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News Review





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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	9
Other Feedstocks	. 13
Events	. 14
Feedstock Prices	. 16

Foreword

Welcome to August's Feedstocks News Review.

We begin with a legal issue regarding genetically modified crops. Under European law, these crops are heavily regulated, including limitations on how they can be planted and sold. The law in question is a directive published in 2001, that restricts the intentional release into the environment of strains where whole genes have been inserted into the genome. This is an effort to prevent unintentional crossbreeding of these modified species with wild-type strains, which could introduce unwanted genetic material into the latter's genome. There are, however, some genetic modification techniques that are exempt from this restriction: namely mutagenesis techniques, which expose plants to mutagens in order to instil changes to the genome without deliberately adding anything new. There has been controversy this month regarding more modern genome editing techniques, such as CRISPR editing, which targets and modifies very small specific sections of DNA to produce phenotype changes. This month, the European Court of Justice has ruled that techniques such as this will be subject to the same restrictions as older gene insertion techniques. Plant breeders had argued that CRISPR should be exempt from the genome editing restrictions as it could be considered a process of targeted mutagenesis, as it has the same net effect as a mutagenesis process. However, the ECJ has decided to rule in favour of those opposed to the technology, who claimed that the deliberate nature of the modifications made using CRISPR should bring them under the umbrella of the restrictions. Supporters claim that this could seriously hinder the prospect of GM technology in Europe, which is seen by many as a solution to the concerns about future global food production. The debate around GM crops is not set to end any time soon, and this ruling - either way - was always going to simply add fuel to that debate.

Also in Europe, there are fears for crop yields, as the hot, dry weather continues. France is no longer expecting a surplus of barley for the coming year, where previous forecasts had indicated a significant surplus, and the German barley harvest is set to fall by almost 20% compared to last year. Wheat production is also forecasted to fall significantly compared to last year. There are also significant droughts in the US and Australia, adversely affecting crop yields in the latter, but the US is still reporting a decent harvest. As reports come in that the weather could last until October, there could yet be further issues with harvests yet to come.

Read on for the latest news.

Policy

European Court of Justice rules to regulate genome editing technologies



Max Pixel

Gene-edited crops should be subject to the same stringent regulations as conventional genetically modified (GM) organisms, Europe's highest court ruled on 25 July.

The decision, handed down by the Court of Justice of the European Union (ECJ) in Luxembourg, is a major setback for proponents of gene-edited crops, including many scientists. They had hoped that organisms created using relatively new, precise gene-editing technologies such as CRISPR–Cas9 would be exempted from existing European law that has limited the planting and sale of GM crops.

Instead, the ECJ ruled that crops created using these technologies are subject to a 2001 directive. That law was developed for older breeding techniques, and it imposes high hurdles for developing GM crops for food.

That is likely to hinder investment in crop research using these tools in the EU.

The 2001 EU directive behind the ECJ's decision concerns the intentional release of GM organisms

NNFCC News Review, August 2018, Page 4 of 18

into the environment — and was aimed at species into which entire genes, or long stretches of DNA, had been inserted. The law exempts organisms whose genomes were modified using mutagenesis techniques, such as irradiation, which introduce changes to an organism's DNA but doesn't add foreign genetic material.

Many plant breeders and scientists contend that gene-editing techniques such as CRISPR–Cas9 should be considered mutagenesis, just like irradiation, and thus be exempt from the directive, because they can involve changes to DNA and not the insertion of foreign genes. But people opposed to GM organisms contend that the deliberate nature of alterations made through gene editing means that they should fall under the directive.

But in its ruling, the ECJ determined that only mutagenesis techniques that have "conventionally been used in a number of applications and have a long safety record are exempt from those obligations". Organisms made using mutagenesis techniques developed after 2001 — including gene editing — are not exempt from the directive.

US approves sorghum as biofuel feedstock



Pxhere

Environmental Protection Agency (EPA) Administrator Andrew Wheeler approved sorghum as an eligible feedstock under the Renewable Fuels Standard. The announcement marks a significant step toward levelling the playing field for ethanol plants that extract oil from sorghum.

The National Sorghum Producers worked closely with EPA over the past two years to establish a biofuels pathway for sorghum oil in the RFS. The announcement now provides new market access for sorghum producers.

Click here for more information.

Markets

Fears for crops thanks to prolonged European drought

AHDB reports many European and Black sea countries are continuing to experience prolonged dry weather, leading to crop concerns. The sweltering heat and dryness in the northern parts of Europe continued to spark concerns for supplies of spring malting barley. The French agency Stratégie Grains now anticipates no surplus spring malting barley in the EU in 2018/19, when a notable surplus was previously expected. The German farming association DBV also forecast German barley production to be 1.7Mt lower year on year at 7.3Mt in 2018/19, and expects wheat production to also be adversely affected.

Soft wheat production in France is forecast to fall to 34.17Mt in 2018/18, down 6.5 percent from last year according to the consultancy Agritel on Friday 20 July. Heavy rain throughout winter and then during spring hurt crops across France, particularly in the west, followed by the recent prolonged dry weather.

Dry weather in the US is causing drought in important maize and soyabean growing states situated in the Midwest. During the month of July, maize and soyabeans are in their reproductive development stage ('silking' and 'blooming'), the period crucial to yield determination, with high susceptibility to moisture stress.

In Missouri, which has the 10th largest maize area in the US (1.38Mha) and sixth largest soyabean area (2.3Mha), drought conditions have advanced from severe to extreme in some regions over the past two weeks (from 3 July to 17 July). Similarly, conditions in Michigan have become abnormally dry, with moderate drought recorded in some areas in the Northeast of the state.

Harvest forecasts slashed in hot weather



Geograph

AHDB's cereal market watch identified that UK wheat futures prices fluctuated in early July. Prices were pressured by reports of good crop conditions and progress in the US. Some of the loss was then recovered, closing at £169.50/t on Friday 13 July, down £2.40/t on the week with support from the continued dry conditions and concerns over European wheat production.

The USDA cut its estimates of world wheat supplies and stocks in 2018/19. In its latest World Agriculture Supply and Demand Estimates (WASDE) the department has cut its estimate of global wheat ending stocks, down 5.3Mt to 260.9Mt. The ending stocks were marked down due to production cuts in Russia, Australia, Ukraine and the EU following dry conditions.

In relation to the latter, the French government has pegged soft wheat production in the country at 36.1Mt in its first forecast of the 2018 crop, only slightly down from last year's 36.6Mt. The year on year decline is attributed to challenging spring weather, with winter crops being affected by 'significant variations in temperature and excess water'. Yields are expected to be down in some regions, including Normandy and New Aquitaine, but up in eastern areas after a difficult 2017. The Association of German Farm Cooperatives cut its 2018 German wheat production forecasts to 21.53Mt, a 12.1% reduction on the year and a 1.36Mt reduction from its June estimate.

Oilseeds markets have seen similar jitters following uncertainty over European oilseed production which have led to firming of prices in recent days. World soyabean stocks in 2018/19 are forecast to reach a record high of 98.27Mt, according to the latest report release by the USDA last week, which should help to keep other oilseed price rises in check. Brazil has also planted its largest soyabean area on record - 36 million ha.

The Association of German Farm Cooperatives cut its estimate for the German rapeseed crop to 3.55Mt, a 0.50Mt reduction from June. This reduction in rapeseed production, if realised, would be a 16.8% decrease from 2017 levels. The French government is now estimating the 2018/19 winter rapeseed production at 4.6Mt, a 0.3Mt reduction from its June forecast. Output is now down 15% from 2017, which is attributed to the impacts of frosts, the wet spring and increased flea beetle pressure.

US densified biomass production statistics

The U.S. Energy Information Administration recently released data showing that U.S. manufacturers produced approximately 630,000 tons of densified biomass fuel in April, with sales reaching 600,000 tons. The data was released as part of the July edition of EPA's Monthly Densified Biomass Fuel Report.

Domestic sales reached 119,636 tons at an average price of \$146.43 per ton. Exports reached 478,246 tons at an average price of \$186.20 per ton. The latter reflect an increasing monthly trend in price reflecting high European demand in the early part of the year. Other data indicates pellet prices have since levelled off at just over \$170/t (CIF ARA).

Total U.S. densified biomass fuel production capacity reached 12.52 million metric tons, including 11.91 million tons listed as currently operating or temporarily not in operation.

Click here for more information.

Research & Development

"Feeding" algae with plant biomass



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Research published in Algal Research, suggests that amending micro algal cultures with non-food plant substrates could have benefits.

Algae hold great potential as a source of renewable fuel due to their ability to produce refinery-compatible diesel and jet fuel precursors. Significant effort has been made to maximize productivity under photoautotrophic growth conditions; however, little progress has been made to discover and understand reduced carbon

NNFCC News Review, August 2018, Page 7 of 18

assimilation pathways or enzymatic degradation of complex carbon substrates in algae. The researchers purport that utilization of plant-based carbon substrates in addition to photosynthesis (mixotrophic growth) for biochemical assimilation into biomass, biofuels, and bioproducts, can increase cultivation productivity and improve the economic viability of algal-derived biofuels. The report that a freshwater production strain of microalgae, Auxenochlorella protothecoides UTEX 25, is capable of directly degrading and utilizing non-food plant substrates, such as switchgrass, for cell growth. This work paves the way for future designer engineering of plant-carbon utilization to further improve productivity of algal production strains.

Click here for more information.

Azolla plant shows potential as biofuel feedstock

Trade expert and entrepreneur Leonardo Gonzalez Dellan has called for the development of a new feedstock for biofuel called Azolla across Latin America. In addition to biofuel, studies have found it has potential uses as a "green manure in rice fields, as a feed supplement for aquatic and terrestrial animals, as a human food, as medicine, as water purifier, as a biofertilizer, control of weeds and mosquitoes".

Azolla is an aquatic plant that can be grown in wastewater and can be used as a feedstock for the production of bioethanol. It can produce a substantial biomass quickly when planted in contaminated waters, and with its growth help to improve the quality of the waters itself by consuming chemicals. A study has shown that Azolla can potentially produce up to 20.2 tons per hectare per year of bio-oil, and up to 48 tons per hectare per year of bio-char. It can double in mass within 2-5 days. González Dellán argues that Azolla would be especially effective in a Latin American context, highlighting that "by moving the production of bio-ethanol from arable land to wastewater, the reclaimed land can then be used for the development of further sustainable crops while continuing the production of bioethanol." Using Azolla as the primary foodstuff for bioethanol can lead to Latin America dramatically increasing its production of sustainable resources across the board through more efficient use of land.

Click here for more information.



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Post-Horizon2020 EU innovation programme

Plans for Horizon Europe have been released by the EU Commission. This is the EU Commission's proposal for a funding programme to succeed Horizon 2020. Horizon Europe is due to start in January 2021 and will incorporate policy missions to ensure the effectiveness of research and innovation funding by pursuing clearly defined targets.

UK eligibility at this stage remains uncertain until the final BREXIT deal is approved.

Click here for more information.

Sources and applications of technical lignin

Technical lignins are bulk feedstocks. They are generated as by-products from pulping or cellulosic ethanol production. As lignin undergoes significant structural changes as a result of chemical and physical treatments, all technical lignins are unique in terms of chemical structure, molecular weight, polydispersity, and impurity profile.

Kraft lignin is potentially the largest source of technical lignin as new isolation technologies have been implemented on an industrial scale in recent years. Lignosulfonate has been an integral product in sulphite pulping biorefineries. It has a wellestablished market in the construction industry. Organosolv-like lignin production is increasing as cellulosic ethanol has been promoted as a substitute for fossil fuel. It may have unique applications because it has low molecule weight and is free from sulphur. Technical applications of lignin are expected to expand as its characteristics are improved with fractionation or chemical modification.

The application of technical lignin has been focusing on developing products equivalent to those made by petroleum chemicals. Recent developments in technical lignin supply should increase its market share as an additive in polyurethanes and as a substitute for phenolformaldehyde adhesives. Moreover, technical lignin depolymerization has been extensively explored to provide renewable aromatic chemicals. Starting from controlled pyrolysis and thermal liquefaction as the baseline technologies, many different chemical depolymerizations have been invented with a wide range of underlying chemical principles.

Startup seeks field trial participants

Nova Extraction is an engineering start-up which has designed and built proprietary and affordable CO2 extraction technology to extract flavours and fragrances from plants. In 2019, Nova Extraction intend to perform field tests of their mobile unit in UK and Europe and are now looking to recruit partners among plant growers, ingredient manufacturers (essential oil companies) and final product manufacturers (perfume and cosmetic companies) to take part.

Click here for more information.

Wood & Crop

New "supercritical water" process to extract cellulose from biomass

AkzoNobel Specialty Chemicals and Renmatix, a leader in the global plant-based technology movement, will jointly develop biomass-based performance additives that improve the properties of architectural paints and construction materials. Renmatix is one of the winners of the 2017 Imagine Chemistry challenge, a program through which AkzoNobel Specialty Chemicals collaborates with startups, scale-ups, scientists and others to uncover business opportunities for sustainable chemistry.

Renmatix's proprietary Plantrose® Process utilizes 'supercritical' water under high temperature and pressure to convert biomass into cellulosic sugars and bio-fractions, which are valuable green chemistry building blocks. It is the first application under a joint development agreement signed by the companies to research, develop and commercialize novel products using Crysto[™] Cellulose, a unique form of crystalline cellulose, and the newest bio-fraction isolated by Renmatix.

The collaboration with Renmatix is the second success story of the 2017 edition of the Imagine Chemistry challenge. Earlier this year, AkzoNobel Specialty Chemicals announced that it will use watermark technology developed by FiliGrade that provides an invisible watermark for packaging.

Click here for more information.

Hot dry weather continues to disrupt global crops



Pixabay

AHDB market roundup continues to identify global problems with falling yield estimates for wheat production around the globe. Average wheat yield in Germany is predicted to be 20% below last years, with total grain production falling by 9.6Mt. As the UK harvest proceeds early yield estimates indicate that UK production could be around 1.3Mt below 2017 levels.

In Australia, dry weather is affecting new crop planting, getting things off to a poor start following the difficult 2017 season. Production could be seriously affected if rains do not arrive soon.

Weather conditions have also been challenging in Russia and the planted area of cereals in India is

anticipated to have decreased by 3% to 15.1Mha due to weaker monsoon rains.

Oilseed rape production has also been impacted, with 80% of the UK crop harvested average yields are 3-8% below the 5-year average. In Germany oilseed rape yields have fallen to 32% below the five-year average, resulting in a 24% fall in production over 2017.

Looking ahead and with warmer and dry conditions possibly remaining there is also some concern regarding moisture levels in the seedbed for this year's planting, which could influence establishment rates thus resistance to pest pressure for the 2019 crop.

Bioenergy Europe announces new woodchip certification

GoodChips is a certification launched in 2018 by Bioenergy Europe (formerly AEBIOM) with the aim of guaranteeing the quality of wood chips and hog fuel on the European market.

GoodChips is the first international certification of its kind to set specific quality specifications for these fuels, facilitating easier trade between countries. Like ENplus (also managed by Bioenergy Europe), GoodChips aims to create a common understanding of quality standards for woodchip to ensure standardisation.

GoodChips operates as a third-party certification, meaning that an independent certification body assesses company compliance with the requirements of the scheme.

Bioenergy Europe is the owner and manager of the certification, acting as the international point of contact for the stakeholders involved. It safeguards the integrity of the certification by monitoring the correct use of the trademark,

NNFCC News Review, August 2018, Page 10 of 18

continuously improving the scheme, and providing support to companies and end-users.

Over the past months, Bioenergy Europe has been working with the support of a Technical Committee, an Advisory Committee (National Partners), and various technical consultants to create an effective scheme.

Click here for more information.

Renewed viability of Jatropha



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Jatropha curcas is a promising non-food crop with oil-rich seeds (30-48%), an easy propagation system, and high adaptability to a wide range of climatic and soil conditions. These attributes have led to the promotion of Jatropha for low-cost biodiesel production and as part of the solution to the challenges of climate change, energy crisis, and provision of rural income.

However, in 2010, the use of Jatropha as an alternate energy resource was questioned due to inconsistent yield patterns recorded for plantations in marginal and low-nutrient environments. The inconsistent yields were identified to result from the lack of information on the optimal agricultural practices and nutrient requirements needed for large-scale Jatropha cultivation. The low productivity of Jatropha plantations arises from variation in seed quality and quantity, high male-to-female flower ratio, asynchronous flowering, seed toxicity, and vulnerability to various biotic and abiotic stresses.

A group of researchers from University of Malaya and VIT University report on an analysis of recent studies that address the limitations of Jatropha from the biological aspects of harnessing current knowledge on plant-microbe interactions (to improve productivity on low fertility soils), gene resources, and biotechnological tools, from which they foresee renewed promise for this energy crop.

There are excellent prospects to advance Jatropha as a foster energy crop for use on marginal soils, especially if best growing practices and bioagents are used together with elite cultivars developed to suit poor soils and high productivity. The emergence of precise genome editing techniques which in some legislations is not regulated as a genetic modification, has been effective as a novel targeted approach to crop mutagenesis can also be used in Jatropha. Ideally, an integrated approach using elite lines from conventional breeding programs, complemented by and crossed with engineered lines produced via biotechnological tools can expedite crop improvement. Taken together, biological information and biotechnological approaches can help to bridge the gaps in productivity for Jatropha.

Click <u>here</u> for more information.

Sustainability affects wood pulp sector

According to a new strategic technical study from Smithers Pira - The Future of Tissue Manufacturing to 2023, Smithers Pira identifies that Sustainability is becoming the greatest risk to, and an opportunity for tissue manufacturers. Consumers, brands and governments are increasingly aware of the threat posed by global warming resulting in an increased focus on sustainability, especially in natural products. The risk is that consumers could come to see tissue production as unsustainable due to poor fibre sourcing and lack of tissue product recycling.

Use of recycled paper pulp – though widespread in industrial tissue products – is limited by consumer attitudes. Two main forces are driving the search for alternative fibre sources, which will pose new technical challenges for tissue manufacturers; sustainability and a replacement for recycled fibre.

Non-wood fibre tissues are now entering consumer markets, trading on their environmental credentials for marketing. For example, Miamibased the Good Health Company introduced its Gesundheit! facial tissue in November 2017. This product is 80% pure virgin bamboo pulp.

High exports lead to Kenyan sisal shortage



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The Environmental Ministry in Kenya banned the use of plastic carrier bags, but high demand for sisal in the world market has slowed down adoption of sisal bags as an alternative to plastic carriers in Kenya, reports Business Daily Africa.

Acting head of Directorate of Fibre Crops Naomi Kamau said more than 90 per cent of locally produced sisal is exported, with global prices having risen steeply in recent years.

She says a tonne of sisal in the international market is currently trading at Sh180,000 (£1,395) compared with Sh100,000 fetched locally.

The directorate is now working with small-scale farmers and the counties to increase the production of the crop from the current 25,000 tonnes annually to 30,000 tonnes. The agency has also distributed free seedlings to farmers. About 37,500 hectares in the Rift Valley, eastern and coastal regions, have been put under the crop.

Sisal has mainly been a plantation crop with the 10 estates accounting for up to 80 per cent of production.

Click <u>here</u> for more information.

Bamboo for African biomass plant

Africa Plantation Capital signed an MOU to supply bamboo biomass to Bidco Africa group for a green and sustainable energy source.

Bidco Africa Group needs over 60,000 tons of dry bamboo biomass annually to support its power plant facility in Thika, Kenya.

Africa Plantation Capital has been working on a business plan that includes supply of Chipped Bamboo Biomass in the range of products that it is offering in the East Africa Region.

Kenya, as well as most East Africa countries, are suffering from illegal logging, causing a huge deforestation problem in the region. Timber prices per metric ton - dry (moisture 5-10 percent), chipped - are ranging between 50 and 70 dollars. The annual commercial demand for timber in the East Africa region is creating a great opportunity for those who are ready to offer a sustainable integrated alternative solution.

Africa Plantation Capital is targeting to provide a minimum of 200,000 metric tons of dry, chipped bamboo biomass in Kenya and Uganda in the next five years. That is a targeted volume of 10 million to 14 million USD annual turnover. In order to achieve this goal, Africa Plantation Capital, with the support of APC Group, is now investing in a collection centre with a drying and chipping facility to be able to accommodate and meet the demand of dry chipped bamboo biomass in Kenya.

Following the model that APC Group has been using in Asia, Africa Plantation Capital is planning to involve local farmers for the production of bamboo in strategically located areas, offering offtake contracts for a minimum of 15 years to outgrowers.

Other Feedstocks

Hot drinks packaging cleared for composting



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The REA's Organics Recycling Group is has confirmed, after discussions with the Animal and Plant Health Agency, Environment Agency and Scottish Environment Protection Agency, that hot drinks packaging components are allowed to be composted in a facility that does not have APHA approval under animal by-products regulations where only milk and cream fit for human consumption have been in contact with the material as part of the drink contents. Such compostable material types and the milk/cream residue on them will not be regarded as within scope of animal by-products regulations as category 3 animal by-products. This does not apply to compostable material originating from means of transport operating internationally (outside the EU / UK).

Many of the compostable packaging and nonpackaging items must have a valid certificate of compliance with at least one of the following standards: EN 13432, EN 14995 or ASTM D6400.

NNFCC News Review, August 2018, Page 13 of 18

The certificate must have been issued by an independent certification body.

Composters must ensure they have appropriate waste codes in their environmental authorisation and if producing Quality Compost, that the waste matches a relevant code and description in its appendix B. In England and Wales, if a composter's bespoke permit does not include an appropriate waste code it should be easy to get it added under an administrative variation made by the regulator, for which they make a charge. Similarly, if an environmental authorisation in Scotland does not include an appropriate waste code, it should be added under a variation made by the regulator, for which they make a charge.

Examples of facility types that could compost the certifiable compostable material types using a suitable environmental authorisation include open-air turned windrow and outdoor static aerated pile systems.

Click here for more information.

Evaluating food waste as potential for Swedish biobased chemicals

Within the current political and industrial transition to a bio-based economy, food waste can be an alternative resource for biobased chemicals. This chapter describes a case study that evaluates the prospect for Swedish production of biobased chemicals such as succinic acid from food waste. The evaluation is addressed from multiple systems perspectives. From a technical and resource system perspective, the results of the case study show that production seems possible. However, from a social system perspective succinic acid production currently lacks institutional support and actor commitment and alignment for realizing development in Sweden. From an environmental and life cycle perspective, the scoping of the analysis is decisive for the results. The study shows that multiple perspectives complement each other when seeking a nuanced evaluation of technical innovation and give insights for the intended value chain.

Click here for more information.

Fiberight launches multi-faceted waste plant

One of the biggest challenges for recyclers and processors is dealing with multiple mixed waste types—not just sorting them but turning them into valuable commodities once they're picked apart.

The journey on the way to a finished product involves numerous, sometimes complex steps. It can entail transporting long distances while moving from location to location to complete these steps and make the best and highest-valued use from each material.

But Hampden, Maine, is about to become home to what Baltimore-based Fiberight calls the first integrated waste conversion plant in the U.S. The plant, which was built and will be run by Fiberight, includes a materials recovery facility (MRF), organic processing, plastics processing, anaerobic digestion (AD) and wastewater treatment—all in one building.

Cardboard, some plastics and metals will be delivered, separated at the facility and baled. Mixed papers that aren't baled will be pulped, washed and further processed to produce a very clean cellulose. Plastic film will be shredded and compressed into a briquette. And residual wash water from wet processes will be sent to an AD and mixed with organics to produce biogas. Cellulose made from mixed paper will be sold to paper mills or sold as biomass fuel for power. Plastic will be converted to a solid plastic fuel sold to industrial consumers. And the residual water will be recycled and reused at the plant.

Recyclables will come from 115 municipalities, with the plant equipped to manage the streams for two years before maxing out capacity.

There is an anticipated late-September launch date for the MRF, and the rest of the plant should be operational by the end of 2018.

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.

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.

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.

Click <u>here</u> for more information.

EFIB

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.

Feedstock Prices

UK spot prices of bagged wood pellets, and wheat and barley straw. Arrows indicate rise \uparrow , unchanged – or fall \downarrow from previous month.

		UK Ex-Farm Barley Straw	UK Ex-Farm Wheat Straw	
UK Wood Pellets Delivered		(D1000)	(D1000)	
Date	(£/tonne, 5% VAT)	(£/tonne)	(£/tonne)	
10 Feb	275-316 ()	60-100(↑ - -)	45-100()	

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

For details on straw spot prices, see http://www.farming.co.uk

UK, French and US future prices for wheat, rapeseed, maize, and soybean. Arrows indicate rise \uparrow , unchanged – or fall \downarrow 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-18	(_/)	(0,1001100)	(0,0000)			893.50 (↑)
Sep-18		216.0 (↑)		571.5 (↑)	372.0 (↑)	901.50 (↑)
Nov-18	194.0 (↑)		384.5 (↑)			912.50 (↑)
Dec-18		215.7 (↑)		593.5 (↑)	385.5 (↑)	
Jan-19	196.3 (↑)					924.00 (↑)
Feb-19			382.5 (↑)			
Mar-19	199.1 (↑)	216.5 (↑)		613.0 (↑)	396.7 (↑)	933.25 (↑)
May-19	199.7 (↑)	217.0 (↑)	383.0 (↑)	619.7 (†)	403.0 (↑)	943.00 (↑)
Jul-19	190.7 (↑)			609.0 (↑)	408.7 (↑)	
Aug-19			367.5 (↑)			
Sep-19		197.2 (↑)		614.2 (↑)	409.5 (↑)	
Nov-19	172.5 (↑)		371.5 (↑)			
Dec-19		200.0 (↑)				
Jan-20	173.5 (↑)					
Feb-20			375.0			
Mar-20	174.3 (↑)	201.2 (↑)				
May-20	174.7 (↑)	202.0 (↑)				
Nov-20	166.2 (↑)					

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

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

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