

The Bioeconomy Consultants



## News Review

Issue Sixty-Five

August 2017

**Each month we review the latest news and select key announcements and commentary on feedstocks used in the bioeconomy.**



# Contents

Policy.....	4
Markets .....	5
Research & Development.....	7
Wood & Crop.....	8
Other Feedstocks .....	12
Events .....	14
Feedstock Prices.....	16

# Foreword

A very warm welcome to August's Feedstocks News Review.

It is the bane of farmers and holidaymakers alike, and here in the UK we love to complain about it. I am of course referring to the weather, and the worrying picture painted by this month's stories is that the weather is having a profound impact on the world's farmers. Many of the world's top crop exporters have been suffering from hotter and dryer weather than usual, and this is expected to hit global supply of crops. China's maize has been one of the worst hit, with the nation having to import six times as much maize than a year ago, meanwhile Australian wheat forecasts have been cut by over 20%, with similar stories of downgraded yield predictions from the USA and Canada for rapeseed and soybean. AHDB has highlighted that wheat in particular may be about to suffer over the next few years, as despite record stocks from last year that are able to cushion the blow from this year's crop, a large proportion of those stocks are held in China, which when removed from the equation paints a grimmer picture. It is worth noting that these falls are coming on the back of record yields in some areas. The knock-on effect this will have for the bioeconomy is that any shortage will increase prices, lowering the commercial viability of such sectors.

In other weather-related news, there was a scare at the Global Seed Vault this month. The vault is sunk into permafrost on a Norwegian island, with the intention being to protect and preserve over a million varieties of food-crop seeds against "natural or man-made disasters". However, its ability to do this has now been called into question after unprecedented meltwater caused a flood to breach the building. Fortunately, the vault itself was not damaged. The Norwegian Government as custodians have taken remedial action, but no doubt the facility will receive increased scrutiny.

In the interest of this Foreword being not-entirely-bad-news, we also have a report from the UK Centre for Process Innovation, who have achieved a record harvest of seaweed. This seaweed is earmarked for use as Anaerobic Digestion feedstock as part of the SeaGas project, but the partners have plans to widen the spread of seaweed farming, as they see it as a potential feedstock for many bioeconomy processes in the future.

Read on for the latest news.

# Policy

## Report aims to improve UK's energy crops growth

Planting 1.4m hectares of non-food crops dedicated to the production of bioenergy can deliver "genuine" emissions savings and provide a degree of income security for UK farmers, according to new research from ETI.

The paper recommends a "learn-by-doing" approach to increasing UK-grown biomass. By planting around 30-35 kha annually through to 2050, the UK could develop best practices that account for impacts on wider markets, such as land set aside for food production. Eventually, the UK should have around 7.5% of total available agricultural area dedicated to bioenergy crops, the report notes.

ETI argues that delivery of energy crops must be balanced with the demand for land use from other agricultural sectors. Specifically, the report claims that increases in land productivity and a reduction in food waste are necessities to create space for bioenergy crops.

Bioenergy from biomass and waste is already delivering low-carbon heat, power and transport fuels in the UK, accounting for 9% of the UK's energy mix in 2015. ETI argues that further increases in supply should be generated within the UK, rather than relying on imports.

The UK is the biggest importer of wood pellets used for bioenergy in the EU, shipping in more than seven million tonnes from the US and

Canada in 2015. The UK has spent around £450m subsidising power stations to burn these pellets.

But with the EU attempting to source more biomass in order to hit EU renewable energy targets, critics are wary that nations will develop a harvest and planting cycle detrimental to the long-term prospects of horticulture practices.

Click [here](#) for more information.

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## Industry members ask for no preferential treatment for Brazilian sugar



*Wikimedia Commons*

Bioethanol and sugar industry interest have called for no concessions on sugar and ethanol in the context of the EU-Mercosur trade negotiations and the phase-out of EU sugar quotas. Brazil is the world's largest producer and exporter of sugar, accounting for a massive 52 per cent of world net sugar exports in 2015. Brazil is also the second largest producer and exporter of ethanol worldwide.

Brazil is already the single biggest beneficiary of the EU's trade concessions on sugar. From October 2017, Brazil's preferential access to the EU market will rise to over 0.7 million tonnes p. a.,



representing 52 per cent of the EU's total WTO quota for sugar. All these imports are subject to a much-reduced duty. The Brazilian sugar and ethanol sector has requested substantial additional access to the EU sugar and ethanol markets in the EU-Mercosur negotiations.

The Brazilian government also offers specific support to its sugar sector, to the tune of 1.8 billion USD per annum. Imports of subsidised sugar and ethanol from Brazil would therefore not be competing on a level playing field with sugar that is grown and manufactured in the EU.

Industry argues that there is no reason to open the EU market further to Brazilian sugar and ethanol. EU sugar production is expected to be more than sufficient to cover the EU's needs from 2017/18. EU ethanol production is also sufficient to cover EU demand, especially given the Commission's intention to phase out the share of crop-based biofuels in the transport energy mix.

Click [here](#) for more information.

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### **Non-GMO organisations hold sway despite fake news allegations**

An article in Forbes News recently questions why NGOs such as the US Non-GMO Project have such a grip on US food supplies. Such organisations have been condemned for perpetuating fake news stories, but also with misleading labelling claims. Non-GMO Project Verified products display an orange butterfly logo, and have been responsible for fastest dollar growth trend in retail stores, with total annual sales exceeding \$19.2 billion

The Non-GMO Project label tells absolutely nothing meaningful about a product or its ingredients, including health impacts, environmental impact, and working conditions for food workers and farmers. It doesn't even tell

consumers about a common objection to GMOs—whether or not a food product was derived from a patented crop variety.

The organization certifies water, cat litter and salt as "Non-GMO" even though none of these contain anything derived from an organism, so there is no genetic material to modify. Given that the term GMO has infiltrated the popular vernacular and is plastered all over our grocery items, it can be surprising to learn how meaningless its use is in some cases.

Click [here](#) for more information.

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## Markets

### **FAO predicts downturn in demand for food products**



*Public Domain Pictures*

Global demand for food and agriculture products is projected to slow "considerably" over the next decade, mainly due to weakening consumption in China, the UN food agency has said.

Over the 10-year period beginning this year, growth in the demand for agricultural products "will slow considerably compared to the previous decade," the UN's Food and Agriculture

Organization (FAO) predicted in a newly released report.

The joint report by the FAO in Rome and the Paris-based Organisation for Economic Cooperation and Development (OECD) of 34 leading world economies contained major food and agriculture products forecasts to 2026.

One of the main reasons given for the decline was a slowdown in growth in China, where incomes over the outlook period are projected to flatline, driving down spending on foodstuffs.

China has traditionally boosted demand for food and agriculture products in the past, including in the last decade when agricultural markets "experienced a demand increase of historical proportions", driven in part by China's high consumption of meat and fish.

But as "income growth moderates and the propensity for households to spend additional income on food declines," growth rates for foods, including cereals, meat, fish and vegetable oil, "will be cut by around half."

The FAO added that the use of biofuels—which "was heavily policy-driven" because of concerns over greenhouse gas emissions and thus boosted demand for maize, sugarcane and vegetable oils over the past decade—will experience a similar production slowdown.

This slowdown will allow farmers to use land that was previously earmarked for biofuels to grow food instead.

Click [here](#) for more information.

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## Japan enters Canadian wood pellet market



*Pixabay*

The growth potential of biomass demand in Asia has been well reported recently. This is reflected in recent market moves with Japan-based Sumitomo Corp acquiring 47.6% of the shares of the British Columbia-based wood pellet manufacturer Pacific BioEnergy Corp (PBEC) to enter into the wood pellet manufacturing business in Canada. Wood pellets have attracted particular attention in Japan as a means of improving power generation efficiency to achieve the full-year 2030 energy mix formulated by the Japanese government in 2015.

PBEC, through its own and affiliated manufacturing facilities, currently markets in excess of 550,000 tonnes of industrial grade wood pellets per annum and is Canada's second largest wood pellet manufacturer.

Sumitomo began importing biomass fuel into Japan for power generation in 2008. Biomass fuel is seen as a promising energy source for encouraging wider use of renewable energies in Japan, and Sumitomo has been developing reliable sources overseas to complement domestically-produced biomass fuel. In acquiring a stake in PBEC, Sumitomo is seeking to establish a steady wood pellet supply for the long term.

Click [here](#) for more information.

# Research & Development

## Record seaweed harvest to be trialled as AD feedstock



*Pixabay*

The Centre for Process Innovation (CPI) has announced that the SeaGas collaboration has successfully harvested a 20-tonne batch of seaweed, the largest harvest of farmed seaweed in the UK to date.

The SeaGas project, funded jointly between Innovate UK and the Biotechnology and Biological Sciences Research Council (BBSRC), is assessing the viability – both technical and financial – of farming sugar kelp seaweed for bioenergy production through anaerobic digestion (AD).

The partners of the SeaGas project are collaborating to build a viable supply chain for farming and storage of seaweed in the UK, initially for the production of biomethane from seaweed through AD, but ultimately to stimulate the market and for higher value products from this sustainable feedstock.

The technical focus of the project is divided into three key areas: seaweed storage to ensure year-

round supply, the potential for biomethane production and AD operational factors, and the environmental and socio-economic effects.

The financial impact is also being assessed through a financial model created for SeaGas to include the specifics of seaweed cultivation, harvesting and storage. A novel storage system is being developed that will support 12 months of AD operation whilst addressing issues around seasonal availability and compositional variability. The project has progressed from operating a series of 5-litre reactors, investigating the operating parameters, to now running two 800-litre AD reactor vessels on a pilot scale.

There has been a good deal of academic study into the potential for seaweeds of different varieties to deliver high value chemicals, food additives/supplements, chemical or bioenergy. Almost all of the literature regarding the exploitation of seaweeds suggests that seaweeds have a suite of chemical and biological properties which make them suitable for wider use. However, in reality, apart from very large seaweed farms off the coastlines of East Asia, to date large scale commercial farming and utilisation is almost non-existent elsewhere on the globe.

Click [here](#) for more information.

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## US researchers look to increase oil production of sorghum



*Wikimedia Commons*

As members of a new federally funded bioenergy research centre, two Nebraska plant scientists plan to spend the next five years working to expand the oil-producing capability of the sorghum plant.

The University of Nebraska-Lincoln is one of 15 institutions partnering with the University of Illinois in the \$104-million Centre for Advanced Bioenergy and Bioproducts Innovation. Energy Secretary Rick Perry announced the new Department of Energy-funded research centre on July 17th. The centre expects to receive slightly more than \$4 million for the research during the next five years. The goal is to genetically enhance certain sorghum species so that the stems and leaves contain more oil and less starch. If achieved, sorghum could rival soybeans in terms of oil production per acre.

One advantage of oil-producing sorghum, is that sorghum is a sturdy, drought-tolerant crop that can be grown on more marginal lands than other farm crops.

Nebraska's research is to focus on sweet sorghum and biomass sorghum, tall plants whose leaves and stems are currently used to make ethanol. Researchers nationally are investigating whether sorghum's novel chemistry and lignin content could produce high-value molecules that could

replace petroleum in lubricants and plastics – even jet fuel.

Researchers have been able to produce oil in tobacco, which has a broad leaf, but more work is needed to transfer the trait to a grassy plant like sorghum.

Among other centre partners, the Brookhaven National Laboratory in New York, Iowa State University, the University of Illinois and the HudsonAlpha Institute for Biotechnology in Huntsville, Alabama, also will be exploring whether sorghum can be modified to produce more oil.

Click [here](#) for more information.

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## Wood & Crop

### Global wheat supply in precarious position

AHDB highlights that recent headlines have been dominated by reports on poor wheat crop condition. In most of the top six global wheat exporters (US, Russia, EU, Australia, Canada, Ukraine), there have been reports of potentially yield threatening weather (hot/dry conditions). Apart from the EU, the USDA and International Grains Council forecast lower wheat production, year on year, for each of these exporters in their initial 2017/18 projections – mainly due to a return to more average yields from some exceptional yields achieved last season. The weather issues in most of these countries could see production estimates revised lower still.

The record level of global wheat stocks carried over from 2016/17 will help cushion the blow. However, the headline stocks figures don't reflect



the reality of the amount of mobile global wheat stocks. Once you remove China from the picture, wheat stocks are not as plentiful as you might think. If 2017/18 closing stocks are then revised down due to any production issues, the cushion will be reduced further still for 2018/19, increasing the risk of supply shocks in future seasons as well.

In 2017/18, the top six wheat exporters are forecast to hold 23.5% of global wheat stocks, the lowest proportion in at least a decade. This again highlights how global wheat supplies may not be as comfortable as the headline figures suggest. In addition, planted wheat area has been declining in both the US and Canada following a trend developed since the 1980's and 1990's. Lower planting rates however mean greater reliance on yield to maintain productivity. This raises a question for the AHDB whether the wheat market is heading for a precarious situation in future years, masked by recent favourable growing seasons.

Click [here](#) for more information.

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## Global agriculture falls foul of weather



*Pixabay*

AHDB's market intelligence highlights key climatic impacts likely to impact on future grain and oilseed markets.

Drought is having an impact on Chinese maize production which has been hit leading to a surge

in imports, with 6 times as much maize shipped-in last month than in same period a year ago. Chinese maize forecast is at a four-year low. Impacts on demand for imports in future months is anticipated.

Dry weather has also started to impact on Australian wheat production, forecast has been cut to 24Mt from 31Mt as yields are expected to be closer to those of a 'normal' year, but there are fears that output could fall to 20Mt with potential to tighten global wheat supplies as the weather has already impacted on North America and Southern Europe to depress anticipated output.

Hot dry weather in Canada is also impacting on oilseed rape, raising fears of impacts on production. Given that Australia is also a major oilseed exported and is also suffering from drought, the global rapeseed market could be tight on supply in 2017/18.

Dry weather has also lead to fears on US soybean production, supporting recent prices, but future weather will determine the degree of recovery that is still possible. The increasing price of soyabean oil has led to switch to palm oil increasing demand, which is also impacted by China buying to replenish its own stocks, exports to the EU are also rising. The start of the European oilseed harvest season may help to temper demand, with early UK yields looking a little above average.

Click [here](#) for more information.

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## European Sawlog prices continue downward trend

Wood Resource International report in an extract of their latest Wood Resource Quarterly publication that European sawlog prices continued their downward trend in late 2016, resulting in a decline of the European Sawlog Price Index by 6.6% over the course of two years.

Sawlog prices have fallen faster in Europe than in the rest of the world for the past two years but are still higher than in North America, Oceania and Latin America reports the Wood Resource Quarterly. The discrepancy between the global and European sawlog price indices reached its lowest level since 2006.

Sawlog prices in Europe have been trending downward over the past three years from their record high levels in 2014. The biggest price drops have occurred in the Nordic countries and in Central Europe, while the log costs have fallen slightly less for sawmills in Eastern Europe. Sawlog prices in Sweden, Finland and Norway are currently at their lowest levels in over ten years in their local currencies despite healthy lumber markets for sawmills in

the region and high production levels. In Germany and Austria there has been a slight increase in sawlog prices during 2016, but prices are still close to their lowest they have been since 2010.

Click [here](#) for more information.

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## Palm oil as tallow alternative in £5 note?



*Pixabay*

Following concerns around use of tallow derivatives in the new polymer £5 note, the Bank of England is considering alternatives. The Bank is hedging its bets by considering palm oil, which has its own problems, highlighted by recent calls within the EU to ban importation for use in biofuels.

The Bank commissioned a report from Efeca which advised that sustainably certified palm oil is the solution. Consumer brands that use vegetable oils also worry about de-forestation. They have been issuing de-forestation free pledges to avoid the bad publicity that has hit biofuels derived from the same oils. The Bank's report examined a range of food and biofuel sustainability schemes and recommended RSPO (Roundtable on Sustainable Palm Oil), the majority of whose members are in the food sector.

In fact, biofuels sustainability standards are often stricter on no-deforestation than food ones.

Sustainability schemes set up for biofuels, which have expanded into food, biomaterials and energy, like ISCC (International Sustainability & Carbon Certification) and RSB (Roundtable on Sustainable Biomaterials), do not allow production on any land which was forest on 1st January 2008. This is unambiguous, so consumers purchasing

products certified by these Schemes can be confident that no deforestation has occurred since 2008, without having to read the small print. There are 200 palm oil mills that have ISCC certification, together with their associated plantations, so the Bank and consumer brands have a ready-made deforestation-free solution. Strict rules on traceability, underpinned by the EU Renewable Energy Directive (RED), mean that de-forestation free palm oil from ISCC can be traced back to a certified plantation on a mass-balance basis.

Click [here](#) for more information.

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## **Global Seed Vault flooded by Arctic meltwater**



*Wikimedia Commons*

The Guardian reports that the Global Seed Vault, built to protect the world's genetic seed resource from global disaster has been breached by floodwater after unprecedented temperature rise in the Arctic.

The vault, which is owned by the Norwegian government, is on the Norwegian island of Spitsbergen and contains almost a million packets of seeds, each a variety of an important food crop. When it was opened in 2008, the deep permafrost through which the vault was sunk was expected to provide "failsafe" protection against "the challenge of natural or man-made disasters".

But soaring temperatures in the Arctic at the end of the world's hottest ever recorded year led to melting and heavy rain, when light snow should have been falling

Fortunately, the meltwater did not reach the vault itself, the resulting ice has been hacked out, and the precious seeds remain safe for now at the required storage temperature of -18C.

But the breach has questioned the ability of the vault to survive as a lifeline for humanity if catastrophe strikes. remedial work has been undertaken to reduce the risk of future flooding.

Click [here](#) for more information.

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## **Task 40 publishes global wood pellets report**

EA Bioenergy Task 40, an initiative established by the International Energy Agency in 2003 to focus on international bioenergy technology, recently published a new report on the global wood pellet industry and trade.

The report, titled "Global Wood Pellet Industry and Trade Study 2017," spans nearly 250 pages and provides an update to a similar report issued in 2011. It addresses the use of pellets in global electricity and heating markets, quality standards and costs. The report also provides an overview of the pellet industry in more than 30 countries, including data and information on regulatory frameworks, production capacity, consumption, price trends, trade, logistics, and country-specific standardization aspects.

The report estimates the U.S. pellet industry reached an operational production capacity of 13.7 million tons per year as of the close of 2016, with the production of wood pellets accounting for 13.2 million tons of that capacity.

According to the IEA, 119 mills in the U.S. south were consuming pulpwood and residual chip fibre in 2015, the same amount as in 2000. However, an internal shift occurred in the sector from pulp and paper to wood pellet production. The report also indicates 16 new wood pellet facilities were built in the region since 2005, with 14 pulp and paper mills that permanently closed between 1995 and 2015. Currently, the IEA lists 15 wood pellet plant operations in the South with capacities above 300,000 tons per year.

In 2015, approximately 63 percent of U.S. pellets were sold into export markets, with the remaining production consumed domestically in residential heating. The report estimates more than 13 million wood heaters are in operational use across the U.S. Pellet stoves account for approximately 10 percent of that volume.

Click [here](#) for more information.

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### **Monthly US stats show pellet production and sales**

The US Energy Information Service provides a monthly densified biomass fuel report, drawing on survey of densified biomass fuel production plants producing 'standard' and 'premium' pellet types

As of April 2017, the monthly data collection included 89 operating manufacturers of densified biomass fuel. These manufacturers had a total production capacity of 12.07 million tons per year and collectively had an equivalent of 1,985 full-time employees.

In April 2017, the monthly respondents purchased 0.81 million tons of raw biomass feedstock, produced 0.48 million tons of densified biomass fuel, and sold 0.46 million tons of densified biomass fuel. Feedstock purchases do not directly relate to production in the same reporting period.

Domestic sales of densified biomass fuel in April 2017 were 0.07 million tons and averaged \$145.61 per ton. Exports in April 2017 were 0.46 million tons and averaged \$127.98 per ton.

The southern US has the greatest capacity by region, and industrial pellets dominate over pellets for the heating sector.

Click [here](#) for more information.

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## Other Feedstocks

### **Waste plastic as AD feedstock in development**

The first systems to use anaerobic digestion technology to turn waste plastics into energy and fertiliser are being developed in South Australia. POET Systems expects to have its first two machines – each capable of processing 20 tonnes of plastic a week – operating commercially in about 12 months.

Inventor David Thompson said his plastic to energy technology had so far successfully been applied to polyethylene, polypropylene, polystyrene and expanded polystyrene.

He said the anaerobic digestion process varied upon disposal feedstock and depended also upon temperature and system set up.

Click [here](#) for more information.

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## Regional disparity in UK gate fees remains



*Geograph*

WRAP's recently published tenth gate fees report analyses the gate fees charged for a range of waste treatment, recovery and disposal options as reported by local authorities. In addition, gate fees are supplied by organic and wood waste facility operators for both local authority, and commercial and industrial waste sources.

The median gate fee for recycling/recovery of all types of wood waste from Household Waste Recycling Centres has remained the same as last year's, at £35/tonne for the UK as a whole. The median in England has increased from £38/tonne last year to £45/tonne this year. However, there is great variety in gate fees within England itself at regional level with gate fees varying from £23/tonne in the north to £50/tonne in the south. Increased biomass capacity, with a number of facilities currently in construction, is anticipated to impact on gate fees i.e. where there is new biomass capacity this will impact on the local market by lowering gate fees. This is already seen in the north east of England. Commercial contracted gate fees are the lowest at £20/tonne, compared with £25/tonne for commercial spot gate fees and all local authority sourced wood waste.

This year, reported median gate fee for incineration with energy recovery (EfW) is £83/tonne compared to £86/tonne last year. The median gate fee reported by local authorities for MBT from this year's survey is £88/tonne compared to £85/tonne last year, showing little change. For Residual Waste (post-sorted) MRFs a median gate fee of £94/tonne is reported.

Click [here](#) for more information.

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## Resource Recovery Solutions receives first waste shipment

The first shipments of waste have been received at Resource Recovery Solutions' Mechanical Biological Treatment and energy recovery facility in Derby.

RRS is a joint venture between international waste and recycling firm Renewi plc, and Interserve Group plc. The Waste Treatment Centre comprises an MBT operation, a recycling plant and a gasification waste to energy facility.

The company explained that the testing period will ensure that the equipment is working properly – a key stage in the development of a waste treatment facility.

The new plant will divert up to 98% of residents' residual waste from landfill, while also generating enough green electricity to power approximately 14,000 homes. This electricity will be supplied to the national grid, offsetting the cost of the waste treatment to the Councils

Interserve said that it expects to substantially complete the building and testing of the centre during 2017 with the facility expected to be fully operational in spring 2018.

Click [here](#) for more information.

## **Biffa acquires Waste Recycling Solutions company in North-East England**

Biffa plc has announced the acquisition of North-East-based O'Brien Waste Recycling Solutions Holdings Limited.

O'Brien WRS has been acquired for a cash consideration of £35.2m, funded from Biffa's existing cash and debt facilities, with a further contingent consideration of up to £0.9m payable subject to the satisfaction of certain conditions.

O'Brien WRS collection business, which serves c3,600 customers and generates revenues of c£20.7m, will be incorporated into Biffa's existing Industrial & Commercial ('I&C') collection business, enabling the combined business to operate more efficiently and enhance its customer service offering.

In addition, the acquisition brings a substantial recycling and waste treatment operation across 3 locations which serves both commercial and local authority customers and which will significantly strengthen Biffa's infrastructure in the region, it says. These facilities will be incorporated into Biffa's Resource Recovery and Treatment (RR&T) divisions.

Click [here](#) for more information.

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## **Events**

### **Value from Unavoidable Food Waste York, 21st September 2017**

Join us to discuss the opportunities, barriers and latest technologies for extracting high-value products from unavoidable food waste. With the help of a panel of experts from industry, policy and academia, we will be exploring the issues over breakfast.

Click [here](#) for more information.

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### **European Biomass to Power 8th-9th November 2017, Aarhus**

Already on its 7th edition, this event will give latest updates on the European biomass market and its new developments, as well as focus on sustainability challenges. Over the two days, ACI's conference will give you in-depth look into case studies giving practical examples of planning, finance and technology strategies utilised for biomass co-generation projects.

Four Exclusive Site Visits: during the afternoon of 7th November a limited number of conference delegates will receive a unique opportunity to visit Dong Energy's Skaerbaek & Studstrup Power Stations and on 8th of November a delegation will be invited to visit Biomass fired CHP plant in Lisbjerg and Verdo's CHP Plant (KVR) in Randers. There is no extra charge to attend, 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.

## **European Biosolids & Organic Resources Conference**

### **20th-21st November 2017, Leeds**

Now in its third decade this event provides practitioners with an annual update on legislative changes; new technologies; best practice and site-experiences with existing technologies and an insight into relevant research in the science and engineering of biosolids and organic resources. The conference is attended by recognised experts from around the world both, as speakers and delegates.

The programme covers the latest innovations and updates of existing technologies. Presentations from respected industry experts and newcomers follow the development of technologies and legislation from inception to full-scale installations.

Click [here](#) for more information.

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## **2nd International Conference on Marine Biomass as Renewable Energy**

### **5th-6th March 2018, Glasgow**

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.

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# Feedstock Prices

**UK spot prices of bagged wood pellets, and wheat and barley straw. Arrows indicate rise ↑, unchanged – or fall ↓ from previous month.**

Date	UK Wood Pellets Delivered	UK Ex-Farm Barley Straw	UK Ex-Farm Wheat Straw
	(£/tonne, 5% VAT)	(D1000) (£/tonne)	(D1000) (£/tonne)
10 Feb	234-257 (↑-↓)	40-55(–↓)	40-60(––)

For wood pellets prices, we considered UK pellet traders selling prices.

For details on straw spot prices, see <http://www.fwi.co.uk>

**UK (LIFFE), French (MATIF) and US (CBOT) future prices for wheat, rapeseed, maize, and soybean. Arrows indicate rise ↑, unchanged – or fall ↓ from previous month's predictions.**

Date	UK (LIFFE) Feed Wheat (€/tonne)	MATIF Wheat (€/tonne)	MATIF Rapeseed (€/tonne)	CBOT Wheat (cnts/bsh)	CBOT Maize (cnts/bsh)	CBOT Soyabean (cnts/bsh)
Aug-17						966.50 (↓)
Sep-17		163.7 (↓)		460.7 (↓)	365.0 (↓)	970.75 (↓)
Nov-17	143.2 (↓)		365.2 (↓)			977.50 (↓)
Dec-17		168.5 (↓)		487.7 (↓)	379.0 (↓)	
Jan-18	145.5 (↓)					986.50 (↓)
Feb-18			367.7 (↓)			
Mar-18	148.7 (↓)	173.5 (↓)		509.2 (↓)	391.0 (↓)	993.50 (↓)
May-18	148.7 (↓)	176.5 (↓)	369.2 (↓)	523.0 (↓)	396.5 (↓)	998.75 (↓)
Jul-18	150.6 (↓)			532.0 (↓)	402.0 (↓)	
Aug-18			351.7 (↓)			
Sep-18		176.5 (↓)		545.2	405.2	
Nov-18	147.0 (↓)		355.7 (↓)			
Dec-18		178.7 (↓)				
Jan-19	149.4 (↓)					
Feb-19			360.2			
Mar-19	151.9 (↓)	181.2 (↓)				
Apr-19						
May-19	152.9 (↓)	185.5 (↓)				
Nov-19	152.0					

For details on future prices see <http://www.hgca.com>

**Other biomass feedstock prices are available upon request, simply contact [enquiries@nnfcc.co.uk](mailto:enquiries@nnfcc.co.uk)**



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