

The Bioeconomy Consultants



News Review

Issue Sixty-Six

September 2017

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



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Foreword

Welcome to September's Issue of Feedstocks News Review.

As the end of the harvests are being brought in around the UK, we begin with a couple of harvest- and yield-related stories. Last month we reported on the adverse effects the global weather has been having on crop yields, with hot, dry weather affecting key producers such as Chinese maize and US Soybean. Wheat in particular was a cause for concern, as the majority of stocks, which would be used to fill the gap caused by low production, are held in China. However, there has been good news this month coming out of Eastern Europe, with Russia and Ukraine reporting strong wheat harvests, with forecasts looking like yields will surpass the countries' current record by over 5Mt. This would go some way to ameliorating the dent in global wheat stocks that was predicted last month and now the US Department of agriculture are predicting that the world will once again have record wheat stocks. This just goes to show that harvests always have the capacity to defy forecasts.

On the other hand, what happens when a harvest yield is *too* high? If the entirety of a crop is unable to be utilised, this not only creates waste that has to be dealt with, but is also an inefficient use of resources in its production. In this situation, new markets need to be found. This is exactly the quandary facing Canada's hemp market. Since the crop was legalised nearly 20 years ago, acreage has grown erratically, as yields continue to improve and offset the need for new cropland. However, this does come with the flipside that Canadian hemp risks oversupply. While hemp is recognised as a useful crop, its applications remain quite niche. Hemp has been touted as an alternative protein source to fish, which led to a boom in the South Korean market, but now prices have fallen again thanks to competition from China, leaving Canadian hemp back at square one. However, both Australia and New Zealand earlier this year have made hemp legal for human consumption, and so here are a couple of potential markets to exploit.

Read on for the latest Feedstocks News.

Policy

WRA seeks wood-boiler clarification



Pixabay

The Wood Recyclers' Association (WRA) is calling for clarification on exactly what grades of wood are acceptable for small scale RHI biomass boilers (non WID compliant), after discovering inconsistencies in guidance to boiler manufacturers and fuel suppliers.

The trade body is expressing its concerns after finding "inconsistencies" in wording used in guidance to boiler manufacturers and fuel suppliers. The Environment Agency states only clean grade A wood can be used in non-WID boilers, whilst local authority guidance allows a mix of grade A and in certain circumstances grade B, to be used in non-WID boilers processing less than three tonnes an hour, under something known as a "B Permit".

Although the local authority guidance then refers to a further description of what it means by Grade B, (i.e. offcuts from board product manufacture), the WRA feels this needs to be explained more clearly.

The trade body feels the confusion has resulted in some boiler manufacturers being able to sell non-WID compliant boilers on the basis that lower grade woods can be burned in them.

while the trade body awaits clarification, it has decided to adopt an interim position of only recommending the use of virgin or untreated pre-consumer waste wood for small scale RHI (non-WID compliant) boilers.

Click [here](#) for more information.

EU reintroduces import duty on maize

AHDB reports that the EU re-introduced import duty on maize last week, after keeping it at zero since November 2014. The reintroduction reflects a drive to protect domestic cereals following a fall in global maize prices and the increased strength of the euro against the US dollar. The duty of €5.16/t will apply to all maize imports into the EU-28 outside of the Tariff Rate Quota system, unless the 10-day rolling average duty calculation moves by more than €5/t or returns to zero. Both 2017 duty free quotas have already been exhausted.

Markets

Hemp needs new markets to deal with yield increases



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Hemp yields in Canada have jumped as agronomy and varieties have improved, but now processors are on the hunt for new markets to deal with oversupply risk. Hemp occupies the somewhat risky middle ground of being established, but still niche. There's plenty of interest in growing it, but that capacity could swamp markets that are still developing.

Hemp acres have risen dramatically, but not steadily, in Manitoba since the crop was legalized in 1998. From 2001 to 2006, industrial hemp acres in Manitoba jumped from 1,300 to 30,000, but since then have continued to fall, bottoming out in 2008 at 2,500 acres, before starting to recover, rising to 17,450 ha in 2014.

Improvements in yield have dented demands for increase acreage. Jeff Kostuik, central region director of operations for Hemp Genetics International, cited new, shorter varieties designed to maintain yield while minimizing residue and limit shelling loss due to wind. His company is also

developing more herbicide-tolerant varieties, and looking at better establishment.

Internationally, Canadian hemp value is in flux as the South Korean market slows. The industry heralded the Asian country as the next great market last year, after Koreans unexpectedly tapped hemp seed as an alternate protein source to fish. That peak has since tapered off, something experts have blamed on increased competition from countries like China. Prices have since lowered in South Korea and other Asian countries.

With the decline in Asian markets, companies like Manitoba Harvest are turning to places like Japan or Australia. Australia and New Zealand will join the hemp foods market for the first time this fall, after their governments ruled to legalize hemp for human consumption in April.

Click [here](#) for more information.

Report predicts future pellet demand from Japan & Korea

Biomass magazine reports that FutureMetrics has published a new white paper on the Japanese industrial wood pellet market. The report predicts most of demand growth for industrial wood pellets after 2019 will come from Japan and South Korea.

According to FutureMetrics, the Japanese and South Korean markets for industrial wood pellets are both driven by policy. The policies are different, but both create demand for industrial wood pellets as a replacement for coal in power plants.

In Japan, pellet buyers are supported by a long-term feed-in-tariff (FIT) and prefer long-term offtake contracts with set terms for prices. According to the report, Japanese policies require

that suppliers show that the pellet supply chain meets sustainability criteria. As a result, buyers from Japan prefer to engage with parties from countries with strong rule of law, strong management practices, and stable macroeconomic conditions.

Alternatively, FutureMetrics indicates pellet buyers from South Korea are incentivized by the need to comply with renewable portfolio standards (RPS), and from carbon trading in the Korea Emissions Trading scheme (KETs). They are currently seeking the lowest cost pathway to compliance, said FutureMetrics in the report. Some RPS requirements have been met with wind and solar generation, with some met by cofiring pellets. To date, the report notes that South Korea has procured pellet fuel under a short-term tendering strategy that has producers competing several times per year to win bids to individual utility buyers. According to FutureMetrics, South Korean buyers prefer short-term supply contracts from low-cost producers.

Click [here](#) for more information.

US report discusses EU wood pellet production



Wikimedia Commons

A recently released USDA Foreign Agricultural Service report provides data on EU biofuels and progress being made towards the EU's 2020 mandates. In reviewing policy developments affecting markets, the proposed sustainability requirements in the new legislative proposals for the revised Renewable Energy Directive (RED II) are viewed as a potential trade barrier for the import of wood pellets.

The EU is the world's largest wood pellet market, with consumption of about 22.2 MMT of pellets in 2016. Based on the EC mandates and MS incentives, the demand is expected to expand further to about 25 MMT in 2018. Future consumption will significantly depend on a range of market factors and in particular MS incentives and conditions.

With a production of about 14.8 MMT in 2016, about fifty percent of global production, the EU is the world's biggest producer of wood pellets. Compared to production plants in North America, plants in the EU are mainly small or medium-sized. Most of the main pellet producing countries have a sizeable domestic market for residential heating pellets. Recent growing demand for pellets has supported a further increase in domestic production

The major raw material for pellets has traditionally been sawdust and by-products from sawmills. With increasing competition for sawdust resources, a broader sustainable raw material is expected to become necessary. There is increased interest in forest residues, wood waste and agricultural residues, but even the volume of these additional feedstocks is deemed to be insufficient for supplying the full demand in Western Europe. Overall, EU wood pellet production is not expected to be able to keep up with the demand from both the residential heating market and for power generation.

EU demand represents about 75 percent of the global market. In 2016, total EU consumption was 22.2 MMT of which about 65 percent was used for heating (40% of which is for residential applications) and 35 percent for power.

Click [here](#) for more information.

Macquarie completes Green Investment Bank acquisition

New owner Macquarie has committed to the GIB's target of leading £3 billion of investment in green energy projects over next 3 years.

The Climate Change and Industry Minister, Claire Perry, confirmed on 18th August 2017 that the sale of the Green Investment Bank (GIB) to Macquarie Group Limited had been completed.

The £2.3 billion deal ensures that all the taxpayer funding invested in GIB since its creation, including set-up costs, has been returned with a gain of approximately £186 million.

As well as fully meeting the government's objectives, the deal secures the future of the GIB with an ambitious new owner committed to growing the business. The Edinburgh office will be

home to a new revenue-generating business as well as providing services to the green energy portfolios of both Macquarie and GIB in the UK.

The government decided that moving it into the private sector now would free it from the constraints of public sector ownership allowing it to increase investment in our green infrastructure as we transition to a green economy. GIB's independent Board supported the government's decision to sell the business to Macquarie.

In order to build on the company's success within the private sector, Macquarie and GIB have announced today that the company will now be known as the Green Investment Group (GIG) so that it will be able to make overseas investments.

Click [here](#) for more information.

Research & Development

UK Government report on farm GHG mitigation



Pexels

The UK Government's annual Farm Practices Survey reviews practices adopted on-farm, including GHG mitigation strategies. Survey responses in 2017 from 2323 farms (equal to 3.8% of eligible holdings) was achieved across a sample of farms representative of the UK as a whole. Across those surveyed, 5.5% process wastes by AD (the figure was 1.3% back in 2013), crops were the most popular feedstock (3.9%) followed by slurries (2.9%). 56% reported that they were taking actions to reduce GHG emissions by waste recycling (86%), improving energy efficiency (75%) and improving accuracy in nitrogen fertiliser use (72%). For those not taking action, the main reasons cited were: "don't believe that they produce many emissions" (47%), "lack of information" (35%), "unsure what to do due to conflicting views" (29%), "lack of incentive" (25%). For those taking action, the main incentives were: "good business practice" (80%), concern for the environment (62%) and "improve profitability" (55%). More than half of respondents who spread manures or

slurry do not regularly calibrate their spreaders (at least annually).

Two thirds of farmers store solid manures in a temporary heap, while slurry is stored in tanks (24% of farms) or lagoons (16% of farms), with the latter most likely to be covered. 78% have at least 6-month storage capacity for slurries.

The results highlight that there are widespread areas of good practice, but some areas for improvement. Developments such as AD offers an incentive to better exploit manures and reduce emissions from livestock farms while delivering revenue and energy for on-farm use.

Click [here](#) for more information.

AD Digestate as Biofertiliser



Geograph

Bioenergy Insight reports on farming family Steve and Sarah Suggitt of Suggitt Farm Services in Norfolk who are using digestate, a liquid by-product from their AD plant, to produce PlantGrow, a solid biofertiliser and liquid plant food developed by them specifically for the horticultural market. The solid version is a soil conditioner, while the liquid plant food nourishes growing plants.

The biofertiliser is available to both commercial growers and hobby gardeners and is on-shelf in 200 Homebase stores, all Blue Diamond stores, and independent garden centres in Norfolk, as well as online.

Due to its organic content, digestate from AD has a very high nutritional value. Despite this, operators of AD plants have traditionally found it difficult to find a market for digestate as farmers and gardeners have been wary of alternatives to artificial fossil-fuel-based fertilisers, which dominate the market.

Click [here](#) for more information.

Australian research partnership for better food crop yields

Australian Farm Weekly reports that Agriculture and Food Minister Alannah MacTiernan attended the Northern Crop Research Alliance field day at the Kimberley Research Station in Kununurra to view first-hand the large-scale crop research program undertaken by the Northern Australian Crop Research Alliance (NACRA).

NACRA, a partnership between the Ord River District Co-operative, Kimberley Agricultural Investments and The Chia Company was formed to drive collaborative, commercial and market focused crop research in northern Australia.

The \$1.7 million project directly addresses the opportunity to develop world-class field cropping production systems, with the focus on high yields and premium quality. Key targets for development apply to chickpeas, corn, chia, quinoa, teff and other high value, functional food crops plus feed crops for animal and aquaculture opportunities in the region.

Click [here](#) for more information.

Wood demand stimulates forest growth in US South



Wikimedia Commons

As the debate about the carbon benefits of generating electricity in Europe from wood pellets manufactured in the southern United States continues, a new Forest2Market report, commissioned by Drax Group, plc, National Alliance of Forest Owners and US Endowment for Forestry and Communities, shows that since the middle of the 20th century the amount of timberland in the US south has remained stable, increasing by 3% between 1953 and 2015. During this period, economic growth and increase construction spurred timber demand which increased timber harvest by 57%. Yet over the same period the amount of wood fibre stored in Southern Forests increased 108%.

This increase in forest productivity was made possible, particularly in privately-owned forests, by long-term investment encouraged by strong demand. Increased demand was shown to be strongly correlated with increased acreage and improved growth. Urbanisation was deemed to be a greater threat to the forest acreage than increased demand for forest products.

Click [here](#) for more information.

New Growth System may increase profitability of algae growth

Sandia National Laboratories is testing whether one of California's largest and most polluted lakes can transform into one of its most productive and profitable. Southern California's 350-square-mile Salton Sea has well-documented problems related to elevated levels of nitrogen and phosphorus from agricultural runoff. Algae thrives on these elements — a fact that causes environmental problems but could also be a solution to those problems.

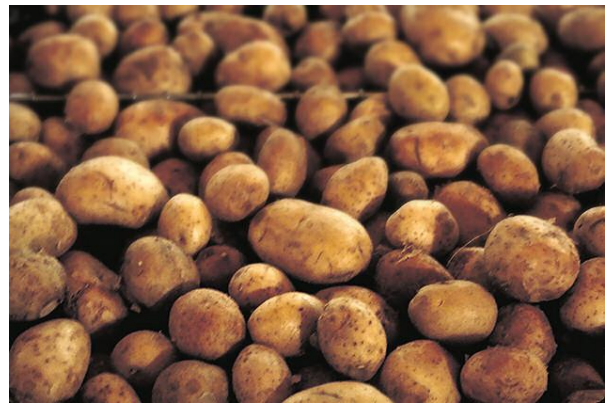
Sandia intends to harness algae's penchant for prolific growth to clean up these pollutants and stop harmful algae blooms while creating a renewable, domestic source of fuel. Algae can be easily converted to fuels and chemicals using a Sandia Labs-patented fermentation process.

Traditionally, companies grow single species of algae in raceways — structures vaguely resembling small race tracks or giant bathtubs. The raceways produce algae well suited for making high-value nutritional products like spirulina or beta carotene, as well as other nutraceuticals. Raceways also offer growers a lot of control. But there are a few drawbacks. They are generally high maintenance, requiring trained technicians, expensive fertilizers, carbon dioxide and high-quality water.

The newer farming method is called an "Algal Turf Scrubber" floway system, used for growing a collection of native algae species. To the untrained eye, the system looks like a free-standing rain gutter. It gurgles quietly as water is pulsed in waves across a sloped floway. The algae consume the nutrients, and clean water emerges from the lower end.

Click [here](#) for more information.

Potato waste as ethanol feedstock



Wikimedia Commons

Researchers in Penn State's College of Agricultural Sciences have developed a novel approach to more efficiently convert potato waste into ethanol.

Using potato mash made from the peelings and potato residuals from a Pennsylvania food-processor, researchers triggered simultaneous saccharification — the process of breaking down the complex carbohydrate starch into simple sugars — and fermentation — the process in which sugars are converted to ethanol by yeasts or other microorganisms in bioreactors.

The simultaneous nature of the process was innovative: the addition to the bioreactor of mold and yeast — *Aspergillus niger* and *Saccharomyces cerevisiae*, respectively — catalysed the conversion of potato waste to bioethanol.

The bioreactor had plastic composite supports to encourage and enhance biofilm formation and to increase the microbial population. Biofilms are a natural way of immobilizing microbial cells on a solid support material. In a biofilm environment, microbial cells are abundant and more resistant to environmental stress causing higher productivities. In this application, these benefits were especially important because mold enzyme activity required higher temperatures.

Click [here](#) for more information.

Metsä commissions new bioproduct plant



Metsä Group's next-generation bioproduct mill in Äänekoski came into operation as planned on Tuesday, 15 August 2017 at 6:00 in the morning. Pulp deliveries from the new mill to customers will begin in early September 2017. The construction project was carried out as planned, in accordance with its schedule and its EUR 1.2 billion budget.

Before the bioproduct mill started up, the old pulp mill in Äänekoski was shut down and its dismantling is currently in progress.

The bioproduct mill will achieve its nominal capacity approximately a year after start-up. The mill will produce 1.3 million tonnes of pulp per year, along with other bioproducts such as tall oil and turpentine. New bioproducts that already complement the product concept include product gas from bark, sulphuric acid from the mill's odorous gases, and biogas and biofuel pellets from sludge.

With this new bioproduct mill Äänekoski's industrial ecosystem is developing and growing, and the mill will be a platform for production of new bioproducts. Several processes and product paths are being actively studied. The most important new bioproduct development projects are lignin products, textile fibres, and biocomposites.

Click [here](#) for more information.

Wood & Crop

High Eastern European harvests offset dent in wheat stocks

AHDB reports significant increases to wheat crop estimates for Russia, Ukraine and Kazakhstan contributed to a heavier global wheat supply picture in USDA production estimate reports. In particular, Russian production is pegged at a record 77.5Mt, surpassing last year's record by almost 5.0Mt.

Harvest results to date are the main reason for the increases, which the USDA states have shown higher winter wheat yields than last year in both Russia and Ukraine. Additionally, spring wheat conditions are said to have remained very favourable in both Russia and Kazakhstan.

These increases more than offset cuts to the US (0.6Mt) and Canadian (1.9Mt) wheat crops, on the back of continued drought conditions in key growing areas over recent weeks. The EU total wheat (inc. durum) production forecast was also scaled back by 0.4Mt from the previous estimate, to 149.6Mt (145.7Mt, 2016/17).

Consequently, the USDA now projects global wheat stocks at the end of 2017/18 at 264.7Mt, over 4Mt higher than in July and over 6Mt above last season's record stock levels.

Corn stover to be pelletised



Flickr

As a result of new U.S. corn production records being set each year—up to 15.2 billion bushels-plus in 2016 from 13.8 billion in 2013—the volume of leaves, stalks, and husks left in the field post-harvest is also at an all-time high, thus creating even more of a need to remove some of it.

Especially in continuous-corn regions, stover is creating an extra revenue stream for farmers who are selling it for other uses. For some corn farmers in the York, Nebraska, area, that opportunity is being provided by Pellet Technology USA. At the beginning of 2017, Pellet Technology brought online a \$30 million plant that takes in 90,000 US tons of corn stover purchased from area farmers, and, through a propriety process, pelletizes the stover to be marketed as feed and fuel products.

Pellet technology teamed up with AGCO, who had experience in corn stover collection for lignocellulosic biofuel producers. AGCO worked to harvest nearly 93,000 tons of corn stover. This stover was processed into 143,800 bales and required 3,852 truck deliveries to Pellet Technology's facility, work that was completed by a fleet of 25 high-horsepower tractors, 12 large square balers, 12 shredders, six self-propelled (Stinger) stackers, and nine tractor trailer rigs.

Click [here](#) for more information.

North American pellet prices hit new low

Biomass Magazine reports that the price indices (pellet fibre price index, PFPI) for both the US and Canadian wood fibre pellet feedstock have trended downward the past few years and reached record lows in both countries in the 2Q/17. The PFPI-US has fallen 15 percent from its peak in the 3Q/13 to the 2Q/17. Slightly declining roundwood prices, plummeting sawdust costs, and a change in the feedstock mix towards lower cost residuals in both the Gulf States and the Atlantic States were the major reasons behind the decline in the PFPI-US Index the past year.

Each individual pellet facility's estimated mix of fibre (roundwood, sawdust, shavings, microchips, etc.) are calculated using local fibre pricing to determine a weighted price, which is further combined with production capacity and operating rate to calculate the final regional index price. These are collated to provide a quarterly volume-weighted price for the fibre sources consumed.

A snapshot of the various feedstocks currently being used by the U.S. export pellet sector shows 50 percent was roundwood in the 2Q/17, followed by significant volumes of sawdust and shavings, and an increasing supply of forest microchips.

The Canadian price index has fallen more than the U.S. index (in U.S. dollar terms), mostly because of the weaker Canadian dollar. However, wood fibre costs for pellet manufacturers have also fallen slightly in Canadian dollar terms because of lower costs for logs the past few years. From its record high in early 2013 to the 2Q/17, the PFPI-CA declined 26 percent. The lower indexed price in the 2Q/17 primarily reflected the falling costs of sawdust and shavings and incremental increases in the usage of these feedstock forms over higher cost roundwood.

Click [here](#) for more information.

Update on Enviva's Wood Sourcing



Enviva

Wood pellet giant Enviva has released its latest Track & Trace forestry data. In the US Enviva sources from the Southern and Eastern forests of the US close to its pellet plants. However, in total it sources from 1200 forest harvests in 83 countries.

Between October 2016 and March 2017, approximately 38% of Enviva's wood came from pine and hardwood mixed forests, 29% from Southern yellow pine forests and five percent from upland hardwood forests. The wood sourced consisted of undersized or "understory" wood that was removed as part of a larger harvest; tops and limbs; brush; and "thinings" that were removed to make additional room for planted pines to grow. Approximately 23% was sawdust, shavings or residuals from wood product manufacturing. Four percent came from working bottomland hardwood forests, also consisting of undersized or "understory" wood; and tops and limbs. Less than one percent came from arboricultural sources, such as landscaping and urban tree maintenance. Wood fibre harvested on these tracts came from trees that were an average of 36 years old.

Click [here](#) for more information.

Enviva announces second quarter results

Biomass magazine reported on an investor call with Enviva following release of its second quarter financial results. Enviva has taken steps to modify pellet production to improve handling qualities to meet client requirements.

Enviva and its sponsor announced the execution of a memorandum of understanding for a take-or-pay off-take contract as the sole source supplier of 650,000 metric tons per year of wood pellets to the largest dedicated biomass project announced to date in Japan. Subject to definitive agreement documentation and certain conditions precedent, deliveries under the contract are expected to begin in 2022 and continue for at least 15 years.

Enviva reported that construction of the 600,000 million-tonne-per-year pellet plant in Hamlet, North Carolina, continues to progress. The company's sponsor currently expects construction to be complete late next year. Pellets produced at the facility are expected to supply MGT Power's Teesside Renewable Energy Plant, which is currently under construction in the U.K.

Click [here](#) for more information.

Other Feedstocks

UK Environment Agency looks to crack down on illegal waste exports

In a bid to crack down on the illegal export of waste, the Environment Agency carried out an intelligence gathering operation at Harwich International Port in Essex last week.

Specialist enforcement officers stopped and checked 30 HGVs carrying waste to identify any materials being unlawfully exported to Europe. As part of the operation, drivers were asked to produce supporting documents and waste loads were examined.

Field Intelligence officers, port officers and members of the illegal waste shipments team were on hand to speak with drivers passing through the port, offering advice and support on transporting waste abroad legally.

The team on site made use of the Environment Agency's Incident Command Unit, enabling them to receive emailed paperwork from waste contractors when it was found to be missing.

Twenty-nine trailers were inspected in total and 18 were found to be carrying waste. In each instance paperwork was examined and in nine cases there were missing or incomplete documents. These were eventually all completed with the support of Environment Agency officers and the vehicles were allowed to continue their journeys.

Click [here](#) for more information.

Orange Peel as Feedstock for Plastics



Pixabay

Spanish plastics research centre AIMPLAS is leading a project to convert the vast amounts of orange peel waste left by the country's citrus juice industry into a biopolyester suitable for blow moulding bioplastic juice bottles and extruded profiles.

The project MIPLASCOE, funded by CDTI through the programme Interconecta 2016, will focus on extracting different monomers from the citrus waste using microbial fermentation and biopolyester synthesis.

Spain is the world's fifth largest grower of oranges and the largest in Europe. The orange industry is centred in AIMPLAS' home region of Valencia, where three million tonnes of citrus fruits are produced each year, approximately 60 per cent of the national production.

Currently, the citrus waste derived from this important industry undergoes energy intensive processing into animal feed pellets or is consigned to landfill. In both cases, there are environmental impacts.

Click [here](#) for more information.

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.

Focus on Feedstock York, 1st November 2017

Join BioVale for a half-day workshop to discuss the issues around feedstock: how to get your feedstock right and what to do when you get it wrong. There will be a series of talks, followed by a question and answer session with the panel of speakers, networking and an 'ask the expert' session.

Click [here](#) for more information.

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

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 Leeds, 20th-21st November 2017

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.

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

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

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

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

Click [here](#) for more information.

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

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

New advances in technology mean that everything that can be made out of oil can be made from renewable, biological resources. There are huge environmental and business opportunities for a

wide range of industries: construction, chemicals, textiles, energy, plastics.

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

Click [here](#) for more information.

2nd International Conference on Marine Biomass as Renewable Energy Glasgow, 5th-6th March 2018

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

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

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

Click [here](#) for more information.

EUBCE 2018

Copenhagen, 14th-18th May 2018

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

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

Click [here](#) for more information.

RRB 14

Ghent, 30th May - 1st June 2018

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

Delegates from university, industry, governmental and non-governmental organizations and venture capital providers will present their views on industrial biotechnology, sustainable (green)

chemistry and agricultural policy related to the use of renewable raw materials for non-food applications and energy supply. The conference further aims at providing an overview of the scientific, technical, economic, environmental and social issues of renewable resources and biorefineries in order to give an impetus to the biobased economy and to present new developments in this area.

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

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

Click [here](#) for more information.

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 Sep	234-260 (–↑)	44-60(↑–)	40-53(–↓)

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

For details on straw spot prices, see <http://www.farming.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)
Sep-17				412.2 (↓)	345.5 (↓)	954.75 (↓)
Nov-17	139.7 (↓)		361.0 (↓)			960.00 (↓)
Dec-17		159.0 (↓)		434.7 (↓)	357.5 (↓)	
Jan-18	142.0 (↓)					970.00 (↓)
Feb-18			363.0 (↓)			
Mar-18	143.9 (↓)	164.7 (↓)		455.2 (↓)	369.7 (↓)	978.50 (↓)
May-18	145.6 (↓)	168.5 (↓)	365.2 (↓)	470.0 (↓)	377.7 (↓)	987.25 (↓)
Jul-18	147.6 (↓)			483.5 (↓)	384.0 (↓)	994.75
Aug-18			351.5 (↓)			
Sep-18		171.0 (↓)		498.7 (↓)	390.2 (↓)	
Nov-18	145.3 (↓)		355.5 (↓)			
Dec-18		174.2 (↓)				
Jan-19	146.8 (↓)					
Feb-19			359.0 (↓)			
Mar-19	148.8 (↓)	177.5 (↓)				
May-19	149.4 (↓)	180.0 (↓)				
Sep-19		181.2				
Nov-19	148.1 (↓)					

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

Other biomass feedstock prices are available upon request, simply contact enquiries@nnfcc.co.uk

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