

## Start of construction of 75,000 tons PLA plant in Thailand

Creating a 50/50 joint venture, Corbion NV, Amsterdam/Netherlands, and Total SA, Paris/France, will invest US\$ 100 million in a new PLA plant in Thailand. The ground breaking ceremony which took place on November 9, 2016 marked the official start of construction of the new PLA bioplastics polymerization plant at the existing Corbion site in Rayong/Thailand. Upon completion in 2018, it will be able to produce the complete Luminy portfolio of PLA neat resins: from standard PLA to innovative, high heat-resistant PLA. The new PLA plant with a capacity of 75,000 tons/year will be constructed using Corbion's and Sulzer's proprietary polymerization technology, and key equipment will be supplied by Sulzer Chemtech Ltd., Winterthur/Switzerland. The new JV company will be based in the Netherlands and will launch operations in the 1<sup>st</sup> quarter of 2017, subject to regulatory approvals. In addition to the construction of this new PLA polymerization plant, Corbion will expand its existing lactide plant in Thailand by

25,000 tons/year. With this expansion, Corbion will be able to serve its current and future lactide customers. In 2010, Corbion opened the world's largest lactic acid plant in Rayong. In 2013, the plant was expanded by 75,000 tons/year lactide capacity. The current lactide expansion will also enable the production of a wider range of lactides than is currently possible.

The targeted start-up date for the PLA polymerization plant and the lactide expansion is in the 2<sup>nd</sup> half of 2018.

PLA is a bio-based, biodegradable polymer obtained by fermenting renewable resources (sugar cane or starch) to produce lactic acid. PLA is mainly used for food packaging, disposable tableware and textiles, as well as in numerous other industries.

PLA is a fast-growing polymer market segment, with an estimated average annual growth rate of 10-15% to 2025, driven by consumers that want to have plastic products that are more sustainable than the oil-based plastics. ■

## BiobasedWorld 2017 Premier trade show for the bio-based industries cancelled

Due to the challenging economic environment, registrations for BiobasedWorld lagged far behind the expected numbers. Therefore, the trade show for the bio-based industries that had been scheduled to take place in February 2017 in Cologne/Germany, has been cancelled. At Achema 2015, Dechema has announced the implementation of this new trade fair as a stand alone event between the triennial Achama show, for the first time in February 2017.

The low oil price, a volatile overall economic environment – the bio-based economy is currently facing some challenges. This has affected registrations to BiobasedWorld, too: 3 months before the scheduled kick-off, the numbers are far below the expectations. The organizer Dechema, Frankfurt/Germany, had to acknowledge that many companies thought the concept was very interesting, but were reluctant to participate in a first-of-its-kind event.

## Novamont Large-scale bio-BDO plant opened

The biotechnology company Novamont SpA, Novara/Italy, has opened its first industrial-scale production facility of 1,4-butanediol (1,4-BDO) directly from sugars and through the use of bacteria at its Mater-Biotech plant in Bottrighe/Italy. 1,4-BDO is a chemical intermediate usually obtained from fossil sources widely used both as a solvent and for the production of plastics, elastic fibers and polyurethanes. Currently with an annual market of 1.5 million tons worth approximately €3.5 billion, it is estimated this market will grow to 2.7 million tons and more than €6.5 billion by 2020.

Using technology developed by Genomatica, San Diego, CA/USA, a leader in the field of bioengineering, Novamont has developed a biotechnological platform which takes sugars and transforms them into bio-BDO through the action of suitably engineered e.coli-type bacteria.

Novamont's plant will produce 30,000 tons/year of renewable BDO, 70% more than the original target of 18,000 tons. The plant's capacity was expanded due to higher anticipated demand for renewables, continually-improving process performance, and competitive economics. The plant is up and running now and is expected to reach full production rate in 2017. Novamont invested € 100 million to build the plant. ■

## BIOFOREVER

### Converting of biomass from wood to value-added chemicals

BIOFOREVER (BIO-based products from FORestry via Economically Viable European Routes) is a recently started European project to demonstrate the feasibility of conversion of lignocellulosic feedstocks like wood into chemical building blocks and high added value products. The project will run under the umbrella of the Bio-Based Industries Joint Undertaking (BBI JU) which is a public private partnership between the European Union and the Bio-based Industry Consortium. The BIOFOREVER project consortium consists of 14 European companies, including API Europe, Athens/Greece, Avantium, NV, Amsterdam/Netherlands, Borregaard AS, Sarpsborg/Norway, DSM NV, Heerlen/Netherlands, MetGen Oy, Kaarina/Finland, nova-Institute GmbH, Hürth/Germany, Suez Environnement, Paris/France). The project will run for 3 years from September 2016 – September 2019 with a total investment of €16.2 million.

The BIOFOREVER project objective is the technical and economical demonstration of 5

different value chains from feedstock to final product. Within this framework, several conversion technologies will be demonstrated up to pre-industrial scale for several types of feedstock while commercialization routes for the most promising value chains will be delivered.

The comparison parameters will be the quality of the final product (lignin and sugar solution) and the profitability of the various methods. Borregaard's proprietary BALI method is one of the pre-treatments to be compared with other established methods.

The project also aims to demonstrate that the sugar solutions can be used for the production of chemicals such as butanol, ethanol, Furandicarboxylic acid (FDCA) and enzymes. Butanol and FDCA can be used in the production of bioplastics and thus replace oil-based plastics such as PET bottles. In addition, the project will seek new applications for lignin, which is currently used in agriculture, fisheries, construction and batteries. ■