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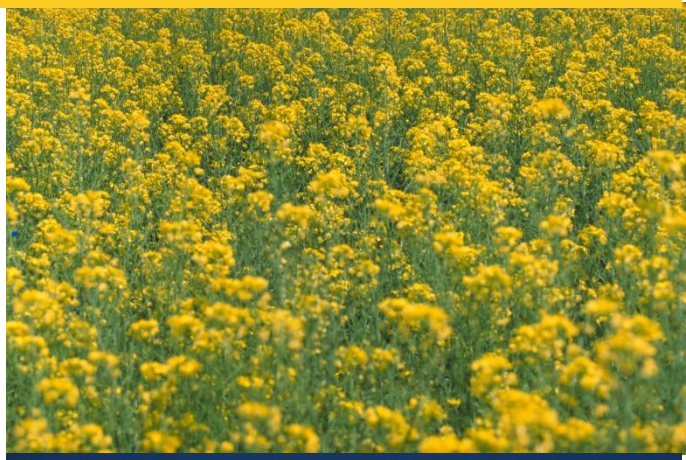
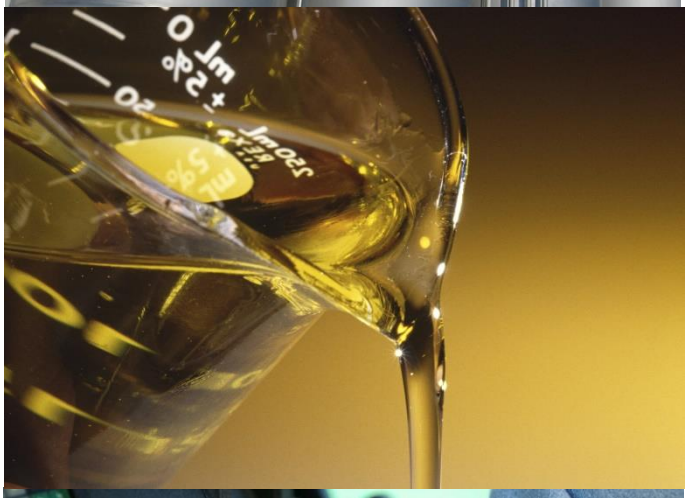


News Review

Issue Seventy-One

February 2018

Each month we review the latest news and select key announcements and commentary from across the biofuels sector.



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Foreword

Hello and welcome to February's Biofuels News Review.

Sometimes, when developing something biobased, it can be difficult to quantify the level of greenhouse gas mitigation provided by your technology without a full Life Cycle Analysis. These are expensive and often provide barriers to the development of new biobased technologies. Other times where such information is useful lie in the claiming of government support, which often hinges on sustainability criteria. This is why at NNFCC we developed our Biogas Carbon Calculator, to assist generators in the bioenergy sector to navigate this hurdle. Tools like this, that simplify intricate analysis processes, are inherently valuable to a sector like the bioeconomy. This is why it is good news that Argonne National Laboratory have developed an emissions calculator for heavy-duty vehicles. For companies managing large fleets of HGVs, this tool will provide a much easier overview of the low-emissions options available, beyond simply switching to biofuels, also extending to management of the fleet itself. This demonstrates the importance of management to the bioeconomy, as there's no use in developing a ground-breaking green technology without there being the facility to successfully roll it out.

Elsewhere, statistics have been released by the UK's Department for Transport that paint the picture of how successful biofuels can be at achieving transport decarbonisation. Since April 2017, 777 million litres of biofuel were supplied in the UK (as of December 2017), providing a 73% reduction in greenhouse gas emissions compared to fossil fuels (*even when indirect land-use change is accounted for*). This figure is excellent and should provide encouragement for the biofuels sector, as it shows how significant greenhouse savings can be made in the short-term by switching to biofuel. Even if in the future we move on to greater carbon reductions through electrification, biofuels provide the most viable short-term solution, while the alternative technology continues to develop. The other encouraging facet of these statistics is that 30% of the feedstock used in the production of this biofuel was waste, which demonstrates the potential scale that biofuels can be utilised as a method of reducing waste sent to landfill, which adds additional environmental benefits on top of the emissions reductions.

Read on for the latest news.

Policy

UPM and ZERO to promote greener biofuels

UPM Biofuels and the Zero Emission Resource Organisation have started cooperation in promoting green shift in the transport and petrochemicals sectors. The work focuses on creating a predictable long term operating environment for sustainable, advanced biofuels to enable climate change mitigation in transport with renewable fuels.

The cooperation also aims to enhance knowledge of sustainable fossil-free bioproducts, such as bioplastics, as an important climate solution for example in the packaging and labelling industries. The work is conducted through continuous dialogue with policy officials and decision makers to promote the transition towards a wider bioeconomy.

UPM and ZERO support advanced biofuels and sustainable bioproducts, which considerably reduce greenhouse gas emissions during their lifecycle from raw material to end product when compared to fossil fuels and products.

There is an urgent need for various climate solutions. Sustainable development is all about gradual change towards a cleaner climate, and renewable sources of energy and sustainable production methods are key in reducing our ecological footprint. As changes in infrastructure, production systems and consumer behaviour are slow, policy support needs to have a clear direction and continuity. UPM is committed to growing its sustainable product offering for various sectors and therefore engages with civil society to promote the change towards environmental friendly bioeconomy.

Click here for more information.

Anti-Dumping Review welcomed by European Renewable Ethanol

The European Commission's initiation of an expiry review of the anti-dumping duties on imports of fuel ethanol originating in the United States is an important step toward the renewal of existing anti-dumping measures and ensuring EU industry can compete on a level playing field.

The anti-dumping duty in place since 23 February 2013 on U.S. fuel ethanol exports to the EU has proven effective in preventing continued dumping by the U.S. industry but was set to expire after an initial 5-year period. Removal of the measures would result in the resumption of massive and unfair imports of ethanol from the U.S., leading once again to severe material injury to the EU industry.

In November 2017, European ethanol producers submitted a request to extend the measures – which are needed now more than ever. Since the imposition of the measures by the EU in 2013, the U.S. ethanol industry has continued to expand, adding over 6 billion litres of production capacity. Yet the U.S. fuel ethanol market has not expanded at the same rate, resulting in staggering overcapacity of more than the EU's entire annual fuel ethanol consumption.

The risk that the U.S. industry would resume dumping once the measures are lifted is becoming increasingly acute. Other major U.S. export markets are retaliating against unfair trading practices by the U.S. industry. In 2017, as a direct response to massive U.S. exports, China increased its import tariff for ethanol from 5% to 40%; Brazil increased its import tariff from 0% to 20% for imports exceeding 150 million litres per quarter; and Peru initiated its own anti-dumping investigation against the U.S.

The anti-dumping measures will remain in place during the European Commission investigation, which will be concluded within 15 months.

Click here for more information.

Markets

WTO rules in favour of Indonesia for EU biofuel imports

AHDB reports that the World Trade Organisation (WTO) has ruled that the EU must change anti-dumping duties on Indonesian biodiesel imports. This follows the WTO finding in favour of Argentina last year regarding the country's complaint against EU anti-dumping duties on Argentine biodiesel imports. As a result, the EU lowered tariffs on Argentine biodiesel imports from 22-25.7% down to between 4.5-8.1%.

It is likely that the duties will be reduced in the coming months with the EU withdrawing from a planned appeal of the WTO verdict. Any change in import duty could have a substantial impact on the quantity of Indonesian biodiesel exported to the EU with rates currently standing between 8.8% and 20.5%. Argentina's successful challenge led to a resumption of trade of biodiesel into the EU in the latter part of 2017. This is a trend which is likely to be followed by Indonesian exports should the duties be reduced.

The potential of re-entering the EU biodiesel market is significant to Indonesia with the Indonesian trade minister estimating that exports to the EU should increase to $1.7 billion in 2020 from $150 million in 2016.

With an increasing amount of cheap biodiesel entering the EU from various destinations there is the potential for these imports to depress EU rapeseed oil prices. This in turn could lead to downward pressure on the UK's domestic rapeseed market.

Click here for more information.

Max Pixel

China to build 100 new biofuel plants by 2035

Enerkem Inc., a world leading waste-to-biofuels and renewable chemicals producer, announced today it has signed an agreement with Sinobioway Group worth over C$125M in the form of equity investment in Enerkem Inc., future licenses, equipment manufacturing and sales, as well as for the creation of a major joint venture that will lead the construction of over 100 Enerkem state-of-the-art facilities in China by 2035. The announcement was made in the presence of the Premier of Quebec, Philippe Couillard, during his China trade mission.

Sinobioway, a flagship conglomerate in China's bio-industry, will help accelerate Enerkem's global growth by opening the Chinese market to Enerkem's pioneering waste-to-biofuels technology. This joint venture will spearhead the development of a clean economy, reducing air pollution by producing renewable fuels from non-recyclable garbage.

Sinobioway is a leading Chinese company engaged in the bio-economy. This group primarily invests in bio-energy, bio-environmental protection, bio-medicine, bio-agriculture, bio-service, bio-manufacturing, and bio-intelligence areas. With 4,000 employees, it is one of the three main industrial groups affiliated with Peking University. The company was founded in 1992 and is based in Beijing, China.

Click here for more information.

Largest investment round ever for Enerkem

Enerkem

Enerkem Inc., a world leading waste-to-biofuels and chemicals producer, announced it has completed a C$280 million investment round - its largest to date. In addition to new investors BlackRock and Sinobioway, existing investors also participated in this financing.

Existing Enerkem investors include Rho Ventures, Braemar Energy Ventures, Waste Management of Canada, Investissement Québec, Fonds de solidarité FTQ, Cycle Capital, Fondaction, The Westly Group, and the National Bank of Canada.

BlackRock is a global leading investment management corporation, managing close to six trillion dollars in assets on behalf of investors worldwide. BlackRock operates globally with 70 offices in 30 countries and clients in 100 countries.

Sinobioway is a leading Chinese company engaged in the bio-economy. This industrial group, affiliated with Peking University, primarily invests in bio-energy, bio-environmental protection, bio-medicine, bio-agriculture, bio-service, bio-manufacturing, and bio-intelligence.

Click here for more information.

Musket retains exclusive distribution rights for Gevo's Isobutanol

Gevo, Inc., announced that it has strengthened its existing relationship with Musket Corporation, a national fuel distributor under the umbrella of the Love's Family of Companies, by amending its existing isobutanol supply agreement to provide Musket with the exclusive right to sell Gevo's renewable isobutanol within a 300-mile radius of Houston, Texas. This agreement establishes a market region that encompasses Austin, Dallas, Fort Worth, Oklahoma, Louisiana, as well as the majority of South and East Texas.

Musket began distribution of isobutanol gasoline blends in the Houston area in late 2016. Their ability to source, transport and blend fuels has led to rapid growth in and around Houston. Houston is classified as a Reformulated Gasoline (RFG) market under the EPA guidelines. Nearly all RFG gasoline is formulated with ethanol as the oxygenate. Isobutanol enables an ethanol free blended gasoline in RFG areas that meet all the EPA guidelines.

Click here for more information.

BP & Verenium biofuels plant liquidated

Aaron Equipment Company in conjunction with Reich Brothers and Phoenix Equipment Corporation recently acquired the BP Verenium Biofuels plant including over 40 acres of real estate and equipment located in Jennings, LA. The group plans to first offer the plant in its entirety and then by piece meal to the buying public. Consisting of a full plant made up of hundreds of individual pieces of equipment and components, the liquidation marks Aaron Equipment's expansion into the trendy biofuels equipment market after eight decades of providing new, used and reconditioned processing equipment to other industries. The sale offers a unique opportunity to

save money while getting into or extending one's reach in the sustainable fuels game.

According to a Global Industry Analysts, Inc. market trends report "Global consumption for Biofuels is projected to reach US$57.8 billion gallons by 2020." With sustainability on everyone's minds these days, the growing demand for biofuels as alternatives to fossil fuels represents a solid business opportunity. Relatively inexpensive to process, biofuels pose a low-cost entry point. The one barrier to that entrance is automated equipment cost.

With an 80-year history in selling used and reconditioned-to-new process equipment for a wide range of industries, Aaron Equipment Company is a natural choice for eliminating this cost barrier. And with its recent acquisition of a biofuels plant in Louisiana, Aaron Equipment is poised to make fuelling the globe more sustainably a more affordable proposition.

A former biofuels business, the plant was a joint venture between BP and Verenium. It was built to validate various technology platforms for application in all types of biofuel business segments. Although the plant assets have an original cost of $98 million dollars, through the liquidation sale, buyers will be able to secure them for a fraction of that cost.

All equipment in the liquidation sale is available for inspection on site by appointment. This Liquidation will run from January 2018 and will continue through the end of the year. Among the equipment up for sale are 316 stainless steel fermenters, 316 stainless steel tanks, stainless steel reactors, shells, tubes, screw presses, decanter centrifuges and hydrolysers, spiral and plate heat exchangers and an unused DAF system. Full details about all 114 items included in the sale can be found online at Aaron Equipment Company's website.

Click here for more information.

Research & Development

73% reduction in emissions from biofuels in UK

Wikimedia Commons

In the latest UK DfT report "Renewable Transport Fuel Obligation statistics: period 10 2017/18, report 2" information is provided on latest supply statistics and origin of fuels for 2017/18 obligation period (15 April to 14 April), by the end of December 2017, 777 million litres of biofuel were supplied and for which 63% had so far supplied data regarding and had met sustainability criteria. Of the latter, 51% was biodiesel and 56% bioethanol. In total 68% of the sustainable biofuel supplied was derived from waste feedstocks. 30% of all feedstock came from the UK.

The predominant feedstock for biodiesel was used cooking oil form the US (14% of total biofuel supplied), while for bioethanol it was UK sources wheat (accounting for 15% of total fuel supply).

An aggregated greenhouse gas saving of 78% compared to fossil fuels was achieved this period. Including emissions from indirect land-use change (ILUC) reduces this to 73%.

Click here for more information.

ANL develops vehicle emissions calculator

Geograph

Argonne National Laboratory (ANL) unveiled its new Heavy-Duty Vehicle Emissions Calculator (HDVEC). The new ANL emissions calculator makes it easier for state officials and fleet operators to assess the emission reduction potential of various medium- and heavy-duty vehicle projects and to also evaluate the relative cost-effectiveness of reducing harmful emissions.

HDVEC provides fleets and policy makers with a tool that makes it easy to model environmental mitigation projects involving replacement and scrappage of older diesel vehicles with new vehicles or projects involving repowering an older diesel vehicle with a brand new, cleaner engine. It also provides calculations for fleets that simply want to understand how various new vehicle options compare in terms of delivering emission reductions.

The HDVEC was developed using Argonne's Alternative Fuel Life-Cycle Environmental and Economic Transportation Tool (AFLEET). AFLEET Tool 2017 uses emissions data from both the U.S. Environmental Protection Agency's Motor Vehicle Emission Simulator (MOVES) and Argonne's Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) models. Unlike these other tools, however, HDVEC is a simple-to-use online calculator as opposed to a spreadsheet.

The emissions evaluated include vehicle operation nitrogen oxide (NOx) and fine particulate matter (PM2.5) emissions as well as the well-to-wheel greenhouse gas emissions (GHGs) of current commercially-available alternative fuel medium- and heavy-duty vehicles. Users can select from a variety of different types of vehicle projects and then must input project-specific information identifying the state where the vehicle will be operated in, the annual mileage, and years of operation. For scrappage projects, the remaining life of the vehicle to be replaced also must be entered.

Like the AFLEET model, HDVEC also includes emissions factors for new, low-NOx engines and the latest estimated emission factors for in-use operation of diesel vehicles. Cost-effectiveness is based on the amount of funding requested and the amount of emission reduction generated by a specific project. Results are presented in an easy-to-review format with bar charts and the results can be saved or downloaded for future review.

Click here for more information.

Lanzatech licenses AI assistance for waste-based fuel design

LanzaTech will license TeselaGen's proprietary cloud-based informatics solution and will collaborate closely with TeselaGen, extending its state-of-the-art biological design platform to include artificial intelligence capabilities that speed up the design process.

Developing biological solutions for transformative products like carbon-negative biofuels requires innovative use of molecular design technology. TeselaGen Biotechnology Inc. and LanzaTech announced that LanzaTech will license TeselaGen's proprietary cloud-based informatics solution and will collaborate closely with TeselaGen, extending its state-of-the-art biological design platform to include artificial intelligence capabilities that speed up the design process.

As a secure enterprise quality addition to LanzaTech's advanced R&D infrastructure, the TeselaGen private-cloud platform will enable scientists at LanzaTech to advance their research finding new ways to reliably modify microbes that produce low carbon fuels and chemicals from waste emissions, including those from heavy industry or from gasified municipal solid waste or agricultural residues.

Click here for more information.

Global Bioenergies commissions LCA for renewable ETBE

Geograph

Global Bioenergies has entrusted EVEA, a company specialized in calculation of Life Cycle Assessment (LCA), with a study focused on the products to be manufactured in the future IBN-One plant. Fully renewable ETBE is estimated to enable 69% reduction in greenhouse gas emissions compared to fossil gasoline. This figure was calculated for the current design planned for the IBN-One plant using a greenhouse gases emissions calculator based on 2BSVS, compliant with the Renewable Energy Directive.

As part of the ISOPROD project financed by the Investissements d'Avenir program and operated by the ADEME, an assessment of the environmental impact of the future renewable isobutene plant IBN-One was performed by Evea, a company specialized in Life Cycle Assessment (LCA) and eco-design. The LCA focused on the production of renewable isobutene derived from sugar beet under the IBN-One plant design in collaboration with Cristal Union, partner of Global Bioenergies in this joint-venture.

The preliminary results of the analysis according to the greenhouse gases emissions calculator compliant with the Renewable Energy Directive was that fully renewable ETBE (Ethyl Tert-Butyl Ether), produced from renewable isobutene and bioethanol, is associated with a reduction of 69% of CO2 equivalent emissions if compared to fossil gasoline. These results will have to be confirmed after an audit on site and a peer review of the LCA. ETBE is today incorporated in gasoline, up to 23%. Fully renewable ETBE holds the potential to incorporate 2.7 times more renewable energy in gasoline than using traditional biofuels.

Click here for more information.

UPM conducting EIA for potential Finnish biofuels plant

UPM is studying biofuels development opportunities by starting an environmental impact assessment (EIA) for a possible biorefinery in Mussalo, Kotka, in south-eastern Finland. The study of a possible Kotka Biorefinery is in the very early stages and the EIA process normally takes approximately one year.

EU and national policies on biofuels will also play an important role in the final assessment of the possible investment.

The EIA study states that the proposed second UPM biorefinery would use a different raw material base and technology than in the current UPM Lappeenranta Biorefinery. The Kotka Biorefinery would produce approximately 500,000 tonnes of advanced biofuels for transportation, made from several renewable and sustainable feedstocks.

Click here for more information.

Sinobioway to help Enerkem with China expansion

Enerkem Inc., a world leading waste-to-biofuels and renewable chemicals producer, announced that it has signed an agreement with Sinobioway Group worth over C$125M in the form of equity investment in Enerkem Inc., future licenses, equipment manufacturing and sales, as well as for the creation of a major joint venture that will lead the construction of over 100 Enerkem state-of-the-art facilities in China by 2035. The announcement was made in the presence of the Premier of Quebec, Philippe Couillard, during his China trade mission.

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Click here for more information.

Bioethanol

US Cellulosic Ethanol Industry fears targets are too low

Pixabay

Biomass magazine reports that representatives of the cellulosic biofuels industry are asking the U.S. EPA to take a renewed look at commercial-ready cellulosic biofuels, including cellulosic ethanol made from corn kernel fibre, as the agency begins its work to develop proposed 2019 Renewable Fuel Standard renewable volume obligations (RVOs). With industry fearing that the EPA will reign in support.

The EPA stated in 2017 that its review of cellulosic biofuel production data showed that "facilities that convert corn kernel fibre to cellulosic ethanol at existing ethanol production facilities have generally over performed relative to our estimates." However, industry counters that the EPA set low volumetric projections for the biofuel in the proposed 2018 RVOs and reduced targets for corn kernel fibre ethanol in the final rule.

Industry is concerned that an overly conservative corn kernel fibre ethanol projection, compounded with uncertainty around how quickly EPA will approve new corn kernel fibre ethanol technologies for D3 RIN generation, threatens to slow the adoption of cellulosic production capacity at existing ethanol facilities across the country.

Click here for more information.

Aviation Biofuel

Dutch Air-Traffic Control to fly its employees with biofuel

KLM Royal Dutch Airlines said Monday that Air Traffic Control the Netherlands (LVNL) will support the increased use of sustainable biofuels on flights by joining the airline's Corporate BioFuel Programme.

LVNL, the agency in charge of air traffic control in the Dutch airspace, will buy biofuel for all business flights of its employees.

The use of sustainable biofuels on a large scale could result in an 80% reduction in carbon dioxide (CO2) emissions, compared with fossil fuels, but the price of the green fuel is still two-three times higher than that of kerosene, KLM explains. Participants in the Corporate BioFuel Programme pay a fee to cover the difference in price.

The airline's goal is to create demand so that production of biofuels for the airline industry becomes stable and the price falls to an acceptable level.

KLM aims to cut CO2 emissions per passenger by 20% by 2020, as compared to 2011 levels. To do that it is investing in sustainable biofuels, sourced through SkyNRG, and in new aircraft and more efficient flight operations.

Click here for more information.

Other Fuel

AkzoNobel and Gasunie to build hydrogen plant

AkzoNobel Specialty Chemicals and Gasunie New Energy have joined forces to investigate the possible large-scale conversion of sustainable electricity into green hydrogen via the electrolysis of water.

Intended for Delfzijl in the Netherlands, the installation would use a 20-megawatt water electrolysis unit, the largest in Europe, to convert sustainably produced electricity into 3,000 tons of green hydrogen a year – enough to fuel 300 hydrogen buses. A final decision on the project is expected in 2019.

The planned 20-megawatt facility is an important step towards scaling up the electrolysis technology. So far, the largest planned electrolysis unit in the Netherlands has a capacity of 1 megawatt. The eventual aim is to be able to build installations that convert and store sustainable energy in the form of hydrogen on an even larger scale (from 100 megawatts).

The vast majority of the more than 800,000 tons of hydrogen used by Dutch industry each year is produced using natural gas. Replacing this by sustainably produced hydrogen will reduce CO2 emissions by seven million tons. However, the real potential is in large-scale production as the basis for green chemistry. The northern part of the Netherlands is perfectly positioned to develop a green hydrogen economy, due to the large-scale production and import of green electricity, the existing chemical industry, the current gas transmission infrastructure, the knowledge infrastructure and the support within the Northern Innovation Board.

Click here for more information.

Events

Eco-Bio 2018
Dublin, 4th-7th March 2018

ECO-BIO 2018 will highlight the latest research and innovation towards developing industrially viable, safe and ecologically friendly biobased solutions to build a sustainable society.

A topical and comprehensive programme will include plenary and invited speakers, forum discussions, contributed oral presentations, a large poster session and exhibition.

The conference will bring together all concerned with the biobased economy to review industrial, academic, environment and societal approaches, discuss the latest research and progress, and encourage new research partnerships to enable new cascaded biobased value chains.

Click here for more information.

BIOKET
Strasbourg, 6th-8th March 2018

Biomass is a wonderful resource to be transformed into chemicals, biobased materials, food and feed ingredients or energy. Still, adaptation and optimisation of transformation processes and technologies is a real challenge in order to valorise all biomass fraction in a circular approach.

In the context of Industry 4.0, Key Enabling Technologies (KETs) provide the basis for innovation in a range of products across all industrial sectors. They underpin the shift to a greener economy, are instrumental in modernizing industrial base, and drive the development of entirely new industries. BIOKET aims to contribute to the rise of KETs by promoting emerging KETs applied in the Bioeconomy's sector.

Click here for more information.

Communicating Sustainability – BioBase4SME Training
Brussels, 14th March 2018

The bioeconomy is a concept many people are still confused by or unaware of. However, consumers are increasingly willing to spend money on products with strong environmental credentials. Bio-based alternatives with a strong sustainability narrative can help to meet growing demand for these solutions.

You are invited to join a training workshop tailored to bioeconomy SMEs on the benefits of sustainability communications and how to develop strategies to boost the marketability of your products.

Click here for more information.

World Bio Markets
Amsterdam, 20th-22nd March 2018

With governments committed to reducing emissions and consumers becoming more educated about where their products come from, there are opportunities for the bio-based sector to become a true contender to fossil oil. Yet long development times, lack of investment, and challenges in attaining a secure and sustainable supply chain have made it difficult for the bio-economy to achieve commercial success.

This event provides a platform for the entire global value chain, from feedstock producers to consumer brands, to work together to overcome these challenges.

Click here for more information.

Global Bioeconomy Summit 2018
Berlin, 19th-20th April 2018

The first Global Bioeconomy Summit was held in 2015 and brought together more than 700 bioeconomy stakeholders from over 80 countries. Since then, Bioeconomy has taken a steep and exciting way forward. Many notable initiatives and collaborative efforts have been initiated by the bioeconomy community in order to drive the development of sustainable bioeconomies in their countries and regions.

The 2nd GBS will focus on emerging concepts and future trends in bioeconomy, the latest on challenges and opportunities related to ecosystems, climate action and sustainable development along with the bioeconomy innovation agendas and global governance initiatives to manage them.

Click here for more information.

EUBCE
Copenhagen, 14th-18th May 2018

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

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

Click here for more information.

RRB 14
Ghent, 30th May - 1st June 2018

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

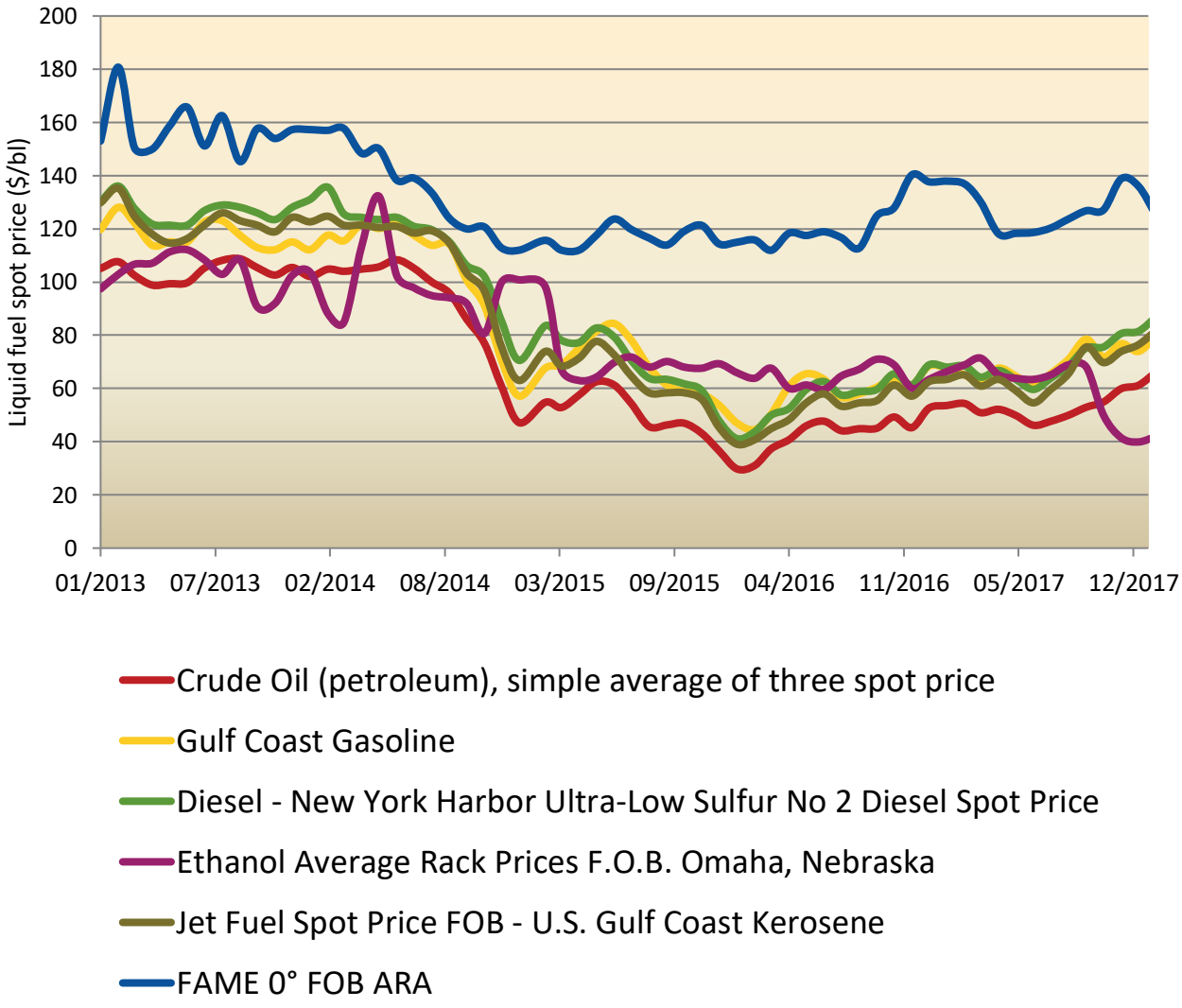
The conference will provide a forum for leading political, corporate, academic and financial people to discuss recent developments and set up collaborations.

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

Click here for more information.

Price Information

Historical spot prices of liquid fossil fuels and liquid biofuels. Five years prices and up to January 2018 are given in $ per barrel.



Prices of Crude oil, diesel, gasoline, and jet fuel are recorded from www.indexmundi.com; Price of ethanol from www.neo.ne.gov; Biodiesel spot prices from http://www.kingsman.com

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