

News Review



Issue Seventy-Eight
September 2018

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

Contents

Policy.....	4
Markets	6
Research & Development.....	8
Biomass Heat and Power	10
Biogas	13
Events.....	14
Prices	16

Foreword

Welcome to September's Bioenergy News Review.

September arrives with big policy news, with potentially massive ramifications for bioenergy.

The UK government's Department for Business, Energy and Industrial Strategy (BEIS) has announced the second wave of updates to the Contracts for Difference (CfD) scheme, following the consultation into the scheme, which ran from December last year to March this year. The CfD is one of the most important support schemes for larger-scale renewables generators, including bioenergy. Currently, over half of the projects supported by the scheme are either bioenergy or advanced conversion projects. However, the express objective of the CfD scheme is to promote low-carbon energy, and the reforms very heavily favour renewable energy options with the lowest emissions. Duly, generators utilising biomass or biogas are subject to stringent sustainability requirements, focused chiefly on greenhouse gas emissions reductions across the whole life-cycle. These greenhouse gas emission reductions are set to become even tighter under the reformed CfD. This could lead to a greater difficulty in developing new large-scale bioenergy projects, and there are concerns within the industry whether new biomass plants could achieve such low levels of greenhouse emissions, given that the new greenhouse gas threshold represents nearly an 85% reduction on the previous threshold under other renewable energy support schemes. Bioenergy offers the unique distinction among renewable energy sources in that its generation is not reliant on external conditions such as the weather, and is able to provide the baseline generation for the renewables sector.

In addition to concerns about the continuing economic support for large-scale bioenergy going forward, there are worries that by effectively "pricing out" the bioenergy sector, it will become harder for the UK to reduce generation from coal, which biomass has traditionally been used to replace.

However, there may potentially be light on the horizon, as it is a widely-held belief that once carbon capture and storage (CCS) technology is fully developed, then bioenergy will be able to generate with net-negative emissions. Here in the UK, biomass generators Drax are spearheading the development of this technology, and so hopefully in future bioenergy will be able to come back into the CfD fold.

Read on for the latest news.

Policy

UK government's second wave of amendments to Contracts for Difference scheme

The UK government has published its second (Part B) response arising from consultation on the future of the UK's Contracts for Difference (CfD) support programme for low carbon electricity generation.

The CfD scheme is currently supporting 42 projects across a range of technologies, providing nearly 10GW of new renewable electricity capacity. In the Clean Growth Strategy, the government confirmed that up to £557 million would be available for further CfDs. In July 2018 the government announced that the next CfD auction would open by May 2019, with the parameters to be set out later this year, as well as an intention to run subsequent auctions around every two years after that.

The December 2017 consultation proposed refinements to what is considered an Advanced Conversion Technology (ACT) in the CfD scheme so that support is directed to the more efficient, innovative forms of the technology. The government sought to make a clear distinction between ACTs and projects based on conventional combustion such as energy from waste and dedicated biomass, with or without CHP.

A 60% efficiency threshold has been introduced for ACT projects to ensure support is focussed on efficient use of valuable biomass resources.

Technologies using solid and gaseous biomass feedstocks are required to meet sustainability criteria to be eligible for support under the

scheme. The criteria include greenhouse gas (GHG) emission limits on solid and gaseous biomass fuels used within the CfD scheme. The GHG criteria are composed of both a GHG Threshold and a GHG Ceiling. These are both limits on GHG emissions from the use of biomass feedstocks (the latter is a specific limit on GHG emissions from individual consignments of biomass). The December 2017 consultation proposed a new (and lower) GHG threshold of 29kg of CO₂ per MWh, but did not propose to change the GHG Ceiling.

The government recognises concerns that the new GHG threshold value is a significant decrease compared to the existing one and that set by other schemes, and this proposed change could make it more challenging to deliver projects using some of the largest scale biomass generation options, but the government sees the objective of the CfD of supporting low carbon electricity generation.

The government will set the new and lower GHG threshold value to apply to projects that are offered a contract from the next CfD allocation round. This will apply to all non-waste biomass feedstocks. Having considered the views expressed on the merits of a weighted average approach, the government intends to continue with the proposed approach of not weighting GHG emissions by the tonnage of feedstocks used. This will enable the resulting GHG threshold to reflect the range of plant types that can feasibly be developed.

Click [here](#) for more information.

Negative response from biomass sector to CfD reforms



Geograph

New rules to limit the cash available for biomass projects in upcoming UK government clean energy auctions have been slammed by the industry, which warns curbing biomass growth will "make it harder and more expensive" to ease coal power off the UK grid.

The controversy was sparked after the government published plans to adopt a new greenhouse gas threshold of 29kg of CO₂ per MWh for new biomass projects seeking subsidy under its Contracts for Difference support scheme.

The new threshold represents a sharp reduction on the previous standard projects had to meet to qualify for the Renewables Obligation scheme, which stood at 180kg CO₂e/MWh and applies from 2025-2030 for existing biomass generators.

The tightening of the standards means biomass plants would have to operate with almost 95 per cent lower carbon emissions than the average EU fossil power plant. The government claims the rules will help the UK ensure only the greenest renewables projects receive state support.

But Benedict McAleenan, head of trade body Biomass UK, said now is the wrong time to "attack" the sector, warning developing new biomass plants will be "much more difficult" under the new rules.

The biomass industry maintains that it has a crucial role to play in supporting the UK's decarbonisation strategy. The sector insists that to qualify for any subsidies it has to source sustainable certified feedstocks that guard against the risk of deforestation or other land use impacts.

Moreover, developers insist improving technologies mean it can offer highly efficient combined heat and power (CHP) plants that generate significant carbon savings compared to fossil fuels, deliver heat to industrial plants, and provide reliable power to support the roll out of variable renewables such as wind and solar power.

The industry also argues that the integration of biomass and carbon capture utilisation and storage (CCUS) technologies - something being explored by leading energy supplier Drax and others - could play a critical role in one day delivering negative emissions.

Click [here](#) for more information.

California senate approves biogas bills

A bill sponsored by the Coalition for Renewable Natural Gas (RNG Coalition) that would pave the way for a state renewable natural gas procurement programme has been approved by California State Legislature on the final day of its 2018 legislative session.

The bill – SB 1440 – passed by 29 votes to 10 in the Senate. It authorises the California Public Utilities Commission (CPUC), in consultation with the Air Resources Board, to adopt a biomethane (aka renewable natural gas or RNG) procurement programme that would benefit ratepayers, is cost-effective, and advances the state's environmental and energy policies.

The RNG Coalition's other sponsored bill this year, AB 3187, passed the legislature by comfortable margins. This bill requires the CPUC to open a

proceeding to consider options to promote the in-state production and distribution of biomethane, including recovery in rates of the costs of interconnection infrastructure investments, by no later than 1st July 2019. It was unanimously approved (38-0) by the Senate on 27th August after passing the Assembly earlier this year.

Click [here](#) for more information.

Markets

2017 UK bioenergy statistics released

The U.K. Department for Business, Energy and Industrial Strategy recently released updated energy statistics, reporting that electricity generation from renewable sources increased by 19 percent between 2016 and 2017, reaching 99.3 terawatt hours (TWh).

Overall in 2017, 10.2 percent of total U.K. energy consumption came from renewable sources, up from 9.2 percent in 2016. Renewable electricity represented 27.9 percent of total generation, renewable heat reached 7.7 percent of overall heat, and renewables in transport reached 4.6 percent.

Generation from bioenergy and waste increased by 6 percent from 2016 to 2017, reaching 31.9 TWh. Bioenergy and waste capacity increased by 5.1 percent, reaching 6 GW. Of this increase, 69 percent was from plant biomass, with 36 percent from energy-from-waste, and 22 percent from anaerobic digestion.

Generation from plant biomass grew by 6.6 percent or 1.2 TWh, reaching 20.1 TWh in 2017. The growth is attributed to a 7.1 percent increase in capacity. New stations include 20.2 MW Mersey Bioenergy Widnes Biomass CHP, 40 MW Margam

REP, 14.37 MW Mepal CHP, and 17.32 MW Liberty Steel Lochaber. The load factor for plant biomass generation facilities was 79 percent.

Anaerobic digestion generation increased by 19 percent, reaching 2.5 TWh. Anaerobic digestion capacity also increased by 7.9 percent as a result of 93 new sites being identified. Load factors for anaerobic digestion facilities reached 63.2 percent.

Energy from waste generation increased by 24 percent, reaching 3.4 TWh, while capacity increased by 6.1 percent. The load factor for these facilities was 37.2 percent.

Generation from landfill gas fell by 8.9 percent to 4.3 TWh.

Animal biomass generation and capacity were largely unchanged from 2016 to 2017, with 06 TWh of generation and 0.1 GW of capacity.

Renewable heat generation increased by 3.6 percent last year, reaching 5,222 kilotonne of oil equivalent (ktoe). Of that increase, 83 percent was from plant biomass. Domestic wood combustion accounted for the largest share of renewable heat, at 40 percent.

Click [here](#) for more information.



Geograph

Indian biomass power greatly exceeds target

The biomass power generation capacity in India has rapidly grown over the last few years as the Indian government focuses on increasing power generation through renewable energy sources. As of December 31, 2017, the grid-connected biomass power generation capacity in India stood at 8.4 GW, up from 4.95 GW as of March 31, 2016. Going by the current growth rate in biomass power generation, India is likely to surpass the target of 10 GW by the end of the next fiscal year, way ahead of the target year of 2022. Moreover, the newly stipulated National Policy on Biofuels will provide a huge impetus to the growing bio-energy sector in India.

The share of biomass power generation capacity to total renewable power generation is just over 13 percent. Globally, the share of biomass in total renewable energy power is 14 percent, as per the latest report from the World Bioenergy Association.

The bio-power sector in India has picked up the pace in the last two years and even surpassed the annual targets set by the government. While India's clean energy sector missed its capacity addition target for the second year in a row owing to lapses in solar (roof-top) and wind energy sectors, its bio-power capacity for 2017-18 stood at 519 MW against the target of 340 MW. Industry players believe biomass power production is crucial for the country when it's starting at piling municipal and agricultural waste across India.

Click [here](#) for more information.

"Bioenergy Day" marks increase in European bioenergy capacity



Geograph

Biomass could cover the energy needs of all 28 member states of the EU from 19 November to the end of the year, according to Bioenergy Europe.

The figures have been announced as part of the build up to Bioenergy Europe's 'European Bioenergy Day', which will be held on 19 November to mark the point in the year from which Europe's energy needs could be met with bioenergy. Significantly, the date falls two days earlier than in 2017.

Bioenergy Europe, a recent rebrand of AEBIOM, converts the forecasts for Europe's energy consumption into calendar format in order to make the calculations. The figures state that Europe will rely on fossil and nuclear energy for 293 days in 2018, and renewables, including bioenergy, for a total of 72 days.

The statistics reveal significant growth in bioenergy over the years. According to the Bioenergy Europe press release, bioenergy was providing only 18 days clean energy to Europeans in the year 2000.

Click [here](#) for more information.

Strong growth for Novozymes Bioenergy segment



Novozymes

Novozymes released financial results for the first half of 2018, reporting 14 percent organic sales growth for its bioenergy segment. Overall, the company experienced organic sales growth of 4 percent.

Bioenergy sales accounted for 19 percent of the company's sales during the first half of the year. Household care, food and beverage, agriculture and feed, and technical and pharma accounted for 32 percent, 29 percent, 14 percent and 6 percent of sales, respectively.

While sales for the bioenergy segment grew by 14 percent organically during the first half of the year, growth during the second quarter alone reached 20 percent.

Novozymes said the strong growth momentum it saw for bioenergy during first quarter of the year accelerated even further during the second quarter, driven by technology offerings and closeness to its customers in the market.

Novozymes also said its newly launched yeast product, Innova Drive, also posted good growth in the second quarter, albeit from a low base. In addition, the company reported good uptake in Latin America.

The company said U.S. and global ethanol production were estimated to be up 2-3 percent during the second quarter, when compared to the same period of last year, compared to a 1 percent increase during the same period of last year.

Novozymes also reported that sales of enzymes for biomass conversion declined during the first half of 2018 when compared to the same period of last year.

Moving forward, Novozymes said organic sales growth for the bioenergy segment is expected to be driven mainly by new product launches and increased penetration from innovation. The company expects U.S. ethanol production for 2018 to be roughly on par with 2017, but noted that ethanol inventories remain high.

Click [here](#) for more information.

Research & Development

Increasing biogas production with microwaves

A microwave system has recently been designed to treat organic by-products, such as slurries, within a biogas production process.

Ashleigh Environmental – an Irish CleanTech company based in Co. Waterford – has been developing its proprietary microwave treatment system called “Biowave” for the past eight years and recently completed its industrial-scale pilot plant.

The system works by transferring electromagnetic waves into the feedstock, thereby creating a disruption of the material's cell wall.

This enables a more efficient breakdown process and a greater overall biogas production rate. The system also reduces biogas production time and,

as a result, a smaller anaerobic digester can become a more feasible option.

A fully-developed control and automation system is also a key aspect of the overall offering. As a result of this, operator time is significantly reduced.

Trials have also shown a marked increase in biogas production from pig slurry – the first trial feedstock – and the company is now working on process improvements and is expanding its technology into other waste treatment processes.

As a cell disruption technology, microwaves are especially useful due to superior heat transfer efficiency compared to conventional heating.

The technology was recently shortlisted for Best Process Optimisation in anaerobic digestion and Best International Agricultural Plant at the AD and Biogas Industry Awards in Birmingham.

Click [here](#) for more information.

Analysis of Swedish willow for bioenergy

Energy from biomass, including lignocellulosic crops such as willow (*Salix* spp.), is expected to increase in importance in Sweden. A recent study assessed the average annual net energy yield and the ratio between gross energy yield and total primary energy input for well-managed current commercial willow production systems in Sweden subject to three levels of fertilization with mineral nitrogen (N): N-high, N-medium, and N-zero. The average annual net energy yields are estimated at 175, 133, and 86 GJ ha⁻¹ yr⁻¹, and the (dimensionless) energy ratios are estimated at 19, 32, and 47, for N-high, N-medium, and N-zero, respectively. Thus, there is a trade-off between achieving a high net energy yield and achieving a high energy ratio. Since the total primary energy input amounts to ≤ 5% of the gross energy yield

in all cases, and the amount of arable land is limited, productivity increases may be considered more important than energy efficiency improvements.

Substantial improvements in energy performance can be achieved by increasing harvest levels and improving energy efficiency in ammonia production and biomass transportation. The results should be interpreted with caution since several input parameters, especially energy use in ammonia production, fuel consumption rates, and the yield response to fertilization, are associated with considerable uncertainties.

Click [here](#) for more information.



Pixabay

Biomass Heat and Power

Irish bioenergy sector needs more formal biomass trading

If bioenergy generation is to become widespread, then biomass must be readily available and cost-competitive.

Currently in Ireland, the biomass market is informal and often supply and demand do not easily match.

To ensure an uninterrupted supply, as well as greater control in fuel quality, the Irish Farmers' Association (IFA) advocates a network of centralised biomass trading centre regional service stations that supply top-quality wood fuels, operated by forest producer organisations.

A centralised system would enable improved control of the procurement process.

Biomass could be stored at the centre and processed during the winter season when the demand for fuel is high and working conditions at the forest may be more difficult.

Supporting the establishment of the network of biomass trade and logistic centres offers farmers and rural communities significant new business opportunities to not just supply biomass, but to become heat contractors.

Click [here](#) for more information.

Controversy over burning biomass at peat power plant



Geograph

An environmental NGO has asked the European Commission to investigate the Irish Government's decision to subsidise large-scale biomass burning at its peat-fired power stations.

In letters to the European Commissioner for Climate Action, Miguel Arias Cañete, and Agriculture Commissioner, Phil Hogan, Friends of the Irish Environment claims that the subsidy undermines Ireland's commitments to meeting EU climate obligations.

Peat, currently burnt at Bord na Mona's Edenderry power station and two ESB facilities in the Midlands, receives state support to the tune of around €120 million every year through the Public Service Obligation (PSO) levy on electricity consumers.

PSO support for Edenderry expired in 2015 and is set to expire at the plants in West Offaly and Lough Ree in 2019. However, Edenderry began receiving support through the PSO-funded Renewable Energy Feed-in Tariff (REFIT) in December 2015 for co-firing with biomass.

The plant is guaranteed a tariff price under REFIT until December 2030, and it is expected that the two ESB plants will receive similar support once they begin co-firing as planned.

However, FIE claim that this is leading to significant increases in greenhouse gas emissions and increasing the price of biomass to home users, forcing them to use more fossil fuels.

The group argues that the continued co-firing of biomass comes despite the recommendations of the Climate Change Advisory Council that the Government resources should not support measures that lead to increases in emissions.

The expert body concluded that the biomass subsidy for peat power plants is an “environmentally harmful” subsidy that is responsible for higher emissions levels at a “direct cost to the nation.”

Both the ESB and Bord na Móna intend to co-fire with increasing amounts of biomass, including woody biomass and to convert them to burn 100 per cent biomass by 2030.

In 2016, Bord na Mona outlined plans to invest in US-based wood pellet manufacturing in southeastern states in the US to secure a long-term supply of woody biomass for its Edenderry plant.

Earlier this year, however, it dropped plans for a €60 million wood pellet factory. It currently imports woodchip from Africa and plans to further enhance its “sustainable international sources of biomass,” with a focus on woodchip.

Click [here](#) for more information.

Japan's newest biomass plant to be among world's largest



Geograph

Power supplier eRex will build its largest biomass power plant to date in Japan, hoping the facility's scale will provide healthy margins and a means of skipping the government's feed-in tariff program.

The Tokyo-based electric company is in the process of selecting a location, most likely in eastern Japan. It aims to open the plant around 2024 or 2025 following a feasibility study. The facility will cost an estimated 90 billion yen (\$812 million) or so, and have an output of 300 megawatts -- enough to supply about 700,000 households.

The biggest biomass power plant operating in Japan currently has an output of 100 MW. With roughly triple that output, the new facility will rank among the world's largest.

Nearly all biomass power facilities in Japan sell their output through the government-mediated feed-in tariff program, which requires utilities to buy renewable energy at a fixed price. For large biomass plants that burn wood or agricultural waste, the rate is set at 21 yen per kilowatt-hour. But the program costs the Japanese public more than 2 trillion yen a year, and is said to hamper price competition.

ERex aims to forgo the feed-in tariff with its new plant by reaping economies of scale in operation and fuel procurement. The goal is to make the undertaking as economical as coal energy, which costs around 12 yen per kilowatt-hour.

Much of the renewable energy available in Japan is solar power, which fluctuates widely according to weather conditions. Biomass plants, which use such materials as wood chips and palm kernel shells as fuel, offer a more stable alternative.

Demand for reliable sources of renewable energy is on the rise in the business world, as shown by the RE100 initiative, in which 100 of the world's biggest companies have announced their commitment to get 100% of their power from renewable sources.

Click [here](#) for more information.

Architecture award nominations for Stockholm biomass plant



Wikimedia Commons

Known by locals as the 'Wedding Cake' due to its multi-tiered form on the Stockholm cityscape, the boiler house at Värtaverket KVV8 biomass CHP plant has been shortlisted for two prestigious global architectural awards.

And inside the terracotta-clad building in Sweden's capital city is one of the world's largest biomass boilers.

The new plant is fuelled entirely by biomass, which comes in chip form from all over Sweden and further around the Baltic region. The chips are fed into the boiler from a dedicated railhead and harbour via a complex subterranean conveyor system down to 40 metres below sea-level through tunnels cut into solid rock.

All of the ash from the plant is transported back through the same tunnels to silos at the harbour through a completely closed-loop conveying system.

What makes the environmental aspects at Värtaverket even more challenging is that the plant is right next to a residential area as well as very close to Ekoparken, the world's first city national park.

Austrian company Andritz was awarded the contract for the boiler and all automation at the plant in December 2012. This was a unique project in many aspects, particularly the manufacture and installation of one of the world's biggest boilers, with a biofuel fed circulating fluidized bed (CFB) and an output of 345 MW.

Andritz also delivered the flue gas cleaning system. Both SNCR and high dust SCR technology is used to ensure lowest NOx and NH3 emissions. For primary desulfurization of the flue gases, limestone is injected into the furnace. For dedusting, bag house filter technology is used with the possibility to add bicarbonate upstream the filter.

Furthermore, the boiler has varying needs going from winter to spring and autumn to winter. The Andritz PowerFluid technology for power boilers allows for the boiler to go quickly and smoothly from a maximum load of 345 MW up to overload operation of 375MW and down to 80 MW, allowing for a wide operation range, which is unique for a biomass application of this size.

Click [here](#) for more information.

Finnish biomass plant given green light by government

Finnish food group Apetit Oyj has announced it has received a favourable decision with regard to securing investment aid from the state to build a 4.5-MW bioenergy plant.

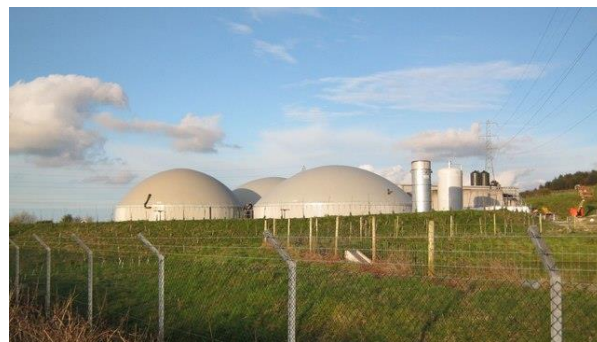
Apetit said in June that it plans to construct a biomass power facility running on forest wood chips and recycled wood in conjunction with its rapeseed oil milling plant in Kirkkonummi. The EUR-3.7-million (USD 4.2m) project has now received the green light from the Ministry of Economic Affairs and Employment of Finland for investment aid of up to EUR 350,000.

The project is still subject to obtaining an environmental permit.

Click [here](#) for more information.

gas being produced, there is also organic material that can be used as fertiliser. This has the advantage that it does not contain gases such as methane, so it smells less, is better for the environment and has a higher nutritional value than just using manure on the fields.

Click [here](#) for more information.



Geograph

Biogas

Denmark leads the way in European Biogas

Biogas production is taking off at scale now in Denmark. In July this year, biogas accounted for 18.6% of all gas used in Denmark. This represents a 50% increase from last year, according to DR Nyheder.

The figures are from the Danish state company Energinet, which owns and runs the gas network. Moreover, they reveal that this is a European record, since no other country is at such advanced state when it comes to biogas integration in the energy network and out to consumers.

Biogas is made from organic waste and animal manure that is warmed up in a tank. In addition to

\$250m biogas plant for Washington waste water facility

The design-build team of PC Construction, Stantec, and Hazen and Sawyer recently announced it has been selected to design and construct the first phase of Washington Suburban Sanitary Commission's \$250 million Piscataway Water Resource Recovery Facility Bio-Energy Project in Prince George's County, Maryland. Upon completion, the facility is projected to help save WSSC customers approximately \$3 million per year while vastly expanding the commission's green energy capabilities through increased production of renewable biogas.

This is the largest and most technically advanced project WSSC has constructed in its 100-year history and, upon completion, the facility will be among the first in the country to incorporate an advanced thermal hydrolysis process (THP).

The Piscataway WRRF Bio-Energy Project will convert wastewater biosolids into renewable biogas, which will then be used by combined-

heat-and-power (CHP) engines to help power the facility. A portion of the biogas generated will also supplement the local community's energy supply. This innovative technology is expected to reduce the facility's greenhouse gas emissions by 15 percent.

The project will also reduce the amount of resulting biosolids produced from five existing WSSC water resource recovery facilities, helping decrease WSSC's costs to transport and dispose of these materials. The quality of the remaining biosolids will create an opportunity for the Commission to sell and distribute these Class A biosolids as fertilizer.

The \$44 million phase one contract includes design and early construction, which entails demolition of existing on-site facilities and relocation of existing site utilities. The entire Piscataway WRRF Bio-Energy Project is expected to be operational by spring 2024.

Click [here](#) for more information.

Events

Biomass for Industrial Applications Amsterdam, 26th-27th September 2018

The VDI conference Biomass for Industrial Applications focuses on the industrial utilization of biomass. The presentations consider both the energy-related as well as the material usage of biomass. Discuss the newest technical, economic and political developments in the industry with leading experts and find out what's in store for the biomass market in the future. This knowledge will help you to make the right strategic decisions for your company and to clear the way of implementation barriers.

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, 17th and 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.

European Biomass to Power Conference Stockholm, 7th-8th November 2018

This two-day event will bring together key industry stakeholders to join forum discussions and excellent networking, including senior representatives from Power Companies, Biomass Producers, Biomass Traders & Distribution Companies, Trade Associations, Renewable Energy Consultancies, EPC Contractors and OEMs, Regional & National Governments and Regulatory & Research Bodies.

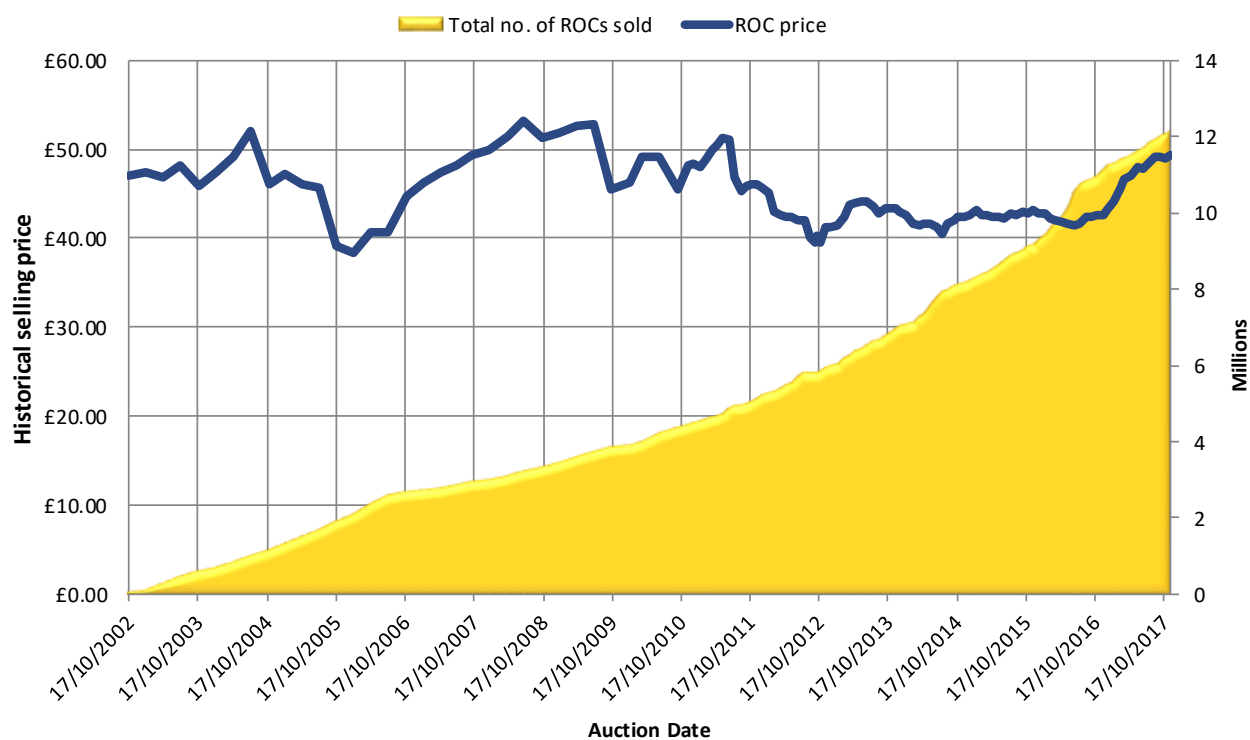
This year's conference will give updates on the European biomass market and its new developments, as well as focus on sustainability and commodity challenges. Over the two days, the event will give you an in-depth look into case studies giving practical examples of planning, finance and technology strategies utilised for biomass co-generation projects.

On Tuesday 6th November a limited number of conference delegates will receive a unique opportunity to visit Stockholm Exergi's and Vattenfall's Uppsala plants. There is no extra charge to attend the site visits, but spaces are strictly limited and allocated to conference delegates on a first-come, first-served basis, so it is highly recommended to book early to guarantee availability.

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