COUNTRY FOCUS: FINLAND A WORLD LEADER IN THE FOREST BIO-ECONOMY

FIVE UK R&D CENTRES FORGE NEW ALLIANCE TO SUPPORT BIO-ECONOMY GROWTH.

BIG OIL MEETS BIO-BASED AS SAUDI ARAMCO BUYS A $100M SUSTAINABLE POLYOL TECHNOLOGY.

ASK THE INDUSTRY: SOPHIE MATHER, MATERIAL FUTURIST AT BIOVATION.

VIEW FROM THE USA: IT’S A WHOLE NEW WORLD.

“PROBABLY THE BEST BIO-BASED BEER BOTTLE IN THE WORLD…”

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BioPilotsUK is an alliance created by five established biorefining open-access centres who recognise the importance of partnerships to develop UK bio-based value chains.

Together, we de-risk the commercialisation of bio based products and processes by trialling new technologies to ensure our partners are investing in the right technologies for their business.

www.biopilotsuk.com

Get in touch to find out more at info@biopilotsuk.com

The quote above is from Simon Hoffmeyer Boas, the Sustainability Director of this edition’s cover stars, Carlsberg. For the brewing giant, the sustainability of their Green Fiber Bottle is important, but so too is its style. There’s no compromise on this. They know that the initial appeal of a beer bottle made from sustainably sourced wood fiber will only appeal beyond the ‘green crowd’ if it looks great, and just does as good, or ideally an even better job as the non-renewable version.

Major companies like Carlsberg beginning to focus on bio-based on a mass commercial scale is a great boost for the industry, and this fourth edition of Bio-Based World Quarterly also features Saudi Aramco, another company not associated with sustainability but now waking up to it.

One of the best parts of my job is attending our live events, and meeting many of you in person. Bio-Based Live! USA was a fantastic two days in San Francisco. These community gatherings are designed to provide inspiration, solutions and connect you with the people you need to grow your business further. And we are delighted to confirm that the European edition will be returning to the Netherlands on May 31st – June 1st 2017 at the Amsterdam Science Park. The event team here have already confirmed speakers from Lanzatech, H&M, Covestro, Ikea, Global Bioenergies and many more. Contact us today if you’d like to be involved.

As we move into 2017, we’d love to hear your thoughts, comments and suggestions on the Quarterly. Send us an email. Give us a Tweet. Or even better use the old-fashioned telephone and give us a call.

Many thanks to all the contributors to this edition, particularly TOTAL, Bio-Pilots UK, IBioIC’s 3rd Annual Conference and ABM Composite, your support is as always greatly appreciated. The next edition will be published on 13th February 2017 so contact us today, if you’d like to feature or advertise.

Enjoy and see you soon.

Luke Upton

Luke Upton
Editor & Co-Founder, Bio-Based World News
Luke@BioBasedWorldNews.com
Joint bio-plastics venture between Total and Corbion formed; operations launch Q1 2017

A big announcement today that energy firm Total and bio-based leaders Corbion are joining forces to develop bioplastics by creating a 50/50 joint venture to produce and market polyactic (PLA) polymers. The two partners plan to build a PLA polymerization plant with a capacity of 75,000 tons per year at Corbion’s site in Thailand that already has a lactide (PLA monomer) production unit that will become part of the joint venture. Corbion will supply the lactic acid necessary for the production of the PLA and the lactide. The new company will be based in the Netherlands and launches operations in the 1st quarter of 2017, subject to regulatory approvals…

Who has won the 2016 Bio-Based Americas Innovation Awards?

The votes have all been counted and the winners of the inaugural Bio-Based Innovation Awards Americas edition have been announced. After a two month search for the most innovative bio-based chemicals and bio-based products organised by Bio-Based World News we finally have our winners, both of whom received their awards at this week’s Bio-Based Live! event in San Francisco.

Chair of the judges, Luke Upton, Editor of Bio-Based World News on the winners; “It’s been fantastic to see such a variety of entries, and the judges had a really tough time choosing our winners, with only a few points between places.”

Walmart prioritises packaging in their latest sustainability pledge

Ten years ago, Walmart devised a zero waste target across all their operations in the hope that they would eliminate waste, improve packaging and promote recycling. So far, more than 81% of the materials which are distributed in US stores are diverted from landfill sites. Walmart have had even better success in Japanese and UK stores where this figure stands at 90%. These statistics show the company’s dedication towards reducing their environmental harm; as one of the biggest multinational corporations generating the largest revenue in the world this is particularly important. There are 11,573 Walmart stores worldwide so their corporate responsibility is an important part to such a large scale operation…
Bonaveri BNATURAL mannequins inspire the fashion industry

Since 1950, the Italian company have designed mannequins for the fashion industry and are now looking to penetrate new sustainable markets with their BNATURAL mannequin. As it stands, the company already produce up to 20,000 figures per year but have now shifting their efforts away from the mass commercialisation of unsustainable mannequins and into bio-based products. With the slogan: “Fashions will come and go but nature will always remain the same”, the eco-friendly mannequins hope to change the way that the fashion industry embraces sustainable fashion. The team at Bonaveri explain that quality has always been at the crux of their work, but “there can be no quality without responsibility.”

Novamont opens world’s first plant for the production of bio-based butanediol on industrial scale

Until now only obtained industrially using fossil sources, Butanediol (BDO) has a vast range of applications from elastic textile fibres to plastic components for the automotive, cell phone and computer industries, and from engineering thermoplastics, paints and coatings to fully compostable plastics for food packaging, tableware, coffee cups/pods and the collection of organic waste. It is estimated that the BDO market, now worth approximately €3.5 billion per year with a volume of 1.5 million tonnes, will grow to more than €6.5 billion and 2.7 million tonnes by 2020…

Would you feel safer wearing a cycle helmet made from paper?

There are more than a billion bicycles used on roads worldwide. Over the past few years the popularity of cycling has soared, now becoming a faster and cheaper way to get around busy commuter cities. According to the UK’s Department for Transport, there were more than 3,200 serious injuries to cyclists on the roads in 2015, but helmets are said to reduce any risk of fatality by 85%. However, a new start-up for alternative recyclable helmets EcoHelmet, reports that nearly 90% of bike users choose not to wear one. For many people, the traditional polystyrene bike helmets are heavy, awkward and bad for storage. The New York designer Isis Shiffer, an enthusiast for design and cycling developed EcoHelmet so that more bicycle users could feel confident to travel safely in cities.
CARLSBERG’S NEW BIO-BASED BEER BOTTLES TO ‘STEP UP’ TO SUSTAINABILITY TARGETS

HOW MANY BOTTLES OF BEER DO YOU THINK CARLSBERG SOLD LAST YEAR?

HAVE A GUESS.

IT’S PROBABLY MORE THAN YOU THINK.

In 2015, Carlsberg sold a whopping 36 billion bottles, that’s more than 120 million hectolitres of beer. As the figures show, this is an incredible amount of beer being produced and therefore a lot glass bottles going to waste. The iconic Carlsberg packaging accounts for 45% of their CO2 emissions and can have a negative brand effect if then disposed of in an irresponsible way. Carlsberg are conscious about how they need to focus their efforts on their sustainable growth and are now looking to bio-based solutions.

At the Sustainable Brands conference held in Copenhagen last month, Carlsberg announced that they will be making a change to the production processes for their beer bottles. The new bottles will be made from a bio-based green fiber material. The Danish brewing giant will begin working in participation with fellow Danish EcoXpac (@ecoXpac) to create the bottles from wood fibers. With a business spanning over two decades, their focus has been to produce molded pulp solutions for packaging. These bottles are thicker but lighter than plastic alternatives. They can be manufactured into any design and size. Current technology means that each bottle can be scanned to create an exact replicated fiber copy. In addition, the trees that will be used are to be replanted at the same rate that they are harvested.

“We are thrilled to cooperate with Carlsberg on developing a bottle that will be both truly sustainable and appealing to consumers. The coming three years will be both challenging and exciting, and we can’t wait to put the bottle on the market.”

Martin Pederson, CEO of EcoXpac.

The materials will be 100% bio-degradable to prevent toxic by-products being released into the environment. “The bottle has been created with input from some of the leading packaging specialists in the world, who are very excited to participate in the project. Though we still have technical challenges to overcome, we’re on track on the project,” says Håkon Langen, Packaging Innovation Director. As covered by Bio-Based World News, the move towards sustainable packaging is not a new idea with brands like Tetra Pak who now use bio-based plastic to make their bottles. However, this is certainly new for the beer brewing industry. Competitors like Corona, Becks and Heineken have only just started taking sustainability into account by implementing energy or water efficiency measures but none quite as radical as Carlsberg’s green fiber bottles. However, for Carlsberg (@CarlsbergGroup) they are focused by their three main objectives which is to minimise waste, optimise reuse and recycling.

As we know, Carlsberg’s packaging and design is crucial for their brand image, so it is now their job to market a product which will combine design and consumer appeal in one bottle that will also be saving the environment. Not only will the product itself be environmentally sustainable but it will also require less energy to make them. With the new fiber drying technology, it will reduce the usage of fossil fuels in the production process.

Carlsberg’s Sustainability Director, Simon Hoffmeyer Boas (@Simonhboas) says: “The new bottle is a great milestone in the project, as having a physical prototype makes it easier for us to explain the new packaging format to consumers and colleagues. I think the new bottle looks great and shows how we can use innovation and design to help shape products for a better tomorrow.”

Boas has worked behind Carlsberg’s CSR initiative for the past eight years and plans to execute sustainable business development projects. The company have ‘stepped up’ by creating the ‘Carlsberg Circular Community’ to rethink design, production and packaging for the brand. Boas makes the claim that “To [Carlsberg], sustainability or CSR is business, it’s not something that’s detached.”

This project will be supported by the Innovation Fund Denmark and the Technical University of Denmark. Whilst it is expected that Carlsberg will face some technical difficulties, the brewing giant believe that they will be able to launch this product to market in the next three years. A pilot market test in set to be launched in 2018. Whilst the green fiber bottle is ambitious, it is something that Carlsberg are confident they can deliver and sell to the global consumer by 2019.
The Green Fiber Bottle Project
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AS GOOD AS GREEN
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ZERO WASTE
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“THE NEW BOTTLE IS A GREAT MILESTONE IN THE PROJECT, AS HAVING A PHYSICAL PROTOTYPE MAKES IT EASIER FOR US TO EXPLAIN THE NEW PACKAGING FORMAT TO CONSUMERS AND COLLEAGUES. I THINK THE NEW BOTTLE LOOKS GREAT AND SHOWS HOW WE CAN USE INNOVATION AND DESIGN TO HELP SHAPE PRODUCTS FOR A BETTER TOMORROW.”
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COMPOSITES INSPIRED BY NATURE
BIG OIL MEETS BIO-BASED AS SAUDI ARAMCO BUYS A $100M SUSTAINABLE POLYOL TECHNOLOGY

"...CLEANER, HIGH-VALUE END-PRODUCTS WITH SIGNIFICANT PERFORMANCE, COST AND CARBON FOOTPRINT IMPROVEMENTS."

Saudi Aramco or to give them their full name, the Saudi Arabian Oil Company, might seem an unlikely company to feature on our pages. Thought by many to be the world’s most valuable company, it has both the world’s largest proven crude oil reserves, at more than 260 billion barrels and largest daily oil production across their many huge facilities. But for even companies with fortunes built on hydrocarbons and fossil fuels, the potential of sustainable alternatives is becoming clear. And this month, we’ve received very big news, that Saudi Aramco have acquired the Converge product line and associated operations and technologies from U.S.-based Novomer Inc. in a deal valued up to $100 Million US dollars.

Converge is manufactured from and contains a significant portion of Carbon Dioxide (CO2). The technology provides a high-performance, cost competitive and more sustainable alternative to conventional petroleum-based polyols that are used in Coating, Adhesive, Sealant, and Elastomer (CASE) applications which feature in high-value, high-demand end-products, including within the flexible and rigid foam manufacturing segments. Applications cover a broad spectrum from automobile seats to building insulation panels.

Amin H. Nasser, Saudi Aramco (@Saudi_Aramco) President & CEO said: “Some of Saudi Aramco’s most significant achievements in recent years have been in developing new international partnerships in the downstream space. There is compelling industrial logic to the Converge polyol technology deal as it enables the conversion of waste CO2 into cleaner, high-value end-products with significant performance, cost and carbon footprint improvements. The deal also enables the development of new technological growth areas in line with Saudi Vision 2030 objectives of economic diversification and job creation.”

Jim Mahoney, Novomer President, said: “The entire Novomer team is truly excited by this acquisition. Soon after we commercialized the Converge polyol technology we entered into a strategic relationship with Saudi Aramco and for the past two and one-half years have worked together to expand the commercial potential of this exciting technology. This acquisition is the culmination of that significant team effort. I commend Aramco on its strategic vision and commitment to innovation.” Mahoney also added: “Novomer will use the proceeds from this acquisition to fully commercialize its COEthTM (EO/CO) process to make low cost, sustainable C-3 and C-4 products, including glacial acrylic acid, butanediol, polypropiolactone and succinic acid.”

Abdulaziz Al-Judaimi, the Acting Senior Vice President of Downstream, Saudi Aramco added: “The acquisition of the Converge technology reflects the success of Saudi Aramco’s efforts to continuously seek the best possible opportunity for the commercialization of specific downstream technologies on a large-scale. This technology represents an excellent marriage of improved product quality and lower cost while achieving environmental benefits.” Judaimi concluded: “By providing access to reliable feedstock supplies, financial stability and unrivalled R&D investment and focus, Saudi Aramco will accelerate the commercialization of these exciting new polyol materials. This will help spur growth in the production of more sustainable finished and semi-finished products in the petrochemicals conversion sector, including within the small and medium enterprise sector in Saudi Arabia.”

Compared to conventional polyols, Converge polyols have approximately one-third the carbon footprint. When incorporated into polyurethane formulations, they demonstrate superior material performance including: increased strength; increased abrasion, chemical and weather resistance; increased adhesion, hardness and tear-strength; greater load bearing capacity; and reduced heat of combustion.

Saudi Aramco will manufacture and market Converge and associated products through its subsidiary, Aramco Performance Materials LLC (APM). Saudi Aramco is planning for full-scale production facilities in Saudi Arabia to support the manufacture of specialty and intermediate chemical products to supply a wide variety of industries.
HIGHLIGHTS INCLUDE

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Dr Andreas Worberg, Senior Sales Manager, ThyssenKrupp Industrial Solutions

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inland is famous for its forests and thriving wood-based industries. Finland is Europe’s most heavily forested country with 86% of its land area – 23 million hectares – under forest cover. In fact, Finland’s historical development into one of the world’s most prosperous countries is to a great degree based on our ability to utilize this renewable natural resource, our green gold. Today Finland’s innovative and dynamic forest industry cluster consists of more than 50 pulp and paper mills and over 240 other production sites for wood products. The biggest Finnish forest industry companies are global players and lead the development and production of new, higher value added bio-based products.

Today in a guest post from foreign direct investment and trade promotion agency Finpro we focus on the wide variety of new bio-economy business opportunities that exist in the country. These myriad developments are based on smart exploitation of biomasses and high added value products and services. Growth is supported by the nation’s favourable operating environment and policy actions. It is estimated that up till 2025, the Finnish bio-economy could experience an annual growth rate of some 4%. This equals an increase from the present EUR 60 billion to EUR 100 billion.

Bio-chemicals: The cornerstone is to secure the competitiveness of the existing industries and to provide them with a favourable setting in which to operate and grow. More than one out of three chemical industry companies operating in Finland are already using bio-based raw materials, and studies indicate an increase in this figure. The major chemical producers such as Arizona Chemical, CP Kelco, Forchem, Neste Oil (left) Kemira and ST1 focus strongly on bio-based raw materials and processes.

The chemical industry plays a key role for many of the new bio-economy value networks, as it manufactures intermediate products and chemicals for further use. The chemical industry has the required expertise and infrastructures, and it is already operating in a similar market. R&D in biochemical area is on globally high level in Finland. Manufacturing processes for platform chemicals and bio-based drop-in chemicals have been developed in laboratory scale and are available for upscaling when industrial interest appears.

Biofuels: Biofuel technology and production is the other strong area and it is growing rapidly. Particularly the use of wood-based transport biofuels has been raising its profile in Finland. While the major forest and energy companies such as UPM, Neste Oil and St1 are leading the development, medium-sized and startup companies operate as specialists in the biogas and liquid biofuel ecosystems. The estimated annual revenue for biofuels in Finland currently stands at 5 billion EUR.

New biomaterials for construction industries, health sector, consumer goods etc.: The industrial exploitation of wood-based biomass is significantly diversified. In addition to traditional forest products, wood is used in innovative high added value fiber products and various new products made from wood ingredients. The new product areas are to some extent based on forest industry, while the current boundaries between sectors are disappearing, enabling the creation of new value networks. Various combinations of process chemistry and bio and nano technologies
give rise to completely new production technologies and biomaterials. New start up companies like Paptic – manufacturer of fibre based substitutes for plastic bags (pictured above right), Spinnova – manufacturer of textile yarns directly from wood pulp, Metgen – manufacturer of tailored industrial enzymes, Betulium – developer of manufacturing process for fibrillated cellulose from agricultural raw material sources, Lumir – producer of natural fiber based blowable acoustic insulation and Swanheart design etc. develop and commercialize new technologies and products based on Finnish innovations.

Research & Development & Innovation: In the future, Finland continues to invest heavily in bio-economy research and development. E.g. VTT Technical Research Centre of Finland facility called Bioruukki supports bio-economy and cleantech research and aims to accelerate the commercialization of bio-economy innovations in the areas of bioenergy, bio-chemicals, fractioning of biomass and recycling. Bioruukki infrastructures are developed together with Aalto Bio-economy, which contains the selected research infrastructures for development of chemicals, fuels, fibre products and materials from renewable biomass. A special feature in the development work is combination of globally top level appreciated design expertise of Aalto ARTS School of arts design to VTT’s material development skills - this combination further strengthens Finland’s top level position in future development of innovative bio-based materials and products.

FINPRO: Finpro helps Finnish SMEs go international, encourages foreign direct investment in Finland and promotes travel to Finland. Finpro’s almost 300 professionals work in 36 Trade Centers in 31 countries and 6 offices in Finland. Finpro (Finpro) manages almost 40 significant Growth Programs. Through the Growth Programs, Finpro helps hundreds of Finnish companies enter the international market and attracts investments from around the world to Finland. Innovative bioproducts is one of the newest programs, it focuses on helping the companies in the field of bio-economy, especially in the field of bio-products to grow internationally. Contact the growth program team to guide you further - Program manager: Pia Qvintus pia.qvintus@finpro.fi, +358505634129 and Program coordinator: Kukka-Maaria Hietamies, kukka-maaria.hietamies@finpo.fi, +35850 407 3048.

“WHILE THE MAJOR FOREST AND ENERGY COMPANIES SUCH AS UPM, NESTE OIL AND ST1 ARE LEADING THE DEVELOPMENT, MEDIUM-SIZED AND STARTUP COMPANIES OPERATE AS SPECIALISTS IN THE BIOGAS AND LIQUID BIOFUEL ECOSYSTEMS. THE ESTIMATED ANNUAL REVENUE FOR BIOFUELS IN FINLAND CURRENTLY STANDS AT 5 BILLION EUR.”
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De-risking the commercialisation of bio-based products and processes is one of the biggest challenges the industry faces. Navigating the so-called “valley of death” by demonstrating the innovation can be developed at a commercially-relevant scale is essential to achieve success. Now five established R&D centres across the UK have this week announced a new alliance, BioPilotsUK to further position the country as a global leader in bio-refining technology development and bio-based product manufacture – two key elements of the bio-economy.

The founding centres are from across the breadth of the UK - BEACON in Wales, the Biorenewables Development Centre (BDC) in York, the Centre for Process Innovation (CPI) in Redcar, Scotland’s IBioIC and The Biorefinery Centre in Norwich. Together they will not only work on the processes but also help clients invest in the right technologies to grow their businesses.

The announcement was made at this week’s European Forum in Industrial Biotechnology and the Bioeconomy (EFIB) 2016 (@EFIBconference) in Glasgow. In an event where discussion of the UK’s impending departure from the European Union was never far away and the announcement of the first stages of a potential second referendum on Scottish independence was met with disappointment by most, collaboration like this can only be a positive for a UK cloaked in uncertainty.

“What we are all about is supporting the transition away from fossil resources by making the best use of bio-renewable materials and unavoidable wastes,” expands Adam Charlton, BEACON (@beaconwales) Project Manager, BioComposites Centre, Bangor University. "As an alliance, we can significantly de-risk the innovation process for anyone exploring a bio-based idea."

By working collaboratively, the alliance seeks to significantly speed up the commercialisation of new green processes and products from biomass, including: plants, algae, and wastes.

“Together we offer the skills, facilities and industry experience to help our partners tackle all manner of bio-based projects such as turning food by-products into pharmaceuticals, improving anaerobic digestion processes or developing batteries from biomass,” notes Joe Ross, Director, BDC (@BDC_org)

Due to the varied nature of these raw materials, or feedstocks, there is no one size fits all approach to bio-refining, rather a series of technologies that must be trialled and combined. Now, the new alliance can quickly assemble the right team for any given bio-based project using expertise and facilities from across the five centres.

“The five founding open-access centres have developed a wealth of experience in blending the right processes and technologies to translate bio-based innovations into commercial opportunities for our clients and partners. We want this alliance to make that an even more effective experience and in particular to accelerate the creation and growth of more SMEs in this sector” explains, Frank Millar, Director of Operations at CPI (@ukCPI)

“The UK has huge potential for developing its bio-based and industrial biotechnology (IB) sectors. The breadth and depth of experience, knowledge and equipment of the alliance, will help companies across Scotland, England and Wales to harness these opportunities faster and more cost effectively,” says Roger Kilburn, CEO, IBioIC (@IBioIC).

The bio-economy offers a multi-billion-pound, global business opportunity: it is worth around €2 trillion in Europe alone and is growing rapidly worldwide. Offering the potential to deliver greater business value through social, environmental and financial benefits, a 2015 report states that it is estimated that the UK bio-economy is already worth £133 billion in gross value-added (GVA) terms, generating over 4M jobs

“BioPilotsUK will enable Britain to realise the potential to tap both bio-resources and biotechnology to create novel industrial products and processes necessary for an economically and environmentally sustainable nation,” concludes Keith Waldron, Director, the Biorefinery Centre (@NRPBiorefinery)

For more on BioPilotsUK click here.
It is often the case that Bio-Based World News reports newly launched partnerships, but today we focus on one between DuPont and Tate & Lyle that is celebrating its tenth birthday. DuPont is a long established chemical company, whilst Tate & Lyle specialises in ingredients and solutions for the food and beverage industries; perhaps most famous for their Fairtrade sugar. It was ten years ago this month that DuPont Tate & Lyle Bio Products announced the first commercial shipments of a breakthrough biomaterial, bio-based 1,3-propanediol. Four years later it announced an expansion increasing capacity by 35 percent at its facility in Loudon, Tennessee (pictured right). Today with thousands of customers around the globe and products in most major consumer and industrial market segments, DuPont Tate & Lyle celebrates a decade of offering higher-performing ingredients from a petroleum-free, sustainable and renewable source.

“This joint venture started as a revolutionary innovation project that applied the tools of modern biotechnology to make high-performance biomaterials in a much more sustainable way than traditional petro-chemistry,” stated Michael Saltzberg, global business director of biomaterials for DuPont. “Its track record of success has inspired the academic and industrial science community around the world to invest in industrial biotech and is a case study of how to successfully innovate in this space.”

Twenty years ago DuPont became one of the first companies to lead with their environmental incentives. Sustainability is a crucial factor for the company with their ambitions to build a secure energy source for the future in global markets. Tate & Lyle is a British brand, who were originally a sugar refining business but in the 1970s they began to diversify using new technology to convert raw materials into new ingredients for the food and beverage industry. They market a Fairtrade certified product in organic and natural sugars and now operate in over 30 countries across the world. Earlier this year it was reported that their sales reached £2.4 billion.

By bringing together the unrivalled track record of DuPont’s research and development with Tate & Lyle’s industry-leading fermentation expertise, scientists and engineers from this joint venture developed a proprietary process that uses plant-based feedstocks to produce bio-based 1,3-propanediol. Today the joint venture provides solutions for a wide variety of markets and applications through its bio-based performance brands Susterra and Zemea propanediol in addition to Bio-PDO, the key ingredient for DuPont Sorona high-performance polymers.

It all started in 2000 when DuPont (@DuPont_News) alongside Genencir developed a patent process to create 1-3 propanediol using plant-derived starch instead of petroleum. Then in 2004, it was announced that DuPont and Tate & Lyle (@TateLyleSugars) would be entering a joint venture which would see the investment of $100 million to commercialise a new high-performance, renewably sourced biomaterial as an alternative to petroleum based products. The joint venture now serves thousands of customers around the world with products in most prominent consumer and industrial markets.

“Our partnership with DuPont is a great example of bringing the best of two organizations together to create a first to market product and process that continues to demonstrate versatility and functionality in the global marketplace,” said Greg Wenndt, vice president and general manager, industrial starch and bioventures, Tate & Lyle. “We are proud of the success we’ve built together and share our congratulations with our DuPont partners and the DuPont Tate & Lyle teams around the world for achieving a decade of great work and continued innovation.”

Since 2006, DuPont Tate & Lyle offer high performing ingredients from a petroleum free, sustainable and renewable source. Whereas most everyday consumer and industrial products are still made using non-renewable resources, such as petrochemicals. But the overuse of these finite resources is highly unsustainable. This has inspired the joint venture to produce two main chemicals.

Susterra propanediol is a pure, bio-based, petroleum-free diol. It is an effective polyol or chain extender that gives manufacturers flexibility when developing high-performing, bio-based solutions. The substance can be detected in polyurethanes, engine coolants, de-icing fluids as well as solar and geothermal systems. Secondly, Zemea propanediol is the multifunctional, preservative-boosting humectant and ingredient that delivers a high performance for a variety of consumer applications, from cosmetics and personal care to food, pharmaceuticals, laundry and household cleaning.
VIEW FROM THE USA: IT’S A WHOLE NEW WORLD

In 2016, the US presidential elections followed the UK’s Brexit lead, delivering stunning results as anti-establishment voters upended traditional candidates and platforms throughout the campaign process. In the weeks since president-elect Trump earned a narrow victory, the US has seen thousands take to the streets in protest and great consternation among media and pundits attempting to predict the outlines of a Trump presidency. For large, entrenched Washington interest groups, especially those serving broad stakeholder groups, this is an uncertain time as power is shifting in a big way and traditional alliances are by no means guaranteed. Michele Jalbert, Chief Operating Officer, and Corinne Young, Chief Advocate, of the Renewable Chemicals & Advanced Materials Alliance (re:chem) offer us some guidance in these changing times.

That said, those of who have worked on Capitol Hill, with the White House and across the enormous expanse of the US federal government know that drastic change will come far more slowly than anti-establishment enthusiasts might hope. In every transition after a US presidential election, there is some degree of turbulence – this one is certainly garnering more headlines than most. However, barring a rebellion in the follow-on US Electoral College process, or any real traction in the effort to recount votes in key states, things should begin to settle in coming weeks as key policy officials are appointed and agendas begin to emerge. With the election of a Republican president, backed by Republican majorities in the Congress, it will come as no surprise to observers of US politics that business and economic growth will likely drive legislative, regulatory and administrative actions.

As all this is sorted out, those which are most nimble will be most effective in getting things done. At the Renewable Chemical & Materials Alliance (re:chem), we are particularly well-positioned to leverage opportunities in the midst of change. We have a discrete policy agenda, laser-focused on the renewable chemical sector, unencumbered by other priorities which could complicate the policy asks. Since our launch in 2013, in every policy discussion, re:chem has focused relentlessly on the economic argument that underpins the renewable chemical sector. From our vantage point, it is – and has always been – about innovation, performance and the chance to grow advanced manufacturing in the US. We see clear opportunities for the renewable chemical policy agenda can align with the likely priorities of the new Congress that has given early signals they will tackle tax reform, infrastructure and jobs.

Among other things, we believe the time is ripe to move a top sector priority - enacting a renewable chemical production tax credit (PTC). Tax reform has been called out as an early priority in the new Administration and Congress. We also see openings to pivot around US jobs and pro-growth incentives in potential infrastructure and energy bills. At the same time, the Republican control across the policy-making functions in Washington is likely to have a strong de-regulatory bent, targeting a number of agencies which have helped facilitate the growth of the bio-based economy in the US, such as the Environmental Protection Agency and the Department of Energy. Trump’s campaign rhetoric rejecting the notion of combating climate change has alarmed many seeking to develop alternatives to incumbent petroleum-based products.

As the transition gets underway in earnest, the Republican House Majority has indicated they will table any further action on spending bills, opting instead for a continuing resolution that will fund the government through March 31, 2017. This allows for the seating of a new Congress and the Trump Administration to exercise influence over spending as early as 2017 budgets. Now is the time to shore up support. We can’t disengage or wait to see what happens. Despite the turmoil surrounding this – or any – transition, the US government remains open for business. Those who have business interests in the US would be well-advised to engage – and engage early – as the outlines of a new Trump Administration begin to take shape. While there are opportunities, there are also risks. Consider this a call to action – it’s a new world in Washington DC and across the pond. It is no time to sit on the sidelines.

About the Authors: Michele Jalbert is Founder of the Effective Advocates Collaborative based in Washington, DC and Corinne Young is CEO of Corinne Young LLC, headquartered in Duxbury, MA.
When it comes to the textiles industry, the manufacturing aspect is usually kept hidden from consumers. Many of its processes and practices have changed little, particularly when it comes to sustainability. A quick look into the footprint of the fashion industry and some startling facts begin to appear. Did you know it can take 2,700 litres of water to make just one shirt and three quarters of all garments will end up either sent to landfill sites or being incinerated?

In response to some of these challenges, Sophie Mather, Material Futurist at Biov8tion set up her company in 2010 and has since worked independently on finding sustainable solutions, many of which have been focussed on synthetics like polyester and nylon. Her career has expanded to Hong Kong where sustainable manufacturing and disposal is still a huge problem with a staggering 1,400 t-shirts being disposed of every minute.

Sophie’s role allows her to work collaboratively with key industry sectors and figureheads to connect the people essential to drive projects forward. Biov8tion mediates with many areas of the industry from suppliers to non-governmental organisations, brands and academia. Sophie explains to Bio-Based World News’ Emily O’Dowd why sustainability is so important in the textile industry and what can be done to improve consumer awareness.

Emily O’Dowd (EOD): Thanks for the time today, so what has led you to this role?

Sophie Mather (SM): No problem Emily. I’ve been in the industry for over 20 years with a background in both design and the technical side of textiles. Early on in my career I moved to Hong Kong where I started to realise that there was a huge issue around textile manufacturing and sustainability. I became acutely aware of this as a runner, when I got to a stage where I had to stop running outside because the industry pollution was getting worse and worse. I’ve seen the first-hand the effects of our industry and it’s this which makes me really fired up and continue what I’m doing.

At the time I was working for Nike so it made me think if I couldn’t make a change there then there was no hope. This led me to start my sustainable journey at Nike when at the time I was leading the Innovation for Nike Asia. It was in this role that

“SOME PEOPLE SAY THAT SOME CHALLENGES ARE TOO HARD, ESPECIALLY A LOT OF THE EMERGING SUSTAINABILITY BASED ISSUES, BUT FOR ME, I SEE THESE CHALLENGES AS INNOVATION OPPORTUNITIES. IT MAY BE THAT I NEED TO LOOK OUTSIDE OF THE TRADITIONAL TEXTILE INDUSTRY TO FIND THE ANSWERS THAT WE NEED.”
I started to understand the importance of bio-based resources because the industry is still heavily petroleum based. It has made me look at bio-based polymers not just from a renewable perspective but also at their performance, because I want to make sustainability at the heart of what I am doing. And this is why I started Biov8tion ( @Biov8tion ). The company allows me to work alongside the supply chain so I can find the right partners to work with. For example, I might need a machine supplier, a designer, or someone in the academic field and now I have a lot of strong relationships with these groups. Now my work at Biov8tion means that I am the concrete between them.

**EOD:** What do you enjoy most about your role?

**SM:** This one is really easy for me to answer because I really love the challenges especially in innovation. It is important to identify the main issues and then change your perspective to look at the opportunities that come out of the challenges. If you limit yourself by working in only one area of the sustainable industry then you might miss other opportunities that come up. This is the way that my life and work tend to go. I really enjoy it when I have solved a problem and then another challenge crops up. For me, it means that I can look at the industry in a different way and start to get results.

**EOD:** What is the biggest challenge that you have faced in the industry?

**SM:** When we talk about innovation today it has become a buzz word to replace what it really means. Starting out on my sustainable journey there was a huge amount of resistance to sustainable practices from a range of supply chain and industry partners. This is because either things might be too expensive and difficult or because there was no guaranteed result. People prefer to avoid risk. However, I quickly managed to change these opinions by making people see the opportunities in the sustainable industry. I was always being told – “it’s easier for us to remain as we are today” or “we don’t quite know what it is going to mean for us.” It was important for me to try and change that mind-set and get people excited about this new innovation journey.

**EOD:** What advice would you give for someone starting work in the sustainable/bio-based industry?

**SM:** I would say don’t give up. I know it’s a difficult industry to enter so businesses should follow their ideas through without worrying that they might be wrong. I’ve been in sustainability and innovation for a long time and if I had not gone down a lot of the routes that I took because they were too risky, then I wouldn’t be where I am today. Throughout my career wrong courses have sometimes been taken but each time the industry has learnt from these and moved on. So yes, my message is – don’t give up!

**EOD:** What single change would help develop the bio-based/ sustainable industry further?

**SM:** At the moment, I think that as an industry we are burying our heads in the ground by not engaging enough with the consumer. We are not giving them all the information that they need to be able to make informed decisions. I think the textile industry should take a multi-faceted approach and the food industry as a good example of this. Whilst there is still more to be done, we are so much further behind in clothing.

Maybe one part of the solution could be to work with younger consumers? I set up a competition with school-aged children to make them think about clothing. It was really interesting to get their ideas about it. Or there could be more consumer transparency about where the products come from with marketing campaigns. There are all sorts of different ways that this can be achieved and it has to be done.

**EOD:** Where would you like to see your company in 5 years’ time?

**SM:** My aim for Biov8tion is to work on the intersection between the academic sector and global mega trends in the industry. These partnership can achieve collaborative results in bringing bio-based textiles and other sustainable innovation to the industry. As it stands, the textile industry operates an archaic process which has been used for over a century now. I want Biov8tion to be at the centre of making this change.

**EOD:** What is your favourite bio-based/sustainable product aside from your own product range?

**SM:** Although not in the fibres I work with normally, I recently bought an organic mattress called Snowdonia which is handmade and sourced in the UK. It is made from natural and organic bio-based fibres. I think it is important to bring sustainability as close to you as possible.

**EOD:** Thank you for your time today Sophie and sharing your experiences about the textile industry with. Sophie also co-wrote an article for Bio-Based World News which can be read here.

"MY AIM FOR BIOV8TION IS TO WORK ON THE INTERSECTION BETWEEN THE ACADEMIC SECTOR AND GLOBAL MEGA TRENDS IN THE INDUSTRY. THESE PARTNERSHIP CAN ACHIEVE COLLABORATIVE RESULTS IN BRINGING BIO-BASED TEXTILES AND OTHER SUSTAINABLE INNOVATION TO THE INDUSTRY."