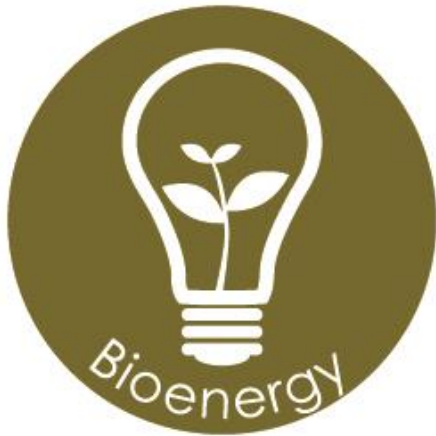


The Bioeconomy Consultants

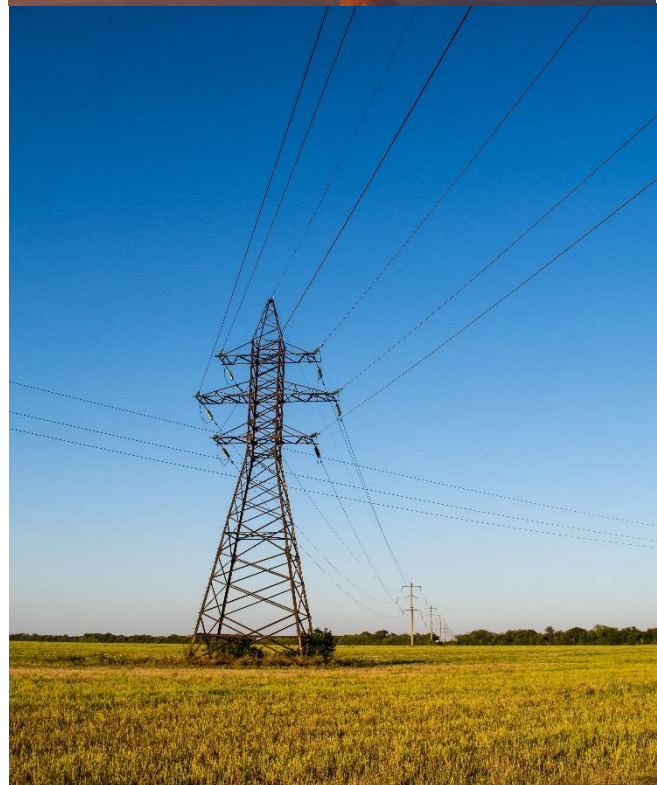


News Review

Issue Sixty-Eight

November 2017

Each month we review the latest news and select key announcements and commentary from across the bioenergy sector.



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Foreword

Hello and welcome to November's Bioenergy News Review.

2017 has been an exciting year in many respects for UK bioenergy, with FiT reforms, the Industrial Strategy, the RHI consultations, and more. However, new statistics are showing that 2017 is also a record breaking year. BEIS statistics have been published showing that low-carbon generation in the UK was at record levels, at 52.2%, passing the 50% mark for the first time. This progress has seen the UK climb into the top 10 countries in the world for low-carbon power, up 13 places. These are both good signs and show that the UK is making progress towards a low-carbon economy, despite lacking the nuclear power resources of France, or the hydropower infrastructure of Scandinavian nations (who top the list). However, there is still a lot of progress to be made, and bioenergy can play a significant role in that progress. New findings in a report by AEBIOM have revealed bioenergy to be Europe's most sustainable option for renewable energy, particularly in the heating sector. The European Commission's ENVI committee appears to have echoed this sentiment, by voting against measures that would have hampered development of the biomass power sector.

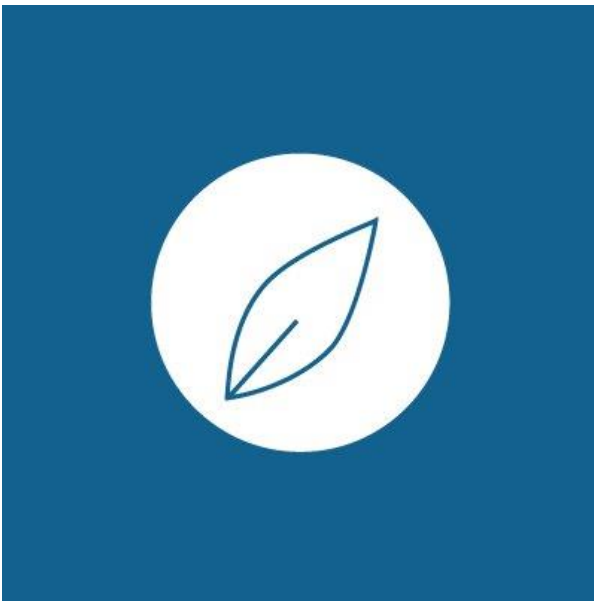
Bioenergy's stock appears to be growing worldwide, not just in the EU, as nineteen nations from around the globe, representing half of the world's population and all continents except Australia and Antarctica, have pledged to increase their generation of biomass energy. No concrete targets have yet been agreed, but this is a promising sign as these nations have highlighted bioenergy as a viable option for reaching targets already established in the 2015 Paris agreement.

In other news closer to home, we have another first: Sheffield is set to see the UK's first bio-energy powered forge. The forge will be powered by burning biomass and biogas, the latter generated by anaerobic digestion. The forge represents a £14m investment by Abbey Forged Products, the company involved, and it is hoped that 55 local jobs will be created by the facility.

Read on for the latest market news.

Policy

EU ENVI committee backs biomass power in vote



European Commission

Reports by Biofuels News on proceedings of Policymakers in the European Parliament's environment committee (ENVI) indicate that they have voted in support of a proposal (by a small majority of 32 to 29 with 4 abstentions) for a total phase out of crop-based biofuels by 2030 while backing the use of biomass for electricity production. The ENVI vote on the revised Renewable Energy Directive, dubbed RED II, happened on the evening of 23rd October. RED establishes an overall policy for the production and promotion of energy from renewable sources in the EU. This proposition goes much further than the current REDII draft which the Commission proposed a cap on crop-based biofuels declining from 7% in 2021 to 3.8% by 2030.

The ENVI Committee voted to increase the EU's renewables target from 27% to 35% for the period

2021 to 2030, but did not impose tougher sustainability criteria on bioenergy, which NGOs had been calling for.

The committee's recommendation also sets stricter criteria for the use of municipal and industrial wastes for energy and excludes renewable energy support for refuse that is not separately collected. However, industry sources point out that despite all efforts of source separation, there will always remain some polluted biodegradable part of the residual fraction of industrial, commercial and municipal waste, which is not suitable for quality recycling or composting, where the only alternative treatment would be landfill.

The next stage of the process is consideration by the Industry, Research and Energy (ITRE) Committee, which leads on the opinion and is due to adopt its position on 28 November. The decision of both Committees will be important in how the European Parliament positions itself when it makes its final decision, expected to be finalised in December, however, this could stretch into 2018.

Click [here](#) for more information.

Nineteen nations commit to biomass energy

China and 18 other nations representing half the world's population said they planned to increase the use of wood and other plant matter from sustainable sources to generate energy as part of efforts to limit climate change.

The group would work out collective targets for increasing the use of what they called sustainable bioenergy, they said during talks in Germany among 200 nations on bolstering the 2015 Paris climate agreement.

Argentina, Brazil, Britain, Canada, China, Denmark, Egypt, Finland, France, India, Indonesia, Italy, Morocco, Mozambique, the Netherlands, Paraguay, Philippines, Sweden and Uruguay signed up for the plan.

They agreed to "develop collective targets prescribing the contribution of sustainable bioenergy to final energy demand and as a percentage of transport fuel use", their joint Biofuture Platform initiative in a statement.

The group would also seek to expand what they called the "bioeconomy", or all economic activity related to the use of plants in the production of renewable energy, materials and chemicals.

Click [here](#) for more information.

Clearfleau demands RHI clarity

The logo for Clearfleau, featuring the word "Clearfleau" in a blue, serif font with a trademark symbol (TM) to the upper right.

Clearfleau

Clearfleau has joined ADBA and other renewable energy bodies asking Ministers to take urgent action on the proposed Renewable Heat Incentive (RHI) legislation.

Clearfleau is one of the UK's leading providers of on-site bio-energy plants for food and beverage processing sites, with a number of operational plants and others planned on food, dairy and distillery sites.

The UK Government says it wants to promote low carbon manufacturing and BEIS has just published its Clean Growth Strategy. However, to stimulate business investment in bio-energy and a more circular economy, Clearfleau states that Government needs to deliver clear messages

showing that Ministers are fully committed to carbon reduction.

Hence, the recent announcement of further delays to the reform of the Renewable Heat Incentive (RHI) are widely regarded as unwelcome, and not only undermines the Government's credibility over sustainability policy statements but is slowing decarbonisation of British Industry.

The RHI reforms announced in late 2016 will restore modest tariffs for the production of renewable heat to previous levels, facilitating the construction of anaerobic digestion (AD) plants that can produce renewable biogas, which can be upgraded to biomethane for injection into the gas grid. Millions of pounds of investment in AD plants on industrial sites is currently on hold, waiting for clarity and certainty from Government Ministers.

Click [here](#) for more information.

SSE & Drax call for Carbon Tax clarification

SSE, the UK's second largest energy supplier, and Drax, which runs the country's biggest power station in North Yorkshire, urged the UK chancellor Philip Hammond to use his autumn budget to shed light on the carbon tax's fate into the 2020s.

The government said last year that the level of the carbon price floor – the minimum price for greenhouse gases emitted by power generators – would be frozen until 2020, but disappointed those who had expected long-term plans to be laid out.

The intervention by two major firms comes after a report warned that without a commitment to a strong carbon price, coal could enjoy a last hurrah in the early 2020s. Energy intensive industries who

pay the tax, such as the chemicals sector, want to see the tax abolished or watered down.

Both SSE and Drax need a healthy carbon price to ensure the economic case stacks up for their hopes of building new gas power stations. Drax recently applied for planning permission to change two of its three remaining coal units to gas, which is comparatively low carbon.

Click [here](#) for more information.

Small is Beautiful campaign seeks beneficial legislation for small-scale generators

Trade associations representing key players in Europe's energy transition. have launched the "Small Is Beautiful" campaign, which aims to highlight the benefits of small-scale, clean and locally owned installations to move progressively towards a decentralised energy system.

The campaign identifies that these benefits are threatened by the European Parliament's current proposal under the Clean Energy Package that will require all power generators to be "balancing responsible" and the blanket removal of priority dispatch.

The campaign argues for a "de minimis" approach to be taken, exempting small-scale renewable and high efficiency cogeneration from disproportionate requirements.

Click [here](#) for more information.

Denmark seeks switch to waste-based biogas

For almost 40 years Danish companies have been developing green gas technologies, designing, building and operating plants around the globe, and creating a dynamic and innovative cluster of competences. Denmark has developed as a leader in Green Gas.

Similar to the UK, Green gas certificates are issued in Denmark. Energinet.dk, the Danish gas grid operator, issues green gas certificates, guaranteeing its green origin to the consumers. Currently, Energinet.dk is in close dialogue with counterparts in Germany and Sweden to create a transnational market by reciprocal recognition of the national green gas certificates.

Over time organic waste will replace energy crop use in AD systems, and biogas will be upgraded and injected into the natural gas grid, traded across borders, and used as green fuel in the transportation sector.

The Danish government has made biogas a cornerstone of the country's new energy strategy, targeting Denmark to be fossil free by 2050. The specific biogas goal is to use half the country's slurry to produce biogas which means a tenfold increase of the current situation. To achieve this target, a series of measures will be introduced, i.e. grants to build new plants and higher feed-in tariffs to new biogas applications: upgrade biogas and its use in transportation.

Click [here](#) for more information.

Markets

UK renewables reach new records again

Latest national statistics released by BEIS show for Q2 2017 v 1 year ago.

Electricity generation by Major Power Producers down 1.8%, with coal down 53% and gas down 10.3%.

Gas provided 45.5% of electricity generation by Major Power Producers, with nuclear at 29.2%, renewables at 23.0% and coal at 2.4%.

Low carbon share of electricity generation by Major Power Producers is up 6.8 percentage points to 52.2%, a record high, due to increased nuclear and renewables generation.

Primary energy consumption in the UK on a fuel input basis fell by 2.0%, but on a temperature adjusted basis consumption fell by 2.3% to a record low level, driven mainly by electricity generators switching from fossil fuels to low carbon sources.

Click [here](#) for more information.

Novozymes beats predictions with strong third quarter growth



Novozymes

Denmark's Novozymes reported third-quarter sales and earnings ahead of forecasts and raised its outlook as more powerful enzymes products drove demand from ethanol makers, sending its shares up six percent to a two-year high.

Ethanol is made by using enzymes to break down and ferment sugars in organic materials, such as corn, but second-generation ethanol, made from more stubborn cellulose using new processes, could raise production.

Sales at Novozymes' bioenergy unit rose by 16 percent in the quarter compared to the less than three percent expected by analysts, as ethanol firms chose the new products and showed improved buying power.

But for sales to continue to rise over time, customers must build more plants, which will only happen if the oil price rises to a higher level.

Shares in Novozymes were up 5.5 percent at 349 Danish crowns at 1056 GMT after it reported third-quarter operating profits (EBIT) of 1.06 billion Danish crowns (\$167.74 million), beating analyst expectations of 1.01 billion.

The company adjusted its guidance for 2017 to an organic sales growth of 3-5 percent from 2-5 percent and maintained expectations of 28 percent reported EBIT-margin.

Click [here](#) for more information.

Britain into global top 10 for clean power



Geograph

Britain's power supply is now the seventh cleanest in the world after climbing 13 places in a global league table, according to a new Electric Insights report.

The report was produced by researchers at Imperial College London, who in collaboration with power giant Drax, compared the carbon content of electricity supplies across various large countries between 2012 and 2016.

They said the UK's strong carbon price of £23 (€25) per tonne of carbon dioxide has driven a shift from coal to gas and an increased uptake of renewables, seeing emissions from electricity almost halve during the period.

Weaker carbon prices of around £5 per tonne in Europe mean Britain's shift was the biggest for any country in the league table, according to the report.

Norway, Sweden and France have the cleanest power systems among large and industrialised countries due to their mountainous terrain allowing for substantial hydropower resources.

Click [here](#) for more information.

First close of Iona Capital's Environmental Infrastructure fund

Iona Capital announced the first close of the Iona Environmental Infrastructure LP 3, a £250m 15-year limited life pooled investment vehicle. It offers investors the opportunity to participate in the emerging and fast-growing asset class of Environmental Infrastructure with a particular focus on investments in UK Bioenergy projects, using proven and low risk technologies backed by long-term supply and offtake contracts. The Fund is targeting returns of 11-14 % composed of high, stable cash yields with strong downside protection.

Iona specifically targets projects in the Biogas, Biomass, EfW and Energy Efficiency sectors and works closely with leading UK and international industry participants, project developers and consultants to source long term projects which it prepares for investment. To date, Iona has led on and successfully completed investments in 20 projects within the Bioenergy sector. Once an asset becomes operational the Iona Team maintain a hands-on approach to ensure that the asset performance is optimised.

Click [here](#) for more information.

Research & Development

AEBIOM report finds Bioenergy to be Europe's most significant sustainable option

Findings from AEBIOM's 2017 Statistical Report confirm that bioenergy is among the most effective options to achieve Europe's energy transition. The publication's release, occurring a few days before a key vote by the Parliament's ENVI Committee on sustainability criteria for bioenergy, brings clarity to a debate that Aebiom argue has been highly misrepresented.

The trade association states that ongoing discussions are wrongly focused on biomass imports from third countries, even though the facts are evident in the data: bioenergy represents 1% of total EU energy imports and only 4,4% of total used of biomass for energy.

Another important finding from AEBIOM's report is that European forests are not managed solely for energy purposes. The share of wood harvested in EU forests used in the energy sector has been rather stable (20% on average since 2000), while bioenergy consumption has more than doubled over the same period. Contrary to common belief, European forests are expanding, and the lack of active management is gradually becoming an issue in many Member States as forest fires and epidemics could increase. In this context, for many public and private forest owners, bioenergy represents an incentive to revitalise their forests by improving their management.

Finally, the report confirms that bioenergy is and will remain a key driver for the decarbonisation of the heating and cooling sector. With fossil fuels still amounting to 81,4% of the energy sources in

this sector, bioenergy, which represents today about 90% of renewables, is among the most effective solutions to drive the energy transition. Replacing aging stoves, developing the use of cogeneration to supply the industrial sectors and district heating plants is the way forward to achieve the decarbonisation of the European heating and cooling sector.

Click [here](#) for more information.

New membrane most selective ever for methane from biogas



Pixabay

A new membrane has been developed that makes the process of separating methane from CO₂ more effective. This process is crucial in making natural gas and biogas suitable for use

An effective membrane only allows the CO₂ to pass through, and as much of it as possible. The commercially available membranes come with a trade-off between selectivity and permeability: they are either highly selective or highly permeable. Another important problem is the fact that the membranes plasticise if the gas mixture contains too much CO₂. This makes them less efficient: almost everything can pass through them, so that the separation of methane and CO₂ fails.

According to a statement, the best membranes available consist of a polymeric matrix with a filler

in it, for example a metal-organic framework (MOF). This MOF filler has nanoscale pores, and the new study has shown that the characteristics of such a membrane improve significantly with a heat treatment above 160°C during the production process.

You get more crosslinks in the polymeric matrix: the net densifies, so to speak, and that in itself already improves the membrane performance, because it can no longer plasticise. At these temperatures, the structure of the MOF - the filler - changes, and it becomes more selective. Finally, the high-temperature treatment also improves polymer-filler adhesion: the gas mixture can no longer escape through little holes at the filler-polymer interface.

The heat treatment apparently gives the new membrane the highest selectivity ever reported, and prevents plasticisation when the CO₂ concentration is high.

If you start with a 50/50 CO₂ mixture, this membrane gives you 164 times more CO₂ than methane after permeation through the membrane. These are the best results ever reported in scientific literature.

Click [here](#) for more information.

Project investigating which wastes business can convert to energy

A new green project looking at how firms could use their own waste to cut their power bills and heat their premises has been launched at Ellesmere Port's university campus.

California based energy generator Arensis and the University of Chester have teamed up to trial the use of a range of landfill wastes to generate combined heat and power at Thornton Science Park at Ince.

The aim is to discover which refuse, including commercial waste, can be redirected from landfill to create electricity and heat to be used directly by the business which has thrown it out.

Organisations would then use their own on-site converters to transform waste otherwise bound for landfill to generate clean power and heat for their own purposes.

The purpose of the three-year trial is to find which rubbish works best. It will involve a biomass converter housed in a shipping container to study the output of the converted energy.

Click [here](#) for more information.

Carbon coating identified as source of biochar's beneficial properties

An international team has looked into what it labels 'the miraculous properties of biochar', revealing that the charcoal-like substance's carbon coating explains its carbon storage and fertilising capabilities.

The team's unprecedented insights could help boost more widespread commercialisation of biochar fertilisers. This would in turn reduce global dependence on inorganic nitrogen fertilisers.

Made from oxygen-deprived plant or other organic matter, biochar stores nutrients and promotes plant growth, acting as a non-toxic fertiliser. In addition, it can store carbon, contributing to reductions in greenhouse gas emissions.

Led by the University of Tuebingen in Germany, and involving researchers from the US Colorado State University, the new research published in the journal Nature Communications has provided a mechanistic understanding of biochar's properties. The research revealed how the composting of biochar creates a very thin organic coating that

significantly improves biochar's fertilising capabilities.

Advanced analytical techniques confirmed that the coating strengthens the biochar's interactions with water its ability to store soil nitrates and other nutrients.

According to the researchers, the coating also developed when untreated biochar was introduced into soil, but much more slowly. Composting experiments were carried out on a small commercial scale at the Ithaka Institute in Switzerland.

Mineral nitrogen fertilisers and liquid manure have an adverse impact on the environment, causing the emission of nitrous oxide and resulting in nitrates leaching into the groundwater. Adding biochar as a nutrient carrier in the soil has long been heralded as an eco-friendly alternative, however its use on a large scale has been restricted because little was known about how it stores and releases nitrates.

Click [here](#) for more information.



Flickr

Biomass Heat & Power

Orsted begins biomass conversion at Asnaes Power Station



Orsted

Biomass magazine reports that in October Orsted (formerly DONG Energy) kicked off the biomass conversion of the Asnæs Power Station in Kalundborg, Denmark. Following the two-year conversion process, the facility will take in wood chips and other forms of biomass as fuel.

Orsted Bioenergy & Thermal Power plans to phase out all use of coal at its power stations by 2023.

The new biomass-fired plant will be built as a separate unit in new buildings at Asnæs Power Station. The plant will be connected to the existing district heating and process steam networks, and the electricity grid. The conversion project includes, among other things, a new conveyor system and wood chip storage.

Orsted indicated the new biomass-fired plant will have an electric production capacity of 25 MW and a district heating and process steam production capacity of 129 MW. The plant will run mainly on wood chips and is expected to be operational by late 2019. The conversion from coal to biomass at the Asnæs Power Station is expected to result carbon reductions of 800,000 metric tons annually.

Orsted also recently announced that it was launching its new combined heat and power (CHP) plant in Fredericia, Denmark.

The new facility, called the Skærbæk Power Station, will use wood chips as fuel to generate district heating and electricity. Skærbæk Power Station has undergone a conversion from fossil-fuel based energy to green energy. Originally built in 1951, the power station was to use coal as fuel. In 1997, it was converted to gas, and it's now been converted to using wood waste from sustainable forestry. This move will significantly reduce Orsted's gas consumption in Denmark. The company aims to reduce its carbon emissions from its heat and electricity generation by 96% in 2023 compared to 2006.

Click [here](#) for more information.

Copenhagen Infrastructure Partners refinance UK biomass plants

Copenhagen Infrastructure Partners has completed the refinancing of its interest in two UK biomass power plants in Brigg and Snetterton. The GBP 250m (\$330 million) senior debt financing is delivered by a combination of banks and institutional investors. Royal Bank of Scotland, Investec, Aviva Investors, and one other major institutional investor together acted as lenders on the refinancing.

Together with CIP's consortium partner BWSC, the two plants have both been taken from FID to commissioning ahead of schedule. The Norfolk facility, officially known as the Snetterton Renewable Energy Plant, opened a month early on April 22 after a construction period of 29 months. The Brigg power plant was handed over on January 21 after a build period of less than 27 months, which was three months ahead of schedule

The plants utilize proven straw-burning technology with construction risk now fully discharged and with stable operation and capacity slightly above initial expectations. The plants are able to operate with variable fuel mixes co-firing straw with e.g. rape, miscanthus, woodchips.

Click [here](#) for more information.

Biogas

Registry set up to mediate EU biomethane trade

The BIOSURF (Biomethane as Sustainable and Renewable Fuel) project has thoroughly studied the conditions for opening the whole European market for biomethane distributed through the natural gas network. It was concluded that an independent, professional and transparent administrative system is necessary to ensure market confidence and exclude double counting and double sale. The system is based on the cooperation of the national biomethane registries (presently in 8 European countries) and is designed to for easy expansion for all other states.

The main purpose of the new association is to establish an independent, transparent and trustworthy documentation scheme for mass balancing of biomethane (biogas upgraded to natural gas quality) distributed along the European natural gas network. The joint work has resulted in developing the voluntary scheme named as "ERGaR RED". ERGaR aisbl will apply for the recognition of the voluntary scheme by the European Commission in accordance with the Renewable Energy Directive, Fuel Quality Directive and other related legislative documents.

The injected biomethane gets blended with natural gas in the pipelines and the methane

molecules of fossil and renewable origin cannot be differentiated anymore. Hence, mass balancing with appropriate documentation is the only feasible solution to track the renewable fuel (biomethane) in the natural gas system.

ERGaR RED has detailed procedures for performing the mass balancing of biomethane injected into the European natural gas system on a consignment to consignment basis and transferring the sustainability claims related to the individual consignments cross-border. The national biomethane registries will issue "Proofs of Origin" for the consignments designated for export. The content and attributes of these electronic documents are harmonised to enable easy transfer all through Europe. Thanks to the solid and reliable administrative system the sustainable biomethane consignments forwarded cross-border will be qualified as sustainable biofuel in the importing countries.

Click [here](#) for more information.

Report discusses potential of biogas for UK heating

Gas made from domestic waste, energy crops, agricultural waste, food waste and sewage could heat up to 15 million homes in the UK every year by 2050, according to a new study just published by Britain's largest gas distribution network.

Titled *The Bioenergy Review*, the report was commissioned by Cadent to estimate how much of the UK's energy demand could be met by renewable gas. The research was compiled by sustainable energy consultants Anthesis and E4tech, and updates the findings of a previous study carried out by the Committee on Climate Change in 2011.

The report's insights come just a week after the UK government's Clean Growth Strategy indicated that it would be exploring biomethane and green

gas technology as a possible route towards decarbonisation.

A key finding of the study is that biogas from 'black bag waste', food waste, energy crops and agricultural residues could produce up to 183 Terra Watt hours of biomethane a year, equivalent to meeting the annual gas demand for homes across the whole of south east England, London and East Anglia.

In their conclusions, the authors call on the government to aid in building the evidence base for policy makers, making two key recommendations. Firstly, they suggest that the government should support the collection and assimilation of improved data for many feedstocks, in particular for C&I wastes and C&D wastes, to enable more detailed analysis of the local and regional potential for the production of renewable gas and the efficient use of these feedstocks.

The second recommendation is for the government to continue to support development of best practices and improved sustainability frameworks, which will improve the understanding of potentials from agricultural and forestry residues, energy crops and short rotation forestry, and will provide assurance around their sustainable use.

Click [here](#) for more information.



Pixnio

UK to see first bioenergy powered forge



Pxhere

Abby Forged Products could be the first forge in the UK to draw power from anaerobic digestion and biomass.

The company will spend £14 million on new premises, creating up to 55 jobs, according to local paper The Star. This will include a 3,000-tonne press, furnaces and 'manipulator' vehicles used for transporting red hot forgings. The new forge could be the first in the country to be powered by biomass and biogas, given that in September, plans were submitted by Beeley Wood Biogas Ltd for a £65 million sustainable business park based on an anaerobic digestion plant and biomass station. The anaerobic digester is expected to generate power from food waste and process up to 65,000 tonnes of material per year from a nearby waste recycling centre.

Click [here](#) for more information.

£3.95m bond launched for AD plant

Peer-to-Peer bond platform Downing Crowd has launched a new project to raise £3.95m for renewables firm Warren Energy.

The Norfolk-based energy company is offering investors 6.75 per cent over the term of the bond, which is due to mature on September 28, 2019.

The power plant generates biogas through anaerobic digestion, a process that breaks down organic materials, without the requirements of oxygen.

Biogas can be used as both fuel and fertiliser and Warren Energy receives payment for exporting it to the grid as well as generating income for biogas and the electricity generated that goes back into the grid.

Click [here](#) for more information.

Energy from Waste

EfW plant planned for Immingham

A £170 million new waste-to-energy plant proposal has today been unveiled for Immingham, with the potential to create 40 long-term jobs and a construction bonanza.

The proposal, brought forward by developer North Beck Energy, would generate virtually 50MW of electricity, enough to power 80,000 homes.

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Click [here](#) for more information.

Hoddesdon EfW plant receives Bioenergy Infrastructure Group Investment

Bioenergy Infrastructure Group, a UK-based biomass and waste-to-energy investor specialist, has announced the addition of the Hertfordshire-based Hoddesdon waste-to-energy facility to its portfolio of bioenergy assets.

Hoddesdon is a 10MW advanced conversion technology (ACT) plant that uses refuse-derived fuel (RDF) to generate renewable electricity for the national grid.

Situated to the north of London, the facility has the capacity to power the equivalent of over 24,000 homes per annum.

BIG's investment in Hoddesdon concludes the recent transaction with the Green Investment Group, which was announced in August.

The transaction furthers BIG's ambition to strengthen its position as one of the leading investors in bioenergy by more than doubling its assets over the next five years, diversifying its projects and utilising its sector knowledge and investment experience to drive the institutionalisation of the asset class.

BIG's investment in Hoddesdon is being made in partnership with the Hancock Renewable Energy Group, a unit of the Hancock Natural Resource Group, which is a subsidiary of Toronto-based Manulife Financial Corp.

Their first collaboration, Energy Works Hull, is a 24MW biomass plant due to be operational in 2018, which will provide enough energy to power the equivalent of one-third of all the homes in Hull and will be capable of diverting approximately 250,000 tonnes of commercial and industrial waste from landfill per year.

Click [here](#) for more information.

Events

Energy from Waste 2017 London, 6th-7th December 2017

A move towards greener energy makes Energy from Waste (EfW) a fundamental cog in energy provision. Supported by the Environmental Services Association (ESA) and European Suppliers of Waste to Energy Technology (ESWET), SMI's 10th annual conference on Energy from Waste will draw critical updates from those shaping the industry.

It will strengthen knowledge in key topics such as EfW feedstock, advanced waste gasification and new financing initiatives, whilst looking at the practicalities of community engagement schemes and keeping attendees at the forefront of technological breakthroughs to adapt to the growing need for sustainable energy.

Understanding current UK policy, potential changes after BREXIT and EU initiatives surrounding the circular economy will be a major focus, as will hearing a selection of case studies from international markets and local authorities currently implementing waste projects including the City of Westminster and the North London Waste Authority CHP Plant.

Click [here](#) for more information.

Bioeconomy Investment Summit Helsinki, 14th-15th December 2017

Over 30 speakers from across the globe will share their views on how we can bring together the economy and the environment.

New advances in technology mean that everything that can be made out of oil can be made from renewable, biological resources. There are huge environmental and business opportunities for a wide range of industries: construction, chemicals, textiles, energy, plastics.

The bioeconomy gives us a unique opportunity for building a sustainable future. Our speakers will focus on what investment steps we need to take to make it happen.

Click [here](#) for more information.

Eco-Bio Dublin, 4th-7th March 2018

ECO-BIO 2018 will highlight the latest research and innovation towards developing industrially viable, safe and ecologically friendly biobased solutions to build a sustainable society.

A topical and comprehensive programme will include plenary and invited speakers, forum discussions, contributed oral presentations, a large poster session and exhibition.

The conference will bring together all concerned with the biobased economy to review industrial, academic, environment and societal approaches, discuss the latest research and progress, and encourage new research partnerships to enable new cascaded biobased value chains.

Click [here](#) for more information.

MBRE 2018 Glasgow, 5th-6th March 2018

One source of biofuels has been identified as marine biomass or marine algae. Many researchers are working on the feasibility of using algae as a feedstock for producing bio-fuels. One example of biofuel from marine algae would be the conversion of Marine biomass to methane via anaerobic digestion, which can generate electricity. Another potential for algae is its potential for biodiesel.

One great characteristic of micro-algae is that it doesn't rely on soil and land. They thrive in water which is salty or dirty. Therefore, they do not need fresh water resources. Algae also have high growth rates, good growth densities which also makes them a good source for biofuels. Algae can be grown in a variety of climates and in different types of production methods. These can be from photo bioreactors, ponds and fermenters.

The conference aims to explore the challenges and opportunities in the area of marine algae as a source of biofuel. It will highlight the recent developments in research areas such as cultivation of marine algae and research & development of algal—biofuel production.

Click [here](#) for more information.

Global Bioeconomy Summit Berlin, 19th-20th April 2018

The first Global Bioeconomy Summit was held in 2015 and brought together more than 700 bioeconomy stakeholders from over 80 countries. Since then, Bioeconomy has taken a steep and exciting way forward. Many notable initiatives and collaborative efforts have been initiated by the bioeconomy community in order to drive the development of sustainable bioeconomies in their countries and regions.

It is now time to come together again and to re-visit the strategies for future international cooperation in a next Global Bioeconomy Summit!

The 2nd GBS will focus on emerging concepts and future trends in bioeconomy, the latest on challenges and opportunities related to ecosystems, climate action and sustainable development along with the bioeconomy innovation agendas and global governance initiatives to manage them.

Click [here](#) for more information.

EUBCE 2018 Copenhagen, 14th-18th May 2018

We look forward to the 26th EUBCE in 2018 in Denmark and to the many vibrant topics that will be included in the agenda. The core of the traditional EUBCE conference will be held over 4 days.

There will however be an extension to the core conference and exhibition in order to showcase the many achievements in the field of full scale biomass utilisation in Denmark that are an integral and major part of the country becoming fossil-free by 2050. Members of the national organising committee will organise special technical visits to sites in the centre of the country where biomass is the key renewable feedstock into processes producing renewable energy, biofuels, biochemicals and biomaterials as well as integrating bioproducts into traditional established fossil-based systems.

Click [here](#) for more information.

RRB 14 Ghent, 30th May - 1st June 2018

The 14th edition of the International Conference on Renewable Resources & Biorefineries will take place in Ghent, Belgium from Wednesday 30 May until Friday 1 June 2018. Based on the previous RRB conferences, this conference is expected to welcome about 350 international participants from over 30 countries.

Delegates from university, industry, governmental and non-governmental organizations and venture capital providers will present their views on industrial biotechnology, sustainable (green) chemistry and agricultural policy related to the use of renewable raw materials for non-food applications and energy supply. The conference further aims at providing an overview of the scientific, technical, economic, environmental and social issues of renewable resources and biorefineries in order to give an impetus to the biobased economy and to present new developments in this area.

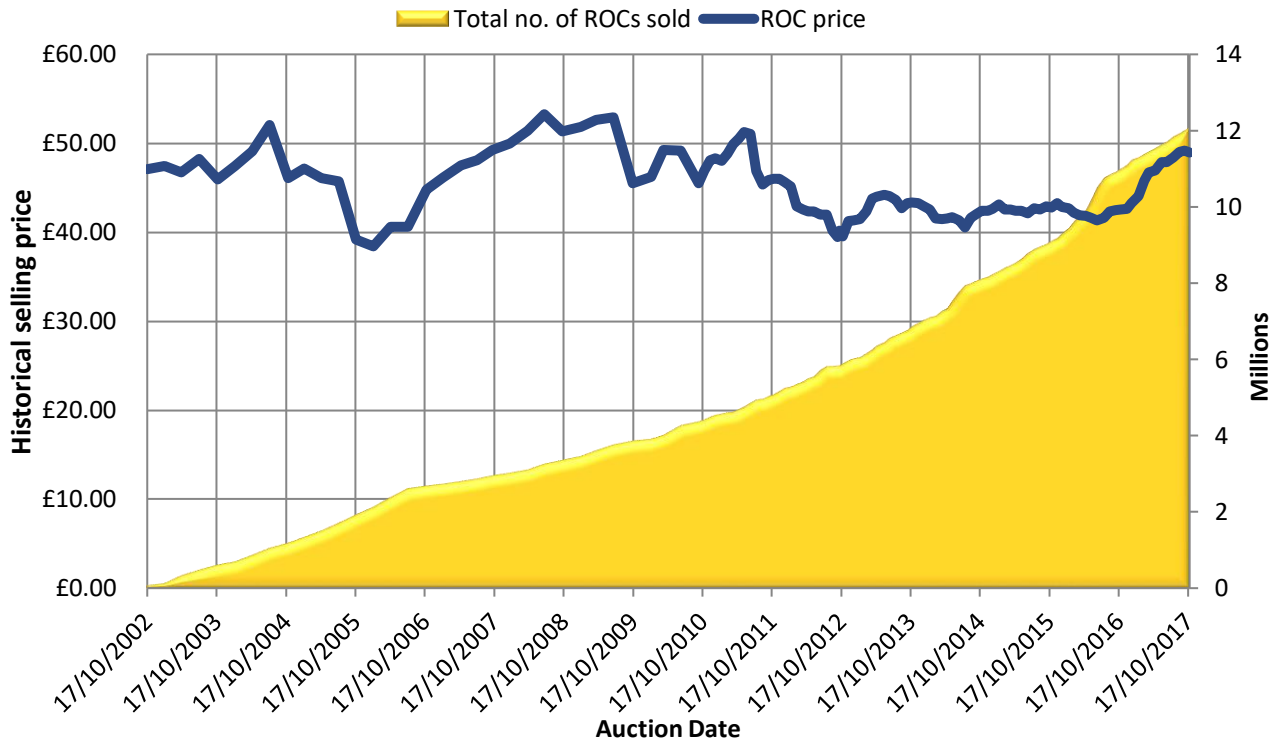
The conference will provide a forum for leading political, corporate, academic and financial people to discuss recent developments and set up collaborations.

The three-day international conference will consist of plenary lectures, oral presentations, poster sessions and an exhibition. Companies and research organizations are offered the opportunity to organize a satellite symposium.

Click [here](#) for more information.

Prices

Historical auctioned prices of ROCs in sterling pounds, and total amounts of ROCs historically sold.



Click [here](#) for more information

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