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NNFCC Market Review | Biobased Products

Welcome to the October 2015 issue of our biobased products market review. Each month we review the latest news from across the biobased chemicals and materials sector. This service is exclusively for NNFCC members.

Contents

Foreword

Welcome to the October edition of the Biobased Products NNFCC Market Review. This month we would like to start by highlighting the results of two European INTERREG projects that are coming to an end, Bio Base NWE and EnAlgae.

The Bio Base NWE project had the aim of supporting the development of North-West Europe as a leading European region in the bio-based economy, resulting in sustainable growth, competitiveness in new economic sectors and creation of jobs based on the development of innovative, renewable materials and products. Over 30 business vouchers with a value between €10,000 and €30,000 were given out to companies in the region to help them scale up novel processes. The project had also the aim of identifying and representing the needs and opportunities of SMEs in the implementation of the EU Bio-Economy Strategy. Stakeholder surveys and roundtable meetings helped to identify the hurdles that SMEs face in this sector and what is needed to remove them to boost competitiveness and market development. This analysis concluded with a report entitled "Bio Base NWE analysis report on the bottlenecks SMEs encounter in the bio-economy" which will be soon be available on the project website. There, it will be also possible to download the Policy factsheets that were created to summarise the bioeconomy strategy of the different regions (Belgium, the Netherlands, France, Germany, UK and Ireland). The project concluded with a dinner debate in the European Parliament in Brussels on September 29th, 2015 with the participation of many MEPs and members of the European Commission.

Bio Base NWE
Innovation and training for the biobased economy

The EnAlgae project had the objective of developing sustainable technologies for algal biomass production, bioenergy and greenhouse gas (GHG) mitigation, by developing and sharing data from nine pilot-scale facilities across North-West Europe. The main objective was to explore the potential for algal biomass to deliver sustainable energy and resources. With the barrel cost of oil almost halving compared to the beginning of this project (5 years ago), and revised estimates for the realistic potential for algal biofuels, project partners have concluded that is looks highly unlikely that algae can contribute

significantly to Europe's need for sustainable energy. The study, however, highlighted the great potential for commercial exploitation of algae in other sectors, such as food and nutraceuticals. The need for food, alone, is just as important to Europe as is energy, and algae contain valuable dietary components for humans. 'Rather than plunder dwindling oceanic fish stocks for these components, we can obtain them from algae, while potentially simultaneously using the algae to remove excess nutrients from waste waters' says Prof. Kevin Flynn, EnAlgae Project Director. The output of this project will be useful for the future of algal cultivation in Europe and they include best practice and standard operating procedures, a decision support tool that enables to study the commercial viability and a network for future collaboration.

Read on for the latest market news

Policy

The role of Bioeconomy in climate change mitigation

Ahead of COP 21 in Paris, Miapetra Kumpula-Natri MEP, member of EP Intergroup on "Climate Change, Biodiversity and Sustainable Development", gathered Parliamentarians and stakeholders in the European Parliament to discuss the pivotal Role of Bioeconomy in Climate Change Mitigation. The benefits of a bioeconomy and bio-based products were made clear by all stakeholders, particularly focusing on carbon sequestration and storage benefits, and the need to replace fossil-carbon-based materials. The need to include bio-based solutions in public procurement was also highlighted along with creating the appropriate legal framework to commercialise bio-based products. The meeting was hosted by Miapetra Kumpula-Natri MEP and Chair of the "Bioeconomy" working group of the EP Intergroup "Climate Change, Biodiversity and Sustainable Development", who provided a Resolution to be brought on behalf of the "Bioeconomy" working group to the 21st UNFCCC Conference of the Parties. The resolution reiterates a report produced by OECD that assesses "the full climate change mitigation potential of biotechnology processes and bio-based products ranges from between 1 billion and 2.5 billion tons CO2 equivalent per year by 2030". The resolution also urges the EU to acknowledge the potential benefits and contribution of the bioeconomy towards climate change mitigation and the development of a circular economy.

Click here for more information.

Plastic bag charge introduced in England

From 5 October 2015 all large UK retailers will be required by law to charge customers for their bags. This is expected to reduce the use of single-use plastic carrier bags, and the litter they can cause, by encouraging people to reuse bags.

The government website mentions that currently, there is no exemption for biodegradable bags, but industry standards for the biodegradability of lightweight plastics are being reviewed as well as procedures that could help separating these bags during the waste management and recycling process.

In 2014 over 7.6 billion single-use plastic bags were given to customers by major supermarkets in England. That's something like 140 bags per person, equivalent to 61,000 tonnes in total. The government estimates that over the next 10 years the benefits of the scheme will include:

- an expected overall benefit of over £780 million to the UK economy
- up to £730 million raised for good causes
- £60 million savings in litter clean-up costs
- carbon savings of £13 million

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Market

Biodegradable plastics market

According to a recent report by Research and Market, the biodegradable plastics market is projected be reach 804.58 kilo tons by 2020, registering a CAGR of 12.5% between 2015 and 2020. In terms of value, the market is projected to reach USD 3.4 Billion by 2020, at a CAGR of 10.8% between 2015 and 2020.Biodegradable plastics are increasingly gaining popularity over the past decade. The biodegradable plastics market still accounts for less than 1% of the overall plastics market, but this is expected to increase in the near future. Biodegradable plastics are increasingly being used to manufacture packaging materials as consumers are showing preferences towards eco-friendly packaging. A major restraint faced in biodegradable plastics market is its high prices. Biodegradable plastics are not able to compete economically with petroleum based plastics because of the high manufacturing cost involved. However, with more investment by market players towards balancing the economies of scale and development of new manufacturing processes, it may result in lower prices in the future. Western Europe and North America are the biggest consumers of biodegradable plastics globally

Click here for more information.

Research & Development

Feedstock chemicals - bio-isoprene a step nearer?

YOKOHAMA ZEON CORPORATION

Japanese elastomer producer Zeon Corp., in partnership with Yokohama Rubber Co Ltd. and a Japanese research agency, has succeeded in synthesizing isoprene from biomass, a development that could lead to help reduce future dependence on petroleum and reduce CO_2 emissions. Zeon said it has been engaged since 2013 in joint research with YRC and the National Research & Development Agency (RIKEN) for producing synthetic rubbers from biomass, using the cell design and plant science technologies of the RIKEN Centre for Sustainable Resource Science. The group intends to commercialize the technology by the early 2020s.

Click here for more information.

US Trends in Synthetic Biology Research Funding

A new analysis by the Synthetic Biology Project at the Wilson Centre finds much of the U.S. government's research funding in synthetic biology comes from the Defence Department and its Defence Advanced Research Projects Agency (DARPA), with less than 1 percent of total federal funding going to risk research. The report, U.S. Trends in Synthetic Biology Research, finds that between 2008 and 2014, the United States

invested approximately $820 million dollars in synthetic biology research. In that time period, the Defence Department became a key funder of synthetic biology research. DARPA's investments, for example, increased from near zero in 2010 to more than $100 million in 2014 – more than three times the amount spent by the National Science Foundation.

Click here for more information.

FP7 PLA InnoRex project launches

The demand for biobased polymers is growing fast. According to the current state of the art, metal-containing catalysts are needed to improve the polymerisation rate of lactones, posing a hazard to health and the environment. InnoREX will develop a novel reactor concept using alternative energies for the continuous, highly precise, metal-free polymerisation of PLA.

Click here for more information.

Platform Chemicals

Butadiene (Synthetic and Bio-based) market for styrene butadiene rubber, butadiene rubber, styrene butadiene latex, acrylonitrile butadiene styrene, adiponitrile and other applications

According to a market report by Transparency Market, butadiene rubber was the largest application segment of the synthetic & bio-based butadiene market in 2014; however, adiponitrile is estimated to be the fastest-growing segment of the global synthetic & bio-based butadiene market from 2015 to 2023. Butadiene is manufactured by using petrochemical as well as bio-based raw materials. Synthetic butadiene and bio-based butadiene are product segments of the market. Synthetic butadiene is one of the primary petrochemicals that are obtained by steam cracking of hydrocarbons. However, bio-based butadiene is produced by using renewable raw material sources such as non-food biomass. Synthetic & bio-based butadiene is widely used in synthetic rubber processing and industrial polymer industries.

Click here for more information.

DEINOVE produces muconic acid from 2G substrates and forges partnership with Tyton BioEnergy

DEINOVE, a biotech company developing innovative processes for producing biofuels and bio-based chemicals by using Deinococcus bacteria, announced that they have produced muconic acid in their laboratory using second-generation substrates. DEINOVE recently announced that it had deployed a new R&D platform dedicated to the production of muconic acid, a versatile chemical intermediate whose derivatives – caprolactam, terephthalic acid (a precursor to PET) and adipic acid - are widely used in the plastics industry (notably for automotive and packaging applications), the production of synthetic fibres for textiles or industry (mainly nylon) and food (acidifying agent). DEINOVE has since obtained proof of concept in their laboratory for the transformation of second-generation cellulose-based materials into muconic acid. Furthermore, the improvements made to the strains have made it possible to multiply

production by five compared to the previous trials carried out on monosaccharide-based model substrates, glucose and xylose.

Click here for more information.

DEINOVE, has also announced a partnership with Tyton BioEnergy Systems (Tyton), a pioneering agricultural biotech company with unique tobacco technology used to produce green chemicals and agricultural products. The main goal of the partnership is to combine Tyton's energy tobacco feedstock, process and production infrastructure with DEINOVE's Deino-based fermentation solutions in order to produce green chemical compounds of high commercial value. Tyton's tobacco technology platform achieves significant environmental improvements through enhanced crop production techniques and clean, fast industrial processing. DEINOVE's CBP (Consolidated BioProcessing) solutions are currently optimized on a variety of sugar sources like corn, wheat and urban waste, and they can flexibly utilize simple, starch or cellulosic sugars. The energy tobacco crop developed by Tyton provides a compelling opportunity to diversify applications for Deinococcus, and the two companies will explore various renewable chemical options for commercialization, beginning in the southeast region of the United States.

Click here for more information.

Canadian sugar to fuel Bioamber succinic acid plant

The Renewable chemistry company BioAmber Inc., announced the opening of its BioAmber Sarnia plant in Ontario, Canada, that was jointly built with Mitsui & Co., Ltd. In total, construction of the Sarnia plant cost approximately US $141.5 million. Sixty full-time jobs were created by the project. BioAmber Sarnia will produce biobased succinic acid from glucose sourced from southern Ontario agricultural suppliers. Boasting a production capacity of 30,000 tons/year of succinic acid, the BioAmber Sarnia plant is the world's largest succinic acid production facility.

Click here for more information.

Fine Chemicals

Bio-Wax market: global industry analysis and opportunity assessment 2015 - 2025

According to a recent market report by Future Market Insights, rising demand for cosmetics and personal care products is expected to drive the bio-wax market.

Bio-wax is a group of water soluble organic polymers that are manufactured from bio-based raw materials. It is also manufactured as a by-product of bio-diesel production process. The applications of bio-wax are cosmetics and personal care products, water protection systems, firelogs, infrastructure building and paints and coatings. Bio-waxes developed to replace petroleum based wax and synthetic olefins.

North America is the largest consumer of the bio-wax in terms of consumption and production. Demand from cosmetics and personal care industry is expected to drive the bio-wax market in this region. In addition, governmental regulations for bio-based fuel in firelogs are anticipated to boost the market. North America is

followed by Europe, where stringent governmental policies for reducing carbon di-oxide emission are expected to boost the market.

Click here for more information.

Second Corbion plant approved to produce L-Lactic Acid for biocidal products in Europe and acquisition of Lactic acid business of Malladi Specialities Limited

Image courtesy of Corbion

Corbion has announced that a second of its production plants for L-Lactic acid received approved supplier status under the Biocidal Products Regulation (EU) No 528/2012 (BPR), and as such it products can be used in biocidal products. The Spanish production plant will meet growing demand from personal care and home care markets. The production plant Purac Bioquímica SA is based in the Barcelona province of Spain and has been manufacturing L-Lactic acid since 1947. It now joins Purac Biochem BV in the Netherlands on the BPR's Article 95 list. In addition to meeting the new regulatory requirements, the move also gives Corbion important supply chain security and flexibility in meeting growing customer demand for lactic acid-based products - such as PURAC® Sanilac - in home care and personal care markets. Lactic acid is growing in popularity as an active ingredient in home care and personal care products thanks to its ability to replace traditional chemicals and solvents while delivering improved safety.

Click here for more information.

Corbion Purac also announced the acquisition of the lactic acid business of Malladi Specialties Limited (MSL). MSL is a leading manufacturer in India of lactic acid and lactic acid based derivatives such as calcium lactate, sodium lactate and buffered lactic acid and supplies the pharmaceutical, home and personal care, chemical and food industries in India. Production will remain with Malladi Drugs and Pharmaceuticals Limited (MDPL), also part of the Malladi Group, which will produce derivatives on behalf of Corbion Purac. MDPL is one of India's leading pharmaceuticals manufacturing Company with a global presence. This transaction allows for a local production base through the partnership, while maintaining control on quality supplied to our customers. Corbion Purac has acquired the lactic acid business for an undisclosed amount.

Click here for more information.

Industrial enzymes market by type, application, brand and by Region - global trends and forecasts to 2020

According to a recent market research by Markets and Markets, the increase in demand of consumer goods and increase in the number of applications of industrial enzymes, investments in the research and developments of industrial enzymes and the need of cost reduction and resource optimization in the production process are driving the global industrial enzymes market. The key players in the market are BASF SE (Germany), E.I. du Pont de Nemours and Company (U.S.), Associated British

Foods plc (U.K.), Koninklijke DSM N.V (The Netherlands), and Novozymes A/S (Germany) among others. The increase in disposable incomes and change in lifestyle of the population in the Asia-Pacific region has resulted in an increase in the demand of consumer goods which has resulted the growth of the industrial enzymes market. The carbohydrases segment is projected to grow at the highest CAGR of 7.5% from 2015 to 2020. The market for food & beverage projected to reach a value of USD 2.0 Billion by 2020. The industrial enzymes market was valued at USD 4.2 Billion in 2014 and is projected to grow at a CAGR of 7.0% from 2015 to 2020. In 2014, the market was dominated by North America. The Asia-Pacific region is projected to grow at the highest CAGR from 2015 to 2020.

Click here for more information.

Biolubricants market worth $2,972.13 million by 2020

According to a report published by Markets and Markets, The Biolubricants Market is expected to reach $2,972.13 Million by 2020 at a CAGR of 6.27% between 2015 and 2020. 'Global Biolubricants Market to reach $2,972.13 Million by 2020'. The market for vegetable based Biolubricants Market in terms of value is projected to reach $2,422.07 Million by 2020, at a CAGR of 6.27% from 2014 to 2019. The market in Europe accounted for the largest share in the Biolubricants Market in 2014 and North America is projected to be the fastest-growing market in terms of value, from 2015 to 2020. The growth is attributed to the stringent regulations in this region including Vessel General Permit and BioPreferred program especially in commercial transport. North America & Europe accounted for approximately 85% shares in Biolubricants Market in 2014. Europe is the prime consumer of biolubricants, globally. Europe itself accounted for around 45% of the Biolubricants Market in 2014. North America is projected to register highest CAGR from 2015 to 2020, backed by the stringent regulations such as Vessel General Permit and BioPreferred program.

Click here for more information.

Organic acids market: global industry analysis, size, share and forecast 2014

According to a recent report by Future Markets Insight, food and beverages dominate the global demand for organic acids and the trend is anticipated to continue for a foreseeable future. Pharmaceutical is anticipated to be the fastest growing end user segment for organic acids. Organic acid is also widely used in the production of several chemicals and materials used in automotive and construction industry. Demand for organic acids is profoundly dependent on food & beverages market which is the largest end use industry for organic acids. Therefore, increasing population and GDP growth in a region are among major factors influencing demand for organic acids. High growth in pharmaceutical industry also has been among foremost factors fuelling demand for organic acids. Moreover, several synthetic organic acid are produced using non-renewable sources and are hazardous to the environment which has led to several stringent regulations to control the use of these organic acids. Increasing number of regulations to control

the use of several synthetic organic acids has led to sluggish market growth in North America and Europe. Bio based organic acids are expected to drive market growth in North America and Europe. Organic acid market is highly competitive and major players compete on pricing differentiation. Moreover, increasing demand for bio based organic acids has led to a surge in investment for research and development activities in organic acids market. Some major players in organic acid market include BioAmber, Genomatica, DSM Cargill and The Dow Chemical Company among others.

Click here for more information.

Louis Dreyfus commodities to begin operating new glycerin refinery in Q4 2015

Louis Dreyfus Commodities announced that it is adding a glycerin refinery to its soybean crushing and biodiesel plant in Claypool, Indiana, with construction expected to be complete by the end of the year. The new refinery will be the second largest in the US producing USP-grade Kosher refined glycerin, with a capacity of 80 million pounds per year. Louis Dreyfus Commodities has been marketing crude glycerin, a co-product of the biodiesel process at Claypool, since the facility began operations in 2007. The addition of the refinery should allow the plant to process up to 100% of its crude glycerin production into USP-grade Kosher refined glycerin.

Refined glycerin is present in a variety of industries worldwide, including personal care, pharmaceuticals, food manufacturing, healthcare, automotive, chemical and textiles. New applications for refined glycerin continue to be discovered, giving rise to a strong and growing glycerin market in the US.

Click here for more information.

Rivertop renewables introduces waterline family of products for water treatment applications

Rivertop Renewables, a Montana-based novel chemicals company, launched Waterline™ corrosion inhibitors and chelating agents, a new family of high performance and sustainable chemicals designed to be integrated with products in the water treatment industry. The new products are high performance, low cost alternatives to phosphate-based options in water treatment formulations. The replacement of phosphorus and heavy metal based ingredients is an ongoing challenge across multiple industries that use large volumes of process and cooling water in their operations, such as power generation, oil & gas, mining, metals, pulp & paper, and many others. Rivertop's proprietary sugar acid technology platform offers a range of versatile organic corrosion and scale inhibitors to help meet this challenge.

Click here for more information.

Polymers

First Brazil-based facility to be realised for producing PHAs bioplastic from sugar cane co-products.

Bio-on and Moore Capital signed a license agreement to build the first Brazil-based facility to produce PHAs bioplastic from sugar cane co-products. The two companies, operating in sustainable biochemistry and in the development of eco-sustainable industrial solutions, will work together to build a production site with a 10 thousand tons/year output, in the state of São Paulo and/or Acre State. Requiring an 80 million Euro investment, the facility will be the most advanced biopolymers production site in South America. The new production hub will create 60 new jobs plus allied industries, helping to meet the high demand for this revolutionary biopolymer already coming in from numerous companies that transform or produce conventional plastic in Brazil.

Click here for more information.

Novamont, has launched a rebranding process in order to enhance and aligning the corporate image of the group.

Ever since it was set up, Novamont has encouraged a new model of sustainable development. The project of integration between chemistry, environment and agriculture is now a concrete model of bioeconomy focused on the efficient use of resources and territorial regeneration. Our products are the result of four integrated proprietary technologies and manufactured in innovative Italian production sites. The rebranding process concerns not only Novamont but also its subsidiaries, Mater Biopolymer e Mater Biotech, and its products: Mater-Bi, Matrol-Bi and Origo-Bi.

Click here for more information.

Edible water bottle to cause a splash at EU sustainability awards

Image courtesy of Skipping Rocks Lab

An edible alternative to plastic water bottles made from seaweed has topped the UK round of an EU competition for new, more sustainable products. The new spherical form of packaging called Ooho and described by its makers as “water you can eat”, is biodegradable, hygienic and costs 1p per unit to make. It is made chiefly from calcium chloride and a seaweed derivative called sodium alginate. Ooho won the joint award with Alchemie Technologie, who has created a digital way of dispensing dye for the textile industry. Clothes are dyed selectively using a product similar to an industrial inkjet printer, replacing the full immersion process used currently, which

consumes vast quantities of chemicals, water and heat. Ooho designer Pierre Paslier, described the product as like a "man-made fruit", which uses a double membrane to contain water. To carry larger quantities of water, a number of the capsules can be packed into a larger and thicker skin: much like an orange.

Click here for more information.

BON EUROPE Bioplastics Organisation Network Europe

The Bioplastics Organisations Network Europe (BON Europe) is a newly formed collaboration of national bioplastics organisations from across Europe. BON Europe was launched in summer 2015 with the mission to connect initiatives around the bioplastics industry on EU level and in the Member States. The BON Europe partner organisations represent companies that produce, convert or use bioplastics that are biobased, biodegradable or both, as well as upstream and downstream sectors, such as agriculture and waste management. The founding members include: Belgian Bio Packaging (Belgium), Club Bio-plastiques (France), Der Verbund kompostierbare Produkte (Germany), Holland Bioplastics (The Netherlands), and Nordisk Bioplastförening (Nordic countries). European Bioplastics (EUBP) acts as the umbrella organisation and coordinates the BON network. The main objective of BON Europe is to push for an economically and politically favourable landscape for bioplastics in Europe by promoting legislative measures to encourage market uptake and eco-design of products, equal access as well as use of responsibly sourced renewable raw materials, as well as promoting an efficient waste management infrastructure throughout Europe.

Click here for more information.

Consumer Applications

All-natural children's health products packed in NatureFlex™

Image courtesy of KiddieKix

A South African company KiddieKix, who produce all-natural children's health products, has adopted NatureFlex™ to wrap its cereals and dried fruit snacks. These films are independently certified to meet the American ASTM D6400 and European EN13432 standards for compostable packaging. They begin life as a natural product, wood which is sourced from certified plantations operating good forestry principals. They also offer a host of advantages for packing and converting such as high seal strength and integrity, excellent gas, aroma, UV light and mineral oil barrier, grease and chemical resistance, dead fold and anti-static properties, enhanced printing and conversion.

Click here for more information.

Patents

MBI issued game-changing patent for AFEX technology

Image courtesy of mbi

MBI announced its innovative biomass pretreatment patent (patent no. 9,102,964) has been issued by the USPTO. The granting of this patent represents a major milestone in the development and commercialization of its AFEX technology. For every ton of corn, wheat, and rice harvested, an equal amount of biomass is left behind on the fields. Within this biomass — of which nearly 2 billion tons are produced each year around the world — nature locks away huge stores of inaccessible sugars. AFEX allows us to unlock these sugars and upgrade the biomass into a sustainable source of both cattle feed or a feedstock for cellulosic biofuels and chemicals. The AFEX technology is a game-changing agricultural innovation, sustainably expanding our capacity to supply both cattle feed and transportation fuels, while reducing our environmental footprint. Conceived at MBI in 2010, this latest innovation represents a major breakthrough in the cost, scalability, and commercial viability of the technology.

Click here for more information.

Events

Process simulation and e-learning for operators: an introductory workshop, 15 October, York UK

The Bio Base NWE project and the Bio Base Europe Training Centre (BBETC) are organising a FREE workshop to demonstrate the e-learning training tools for bio- and petro- chemical industry developed at BBETC. During the event, you will be able to learn the advantages of e-learning and process simulation for the training of operators in bio- and petro- chemical plants. You will also be able to try the software tools during a practical session. Topics of the simulations include synthesis-distillation train, heat exchanger, and drying. E-learning topics include steam boiler, measurement technology, pumps and compressors, adsorption, extraction and fermentation. The workshop is intended for teachers, staff, directors, and HR & training staff in technical colleges, schools, and industry.

This is an NNFCC event

Click here for more information.

EFIB 2015, 27-28 October in Brussels, Belgium

The European Forum for Industrial Biotechnology and the Bioeconomy is the leading European event for biobased industries. EFIB 2015 comes to SQUARE Brussels, Belgium from 27-29 October and is setup to surpass the resounding success of 2014 which attracted 700+ biobased professionals for 3 jam-packed days of insightful presentations, enlightening workshops and networking.

Meet NNFCC Here

Renewable chemicals from waste - securing the molecular value from waste streams, 20 November, London UK

Co-sponsored by the Royal Society of Chemistry and BBSRC, this symposium will provide focus for industry, funding agencies and academic researchers to come together and explore the potential of waste as a resource

Life Cycle Assessment Workshops, 24-25 November in York, UK

This is an NNFCC event

LCA workshops brought to you by NNFCC and North Energy. Following the success of our previous Life Cycle Assessment (LCA) workshops, NNFCC and North Energy are holding two new training workshops providing you with insight into how LCA's work and their applications

Click here for more information.

10th European Bioplastics conference, 5-6 November in Berlin, Germany

Every year European Bioplastics host 350+ senior stakeholders from across the bioplastics industry at the leading networking and business event to discuss the latest trends and developments in your industry, network with your peers, and explore exciting new business opportunities.

Click here for more information.

Global Bioeconomy Summit 2015: Innovation, Growth & Sustainable Development in 25-26 November in Berlin, Germany

Meet NNFCC Here

Organised by the Bioeconomy Council of the German Federal Government, the first Global Bioeconomy Summit is a platform for leaders in the international bioeconomy to discuss ideas on strategy, governance and policy design.

Click here for more information.

The 2015 European Biopolymer Summit, 9-10 December in London, UK

ACI's The 2015 European Biopolymer Summit, taking place in London, UK, on 9th – 10th December 2015, will bring together key industry experts to discuss the latest strategies and methods to overcome current challenges, and maximise the opportunities. The conference will address how the industry will evolve, current trends, how to respond to the changes of the market and the growing demand from end users.

Click here for more information.

EcoBio 2016: Challenges in Building a Sustainable Biobased Economy, 6-7 March 2016, Rotterdam, The Netherlands

Eco-Bio 2016 will highlight the latest research and innovation towards developing industrially viable, safe and ecologically friendly biobased (renewable biological sources) solutions to build a sustainable society.

Click here for more information.

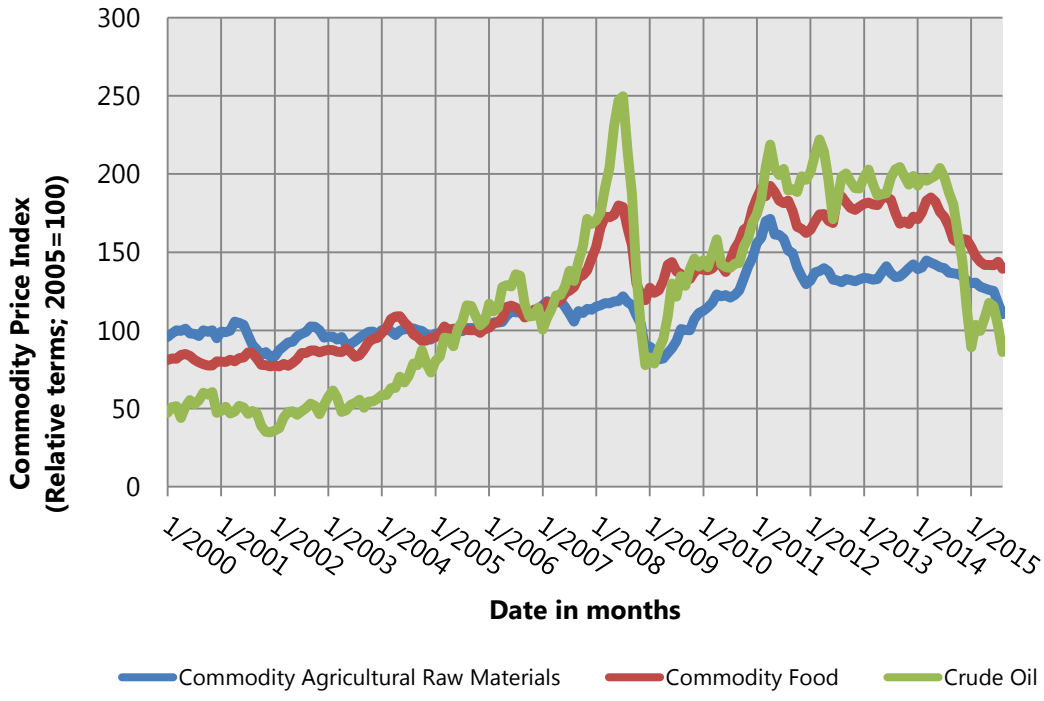
Price Information

Spot Prices of feedstocks as of today and five years ago, and percentile price change. Arrows indicate rise (↑), constant (–) or fall (↓) from previous month.

Item	Price, US$ (Sept 10)	Price, US$ Aug-15)	% Price Change
Crude oil (petroleum, barrel)	76.11	45.72 (↓)	-40%
Maize (corn, metric ton)	205.84	162.74 (↓)	-21%
Sugar (pound)	0.2267	0.1067 (↓)	-53%
Rapeseed oil (metric ton)	1,031.51	754.41 (↓)	-27%
Soybean oil (metric ton)	929.65	628.75 (↓)	-32%
Ethanol (gallon)	1.86	1.62 (↓)	-13%

For details on indexes please see www.indexmundi.com/commodities; Ethanol prices from Govt of Nebraska at www.neo.ne.gov/;

Raw materials 15-year Price Indices



For details on the nature of these commodities please see www.indexmundi.com/commodities

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NNFCC Market Review is edited by Dr Davide Di Maio for NNFCC members. Feedback is welcome. The Review has been compiled in good faith and NNFCC does not accept responsibility for any inaccuracies or the products or services shown.

NNFCC are partners in Bio Base NWE, an INTERREG IVB project designed to accelerate the growth of the biobased economy in North West Europe.

For more information on the project click here and to learn about funding opportunities click here.

NNFCC

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