

Avantium publishes updated Life Cycle Assessment confirming up to 88% lower carbon emissions for releaf®

AMSTERDAM, 27 May 2026, 18:00 hrs CEST – Avantium N.V., a leader in renewable and circular polymer materials, today announces the results of an updated Life Cycle Assessment (LCA) of its plant-based polymer PEF (poly(ethylene furanoate)), branded as releaf®. The LCA shows that releaf® can reduce greenhouse gas emissions by up to 88% in 500 mL beverage bottle applications, compared to conventional PET under representative European conditions. At resin level, emissions can be reduced by up to 71%¹, with further reductions expected over time as feedstock, processes and energy inputs improve. The results demonstrate that a significant reduction in the environmental footprint of plastics can be achieved while maintaining performance and compatibility with existing recycling systems.

The LCA was conducted with nova-Institut and Tereos, using industrial data representative of future industrial production. Results have been peer-reviewed and follow internationally recognised ISO standards. The work was carried out within the European Commission-funded PEFerence project². The findings have been published in the peer-reviewed scientific study [“Life Cycle Assessment of an Emerging, Innovative Biopolymer: Poly\(ethylene furanoate\)”](#), and provide a comprehensive assessment of releaf® across the full life cycle, from biomass production to end-of-life, including recycling. The analysis includes a cradle-to-gate and a cradle-to-grave approach, including feedstock cultivation, conversion into chemical intermediates, polymer production, packaging applications, and end-of-life treatment such as recycling and energy recovery.

The study shows that the reduction in greenhouse gas emissions is primarily driven by the replacement of fossil carbon with renewable carbon derived from plant-based feedstocks. As part of the natural carbon cycle, carbon dioxide absorbed during plant growth offsets emissions later in the life cycle. In addition, releaf®’s improved material properties enable lighter packaging designs, further reducing environmental impact across production and transport. The highest reductions are achieved in monolayer PEF bottles, enabled by lower material use and a fundamentally different carbon balance. In addition, multilayer PEF/PET solutions outperform conventional PET/PA bottles, offering lower emissions and improved recyclability.

The analysis also highlights that renewable carbon and recycling are complementary approaches. Recycling reduces demand for virgin material, while renewable carbon reduces the impact of that material. Combined, these approaches enable deeper reductions in the overall carbon footprint of

¹ This includes biogenic carbon uptake.

² PEFerence has received funding from the Bio-based Industries Joint Undertaking under the European Union’s Horizon 2020 research and innovation program (grant agreement no. 744409). The JU received support from the European Union’s Horizon 2020 research and innovation program and Bio-based Industries Consortium.

plastics. Ed de Jong, VP Development at Avantium, said: "The updated LCA provides a robust, science-based assessment of the environmental performance of releaf® and supports its potential contribution to reducing emissions in plastics, at a time when dependence on fossil feedstocks is increasingly under pressure."

About Avantium

Avantium is a pioneering commercial-stage company focused on renewable & circular polymer materials. Avantium develops and commercializes innovative technologies for the production of materials based on sustainable carbon feedstocks, i.e. carbon from biomass or carbon from the air (CO₂). The most advanced technology is the YXY® Technology that catalytically converts plant-based sugars into FDCA (furandicarboxylic acid), the key building block for the sustainable plastic PEF (polyethylene furanoate). PEF is known under the brand name releaf®, an EU registered trademark of Avantium. Avantium has successfully demonstrated the YXY® Technology at its pilot plant in Geleen, the Netherlands, and is in the process of starting the world's first commercial plant for FDCA in Delfzijl, the Netherlands. Avantium works in partnership with like-minded companies around the globe to develop revolutionary renewable chemistry solutions from invention to commercial scale.

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

For more information:

Caroline van Reedt Dortland, Director Communications
+31-20-5860110 / +31-613400179
mediarelations@avantium.com

Aarne Luten, Director Investor Relations
+31-625687714
ir@avantium.com