

EPBP gives 3-year endorsement to allow multilayer PET/PEF packaging in PET bottle recycling stream

AMSTERDAM, 28 April 2022, 07:30 hrs CEST – Avantium N.V., a leading technology company in renewable chemistry, announces that the European PET Bottle Platform (EPBP)¹ has awarded an interim endorsement to Avantium, allowing recycling of multilayer PET/PEF packaging in the European bottle recycling market.

Avantium has developed a process technology to produce FDCA (furandicarboxylic acid), the key building block for PEF (polyethylene furanoate), which is a 100% plant-based, recyclable, and high-quality polymer with a wide range of applications in areas such as monolayer bottles, multilayer bottles, food & beverage packaging and textiles. Avantium expects to complete the construction of the world's first commercial FDCA factory by the end of 2023, enabling the commercial launch of PEF from 2024 onwards.

PEF can be used, amongst others, in multilayer PET (polyethylene terephthalate) bottles as a barrier material, replacing existing barrier materials such as nylon. Due to the excellent barrier properties of PEF (the ability to withstand gas permeability through the bottle), this leads to a full polyester (PET and PEF) product design for beverages such as carbonated drinks, juices or beer. The replacement by PEF of other barrier materials, such as nylon, furthermore leads to improved recyclability of the multilayer PET bottle.

In accordance with the EPBP protocol, an independent third party (PTI Europe Sarl) conducted an evaluation to determine the effect of multilayer PET bottles containing 10% PEF on the PET recycling stream. The results have demonstrated that the PET/PEF multilayer bottles have no negative impact on haze and other properties of the resulting rPET products at a market penetration of 5%, also taking potential local accumulation into account. Based on the assessment's outcome, EPBP has awarded an interim endorsement to Avantium's PEF resin.

Dirk De Cuyper, CEO of Resilux, is pleased with this interim endorsement. Resilux, an international rigid plastic packaging supplier, signed a conditional offtake agreement for PEF with Avantium in 2021. "This endorsement of EPBP is an important milestone for the market introduction of PEF. We believe that PEF as a barrier material will significantly improve the circularity of high barrier bottles for carbonated and/or perishable beverages. The results leading to this interim endorsement show the potential of combining the PEF performance in PET product designs. We look forward teaming up with our customers to further close the loop for PET recycling."

The interim endorsement applies for a period that will expire on 30 June 2025. This interim period allows Avantium to collect data from the recycling market at scale, once Avantium's commercial plant is operational, expected in 2024. If the data is in line with its guidelines, EPBP will convert the endorsement to a full endorsement. The full text of the EPBP interim endorsement is published on the EPBP website (www.epbp.org).

¹ The European PET Bottle Platform is a voluntary initiative of industry organisations representing waste collectors, plastic recyclers, PET material producers and brand owners. EPBP provides PET bottle design guidelines for recycling, evaluates PET bottle packaging solutions and technologies as well as facilitates the understanding of the effects of new PET bottle innovations on recycling processes

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 (furanedicarboxylic 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 for large-scale production of PEF in 2022. 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.

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