

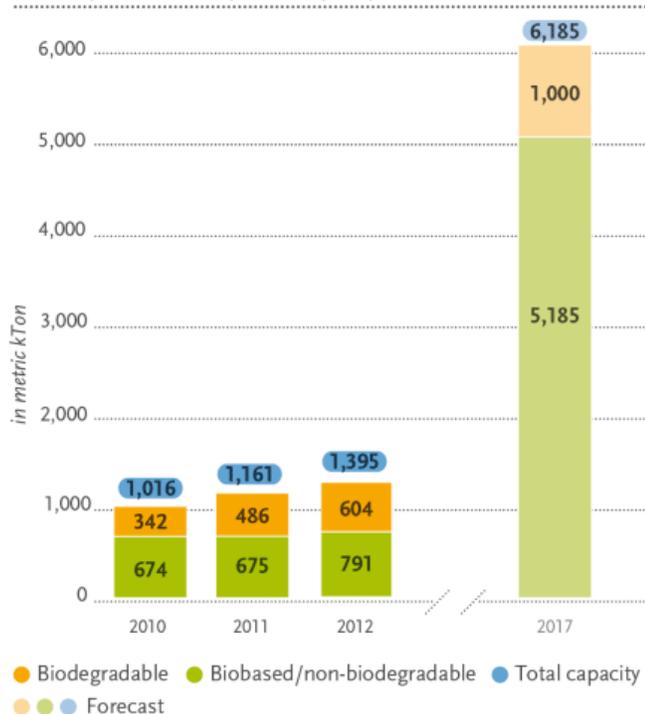
Bioplastics Alliance Looks to Guide Supply Chain

Source: European Plastics News

Posted: June 11, 2014

The Bioplastics Feedstock Alliance (BFA) consists of a powerful group of brand owners who are assessing criteria for sustainable biomass production. As global demand for bio-based and biodegradable plastics is set to rise yearly by 19%, according to US research group Freedonia, more and more companies will be looking for sustainable, environmentally-low-impact bioplastic feedstock solutions. Biomass in bioplastic has two clear advantages, says the European Bioplastics Association – renewability and availability. The organisation states that in 2012 the capacity for bioplastics was 1.4 million tonnes but it estimates that this will grow to reach 6 million tonnes by 2017.

Global production capacities of bioplastics



Source: European Bioplastics | Institute for Bioplastics and Biocomposites (December 2013)

In November 2013, the Bioplastics Feedstock Alliance (BFA) was formed by some of the world’s major consumer brands as a pre-competitive, multi-stakeholder forum focused on increasing awareness around the environmental and social performance of potential feedstock sources for bio-based plastics.

The BFA consists of eight founding companies: The Coca-Cola Company, Danone, Ford, HJ Heinz Company, Nestlé, Nike, Procter & Gamble, Unilever and World Wildlife Fund (WWF). Erin Simon, manager of packaging and material science for the WWF, said of the alliance: “The WWF supports the responsible management of natural resources while meeting the increasing demands of a growing population.

“As a part of this commitment, WWF has helped convene the Bioplastic Feedstock Alliance in order to enable progress toward realising its important objectives to protect the future of nature.”

Coca-Cola backed this sentiment, with a representative telling EPN: “Consumers across the world increasingly are looking for more sustainable products, including those made from plant-based plastics. With increasing rising market demand for food and fibre in the coming decades, responsible sourcing of these materials is the key to enabling sustainable growth.

The majority of bioplastics are currently derived from plants, such as corn, wheat and soy. The emergence of bio-fuel and a debate over land use has also highlighted worries over the potential for land competition between bioplastic feedstocks and crops. “Only around 0.01% of the global agricultural area are used to grow feedstock for bioplastics. In contrast 97% are used as pastures to grow food and feed,” said Kristy-Barbara Lange, the head of communication for European Bioplastics Association. Looking to the future the BFA is aware of the problem and the WWF says bioplastics on their own will not create the competition, but a move from non-renewable resources, especially for fuel, paired with the need to feed a growing population will do so. It states sustainability of resources is key.

The BFA says it is planning to monitor bioplastic feedstocks and therefore help to create strong, transparent supply chains. “Currently, BFA members are looking at commonly accepted criteria for sustainable biomass production systems in order to understand how to identify and mitigate specific risks for particular feedstocks. Risks will vary depending on the feedstock and the region of the world and production management systems in use. By gaining greater visibility into their supply chains and identifying risks, BFA members can better address those opportunities for improvement,” claimed WWF’s Simon.

BFA can potentially achieve, as long as it avoids becoming just a “talking shop”. He sees the alliance eventually putting a stamp of approval on the supply chain, offering “...bioplastics producers a coherent supply chain with a direction on what the key brand owners are looking for, not only technically but logistically”.

DuPont Expecting Escalation in Bioplastics

Source: Plastics News

Posted: June 18, 2014

As bio-based plastics become increasingly competitive — global demand is set to grow 19 percent annually according to one study — DuPont Co. is working to build its portfolio of bio-based and sustainably sourced polymers. The chemical giant expects about half its product line to be bio-based within 15 years, Rick Bell, development manager of DuPont's performance polymers division, said at the Society of Plastics Engineers' AutoEcon. "We are in the process of converting our polymers from [petrochemical] feedstocks to bio-based feedstocks, and that conversion rate is really dependent on the technology and the ability to do that economically," he said.



DuPont is devoting resources to developing new bio-based polymers as well as new applications for those materials. In 2011, it spent \$6.3 billion to acquire Danisco, a specialty food ingredients company with expertise in enzyme chemistry. "One of the things that Danisco has is a lot of capability to take agriculture-based feedstocks and break that material down through enzyme chemistry, to make new materials that are not based on petrochemical sources," Patrick Lindner, DuPont's president of performance polymers, told Plastics News. Lindner worked on the Danisco acquisition during his time in the company's corporate plans department. The Danisco acquisition has helped DuPont build its capabilities around the biological processes by which bacteria digest sugars or carbon sources and produce useful chemicals, Lindner said.

Expanding this area offers the potential to make lower-cost raw materials and polymers with new properties, he added. For example, DuPont's Sorona EP thermoplastic polymer, which the company says is made from 37 percent renewably sourced materials by weight, has a shiny surface that eliminates the need for a painting process, Lindner said. The Sorona material is also available as a stain-resistant fiber and can be used in apparel and residential and automotive carpeting — in fact it's the fastest-growing fiber for carpeting in the U.S. Sorona is made with sugar extracted from feed corn; where possible, DuPont uses feedstocks that do not compete with food sources, Bell said. The company uses castor beans grown in India as one of the feedstocks for nylons, which can actually be made more cost effectively from renewable sources than from a petrochemical source, Lindner said.

Currently, the cost of bio-based polymers is a key obstacle to the industry's growth, market analyst Robert Eller said. "The purchasing agent is only interested in how many cents per pound can he save, and based on that, he's not going to be interested in natural polymers," he said. "On the other hand, if he is under some pressure, then he will think about it, but he'll still want it at the same price, or even lower."

"One of the key things that we're running into in this industry, is how will customers that are very focused on performance view a product that is equivalent but also is renewably sourced? Will they pay a premium? Will they view it as equivalent and will pay the same, but they like it as a nice add-on? We're seeing examples all across the board," Lindner said.

"Some are willing to pay a premium, and say renewably sourced is very important [and] I'm going to market that. Others are saying, if I have two materials I'm looking at, and they have equivalent performance, one is renewably sourced the other is not, basically the same price, I'll take the renewably sourced." That perception could shift depending on the future of petrochemical sources, Eller said.

"In essence they're creating a new monomer. And maybe one can look down the road and see that the cost of those new monomers will not rise as fast as with the fossil fuels. That's a reasonable argument," he said "We've invested in it, we'll continue to invest in it, because we believe that our customers as they go forward are going to want to know that they're working with partners and working with suppliers that have this capability," he said.

Trellis Earth Acquires Cereplast's Assets

Source: Bioplastics Magazine

Posted: June 23, 2014

Bioplastic food service disposables maker Trellis Earth Products will pay \$2.6 million for substantially all of Cereplast's assets including production equipment, patents, inventory, and trademarks, plus pay certain contract cure costs, as part of Cereplast's Chapter 7 liquidation proceedings. "Our company is now officially a US manufacturing entity!", blogged Trellis Earth founder Bill Collins.

United States Bankruptcy Judge Basil H. Lorch III entered the sale order today for the assets of Cereplast, including its former Seymour bioplastics factory. "We have long wanted to mark our products as 'Made in the U.S.A.'," said Mike Senzaki, Trellis Earth CEO. " This acquisition will fast track our large scale injection molding and thermoforming operations in the United States, as we bring in new finishing equipment to this facility in the weeks and months ahead, and enable to us to quickly become the pre-eminent American supplier of bioplastic food service disposables." Trellis Earth is a 7-year old company with over 500 customers in the food service industry including Kroger, Trader Joe's, and Wegmans. Key products provided include bio-based cutlery, food containers, and shopping bags. "Of our 100+ products, we hope to make at least 50 percent of them in the U.S. within six months and the balance within a year," said Senzaki.



Trellis Earth is a privately held company with nearly \$20 million of sales since its founding in 2007. The company is targeting \$8.5 million in revenue for 2015 based on strong forecast demand from customers seeking its U.S.-made, corn starch based, proprietary bioplastic finished goods. The 105,000 square foot facility acquired from Cereplast has existing annual bioplastic manufacturing capacity to produce materials worth over \$50 million. Bob Crosby, Trellis Earth Vice President of Sales, said, "We have worked diligently over the last three years to build a pipeline of marquee customers seeking our sustainable, cost-neutral alternatives for cutlery and food containers. We hope to make several announcements in the coming weeks and months about key contracts that will drive the growth of our U.S. manufacturing strategy." (KL)

Cardia Bioplastics Debuts New Range of Sustainable Dog-waste Bags

Source: Bioplastics Magazine

Posted: June 5, 2014

Australia-based Cardia Bioplastics Limited launched a new range of Compostable and Biohybrid dog-waste bags at last week's Interzoo 2014 show in Nuremberg, in Germany. Cardia has long supplied dog-waste bags to councils and wholesalers around the world and is now focusing on further extending into the pet retail market.

The number of dog-waste bags used globally runs into the billions annually. Governments and pet owners are looking for a sustainable and renewable alternative to the conventional dog-waste bag and Cardia's Compostable and Biohybrid bags offer a low carbon sustainable solution. The company recognized the immense opportunity for sustainable dog waste bags and presented its new Cardia retail range at Interzoo 2014. Cardia also showcased the capability to make custom pet products from Cardia Compostable and Biohybrid resins.



All Cardia's patented Cardia Compostable resins meet stringent international compostability standards, including Europe's EN 13432, the ASTM D 6400 standard in the USA, Australia's AS 4736 and the Greenpla standard in Japan. The company's Biohybrid resins are designed for sustainability - by using annually renewable resources (starch) blended with polyolefins - and low carbon footprint compared to traditional plastics. These materials can contain up to 50% sustainable material and are recyclable. According to the company, its bioplastic resins have a carbon footprint that is up to 60% lower than that of conventional petroleum based polyethylene. As Cardia Bioplastics

Managing Director Dr. Frank Glatz stated, "With the growing demands for a sustainable pet waste bag with a lower carbon footprint, driven by consumer, brand owners, government and municipalities our Compostable and Biohybrid dog-waste bags are a quality sustainable solution."

Coca-Cola and Danone Invest in Advanced Bioplastics for Drinks Packaging

Source: edie newsroom

Posted: June 17, 2014



Coca-Cola and Danone are among a consortium of companies that are looking to scale up the next generation of bioplastics by investing in a commercial scale facility for the production of PEF (polyethylene furanoate). Technology provider Avantium has secured €36 million in financing for the PEF facility from this consortium, which also includes existing shareholders. This investment will make it possible to validate the commercial production of PEF and finalise the engineering and design of the plant.

PEF is a 100% renewable plant-based polymer that can be used in multiple applications such as bottles, fibres and film. Its barrier properties are considered superior to oil-based PET, enabling lighter, thinner, smaller and stronger bottles with a smaller footprint. An independent life cycle analysis study by the Copernicus Institute at the University of Utrecht has demonstrated that the carbon footprint of PEF is between 50-70% lower than

PET. In addition, PEF's enhanced thermal and mechanical properties could make it an ideal material for the packaging of waters, carbonated beverages and alcoholic beverages. According to Danone, the partnership with Avantium is an important part of the company's roadmap to develop a bottle made with 100% renewable materials.

Scaling up

Frederic Jouin, who heads up Danone's Research Packaging Centre, said: "We are participating in this venture as we believe in the future of bio-based plastics for our packaging, with a potential significant reduction in our carbon footprint and enhanced barrier properties compared to PET. "With this investment, we re-affirm our objective to launch a 100% bio-based bottle, not in direct competition with food, and 100% recyclable, and our wish to accelerate this launch on the market."

Avantium CEO Tom van Aken said that securing the finance deal was a huge step forward, but that there was plenty of work to be done. "In our pilot plant in Geleen (NL), we already produce the real material at 20-tonne scale, but obviously our partners need larger quantities for both technical testing and market tests. We have successfully made PEF bottles with YXY technology that meet their needs on performance and sustainability. Now we need to scale up. "Important is our ultimate goal, the PEF bottle made from responsibly sourced plant-based materials, such as second generation feedstock. With this technology we will realise the packaging of the future."

Avantium says that it has already performed extensive safety testing of PEF to demonstrate that it is safe for food packaging. The company has filed a food-safety application for PEF with the European Food Safety Association and will apply for food safety certification with the FDA in the USA.