Press release

Avantium and Carlsberg sign offtake agreement on PEF

Carlsberg further launches consumer test of the Fibre Bottle using PEF as a barrier

AMSTERDAM, 22 June 2022, 08:15 hrs CEST – Avantium N.V., a leading technology company in renewable chemistry, announces that Carlsberg Group and Avantium have agreed to take the next step in the commercialisation of PEF. Carlsberg Group has signed a conditional offtake agreement with Avantium to secure a fixed volume of the 100% plant-based, recyclable and high-performance polymer PEF (polyethylene furanoate) from Avantium's FDCA Flagship Plant, which Avantium aims to start-up in 2024. Carlsberg will use the PEF resin for various packaging applications, including its Fibre Bottle - the bio-based and fully recyclable beer bottle.

Carlsberg has also launched a trial of its latest Fibre Bottle, which contains an inner layer of PEF produced in Avantium's current Pilot Plant. Carlsberg will sample the Fibre Bottle to 8,000 consumers and other selected stakeholders in eight pilot markets in Western Europe.

Avantium and Carlsberg have been partners since 2019 as the companies worked together with Paboco® (Paper Bottle Company) and the Paper Bottle Community. Paboco®, Avantium and Carlsberg developed the Fibre Bottle, a barrier solution, and a pioneering packaging solution for Carlsberg beer, respectively. Today, the results are consisting of a wood fibre outer shell and a plant-based and recyclable PEF polymer liner. Beyond its sustainable packaging benefits, Avantium's PEF has superior barrier properties, protecting the taste and fizziness of the beer and leading to a longer shelf life. PEF also has higher mechanical strength than conventional plastics, enabling thinner packaging and thereby reducing the amount of material required. In 2021, Avantium and Carlsberg signed a Joint Development Agreement to develop several PEF packaging applications, including the Fibre Bottle. With the test results of PEF in the Fibre Bottle proving successful, Carlsberg has decided to sign a conditional offtake agreement with Avantium to purchase PEF resin coming from its Flagship Plant, currently under construction in The Netherlands, for its Fibre Bottle and for the development of other beer packaging applications.

In its largest trial of the Fibre Bottle to date, today Carlsberg has revealed the latest generation design featuring the PEF lining and will sample 8,000 bottles across eight Western European markets throughout the summer. The bottles will be introduced to local consumers, customers and other stakeholders at selected festivals and flagship events, as well as targeted product sampling. Making the product accessible and gathering consumer feedback at this scale will be key to informing the next generation of design and accelerating Carlsberg's ambition to make the Fibre Bottle a commercial reality.

Stephane Munch, VP Group Development at Carlsberg, says: "We are delighted to be bringing our new Fibre Bottle into the hands of consumers, allowing them to experience it for themselves.

However, this pilot will serve a greater purpose in testing the production, performance, and recycling of this product at scale. Identifying and producing PEF, as a competent functional barrier for beer, has been one of our greatest challenges - so getting good test results, collaborating with suppliers and seeing the bottles being filled on the line is a great achievement!"

Tom van Aken, CEO of Avantium, says: "We are pleased to expand our partnership with Carlsberg. It is a truly exciting milestone that – for the very first time - consumers can now experience a PEF-lined beer bottle. With business partners such as Carlsberg Group, Avantium can further scale and build the PEF value chain, meeting the growing global demand for circular and renewable material solutions. This is what the material transition is about: ensuring that consumers can get access to novel and sustainable products at scale."

The FDCA Flagship Plant is supported with a "PEFerence" Horizon 2020 grant awarded by Bio-based Industries Joint Undertaking (BBI JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 744409

About Carlsberg Group

Established in 1847 by brewer J.C. Jacobsen, the Carlsberg Group is one of the leading brewery groups in the world, with a large portfolio of beer and other beverage brands. The Group's beer portfolio spans core beer brands, including local power brands and international premium brands, craft & speciality brands and alcohol-free brews. Other beverages encompass both alcoholic and non-alcoholic beverages such as ciders, soft drinks and energy drinks.

The Western Europe, Asia and Central & Eastern Europe regions provide an attractive exposure to mature and emerging markets. The Group has a number 1 or 2 position in more than 20 markets and around 70% of volumes are sold in these markets. But its products are sold globally, also reaching consumers through exports and licensing agreements.

Carlsberg has delivered strong results through execution of its strategy, its robust geographical footprint and brand portfolio, alongside well-executed initiatives to safeguard the Group's short- and long-term health.

The Group's purpose is brewing for a better today and tomorrow. Doing business responsibly and sustainably supports that purpose – and drives the efforts to deliver value for shareholders and society.

About Avantium

Avantium is a leading technology development company and a forerunner in renewable chemistry. Avantium develops novel technologies based on renewable carbon sources as an alternative to fossil-based chemicals and plastics. The company currently has three technologies at pilot and demonstration phase. The most advanced technology is the YXY® plant-to-plastics–technology that catalytically converts plant-based sugars into FDCA (furandicarboxylic acid), the key building block for the sustainable plastic PEF (polyethylene furanoate). Avantium has successfully demonstrated

the YXY® Technology at its pilot plant in Geleen, the Netherlands, and has started construction of the world's first commercial plant in 2022, with planned large-scale production of PEF in 2024. The second technology is Ray Technology™ and catalytically converts industrial sugars to plant-based MEG (mono-ethylene glycol): plantMEG™. Avantium is scaling up its Ray Technology™ and the demonstration plant in Delfzijl, the Netherlands opened in November 2019. The third technology is called the Dawn Technology™ that converts non-food biomass into industrial sugars and lignin in order to transition the chemicals and materials industries to non-fossil resources. In 2018, Avantium opened the Dawn Technology™ pilot biorefinery in Delfzijl, the Netherlands. Next to developing and commercialising renewable chemistry technologies, the company also provides advanced catalysis R&D services and systems to customers in the refinery and chemical industries. Avantium works in partnership with like-minded companies around the globe to create revolutionary renewable chemistry solutions from invention to commercial scale.

Avantium's shares are listed on Euronext Amsterdam and Euronext Brussels (symbol: AVTX). Its offices and headquarters are in Amsterdam, the Netherlands.

This press release by Avantium N.V. contains information that qualified or may have qualified as inside information for the purposes of Article 7 of the Market Abuse Regulation (EU) 596/2014 (MAR).

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