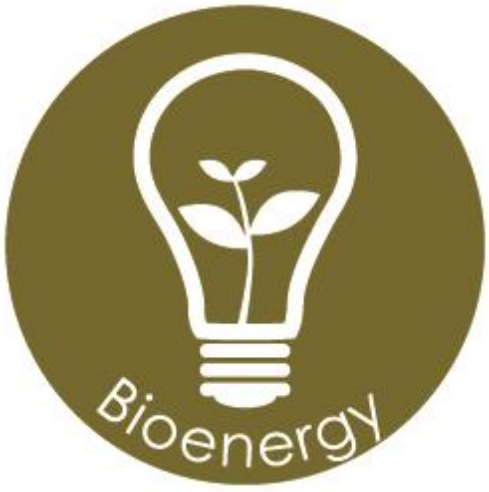
The Bioeconomy Consultants
NNFCC

YOUR PARTNERS FOR BUSINESS INSIGHT AND MARKET INTELLIGENCE

Providing clients with a strategic view of feedstock, technology, policy, and market opportunity across the bioeconomy

News Review



Issue Seventy-Seven

August 2018

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

Contents

Foreword

Welcome to August's Bioenergy News Review from NNFCC.

We begin with news from one of our commercial partners Amur Energy. We have collaborated with Amur to develop a number of services for Anaerobic Digestion plant operators, as we continue to demonstrate AD's viability as a source of renewable energy. However, AD is not necessarily a simple process, it requires rigorous knowledge of how the plant's proposed feedstocks will interact with the AD process, as contaminations can cause death of the microorganisms in the digester, inhibiting the biogas production process. Analysis of factors influencing biogas production used to be a lengthy process, taking up to a month to deliver results, but now Amur have introduced an inhibition test that can produce results in just 24 hours, allowing the process of managing and maintaining a healthy AD system to be greatly accelerated for plant operators. Amur's inhibition test runs alongside their "Bullet BMP" test, which uses spectral analysis to determine the biomethane potential of a plant's feedstocks, producing results in just three days, granting maximum convenience, and thus flexibility, for plant operators,

Moving up in scale from AD, it has been an interesting month for Drax, with several stories being picked up concerning the Yorkshire biomass-power generator. Drax's half-year financial results were published earlier this month, showing the company to be in good health despite unplanned outages at the power station earlier in the year. This is an interesting time for Drax, who are due to complete the conversion of the fourth of their units from burning coal to burning biomass, which is their final planned conversion for the time being. This comes alongside the announcement of a project to upgrade the turbines on the other three biomass units over the next three years, delivering increased efficiency and thus cost savings. We also reported back in May that Drax were also due to pilot Europe's first ever carbon capture and storage project, and it has now been revealed that Drax are in talks with the British Beer & Pub Association about using the captured gas, which could be sold to beer manufacturers, in the wake of a CO2 shortage across Europe affecting the brewing industry. The CCS project will only be at the pilot scale, but if successful would demonstrate that bioenergy equipped with CCS is a viable carbon negative energy source, which is often touted as one of bioenergy's shortfalls against other renewables: that it is at best carbon neutral, despite being a significant reduction in carbon emissions compared to fossil fuels.

Read on for the latest news.

Policy

UK Consultation on domestic wood burning

Wikimedia Commons

DEFRA has launched a new consultation on the domestic burning of solid fuels and wood, continuing their focus on reducing particle matter emissions and the Clean Air Strategy.

The consultation considers a range of proposals focused on phasing out the sale of the most polluting products, enabling consumers to switch to less polluting alternatives. This includes restrictions on the sale of wet wood for domestic burning so that it can only be purchased in volumes over a specified cut-off point, applying sulphur standards and smoke emission limits to all solid fuels, and phasing out the sale of bituminous or traditional house coal.

Click here for more information.

2019 CfD auction likely to be held in May

BEIS made an announcement on the CfD auctions, as part of a trip to the North East by Claire Perry MP and cabinet colleagues.

No precise date has been given for the 2019 auction, but it is expected to be held sometime in May. The commitment to bi-annual rolling auctions could run into the 2020s, though there is no end date given. There is also no indication over whether these will only be for Pot 2 technologies as per the last auctions - this is assumed but can be altered by the Secretary of State prior to each auction. The references in funding terms are to the £557million announced at the autumn Budget last year with no further breakdown by auction. More details are expected in due course.

Click here for more information.

Markets

Unplanned outages don't dent Drax finances

Drax has published its half year financial and business progress report. Finances are deemed to be on plan despite unplanned outages earlier in the year (including effects of fire damage in the biomass receiving area), share dividends are up and Drax continues to buy-back shares.

Drax has commissioned its 3rd biomass pellet plant, La Salle Bioenergy in the US and conversion of its fourth unit to biomass is planned to complete by the end of the summer. It has a planning application in for review regarding

conversion of the final 2 coal-powered generating units to gas-powered turbines.

Drax has made a £46 million capital investment into the business to date against an anticipated investment of £100-110m over the full year to cover maintenance, improvement and optimisation programmes and conversion of the 4th unit.

Drax has achieved an 80% increase in its own pellet supply while delivering a 12% reduction in cost by reducing transport costs through rail investment in the US and co-location with a sawmill at the La Salle pellet plant.

Click here for more information.

Further UK biomass capacity growth "unlikely"

Geograph

Significant further growth in UK biomass capacity "seems very unlikely", consultancy Tolvik has warned in an analysis of the industry.

Tolvik said in its UK Dedicated Biomass Statistics 2017 report that the industry had been reliant on subsidy support from the former Renewables Obligation (RO) scheme.

The end of this and the expiry of the post-RO grace period on 30 September meant facilities still under construction needed to have been commissioned by then to receive RO support, it said.

But of 15 such projects identified, only four had been fully accredited. While some might become so by 30 September, "a failure to secure RO accreditation is likely to seriously prejudice a facility's ability to commercially operate in line with a business case that assumed RO accreditation", Tolvik said.

"This is likely to lead to either mothballing or an exploration of the facility's ability to switch to a fee-paying fuel such as refuse-derived fuel."

Click here for more information.

Refinancing of biomass plants

Octopus Investments has completed a £174 million refinancing of a biomass and landfill gas portfolio.

It is thought to be the first major UK biomass deal this year and is described as one of the "largest" transactions of its kind.

The company has refinanced the Melton Renewable Energy UK Limited (MRE) portfolio with a £152 million term loan, £10 million revolving credit facility and £12 million debt service reserve facility.

Octopus has a £2.6 billion portfolio of clean energy assets, which total 2,026MW. It acquired the biomass portfolio, which includes five biomass plants and 22 landfill sites, on behalf of its investors in 2015.

All the biomass projects are dedicated biomass plants, as opposed to co-firing facilities, sourced from a range of UK sustainable feedstock including poultry litter, meat and bone meal, horse bedding, and forestry wood chips.

The projects have a combined generational capacity of 172MW which makes up the UK's largest independently owned biomass and landfill gas portfolio.

Octopus Investments is part of the Octopus Group, which also includes Octopus Energy. The energy supplier announced a partnership with Marks and Spencer earlier this month. The retail giant will part ways with SSE in September after nine years working together.

Click here for more information.

E.ON customers with Electric Vehicles to receive cashback on bills

E.ON has launched a new energy tariff specifically tailored for electric vehicle (EV) drivers, offering around 850 free miles a year.

The 'Fix and Drive' tariff is fixed for two years and provides a £30 annual cashback reward, which the supplier says is equivalent to the free driving miles.

Customers will receive the credit on their electricity account six months after they sign up to the tariff and is earned annually.

The tariff, certified as 100% renewables through Ofgem's Renewable Energy Guarantees of Origin (REGO) scheme, is available to drivers who own or lease plug-in electric or hybrid vehicles registered with the Driver and Vehicle Licensing Agency (DVLA).

Click here for more information.

Research & Development

NIC back renewables for UK Industrial Strategy

The National Infrastructure Commission (NIC) delivered unambiguous support for renewables as the most cost-effective and affordable route to ensuring decarbonisation and meeting the UK's energy needs in a new report.

An in-depth two-year NIC assessment of the UK's infrastructure needs recommended that the Government must focus future policies on renewables in order to meet the UK's future energy needs.

The recommendations in relation to renewable power, heat and transport make clear that the future lays in flexible renewable energy generation and smart storage solutions. The influential commission also called for proposals for a fleet of new nuclear power stations to be scrapped.

The Renewable Energy Association (REA) has called on the Government to take the NIC's recommendations forward as part of the Industrial Strategy.

Click here for more information.

Implementation plan for bioenergy innovation

Three new Implementation Plans were approved at the Strategic Energy Technology Plan (SET-Plan) Steering Group meeting on the 13th June 2018. Including one on Bioenergy and Renewable Fuels for Sustainable Transport.

The Implementation Plan (IP) of Action 8, Bioenergy and Renewable Fuels for Sustainable Transport, describes the Research and Innovation (R&I) activities that need to be implemented in order to achieve the strategic targets adopted in the SET Plan Declaration of Intent (DoI), agreed in December 2017 by the representatives of the European Commission services, SET Plan countries and stakeholders most directly involved in the respective sectors.

In line with the SET Plan DoI, the Implementation Plan has three common goals for the field of Bioenergy at large: Improve performance (yield and efficiency) of production, reduce GHG emissions along the value chain and reduce cost.

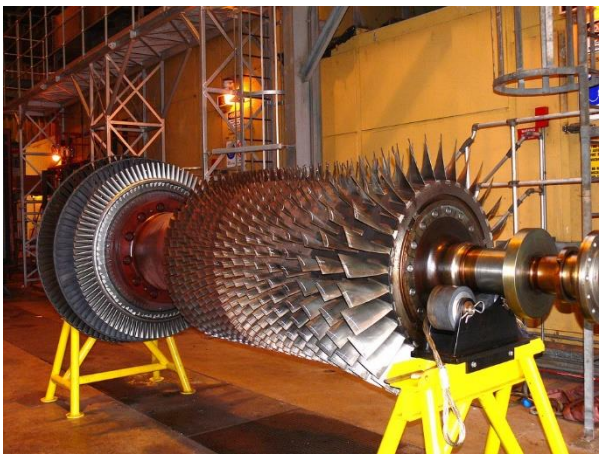
In order to capture the major segments of Bioenergy, this IP describes targeted implementation approaches for Renewable Fuels for Sustainable Transport (automotive and aviation fuels, as well as hydrogen produced from renewable sources).

The estimated volume of investment for development is anticipated at 2.29 Billion €, whereas 104.31 billion € is foreseen for demonstration and scale-up activities.

Click here for more information.

Biomass Heat and Power

Drax to upgrade turbines at biomass plant



Pixabay

Drax Power, which operates the biggest power station in the UK, has signed a new £40 million contract with Siemens for the upgrade of turbines on three of its biomass units over the next three years.

The upgrades will deliver efficiencies, as well as maintenance savings, which will cut the cost of biomass electricity production at the plant in North Yorkshire. The work includes fitting more efficient blading, improved seals and valve work.

The work, which starts in 2019, will take three years to complete, with one biomass unit being upgraded each year as part of its planned major overhaul.

Click here for more information.

Greenalia to develop biomass plant in Spain

Greenalia Group subsidiary has received a loan of €50m from the European Investment Bank (EIB) for the development of a new biomass-fired power plant in Spain.

Located in the municipalities of Curtis and Teixeiro in La Coruña, the plant will generate power using nearly 500,000 tonnes of forest biomass a year.

In using this method, the plant not only helps in forest maintenance but also prevents fire. Additionally, the biomass used by the Curtis-Teixeiro plant will be certified by Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification.

Upon completion, the power plant will be capable of generating approximately 324GWh (50MW) of electricity annually, using forest waste that is sourced within a 100km radius of the facility.

It will be the first biomass plant financed by the EIB under the European Investment Plan (Juncker Plan).

In addition to the EIB financing, the project will receive another €50m loan from various financial institutions through a project finance arrangement for the construction and operation of the new facility.

Currently, 400 people have been employed by the company for the construction of the plant. In addition, once commercial operations begin, around 35 people will be hired on a permanent basis. The project is expected to create 100 additional indirect jobs in the waste supply chain.

Click here for more information.

Apetit to power oilseed milling plant with biomass

Wikimedia Commons

Apetit is building a bioenergy plant in conjunction with the rapeseed oil milling plant in Kirkkonummi, Finland. The company has received a favourable decision of the Ministry of Economic Affairs and Employment of Finland's investment aid that is granted for projects based on renewable energy. The aid will cover 10 percent on the total cost of the project, however, up to a maximum of 350.000 euros.

The bioenergy plant will replace the current energy solution that uses non-renewable fuels and significantly reduce the carbon dioxide emissions of the entire Group. The value of the investment is about EUR 3.7 million. The project is conditional for an environmental permit.

Click here for more information.

Gas from Drax's CCS to be sold to brewers

Public Domain Pictures

Energy group Drax has announced that it is in talks with the British Beer & Pub Association to explore whether the CO2 captured during its bioenergy carbon capture and storage (BECCS) project could be used to tackle CO2 shortages in the beverage industry.

The £400,000 trial, which Drax is undertaking at its North Yorkshire power station, could make the renewable electricity produced at the facility carbon-negative if it is successful. But, Drax announced on August 10 that the programme and could also capture and store enough CO2 to add fizz to 32,000 pints a day.

The six-month trial is due to start this autumn. C-Capture - a spin-out from the University of Leeds – has developed technology to isolate the carbon dioxide produced by the biomass combustion. Drax estimates that the unit will capture and store at least a tonne of CO2 each day - enough to carbonate 5.7 million pints of beer over the six-month period.

The talks between Drax and the British Beer & Pub Association come as a response to the major CO2 distribution problems across the UK and mainland Europe this summer. At least five major European CO2 producers, which sell the gas to drinks manufacturers, went offline for maintenance.

If the trial proves successful, Drax has confirmed it will look into scaling up the CCS technology to capture more CO2 from the power station in future, with a view to sending the captured carbon to be used as a resource by corporates in other industries. The firm also said that the pilot scheme "could be the first of several".

Drax previously signed up for a £1bn CCS competition fund but pulled out in 2015 after then-Chancellor George Osborne axed the development competition.

Its latest foray into CCS has been praised by Energy and Clean Growth Minister Claire Perry, who said the trial could help the UK meet its Industrial Strategy aim of becoming a world leader in CCS.

CCS is the most cost-effective way of meeting climate change targets and needs to be deployed sooner rather than later, according to the Energy Technologies Institute (ETI). The organisation has previously highlighted that the UK has "more than enough" potential CCS sites to meet legally binding 2050 carbon targets in a cost-effective manner, which apparently could save up to £2bn annually throughout the 2020s.

The ETI additionally estimates that BECCS could deliver roughly 55 million tonnes of net negative emissions a year in the UK – approximately half the nation's emissions target – by the 2050s.

Click here for more information.

Biogas

AD industry's fastest inhibition test

Amur Energy

AD operator and services provider Amur Energy has unveiled the industry's first, rapid inhibition test. The test, which runs alongside Amur's innovative Bullet BMP test, produces results in just 24 hours, compared with the 30 days required for existing industry analysis.

The simple test is based on very sensitive bacteria, which react quickly when exposed to inhibition-causing toxins.

Previous industry inhibition analysis has been limited – it could only be achieved through biological BMP testing, which checks for gas potential.

Amur's Bullet BMP technology reports back in just three days. The cutting-edge technology uses near infra-red spectral analysis to identify the components – such as starch, sugar, or fat – in a sample. The findings are calibrated and benchmarked against known biomethane potential from a range of waste materials, then mathematically calculated and converted into BMP.

Click here for more information.

Plan to keep plastic out of digestate and compost

The REA has worked with ADBA as part of the Food Waste Recycling Action Programme (FWRAP) to develop a position paper about keeping plastic out of digestates and composts. This paper covers issues relevant to plastics and biodegradable waste materials supplied for composting or AD treatment, including steps that operators, local authorities and the packaging industry can take to help achieve our aim for plastics-free composts and digestates. It also provides a number of useful links to signpost readers to additional information regarding this hot topic.

This is intended as an information resource for any operators or local authorities who are asked questions about what steps are taken by industry to keep plastics out of composts and digestates.

Click here for more information.

Isle of Wight AD plant bought by Foresight

Foresight Group LLP has announced the completion of the acquisition of an operational AD plant on the Isle of Wight for an undisclosed sum.

The 24-acre site at Arreton has a CHP plant to provide 250kW of electrical power generation capacity to power the facility (and related waste heat use), c.580 Sm3 (standard cubic metres) per hour of biomethane export capacity to grid (plus related CO2 sales) and capacity to process in excess of 50,000 tonnes per annum of energy crops whilst benefiting from FIT and RHI revenue.

Foresight has established a market leading position in AD having previously invested into 20 greenfield and operational AD plants across the

UK and an additional five operational plants in Germany with a combined capacity of 36.5MW.

The transaction is a demonstration of Foresight's appetite to aggregate operational AD assets following the acquisitions of two assets in East Anglia and five assets in Germany earlier in the year. This acquisition consolidates Foresight's Bio-Energy team's strong market position in the UK and enables it to continue to export its deep sector experience to Europe, Australia, North America and beyond.

Click here for more information.

Energy from Waste

Two new Welsh waste and energy plants in the pipeline

Plans for two separate Welsh facilities to manage residual waste have recently come to fruition, at opposite ends of the country.

Flintshire county council has provisionally granted permission for a mechanical biological treatment plant in Deeside, North Wales, which will manage up to 182,000 tonnes of residual municipal, commercial and industrial waste per annum.

The Deeside facility will comprise of a materials recycling facility and anaerobic digestion plant, utilising technology by ArrowBio

The facility will utilise ArrowBio's hydromechanical separation and preparation process. The company says the process recovers 70% – 90% of materials and produces high methane (CH_4) content biogas for several green energy uses.

Outputs of the facility will be biogas, a refuse derived fuel (RDF), compost like output (CLO), while the AD element of the facility would produce up to 2MW.

Meanwhile in the south of Wales, Biffa is preparing to put in an application to develop a small-scale energy from waste facility in Swansea.

The waste management firm entered a pre-application process for the facility which will treat around 21,000 tonnes of trade waste, currently collected by Biffa in the Swansea area for disposal via landfill.

The proposed development will generate 0.4 megawatts of renewable energy in the form of electricity, which will be exported to the National Grid and low-level heat.

Click here for more information.

Events

Recycling and Waste Management Expo
Birmingham, 12th-13th September 2018

Now under new management, RWM is making an exciting comeback to Birmingham's NEC on the 12th & 13th September 2018 for its biggest show to date.

Click here for more information.

International Biogas Congress & Expo Berlin, 10th-11th October 2018

Brought to you by Bioenergy Insight, the leading biogas industry publication, this two-day conference will bring together leading producers, stakeholders and companies within the biogas sector.

Expert international speakers will address a range of biogas related issues and topics within Europe and beyond. Co-located with the International Biomass Congress & Expo as well as the renowned Biofuels International Conference and Expo, this series of bio events will be our largest gathering yet of bio related companies, giving participants unrivalled coverage.

Click here for more information.

International Biomass Congress & Expo Berlin, 10th-11th October 2018

The International Biomass Congress & Expo aims to bring together leading producers, suppliers, regulators and other engaged organisations over a two-day period. High-level speakers, experts in their field, will address a range of topical issues relating to the biomass sector.

Brought to you by Bioenergy Insight, the leading international biomass magazine, this year's conference will be co-located with the International Biogas Congress & Expo as well as the renowned Biofuels International Conference and Expo, making this series of bio events our largest gathering yet of bio related companies, giving participants unrivalled coverage.

Click here for more information.

EFIB 2018
Toulouse, 16th-18th October 2018

Join over 650 bio-based leaders in 2018 for the 11th edition of EFIB in Toulouse, France, on the 16th, 17thand 18th of October.

Click here for more information.

Agrocycle Mission to China
Beijing, 22nd-26th October 2018

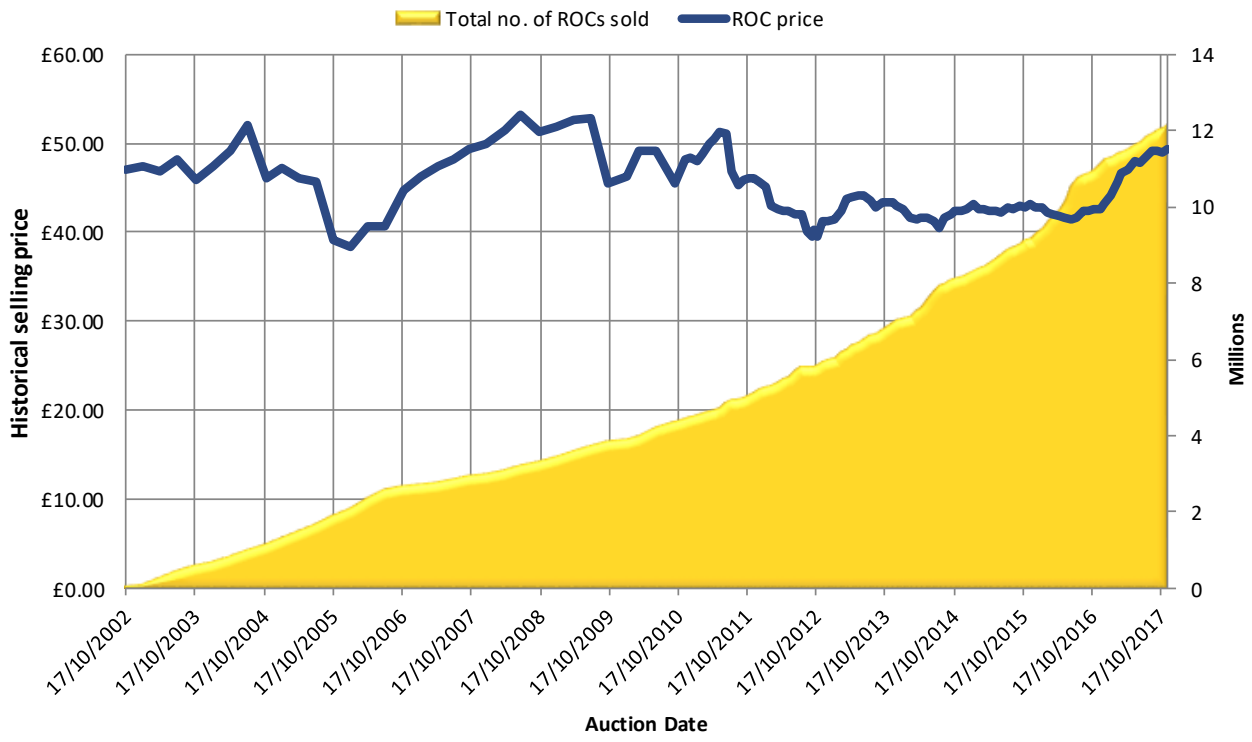
The Agricultural waste and residue management for a circular bio-economy event will be held in China from the 22nd to the 26th of October 2018, and will bring together stakeholders from industries, research, public bodies, educators and policy-makers from China and Europe.

The programme of the event includes 2 days of plenary conferences in Beijing (22-23 October) and three days of workshops, brokerage meetings and on-the-field visits (24-25-26 October).

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

Credits and Disclaimer

NNFCC News Review is edited by Bob Horton for NNFCC subscribers. Feedback is welcome. The Review has been compiled in good faith and NNFCC does not accept responsibility for any inaccuracies or the products or services shown.

NNFCC
Biocentre, York Science Park
Innovation Way
Heslington, York
YO10 5DG

Phone: +44 (0)1904 435182
Fax: +44 (0)1904 435345
Email: enquiries@nnfcc.co.uk
Web: www.nnfcc.co.uk
Twitter: @NNFCC