning permission and securing connections to the National Grid before Watersheds organises a second round of fundraising to allow construction.

The projects involve creating four sites of state-of-the-art photovoltaic solar panels, which generate from five to 10 megawatts. Additionally, five anaerobic digestion plants, the natural process of decomposition used to turn farm-grown energy crops or food processing waste and other waste organic material into biogas, will also eventually be built.

Watersheds Partner David Fletcher said: "Attracting investment and talented individuals was quite a challenge because, whereas millions are raised during the construction of such sites, it is this early stage money that is the most difficult to raise. Pre-planning permission funding can be extremely difficult to obtain, so it was crucial to the success of this project."

Malcolm McAllister, Chairman of Farm Renewables, headquartered in Lavenham, explained, "Our goal is to develop, operate and invest in a variety of clean technologies, often in partnership with farmers and landowners, to make a significant contribution towards the UK's renewable energy and carbon reduction targets.

"As a leading provider of independent development and advice on renewable energy, this project is enabling us to take centre stage."

Nigel Goodhew, Farm Renewables Managing Director, said: "We required finance for the development stage to allow us to gain planning consent at numerous sites before the construction stage. We wanted the investment but we also wanted to ensure that we were able to gain maximum rewards from the capital gains on any exit. We turned to David and the team at Watersheds who looked after us and delivered a crucial result."

Bank lends its support to renewable energy industry

Despite an initial slowdown, after the latest Feed-in Tariff cuts, the domestic renewable energy sector is picking up momentum again. Government figures for January 2016 show 18,772 solar PV installations, compared to a figure of 8,527 during the same period last year. The sector is maturing, stabilising and showing sustainable growth, so why have so many lenders left this space?

Domestic purchasers often look to obtain finance to spread the cost of their investment in renewable energy products over a term that suits their budget. Being able to offer a loan through a third-party lender gives retailers a safe and secure financing option that helps ensure they maximise sales conversion. Industry growth is strong and there is a clear market need for consumer finance. So why are lenders reticent?

Paul O'Leary, Partner Director, Ikano Bank, states: "We feel that many lenders have a distorted view of the renewable energy sector, and the risks associated with it. With an emphasis on lenders taking equal liability for responsible sales practices, many have chosen to exit the market rather than nurture and educate an industry that already exhibits excellent selling behaviours."

Paul Wingfield, Communications Manager, The Home Insulation & Energy Systems Contractors Scheme (HIES), explains: "It's clear that the domestic renewable energy sector is experiencing a period of change driven in no small amount by the latest drop to Feed-in Tariffs. We have been working with lenders such as Ikano to re-evaluate their relationship with the market place, understanding that they share equal responsibility in ensuring ethical and honest sales practices and nurturing high industry standards. We're confident if ethical and responsible traders can continue to access high-quality finance that consumers will continue to invest in renewable products."

Ikano has been working closely with HIES over the past year to ensure that it can effectively and sustainably service the renewable energy sector. Having developed a method of robust vetting, training and compliance support, the bank has ensured that it can manage risk whilst servicing a wide portfolio of respected retailers. The consumer receives the finance that they need, as well as the peace of mind that they are dealing with a reputable and trusted retailer.

"We're proud to be the industry leader in lending to the customers of renewable energy retailers," O'Leary says. "The renewable industry is arguably one of the most important sectors required to underpin economic growth and sustainability in the UK. No longer are domestic renewable energy investments seen as a quick way to make money; instead they are viewed as protection against escalating energy prices and a way of living in a more sustainable way. Our retail partners are committed to honest and professional practices and they deserve to be supported in growing their businesses. We're in this for the long run and we will continue to support, educate and offer investment to grow this industry."

Q&A

Helen Bentley Fox

Woodsure

Helen Bentley Fox, Director of Woodsure – the UK's only quality assurance scheme for woodfuel – answers some of the burning questions affecting the industry!

Tell us about Woodsure

Woodsure is the UK's only woodfuel quality assurance scheme, which ensures its suppliers are certified for reliable, high-quality products. The Woodsure stamp of approval means that a supplier of woodfuel has been through rigorous checks and testing to ensure their fuel meets the correct standards. Since the scheme was introduced, consumers now have the opportunity to choose from a growing network of trusted suppliers, and consequently we've seen an improvement in fuel quality levels. It has boosted industry confidence, reduced boiler damage but, most importantly, it's helping to protect UK air quality from pollutants caused by poor quality fuel.

What are the benefits of using Woodsure approved fuel?

The Woodsure certification scheme and its logo gives those burning woodfuel a brand they can trust. Customers purchasing woodfuel from a Woodsure certified producer can be assured the woodfuel will provide optimum efficiency and will come from a sustainable source.

For installers, always using Woodsure approved woodfuel ensures a smooth-running and reliable installation that will enhance the installer's commercial reputation. The hard work and commitment that goes into a professionally delivered installation can be jeopardised by poor or variable fuel quality.

What are the main objectives behind the Woodsure quality assurance scheme?

To improve the standards of woodfuel and increase the understanding that you can't just burn any old timber. There has been a loss of understanding in this country about how to burn wood correctly. In France, where there is a tradition of using solid fuel woodburning stoves and boilers to heat the home and the water supply, it is second nature and the skills have been passed on through the families. It is something we've moved away from in this country when we moved to coal and joined the 'dash for gas'. It would be great to see Britain return to using homegrown fuel.

As a country we have just 13 percent woodland cover – the lowest levels in Europe – and 42 percent of our woodlands sit unmanaged and neglected. Bringing these neglected woodlands back into management would allow them to be a perfect source to supply the UK woodfuel market – a goal that Woodsure is supporting by working in partnership with Grown in Britain. A healthy, quality woodfuel market holds the key to getting our woodlands back into management.

What are the risks associated with burning poor quality or inappropriate wood fuel?

It's no secret that a woodstove or biomass boiler is only as good as the wood you burn in it. Waste wood or ineffectively processed wood fuel simply doesn't offer a carbon neutral energy source. By making responsible choices about fuel quality and the woodland it's sourced from, we can all play our part in securing its future and reducing carbon emissions.

The most common issues arise from the origin of the wood, which can be compromised by incorrect moisture content, high ash content and even soil or stones, or the presence of chemical contaminants with waste wood. Inappropriate storage of the fuel during production or trading can also affect quality through exposure to impurities.

Poor quality, or inappropriate fuel affects the efficiency of your boiler or wood burning appliance. The correct quality wood fuel will also maintain efficiency and minimise the release of emissions and harmful particles going up the chimney.

Do I save money by opting to use Woodsure approved fuel?

Appropriate woodfuel not only provides optimum efficiency, it also benefits homeowners' appliances, reducing the chance of damaging your appliance and therefore saving money in the long term.

Can I use Woodsure approved fuel with boilers and stoves?

Yes, Woodsure approved fuel can be used with both boilers and stoves. Achieving Woodsure certification means that a woodfuel supplier's products have been tested to meet recognised European and International woodfuel standards for all renewable energy heating appliances and the supplier can ensure you get the right fuel for your individual appliance.

Not only is this helping to guarantee a high standard and reliability in the woodfuel supply chain, but Woodsure certified suppliers are identifiable on the Government's Biomass Suppliers List (BSL). It's worth noting that being on the BSL does not automatically guarantee quality – you must select a Woodsure supplier for this.

How do I know if my fuel is Woodsure approved?

Woodsure works with five woodfuel types: woodchip, pellets, briquettes, hog fuel and firewood. Certified fuel will always have the Woodsure logo on it.

Products are tested to ISO, EN and Önorm quality standards. Tests on pellets, firewood, briquettes, wood chip and hog fuel are all carried out by Woodsure's team of technical experts. For the growing pellet market we also conduct ENplus audits.

How do I find my local Woodsure approved fuel supplier?

Today the Woodsure scheme is a recognised standard within the UK's woodfuel market and for installers it identifies the conscientious, responsible suppliers who produce a trusted product.

There are approximately 800 woodfuel suppliers and producers in the UK. Woodsure certifies nearly 200 depots, and the list is continuing to grow.

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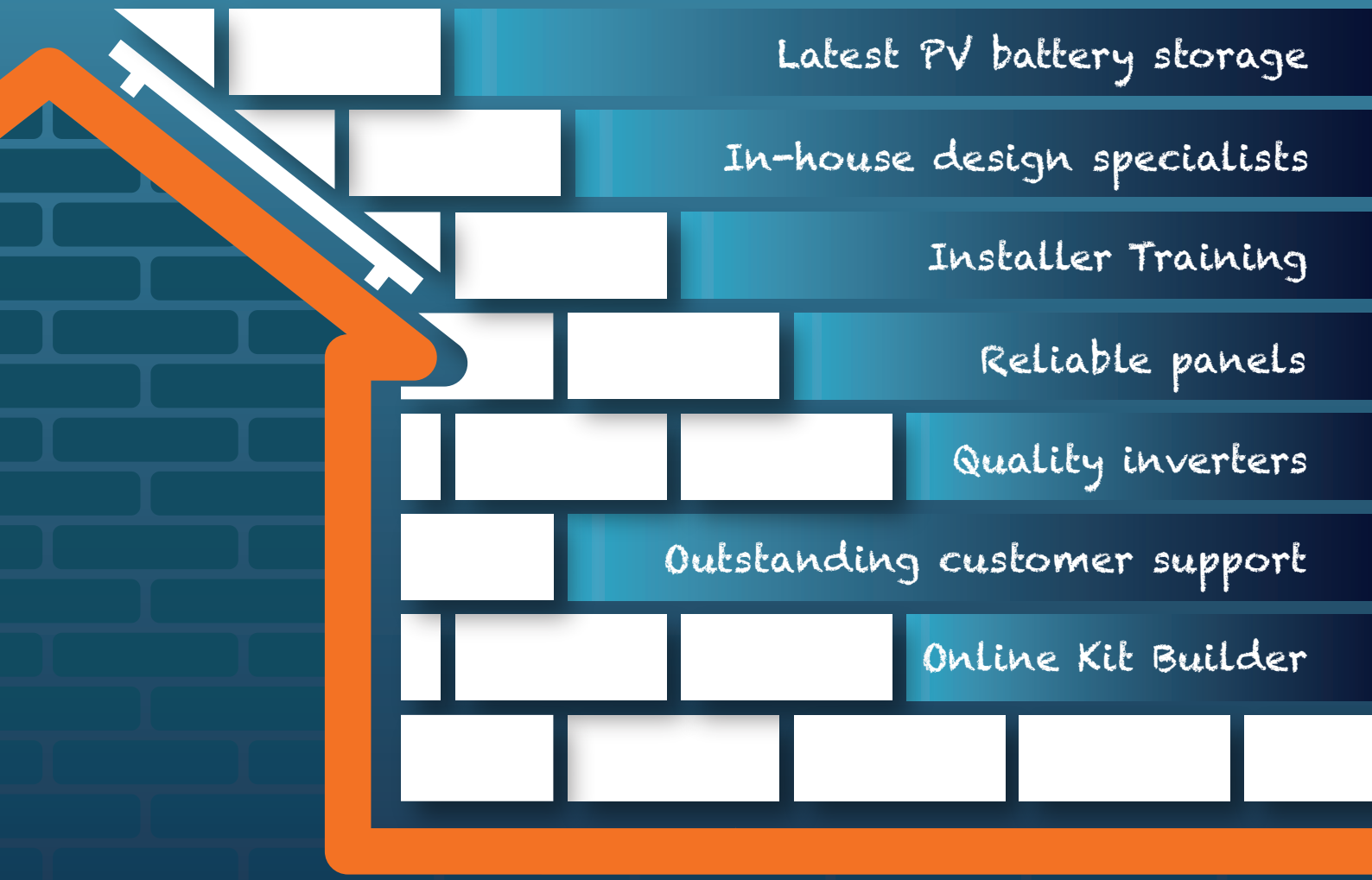

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Sony UK Tech Centre goes for solar

Solar Plants, one of Wales's leading independent PV installers, has completed a 250kW commercial installation with SolarEdge's DC optimised inverter solution at Sony UK Technology Centre. Looking to promote the use of green energy, Sony UK Technology Centre was specifically interested in SolarEdge's solution as it increases system production by maximising energy production at the module level.

The SafeDC technology, which provides module-level shutdown, was an additional benefit that was particularly important to the system owner, who wanted to enhance protection for people and assets. With Sony UK Technology Centre's systems spread across multiple rooftops, SolarEdge's module-level monitoring and remote troubleshooting allow Solar Plants to efficiently conduct operations and maintenance services to provide higher system availability.

"SolarEdge's inverter technology offers Sony UK Technology Centre increased energy yields for an improved return on investment and higher lifetime value," stated James Edgeworth, Commercial Development Manager of Solar Plants. "In addition, the module-level monitoring platform enables us to provide more effective asset management to optimise long-term performance."

Besides installing a new PV system, Sony UK Technology Centre requested that Solar Plants retrofit a previously installed PV system to include SolarEdge technology. The system was upgraded to leverage SolarEdge's monitoring platform and to reduce energy losses from which the original system suffered.

"This installation excellently demonstrates the benefits that SolarEdge provides throughout the solar energy value chain in commercial PV systems, from the installer to the system owner," stated Alfred Karlstetter, General Manager of SolarEdge Europe. "SolarEdge's inverter solution offers improved revenue with decreased Balance-

Of-System costs and O&M costs for an increased lifetime value, which are key benefits when system owners and EPCs are increasingly identifying commercial PV installations as long-term investments."

Wyn Landon of Sony UK Technology Centre added: "We are proud of our status as a manufacturing centre of excellence. With advanced manufacturing capabilities and state-of-the-art technology, SolarEdge technology will maximise our power production with green, clean energy that helps to reduce our carbon emissions."

New windmill for the NHS at Queen Elizabeth Hospital

Queen Elizabeth Hospital in King's Lynn now has its very own windmill, generating green electricity, and cutting its carbon emissions and energy bills.

The windmill, which will generate 1.2 million units (kWhs) of green electricity each year, the equivalent of around 300 homes' worth of power, is a green energy partnership between the hospital and Britain's leading green energy company, Ecotricity.

Ecotricity has built the windmill at its own cost and will continue to operate it for its anticipated 25-year lifetime, while the hospital will use the green energy made on site, saving nearly 500 tonnes of CO2 per annum and reducing its energy bills.

Ecotricity pioneered this partnership approach 15 years ago, and its windmills currently power operations for companies such as Michelin, Sainsbury's, Ford and B&Q, as well as conservation charity the RSPB.

Take-off for kite power

Scotland-based renewable energy consultant Natural Power has been appointed by Kite Power Solutions (KPS) to support proposals for consenting a test and development site at RAF West Freugh, near Stranraer in Dumfries and Galloway.

Founded in 2011, KPS was established to develop a deep water wind energy technology that can be deployed anywhere in the world at a cost that is able to compete with the lowest cost fossil fuel energy systems.

KPS has already designed, built and demonstrated a 40kW proof of concept system, regularly flying at its current base, Bradwell-On-Sea Airfield in Essex. A 500kW pre-commercial demonstration system has also been designed.

Once the company has secured the required £5.5 million investment, the next phase of development will commence, and this includes relocation to the West Freugh site which already has 'controlled airspace' status, and will enable testing of the kites at heights up to 500m. By 2021 KPS intends to have its 500kW system available for commercial sale, and will have deployed a floating 3MW system.

The West Freugh location was selected after extensive consultation with the Civil Aviation Authority. A rolling five-year lease for the demonstration test site was signed

in February 2016, with first kite system flying on the site expected in April 2017.

Oil major Royal Dutch Shell and the Department of Energy and Climate Change (DECC) have supported the £3 million development so far. In February 2016, a KPS led consortium was awarded a £1 milliom InnovateUK Energy Catalyst grant towards the West Freugh development.

UK's largest solar carport at Nottingham leisure centre

Commercial solar PV developer EvoEnergy has completed the UK's largest solar carport at a leisure centre owned by Nottingham City Council.

The 354-panel, 88.5kWp system was designed and installed by EvoEnergy across nine separate, specially built roofs at Ken Martin Leisure Centre. It is the latest energy-efficiency measure to be taken by the city council and was built following the success of its first solar carport – the 67kWp system at Harvey Hadden Sports Village, which EvoEnergy delivered last year.

The array at Ken Martin should cut the council's carbon footprint by 41 tonnes a year, generating 79,874kWh of energy – 100 percent of which will be used on site.

Michael Brien, project manager for EvoEnergy, said: "We've partnered with the council on numerous solar projects now since 2011. This time around we've helped them build the largest solar carport in the country; an accolade which really highlights the council's commitment to energy efficiency."

The Ken Martin solar carport was fitted between November and January in time to beat the recent cut to the Feed-in Tariff (FiT). It will save the council around £10,000 a year on its energy bills, and should pay for itself within 11 years, after which it will earn Nottingham City Council an income for the remaining nine years of the FiT.Rather than using a traditional string setup, which only performs as well as the least efficient module, it uses SolarEdge optimisers connected to pairs of modules. Its heartbeat communication system lets individual panels talk directly to the inverter in pairs, so if one panel breaks or loses efficiency during the next two decades, only two in the array will be affected.

Yeo Valley's Organic Farm goes even greener

The UK's most popular organic dairy brand, Yeo Valley, is expanding its use of renewable energy after switching to EV quad bikes.

As an organic business, Yeo Valley prides itself on considering its impact on the environment in all aspects of its operation and as such turned to Eco Charger, a farming family-run business in North Devon, that has designed and developed a number of environmentally friendly, electric quad bikes ideal for large landowners, farmers and businesses like Yeo Valley.

Yeo Valley has been using the Eco Charger Dominator on a daily basis on the farm over the past year. It provides quick and easy access around the Yeo Valley

Organic Garden and also supports the team with their increasingly popular farm tours.

Yeo Valley has 0.5MW of solar panels on the farm roof and therefore the Eco Charger provides zero CO2 emissions, as it can be powered renewably. This also keeps the running costs down to an absolute minimum. Furthermore, due to the lack of fuel, the vehicle emits no toxic fumes, meaning it's ideal for the organic farm – it also runs very quietly and therefore doesn't disturb the animals.

Tim Mead, Chairman of Yeo Valley, said: "The Eco Charger has provided a reliable, cost-effective and, most importantly, environmentally friendly mode of transport for easily accessing all areas of the farm and it's a great help with our farm tours.

"I'd recommend an Eco Charger for anyone with daily transportation needs on their land as it's been brilliant for us. It's a hard-working, practical machine that's easy to drive, doesn't harm the environment and is ideal for working with animals and organic product – what more could you want?"

Anaerobic digestion power on a tight schedule

Stoneleigh-based Weltec Biopower UK has reported two new orders for agricultural biogas plant projects in England and Northern Ireland.

Weltec is currently building a 500kW plant for Stephen Carson's agricultural enterprise near Strabane, Northern Ireland. The plant's two stainless-steel digesters (3,573m³ and 4,903m³) will be fed with 24,500t of cattle manure, whole plant silage, dry chicken dung, grass silage, sugar beets and small quantities of maize. The project is progressing smoothly, and the plant is set to go live and feed in power as early as summer 2016.

Low Farm in Sherburn, England, also decided to have its 500kW biogas project built with Weltec technology. The fast construction time was an important factor for the clients in their decision making, along with the quality, the experience of the company and the strength of the ongoing biological support.

Despite delayed project commencement and exceptionally wet weather, Weltec successfully completed the plant ahead of the tight Feed-in Tariff pre-accreditation deadline, ensuring long-term financial viability of the plant for the client. Weltec constructed the plant, based on a 3,573m³ stainless-steel digester, achieving G59 in September last year despite only starting work on site at the beginning of July 2015.

SOLAR PV

What: PV panels integrate with slate roof tiles at zero carbon housing scheme

How: Romag produced 562x1247 panels to produce at least 83W of power

Result: Energy bills reduced by around 40 percent

PV technology at UK's largest zero-carbon housing scheme

Dozens of new homes on the UK's largest zero-carbon housing development are benefiting from new roof-integrated photovoltaics (PV) used to produce sustainable solar energy.

The PV roof tiles supplied by Romag have been installed as part of the £12m Park Dale housing development in Castleford, West Yorkshire, where over 90 homes for social and intermediate rent have been built to comply with Level 6 of the Code for Sustainable Homes.

The new rooftop solar technology at Park Dale combines renewable energy generation with a glass laminate design to enable the PV cells to blend sympathetically into the fabric of the housing scheme. The system is watertight and complies with building standards as well as fire control and airtightness regulations.

Heating demand at Park Dale is expected to be one-fifth of the average UK home with associated energy bills around 40 percent lower.

The PV technology has been designed to seamlessly integrate with regular slate tiles to form an eye-catching central feature on the south-facing roof of each of the two, three and four bedroomed houses on the development.

Beco, one of the UK's leading PV designers and installers, commissioned Romag to produce the 562x1247mm panels to produce upwards of 83W of power.

Nigel Brunton-Reed, Managing Director at Beco, said: "Romag's PV solution met the requirement for advanced technology to deliver not only a cutting-edge, large-scale zero-carbon development, but also one that's realistic, affordable and can be replicated across the UK."

BIOMASS

What: Hotel group switches to renewable heating

How: Installation of 36 BioWIN Excel wood pellet boilers

Result: Full biomass heating across all hotels

Hotel group opts for low-carbon heating

The Strathmore Hotel Group, a long established group with hotels in Northern England and Scotland, has committed to switching its heating to biomass (wood pellet), providing a sustainable, renewable source of heating and reducing carbon emissions whilst promoting the hotel group's environmental credentials.

The installation of 36 BioWIN Excel wood pellet boilers from Windhager's commercial boiler range provides the heat and hot water for seven hotels within the group. Completed by Newcastle based installers, Green Guru, the BioWIN Excels replace the old fossil-fuelled boilers with a sustainable and cost-effective alternative.

Charlie Lamb, Sales Director at Windhager UK, commented: "The Strathmore Hotel group is committed to the environment with a very sustainable approach to running its business; we are pleased that we were able to contribute to their aims. With full biomass heating across all hotels there will be a significant reduction in their carbon footprint and a big saving in energy costs."

Windhager's BioWIN Excel has proved extremely popular amongst commercial installations due to its reliability, small footprint and cascade application. The biomass boilers can be linked together to match the heat demand of individual buildings in a cascade system comprising up to four BioWIN Excel boilers. This is a particularly popular choice amongst applications such as hotels and leisure facilities that require a high winter demand (heat and hot water) with lower summer demands when hot water only is required.

Further information is available from Windhager UK on 01225 892211 email: info@windhager.co.uk or by visiting the company's website at www.windhager.co.uk

SOLAR

What: Cheese firm looks to AD to match energy demands

How: Clearfleau uses dairy waste to feed AD and CHP plant

Result: First on-site AD plant in Europe to feed biomethane to the gas grid

Green Energy from Cumbrian Cheese

Award-winning British company Clearfleau, leading British provider of on-site treatment solutions for the food and beverage sector, is commissioning its most complex plant to date, which will feed biomethane into the gas grid in rural Cumbria. In so doing, the facility will produce over £3m per annum in cost savings and revenue, while supplying up to 25 percent of the creamery's energy requirements.

The plant has been designed and built for Lake District Biogas, which will operate the site for twenty years taking feedstock from First Milk's Aspatria creamery site. This comprises low-strength wash waters such as process rinses, supplemented by whey permeate (cheese production residue after protein extraction for use in energy supplements). This is pumped to the AD plant from the creamery.

This is the first on-site AD plant in the dairy industry in Europe to feed biomethane to the gas grid, generated exclusively by digesting its cheesemaking residues. When the plant is operating at full capacity later this spring, it will treat 1,650m³ per day of process effluent and whey and generate around 5MW of thermal energy.

It will produce 1000m³ of biogas per hour, of which over 80 percent will be upgraded for injection into the national grid. At least 60 percent of the biomethane will be used in the creamery for steam generation, with the balance being used by local businesses and households.

Revenue benefits include 20-year index-linked, Government-backed incentive payments, with about £2m per annum through the RHI scheme and a further £1m through the sale of gas to the wholesale market and from the Feed-in Tariff for the power generated in the CHP engine.

The new plant will replace the outdated aerobic plant, saving First Milk from having to upgrade the old inefficient plant, reducing effluent treatment costs and cutting operational costs, which are borne by Lake District Biogas.

SOLAR PV

What: Holiday park selects biomass CHP solution

How: WES's 20kWe Cogetherm CHP unit

Result: Reduced energy costs and money-back from the RHI and ROCs

Biomass CHP installed in Cheshire

Milton Brook Farm and Holiday Lodges is set in the idyllic Cheshire countryside and caters for visitors wishing to explore historic Chester and into Wales.

Recently renewable energy installers and business owners have been visiting Milton Brook to see its CogeCabin, a Combined Heat and Power (CHP) system powered by biomass. The owner Mark Chesworth installed 2 215kW WES E-COMPACT biomass boilers in 2015 and when he subsequently learned of WES's Cogetherm system he jumped at the chance to install the unit.

The site is home to four industrial units but also has a heated swimming pool and games room as well as seven holiday lodges and a private dwelling. The CogeCabin, which houses a 20kWe Cogetherm, provides electricity for all the farm's needs while the boiler is running and any excess electricity is sold to the grid.

An added bonus is that the owner can earn both RHI and ROCs from the system, making it a real winner in terms of reducing energy costs and using one of the most complete renewable energy systems in the world.

Cogetherm is available as a standalone unit or can be supplied in a CogeCabin, a plug-and-play plant room, which is delivered on site. The Cogetherm (which uses Organic Rankin Cycle) provides outstanding value for money, low maintenance and simplicity compared to other biomass CHP systems. The manufacturer can also provide finance packages in terms of lease/Hire Purchase and free to fit/funded solutions.

UK's first Passivhaus social housing project

In a UK first, East Devon District Council has commenced refurbishment work with South West housing specialists Mi-space, using ground-breaking low energy standards, on an exciting new type of shared social housing in a Victorian-style terraced house in Exmouth.

The pioneering project will incorporate key Passivhaus design principles, which if correctly achieved will ensure that the building meets the required criteria for EnerPHit Standard, a highly successful approach to constructing and, in this case, refurbishing, buildings so that they attain specific energy values.

Subject to the house passing a number of stringent tests, it will be certified as a Quality-Approved Passive House on completion, which is anticipated to be during Summer 2016. This will mean that the house will have excellent thermal performance, requiring very little energy to heat or cool it. This in turn will reduce its dependence on fossil fuels and, most importantly in this day of rising fuel costs, will mean lower heating bills for tenants.

The Passivhaus components used in the refurbishment will ensure that the temperature in the house never drops to below 16°c – even with the heating turned off. The insulation will ensure that the house is draught free with excellent indoor air quality, thanks to air infiltration rates and a supply of fresh air.

The house will be shared by six single people who will each have their own en-suite rooms and access to a communal kitchen and dining room. Occupants will abide by a set of house rules and will be expected to show courtesy and consideration to fellow sharers.

Existing tenants in other council accommodation will be invited to help choose items such as floor coverings, colour schemes and the design of communal areas.

The search for suitable tenants will commence before the project's completion, so that as soon as the house is ready, people can move in immediately. The accommodation is designed to provide single people with the ability to stabilise their lifestyle through either short-term accommodation or a more permanent home.

Councillor Jill Elson, East Devon District Council's portfolio holder for Sustainable Homes and Communities, said: "East Devon is totally committed to developing energy efficient housing and this house is an example of the pioneering work that we are undertaking in this area. We are using state-of-the-art technology to build to an eco-standard that will require very little energy to heat or cool this property, giving it a green footprint that significantly reduces any dependence on fossil fuels. To attain Passivhaus accreditation will be a considerable achievement not only for this planet, but also to the greater benefit of our tenants.

"We have spent a significant amount of time designing the property in a way that we believe will be best suited to this type of accommodation. We have had to consider many factors including how the property will impact on neighbouring properties and how to make the most of limited space available in this Victorian-style terraced property."

Amy Gilbert, Property and Asset Manager for East Devon District Council, said: "This is an extremely exciting project and we look forward to working in partnership with Mi-space to bring into being what we believe is the first ultra-low energy retrofit property (of shared social housing accommodation) in the country. Tackling fuel poverty is one of our top priorities and this development will help to dramatically reduce household bills, so helping our tenants confront the rising cost of living."

A J Eaton, Divisional Director of Mi-space Asset Management, part of construction company The Midas Group, said: "Achieving these standards is something that is usually only done with new builds, so we are looking forward to completing what is believed to be the first retrofitting of a pre-existing building with the efficient certification. This partnership with East Devon District Council takes our work to a new and exciting level. It will allow the Midas Group to bring its knowledge, skills and experience across construction, asset management and energy efficiency to the project."

Councillor Jill Elson and Tim Baker, Commercial Director of Mi-space Asset Management

Battery storage underpins community energy scheme

National energy efficiency solutions company Anesco has played a key role in a ground-breaking new community solar farm near Stratford-upon-Avon that will provide a long-term funding stream for local charity groups over the next 25 years.

The company has constructed a brand-new solar farm for Stratford Community Energy, which will generate 4,696MWh of electricity per year – enough energy to power around 1,400 homes. Covering 11.8 hectares of former DEFRA land, the site is already generating electricity into the National Grid.

Surplus profits from the sale of power will be fed into a community fund that directly benefits local people. Local projects and charities that will gain include The Stratford Hospital Appeal, which is aiming to raise £1 million to pay for the world-class facilities and enhancements for new Cancer and Ophthalmology services that have not previously been available locally. It will receive £125,000 from Stratford Community Energy over the next 25 years. Welford on Avon School, based five miles from the solar site, will receive a windfall of around £2,000 a year.

Members of the public are invited to purchase solar bonds offering a return of five percent per annum, paid every six months for the initial three-year term.

The solar farm is one of only two community energy projects in the country that will benefit from being connected to a battery storage unit. A 1000kW/1200kWh Energy Storage System (ESS) will be installed on the site – Anesco's 10th installation of such a system in the past few years – meaning the energy generated can be stored and released when it is most needed.

As a renewable power source the solar farm is expected to reduce the region's carbon emissions by up to 1,800 tonnes per year.

Delvin Lane, Commercial Director at Anesco, said: "It's been incredibly rewarding supporting a project that's not only benefiting the environment but also the local community. The groups Stratford Community Energy has chosen to support are doing fantastic work and we know they will put the funding to very good use.

"It's also rewarding to know that the site – an old DEFRA site – is now in the business of green energy, helping to drive down carbon emissions and create a better future for everyone. To date in schemes up and down the country, Anesco has helped to take over 275,000 people out of fuel poverty. The renewable technologies it has deployed are now generating over 500MW of power."

In addition to being appointed by Stratford Community Energy to install the solar array, Anesco has been brought on board to operate and maintain it over the next 25 years.

Stratford Community Energy is funding the Stratford Solar Array through the sale of £3.8 million of bonds, which can be purchased by the public, and its debt partner, Close Brothers.

Figure it out

REI 10 – Share performance of UK's leading green energy companies

	52 week high	52 week low	February price	Current price	
Drax Group (DRX)	451.30	205.60	265.20	305.80	▲
Good Energy Group	255.13	200.00	199.00	229.00	▲
Intelligent Energy	151.50	67.00	45.00	12.87	▼
ITM Power	36.45	19.88	12.25	12.09	▼
Leaf Clean Energy	43.00	22.00	37.00	36.05	▼
PV Crystalox Solar	13.00	7.78	10.10	12.81	▲
Rame energy	11.00	5.75	8.80	8.50	▼
REACT Energy	9.00	2.00	3.90	5.25	▲
Renewable Energy Holdings	2.69	0.70	Suspended		
Rurelec	4.60	0.50	1.22	1.07	▼

Generation tariffs for solar PV

Tariff band	FiT rate (p/kWh) from 01/04/16 - 30/06/16	
< 10kW	Higher rate Middle rate Lower rate	4.32 3.89 0.74
10 - 50kW	Higher rate Middle rate Lower rate	4.53 4.08 0.74
50 - 250kW	Higher rate Middle rate Lower rate	2.38 2.14 0.74
250 - 1000kW	1.99	
> 1000kW	0.74	
Standalone	0.74	

* Currently subject to consultation

FiT Deployment caps that have been reached in tariff period 01 (01 April – 30 June 2016)

Deployment band	Cap limit (MW)	Cap reached?	Date and time of final installation to qualify	Capacity deployed (MW)
PV <10kW	76.96	No	N/A	2.56
PV 10-50kW	25.72	No	N/A	0.859
PV >50kW	14.5	No	N/A	6.79
PV standalone	5	Yes	08/02/2016 01:15	12.79
Wind <50kW	11.17	No	N/A	-
Wind 50-100kW	0.3	Yes	08/02/2016 00:15	0.542
Wind 100-1500kW	6.8	Yes	08/02/2016 00:18	21.730
Wind 1500kW-5000kW	10	No	N/A	-
Hydro 0-100kW	1.1	No	N/A	0.135
Hydro 100kW-5000kW	9.5	No	N/A	-
AD (All)	5	Yes	08/02/2016 00:15	15.67

Accurate as at 00:01 on 15 March 2016

Generation tariffs for non PV technologies

Technology	Band (kW)	Tariffs (p/kWh)
Hydro	< 100kW	8.54
	100 - 500kW	6.14
	500 - 2000kW	6.14
	> 2000kW	4.43
Wind	< 50kW	8.53
	50 - 100kW	8.53
	100 - 1500kW	5.46
	> 1500kW	0.86

(Source: OFGEM)

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	0.31 per litre	2530 litres	£784
Wood pellets	4800 per tonne	94	24300	256 per tonne	5 tonnes	£1,280
Natural gas	1 per kWh	90	25300	0.04 per kWh	25300 kWh	£1,012
LPG	6.6 per litre	90	25300	0.38 per litre	3833 litres	£1,457
Electricity	1 per kWh	100	23000	0.14 per kWh	23000 kWh	£3,220
*Air source heat pump	1 per kWh	290	7931	0.14 per kWh	7931kWh	£1,110
*Ground source heat pump	1 per kWh	360	6389	0.14 per kWh	6389kWh	£894
Dual mode system 1						
Oil boiler (30% of heat load)	10 per litre	90	7590	0.31 per litre	759 litres	£235
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.14 per kWh	5552 kWh	£777
Dual mode system 2						
Gas boiler (30% of heat load)	1 per kWh	90	7590	0.04 per kWh	7590 kWh	£304
*Air source heat pump (70% of heat load)	1 per kWh	290	5552	0.14 per kWh	5552 kWh	£777

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

RHI non-domestic rates

Tariff name	Eligible technology	Eligible sizes	Tariff rate (pence/kWh)	Tariff duration
Small biomass	Solid biomass: Municipal solid waste (inc CHP)	< 200 kWth	Tier 1: 3.62 Tier 2: 0.96	20
Medium biomass	Solid biomass: Municipal solid waste (inc CHP)	200 kWth and above, < 1000 kWth	Tier 1: 5.24 Tier 2: 2.27	20
Large biomass	Solid biomass: Municipal solid waste (inc CHP)	1000 kWth and above	2.05	20
Small ground source	Ground source heat pumps, water source heat pumps, deep geothermal	< 100 kWth	Tier 1: 8.95 Tier 2: 2.67	20
Deep geothermal			5.14	
Solar thermal	Solar thermal	< 200 kWth	10.28	20
Air source heat pumps	ASHPs	All	2.57	20

(Source: OFGEM)

Domestic RHI deployment

Technology	Accreditations (Apr 14–Mar 16)	% of total
ASHP	20,953	45
GSHP	6,803	15
Biomass	11,443	24
Solar thermal	7,521	16
TOTAL	46,720	100

(Source: DECC)

Number of MCS registered installers per technology

Technology type	Cumulative	Registered Feb 16
Solar PV	2173	9
Biomass	282	2
Air source heat HP	708	7
Ground source HP	517	0
Solar thermal	736	5
Small wind	66	0
Total	4482	23

(Figures supplied by Gemserv)

Number of MCS registered installations per technology

Technology type	Cumulative	Installed Feb 16
Solar PV	862691	4593
Biomass	16547	130
Air source HP	45522	898
Ground source HP	12336	281
Solar thermal	8406	56
Small wind	9991	10
Total	955493	5968

Domestic RHI tariffs

Technology	RHI rate (from 1 April) (p/kWh)
ASHP	7.51
Biomass boilers	5.20
GSHP	19.33
Solar thermal	19.74

(Source: DECC)

My working week

Who are you? Craig Andrews of Halifax-based Fusion Heat and Power

What do you do? Fusion Heat and Power is an MCS accredited renewable energy installation company, Gas Safe registered and approved installers to the large domestic and commercial market

Craig Andrews divides his time between the office, site visits, and meetings with suppliers and customers

Rest day? There is always 'the rest' to do!

Monday

Early start on Mondays with essential toolbox talks, briefings to the installers and a quick catch up on any issues that may need attention from over the weekend. Final check and amendments to RAMS for site works for the guys heading off to the commercial environments. Looking ahead in the diary to make sure there are no surprises or oversights, such as shows, presentations, remote stay away site visits or inspections over the next week. A jog of the memory to chase up MCS; Gas Safe, Heatas and Napit commitments. All of us in the industry understand the importance and necessity of keeping on top of these memberships. Straight onto adding any missing details required from suppliers or manufacturers to complete quotations or tenders left uncompleted from last Friday.

Tuesday

Meetings with suppliers or customers are usually scheduled for Tuesdays and Thursdays with today being exceptionally busy as our rapid expansion within the CHP market continues to take hold. An essential site visit taking in a containerised plant room at a biomass project for a rugby club that we have constructed through our engineering division is close to completion. Welcome news that we are on target for a successful commissioning as planned, and the client is very happy with progress.

A day on the road continues, visiting a barrel washing facility where the installed biomass heating system is performing as expected, but low water temperature through a bespoke plate heat exchanger is causing concerns. On further inspection, a splarge pipe has been extended too close to the return port within the tank, short cycling the supply. A sketch, a call and we have arranged with the customer directly to attend tomorrow to rectify.

Wednesday

Going through engineering drawings in the office with the draughtsmen, designers and fabricators gives us all an opportunity to envisage and action any issues that could potentially delay the imminent commencement of the next in-house manufactured skid package. Any conflicts from the working drawings can be addressed at this stage prior to fabrication, construction and assembly. Sharing offices, workshops and the warehouse with the team of designers, welders, fabricators and engineers allows us to remain hands on and flexible to amendments and alterations across all design and build packages, whilst remaining in total control of quality and delivery dates.

As it's an office day, I can usually find some time to take measurements from plans and compile a Bill of quantities for the tender of larger projects, currently a new hospital. heating plumbing, domestic services, above ground drainage, CHP in the plant room and gas absorption chillers on the roof. Wednesdays don't seem to be long enough.

Thursday

Suppliers and customer day again, and today we have a meeting with Strong Energy looking to add Hargassener biomass and Waterkotte heat pumps to our portfolio.

Meeting with Paul at Micknol group with an update and catch up on the position of our energy brokerage interests. We work with Paul to supply credit for customers wanting renewable energy installations, commercial finance as well as offering reduced gas and electricity utility supply prices across the UK, along with water utilities in Scotland. On the back of this meeting I am able to negotiate a far lower energy tariff for existing commercial clients.

Friday

Rest day. Rest day meaning I have to get finished the rest of what I set out to do on Monday! Checking with admin that all accounts are paid and what is owed, a full-time job for the bookkeepers and an invaluable asset to the team. Praise to our admin at Fusion Heat and Power, an often overlooked position, but critical in keeping us grounded and in control of the finances, in and out. All the office staff, engineers and project managers try to get together early Friday afternoon as the fabricators finish earlier today. As the installers come in to return stock, clean vans and compile reports and time sheets, it gives us an opportunity to get a feel for works progress, customer feedback and suggestions for toolbox talks on Monday.

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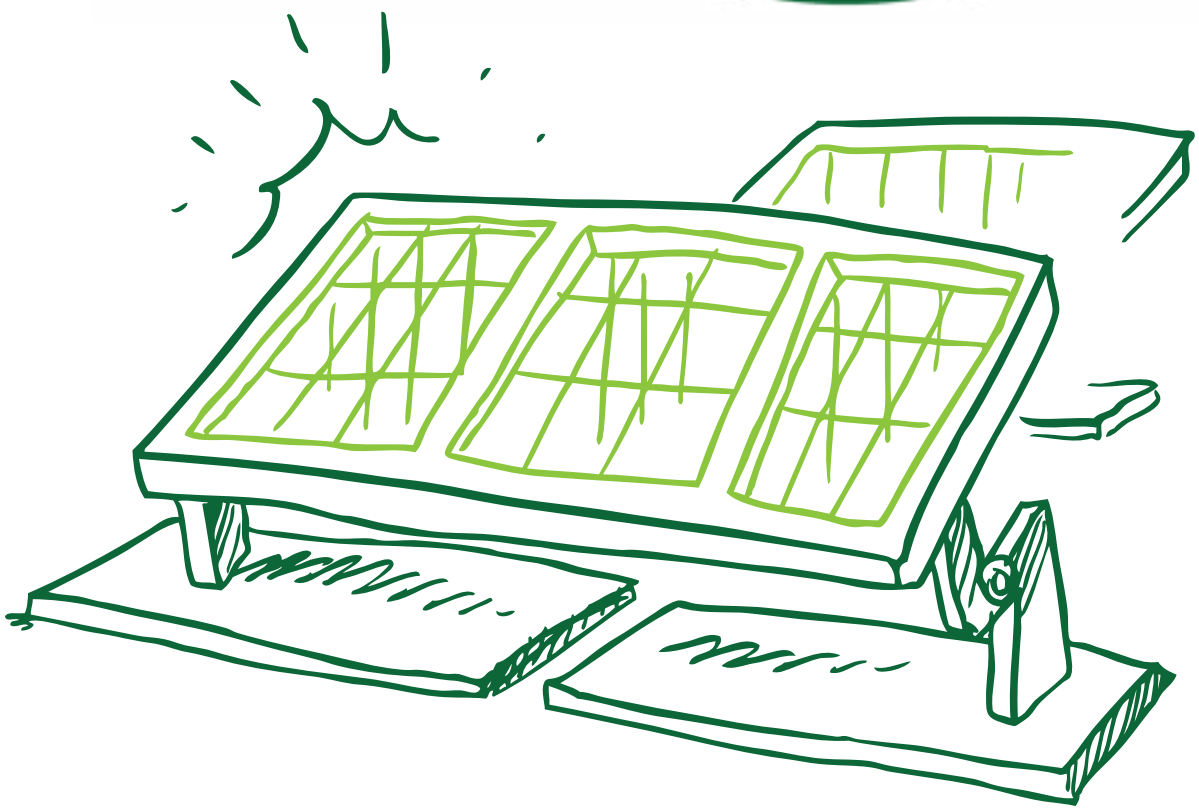

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