SUSTAINABILITY: CORBION PURAC

Dutch biosciences group Corbion Purac has said it wants to "forward-integrate" its position in the bioplastics value chain. It will build on its position as a producer of lactide and start to produce polylactic acid (PLA) too.

Corbion to become a PLA player

Specialist lactic acid, lactic acid derivatives and lactides producer Corbion Purac has announced plans to become a producer of polylactic acid (PLA) too. The Dutch company has said its aim is to bring new biodegradable solutions to the plastics industry and increase the global production capacity of PLA, a biodegradable polyester derived from renewable resources, by around 75,000 tonnes per year.

Global production of bioplastics, those that are biodegradable and made from renewable raw materials, was estimated at 1.4 million tonnes in 2012 but experts such as those who spoke at the fifth International Seminar on Biopolymers and Sustainable Composites in Valencia last year believe this could increase to 6.2 million tonnes by 2017, an increase of almost 350%. PLA is not the only type of bioplastic but it will claim its share of this growth because its characteristics are similar to conventional petrochemical-based plastics and it can be processed using standard equipment that already exists. Nike is one finished product brand that has already said this year that it harbours hope of using bioplastics in footwear.

It may be some time before Corbion is producing materials that might be in demand in



Corbion Purac's lactides factory in Thailand. The company has said it will start producing PLA there if its bioplastics customers show sufficient support.

Corbion

COPYRIGHT

Beaverton, Oregon, not least because it also anticipates demand in application areas such as food packaging or shopping bags, but it has thought carefully before taking this step. Chief executive, Tjerk de Ruiter, said at the time of the announcement: "As part of a strategic review we have confirmed there is an attractive demand outlook for PLA, albeit at a lower growth pace than previously assumed. Given our strong position in lactic acid, our unique high heat technology and the market need for a second PLA producer (in addition to Ingeo producer NatureWorks), we plan to forward-integrate in the bioplastics value chain, from being a lactide provider to a PLA producer."

Customer buy-in

Mr de Ruiter says Corbion's plan is to produce PLA at a new plant in Thailand, investing an estimated €60 million, but he says the company will only start building the new plant when it has commitment from customers to buy at least one-third of the planned 75,000-tonne capacity.

The company's calculations are that worldwide PLA capacity is "almost sold out" and, owing to increasing interest in bioplastics sourced from renewable resources, with its more conservative figures suggesting the PLA market is expected to grow to 600,000 tonnes per year by 2025, additional suppliers are needed. Its market projections are based on independent third-party research, it explains, in combination with its own evaluation of PLA markets and applications.

Natural resources

Corbion says it has been a believer in the PLA market for some time. It made an initial investment in 2010 in a 75,000 tonne-per-year factory to produce lactide, the monomer from which PLA is manufactured, and has made "significant efforts" since then to improve the lactide polymerisation technology. It's a member of Bonsucro, a global non-profit initiative dedicated to reducing the environmental and social impacts of sugar cane production, and the biomass feedstocks it uses to produce its lactides are free from genetically modified organisms. It points out that to make one kilo of its PLA requires 1.6 kilos of carbohydrate biomass, while other types of bioplastics can consume significantly more natural resources to produce the same amount of end-product.

Mr de Ruiter only took up the role of chief executive in 2014 after a long career in biotechnology. His roles included that of chief executive of San Francisco-based industrial biotechnology firm LS9, successfully negotiating its sale to biodiesel company Renewable Energy Group in January 2014. Before LS9, Mr de Ruiter spent 12 years at Danisco where he served as chief executive of its Genencor division, which has pioneered a number of enzyme-based technologies, including some with applications in the textile industry such as the Gentle Power Bleach system, which it developed jointly with Huntsman Textile Effects. Once at the helm of Corbion, he was happy to go ahead with the company's proposed entry into the PLA market.



Corbion chief executive, Tjerk de Ruiter, says demand for PLA is "attractive".

Corbion

Reliable second source

The company says that it took a number of years to come to this conclusion because it wanted to build up its understanding of the plastics market in general and of PLA applications in particular. It feels that it now has the information and knowledge required to make its move. But it says it has also been encouraged to enter this market by its customers. "We have had a lot of contact with existing and potential PLA users," explains François de Bie, who has taken up the role of marketing director for PLA Bioplastics for the company. "Many of these have indicated their interest in a good-quality, reliable second source."

However, it's interesting that Corbion has said it will only begin to make the necessary investment in its production plant in Thailand to begin producing PLA when enough customers do more than make an enquiry about sourcing PLA from the company, but actually make a commitment to buy. Mr de Bie says that, since his company made the announcement, the reaction from customers has been "very positive", and he adds that these buyers "understand our need to de-risk the project".

COPYRIGHT