

The Bioeconomy Consultants



News Review

Issue Sixty-Four

July 2017

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



Contents

Policy.....	4
Markets	6
Research & Development.....	8
Wood & Crop.....	10
Other Feedstocks	12
Events	14
Feedstock Prices.....	15

Foreword

A warm welcome to July's Feedstocks News Review from NNFCC.

Following last month's general election result in the UK, the Conservative minority government has come under heightened scrutiny, and their environmental and energy policies are no exception. The Committee on Climate Change has praised the UK's progress in reducing greenhouse emissions by 42% since 1990, but has warned that continued government commitment is required if the UK is to reach its overall targets of 80% reductions by 2050. Since 2012, the UK's reductions in emissions have been footed by the power sector, with emissions actually increasing elsewhere. The Committee argues that current policies are not enough to bring about this change, and that new policies must come into play in order to reach future targets. Their recommendations are that the government pursue carbon reduction across all industries, investing in low-carbon heat and power, electric vehicles, and carbon capture and storage technology.

But where does the bioeconomy fit in here? As it happens, biomass remains the biggest source of renewable energy in the world, according to the Global Bioenergy Statistics published by the World Bioenergy Association. Europe remains the dominant force in use of biomass for derived heat and power, and it accounted for 23% of the UK's renewable electricity generation in the first quarter of 2017. Data from the UK's Wood Heat Association indicate that the overwhelming majority of this comes from wood sources, led by Drax's pellet-fired plants in the north of England, and this is unlikely to change any time in the future.

There is more potentially disruptive news on the Brexit front. No formal analysis had been conducted into how Brexit would affect UK crop trade, but AHDB's recent analysis paints a grim picture: 80% of the UK's wheat grain exports, and 68% of our barley go to Europe currently, and were the UK to leave the single market then we would find ourselves in a much more competitive world, containing markets for which we do not meet requirements. On the flipside, this could free up UK grain exports to new markets worldwide. Only time will tell, but whatever happens, the UK agricultural sector needs to be on its toes for imminent (and potentially huge) change.

Read on for the latest feedstocks news.

Policy

Looking ahead to post-Brexit UK grain exports



Pixabay

AHDB has begun to examine the risk to UK agriculture of declining EU access in light of the current Brexit negotiations. Without preferential access to the EU there is a very real and significant risk that in a post-Brexit world the UK will find it more challenging to export surplus grain into the EU, which currently takes the lion's share of trade (80% of wheat exports (6.8Mt) and 68% of barley exports (3.95Mt). UK grain exports may well have to look outside of the protection of the EU tariff system and take on staunch competition from the dominant producer-exporters. Gaining access to current external EU markets delivered under preferential EU trade deals will also be more difficult.

Key problems include competition from low cost producers, difficulty in meeting low dry matter content required in some markets (Middle East and North Africa), ability to meet high protein milling wheat specification from what is a limited UK milling wheat pool.

The UK is also likely to face increasing competition from other grains such as maize, and achieving UK access to such commodities is likely to be high on trade-talk agendas.

This all provides a very real risk the UK grain industry could be caught between a more challenging export environment and potentially freer access for the world market to UK processing capacity.

The industry needs to prepare for and drive change in a proactive way, the AHDB advises the industry to improve competitiveness, drive up productivity, work in close partnership with supply chain colleagues, improve consistency in grain quality, and look for new opportunities and specialist niches.

Click [here](#) for more information.

Norway commits to palm-oil biofuel ban

A majority in the Norwegian parliament has voted to ban the public procurement and use of biofuel based on palm oil. "This is a ground-breaking victory in the fight for the climate and rainforests", says Rainforest Foundation Norway.

The Norwegian parliament considered a number of proposals for Norway's biofuels policy, several of them designed to limit the use of palm oil in biodiesel. The resolution adopted in early June instructs the government to introduce a regulation on public procurement that "imposes requirements that biofuel based on palm oil or by-products of palm oil shall not be used."

During the debate over the proposal, the majority requested that this be done in a way that does not

violate international trade agreements. In addition, the parliament instructs the government to advocate for the rejection by the fuel industry of the use of palm oil biofuel.

The decision to ban palm oil-based biofuel comes a year – almost to the day – after Norway's unparalleled and internationally lauded pledge that the government's public procurement policy be deforestation-free to ensure the state does "not contribute to deforestation of the rainforest".

Click [here](#) for more information.

Continued government action needed to reduce UK emissions



Wikimedia Commons

The UK's transition to a resilient, low-carbon economy is in danger of being derailed by a lack of Government action on climate change, the UK's Committee on Climate Change says.

Good progress has been made to date but continued progress depends on significant new measures. Greenhouse gas emissions are about 42% lower than in 1990, around half way to the 2050 commitment to reduce emissions by at least 80% on 1990 levels.

As emissions have fallen since 1990, GDP has increased by more than 65% over the same period

and total household energy bills have fallen compared to 2008 when the Climate Change Act was passed. However, progress is stalling. Since 2012, emissions reductions have been largely confined to the power sector, whilst emissions from transport and the UK's building stock are rising. The overall state of our natural environment is worsening, reducing its resilience to climate change. Recent storms show that national infrastructure remains vulnerable to severe weather. Ten years after the 2007 floods important lessons remain, and the risks of surface water flooding in our towns and cities have still not been tackled.

Effective new strategies and new policies are urgently needed to ensure emissions continue to fall in line with the commitments agreed by Parliament (by at least 50% by 2025 and 57% by 2030 on 1990 levels), and that key risks to homes, businesses, and the natural environment are addressed.

The findings are part of the Committee's statutory 2017 Report to Parliament. The report sets out the CCC's latest independent assessment of UK action to reduce greenhouse gas emissions and to prepare for the impacts of climate change.

In particular, the CCC recommends that the Government urgently delivers a plan to continue reducing emissions across the economy. It is no longer justified or wise to delay the publication of the emissions reduction plan required by law. The plan must address the gap between Parliament's agreed targets and the impact of existing policies, including: plans to bring forward additional low-carbon electricity generation through the 2020s; accelerate the uptake of electric vehicles; provide a path for the uptake of low-carbon heat and set out a strategy for deploying carbon capture and storage technology.

Click [here](#) for more information.

Resource Management Industry sets out Government targets

The Trade Association Group, an umbrella body comprising the main organisations in the UK's waste and resource management sector, today set out its top priorities for the government.

They believe that improvements in resource efficiency – the way in which materials, energy, and water are used in the UK economy – should be a central theme in the government's industrial and environmental policies and strategies.

To this end, the new administration should:

Set out a long-term policy framework for waste and resource management, building on the foundations previously laid by European Union waste and resource legislation, so that the industry has the confidence to invest in the infrastructure urgently needed to maximize the recovery of valuable materials, energy and nutrients from waste.

Take urgent action to reverse the decline in recycling rates. More needs to be done to prevent food waste, to increase separate collections of food waste from homes and businesses when it can't be prevented, and to increase the demand for secondary raw materials.

Tackle the escalating levels of waste crime, which costs the UK economy over £600 million a year, blights local communities and the environment, and undermines legitimate businesses. The latest ESA-led report on this subject, "Rethinking Waste Crime", contains a number of important recommendations on how to tackle the problem, in particular by making it harder for criminals to enter the industry. These measures need to be implemented as a matter of urgency.

Click [here](#) for more information.

Markets

Wood chip trade up 75% over 15 years



Wikimedia Commons

Wood Resources International LLC reports that over the past 15 years, global trade of wood chips has gone up almost 75%, mainly because of major expansion of pulp capacity in China, reports the Wood Resource Quarterly. By far the two largest importing countries are China and Japan, followed by Finland, Sweden and Turkey. In 2016, an estimated 35.6 million tons were shipped.

China has surpassed Japan as the largest importer of chips in the world, and with expansion of pulp capacity on the horizon in China, it is likely that the country will be the number one destination for wood chips for many years to come.

Click [here](#) for more information.

Demand for high-quality oils set to squeeze Rapeseed stocks



Wikimedia Commons

AHDB reports that global rapeseed production is expected to recover in 2017/18, with increases for the EU, Ukraine and Canada on the cards. Nevertheless, production and demand are expected to be finely balanced, which would limit the potential for stock rebuilding and keep markets sensitive to potential weather issues in the months ahead.

In 2016/17, global demand for rapeseed is estimated to outstrip production and draw stocks down to their lowest level since 2007/08 (USDA). Production declined as large Australian and Canadian crops were more than offset by crop issues in Ukraine and the EU.

Meanwhile, demand for oilseeds with high oil contents (including rapeseed) remained high. This is partly due to the long term upward trend in vegetable oil consumption but also palm oil output has struggled to recover from the effects of the 2015/16 El Niño impact. Palm oil usually accounts for a third of global vegetable oil demand, so any impact has important knock on effects.

A finely balanced global rapeseed supply and demand picture in 2017/18, may mean that rapeseed prices need to maintain some premium

to the rest of the oilseeds market. However, the premium may not be at the levels seen this season where the global rapeseed market was in deficit.

Click [here](#) for more information.

Sugar market set for shakeup with imminent EU deregulation

AHDB reports that sugar futures have tumbled by around 40% compared to peak prices paid in autumn 2016, that fall is driven by a global sugar surplus. In the US 40% of the maize crop is now used to produce ethanol, with surplus exported. Maize prices are rising which will tighten margins for US ethanol producers compared to their Brazilian counterparts using sugar cane.

The global sugar market is about to become more interesting; particularly with the deregulation of the EU sugar market in September this year. In terms of trade, the EU is one of the world's largest importers of cane sugar.

Click [here](#) for more information.

UK continues tendency towards net wheat import

The UK's AHDB reports on Defra's latest UK supply and demand estimates, released yesterday, suggesting that the UK will be a net importer of wheat in 2016/17 and enter the new marketing season with a relatively low level of stocks.

Imports of wheat this season have been forecast at 1.7Mt, 13% higher than in 2015/16, while exports have been pegged at 1.5Mt, 47% lower than last season. While export demand is expected to fall, total domestic consumption of wheat in 2016/17 is forecast to rise by 6% on the year.

Breaking that down, human and industrial usage of wheat is thought to increase by 10% year on year, predominantly driven by a rise in biofuel usage. Likewise, wheat used in animal feed is expected to climb by 2%, with a rise in poultry feed demand the main driving force.

The rise in domestic demand this season, combined with a smaller domestic crop in 2016, has led to forecast commercial end of season stocks declining by 27% on the year to 2.04Mt.

This would be the third time in five seasons, the UK would be a net importer of wheat, after being a net importer just once (2001/02) in the previous 20 seasons.

Click [here](#) for more information.

Research & Development

Biomass still top renewable energy source in the world

The Global Bioenergy Statistics (GBS) report is the main annual publication of World Bioenergy Association. The report focusses on the global development of biomass to energy – supply, production and consumption. The data is presented on different geographical levels – global, continental and regional levels covering all sectors of bioenergy – liquid biofuels, biogas, pellets, forestry, agriculture, waste etc.

Globally, biomass is still the most important source of renewable energy, accounting for 73% of all renewable energy supply. it's a mature

technology with a growth rate of 2.3% compared to global growth in wind (25%) and solar PV (45.1%). Most biomass is used in Asia followed by Africa and the Americas. Europe only accounts for around 0.4% of global biomass primary energy supply.

Europe dominates the use of biomass for power and derived heat generation (in CHP and district heating systems), while Asia and Africa dominate use of biomass in direct heat applications (e.g. stoves)

Total global energy supply from biomass in 2014 was 59.2 EJ representing 10.3% of all energy supply globally. 87% comes from forestry, 10% from agriculture and the rest from waste.

The report estimates that 777 million tonnes of forest residue are produced globally during logging, sawmilling, plywood and particle board production and chemical wood pulping. This equates to around 10-15% of global biomass supply - though part of this resource is already utilised.

Click [here](#) for more information.

Corn Chemical Competition Launched



Pixabay

The National Corn Growers Association and NineSigma have launched a global competition to identify new innovative uses for field corn as a renewable feedstock for chemical production.

Up to six awards of \$25,000 each will be made. The NCGA indicated it may also explore funding or other support of an entry even if the entry is not a prize winner.

Successful proposals are described as those that use components of the corn kernel as primary feedstock, have a clear path for the scale-up to commercial scale, and enable a new market for corn. Proposals should not detract from an existing corn market and should lead to products with significant market demand. The NCGA also indicated successful proposals will involve a team with experience taking a process or plan from lab scale to commercial scale.

Eligible feedstocks for the challenge include distillers' grains, ethanol and stover, along with the kernel, cob and components resulting from dry-mill and wet-mill processes.

According to the NCGA, field corn production in the U.S. reached 13.6 billion bushels in 2015, up from 4.2 billion bushels in 1970. There is currently a field corn surplus of 1.8 billion bushels, the association added, noting continued efficient

production is driving the need to find new uses for field corn. The NGCA also said its strategic plan includes a goal to establish three new uses for field corn, with each utilizing 25 million bushels or more by 2020.

Click [here](#) for more information.

Velocys to develop Biomass to Liquids plant



Velocys

Smaller scale gas-to-liquids company Velocys announced on Monday that it selected IHI E&C International to carry out the pre-FEED engineering for its first biomass-to-liquids (BTL) plant.

The AIM-traded firm said IHI E&C was working with Velocys and its technology partners to support the rapid deployment of the BTL plant offer to the renewable fuels sector.

It said that aligned with both Velocys' and IHI E&C's strategic intent to enter the US renewable transportation fuels market, with the engineering study set to be completed in the second half of 2017.

Click [here](#) for more information.

Wood & Crop

Wood still dominating UK non-domestic biomass use

The UK Wood Heat Association and REA has reviewed data on biomass use by non-domestic Renewable Heat Scheme participants in the UK, obtained from Ofgem through a freedom of Information request. The full report is only available to REA members, but in summary 90% of supported installations use biomass in some form or other, and this accounts for 86% of installed capacity.

There are nearly 1.6 times more installations using wood pellets than wood chip and a much smaller number of around 2000 installations using logs. Wood pellet use dominates in smaller applications (up to around 75-100kW) but wood chip and pellet use is more evenly balanced in larger plants up to 200kW. Between 200Kw and 1MW use of wood chip starts to dominate, particularly in units just under 1MW.

Significant amounts of waste wood are burnt and smaller volumes of energy crops and agricultural residues

In summary, the majority of installations use some kind of wood fuel, with 43% of systems stated to use pellets, 31% chip and 16% logs. The distribution of boiler size within the non-domestic RHI scheme is heavily affected by the RHI tariff bands which reward based on heat capacity.

Click [here](#) for more information.

UPM looking to Carinata as alternative fuel crop



The Biofore Company **UPM**
UPM

UPM Biofuels is developing a new feedstock concept by growing Brassica Carinata as a sequential crop in South America. The Carinata crop produces non-edible oil suitable for biofuels' feedstock and protein for animal feed.

The sequential cropping concept enables contract farmers to take agricultural land into use outside the main cultivation period, in winter time, without compromising existing food production. This does not cause any land use change, prevents erosion and improves soil quality. Carinata will provide additional income to local farmers, who do not normally have their fields in productive use during winter. In South America UPM grows and tests Carinata with third-party farmers in Uruguay and Brazil.

Carinata is an oilseed crop specially designed for sustainable production of biofuels. UPM has made a long-term agreement with Canada-based Brassica Carinata crop developer Agrisoma Biosciences Inc. who utilise non-GMO technologies to improve crop varieties.

Biofuels produced from Carinata oil reduce greenhouse gas emissions by over 70% compared to fossil fuels.

The Carinata concept has no direct impact on the operations of UPM's Lappeenranta Biorefinery in Finland.

Click [here](#) for more information.

NWH group acquires wood-processing facility

NWH Group has acquired the business and assets of DJ Laing Recycling Solutions' wood processing division in Petterden, Dundee.

Processing recycled wood into biomass for energy plants, the six-acre Petterden site will supply around 60,000 tons of biomass per annum. The acquisition sees ten staff transfer to NWH Group, and add £1.8m turnover. NWH expects to increase the site's output of fuel for sustainable energy and recruit more employees to support the growth.

Financed with the support of a revolving credit facility (RCF) with Royal Bank of Scotland, NWH was advised by Wright, Johnston & Mackenzie LLP, and D J Laing was advised by Stewart Brymer Legal.

Click [here](#) for more information.

Bamboo as feedstock for bio-based ethyl glycosides



Pixabay

Selective conversion of lignocellulosic biomass to ethyl glycosides and other valued chemicals is an important step for biomass utilization. In this paper, directional liquefaction of bamboo biomass into ethyl glucosides and ethyl xylosides with acid in ethanol media was investigated. The maximum yield of ethyl glycoside and its derivatives was 40.86 wt % based on raw materials, with 16.07 wt % ethyl glucosides and 10.11 wt % ethyl xylosides, respectively.

Click [here](#) for more information.

Drax to forego pellets in favour of gas?

Media reports (Diarmaid Williams, Power Engineering) suggest the UK's biggest power producer Drax is considering the conversion of its remaining coal-fired power units to gas, instead of biomass power, as originally planned.

Management believe a gas-fired power conversion would allow the company to qualify for 15-year contracts in the country's capacity market auctions. As the government has already changed its stance on renewable energy subsidies which previously had made biomass conversion attractive, this would be a logical step for Drax.

The company has already converted half of its Yorkshire coal plant to burn wood pellets but plans to switch the remaining units to biomass have since halted due to the government decision.

Drax is banking on the need for back-up electricity production capacity to complement solar plants and wind turbines and is forecasting a trebling in earnings by 2025.

It is already planning to build four modern open-cycle gas turbine (OCGT) plants, provided they obtain contracts in the capacity market auctions.

Click [here](#) for more information.

Fife biomass plant denied planning permission after public outcry

Council planners have formally knocked back Glenrothes Biomass Energy's blueprint for a 19.8MW facility at Southfield Industrial Estate. It would have seen the creation of a 60-metre high chimney stack and associated infrastructure.

The move, comes days after local people vented their anger at a public meeting.

Most of those who objected were local residents concerned about how the plant would impact upon air quality, the environment and human and animal health in the area.

The Scottish Environment Protection Agency (SEPA), Fife Airport, local company Flexcon and the local Hedgehogs Nursery were among others who voiced their opposition.

Many of the 280 objections noted the prevailing winds could carry emissions from the plant in the direction of the Finglassie and Stenton residential areas of Glenrothes, and stressed the chosen site would, therefore, be inappropriate.

Neighbouring business Flexcon, which relies upon clean air for the quality control of its products, warned it would have to close with the loss of 77 jobs if the development went ahead.

Fife Airport chiefs said the proposed 60m high chimney stack could be a potential aviation danger, raising the risk of collision and the creation of disturbed air from stack emissions.

Click [here](#) for more information.

Other Feedstocks

Best practice guideline for Waste Incineration released by EU



Wikimedia Commons

The latest release of the EU's BAT (Best Available Techniques) Reference Document (BREF) for Waste Incineration sets out the industry emission standards and practices identified by the European Integrated Pollution Prevention and Control (IPPC) Bureau (EIPPCB). BREFs are the main reference documents used by regulatory authorities in member states when issuing operating permits for activities which represent a significant pollution potential. As such the Waste

Incineration BREF is of importance to all Waste to Energy installation. UK permits issued by the Environment Agency will likely adhere to the standards set out in this draft BREF by 2019, at the earliest. This latest update to the BREF follows data submissions from operational waste incineration plants in member states.

The UK Environment Agency (EA) is coordinating with UK industry to collect comments in order to form the UK's response to the EIPPCB. To do this they have encouraged industry to provide comments on the BREF via their respective Trade Associations, in this case the REA and the ESA.

Click [here](#) for more information.

Shell partners with SBI to produce biofuels from waste oils

Royal Dutch Shell plc, through its subsidiary Shell International Exploration and Production B.V. ("Shell"), and SBI BioEnergy Inc. have reached an agreement granting Shell exclusive development and licensing rights for SBI's biofuel technology. Edmonton-based SBI has a patented process that can convert a wide range of waste oils, greases and sustainable vegetable oils into lower carbon drop-ins for diesel, jet fuel and gasoline. Under the agreement, Shell and SBI will work together to demonstrate the potential of the technology and, if successful, scale up for commercial application.

SBI uses a continuous catalytic process that converts fat, oil or grease into renewable gasoline, diesel and jet fuel that can be dropped directly in to petroleum fuels. SBI's drop-in products do not require blending or any modifications to engines or infrastructure. Biofuels emit less CO₂ than petroleum products so their addition to fuels has the potential to reduce transport emissions and help fuel suppliers to meet lower carbon or renewable fuel standards.

Shell believes biofuels are essential to decarbonize transport fuels because they represent one of the most practical, commercial and cost-efficient solution to reduce CO₂ emissions in the transport fuels sector over the next twenty years. Raízen, a joint venture between Shell and the Brazilian company Cosan, is one of the world's largest producer of sugar-cane ethanol. Shell is also developing advanced biofuels made with non-edible plants and crop waste.

Click [here](#) for more information.

Events

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.

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.

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.

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
		(D1000)	(D1000)
10 Feb	224-260 (---)	40-60 (↓--)	40-60 (---)

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

For details on straw spot prices, see fwi.co.uk/

UK, French and US 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)
Jul-17	146.3 (↑)			519.0 (↑)	380.2	980.75 (↑)
Aug-17			368.2 (↑)			985.75 (↑)
Sep-17		177.2 (↑)		539.0 (↑)	390.5 (↑)	990.75 (↑)
Nov-17	150.1 (↑)		371.5 (↑)			999.25 (↑)
Dec-17		184.0 (↑)		561.2 (↑)	402.7 (↑)	
Jan-18	151.8 (↑)					1006.75 (↑)
Feb-18			372.7 (↑)			
Mar-18	154.0 (↑)	187.0 (↑)		578.0 (↑)	412.2 (↑)	1004.25 (↑)
May-18	155.7 (↑)	189.0 (↑)	374.2 (↑)	586.7 (↑)	417.2 (↑)	
Jul-18	155.0 (↑)			590.7 (↑)	422.2 (↑)	
Aug-18			357.2 (↑)			
Sep-18		186.7 (↑)				
Nov-18	149.7 (↑)		360.5 (↑)			
Dec-18		189.5 (↑)				
Jan-19	151.0 (↑)					
Mar-19	153.1 (↑)	191.2 (↑)				
May-19	153.9 (↑)	191.5 (↑)				

For details on future prices see cereals.ahdb.org.uk/markets

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

Credits and Disclaimer

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

The Bioeconomy Consultants



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

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