

Introducing project Mekong: making a greener PET an economic reality

Main themes of presentation:

- Brand owners are driving an increasing demand of renewable materials and a circular economy.
- Shift from fossil-based to renewable material is especially relevant in the plastics industry.
- PET and PEF consist for a large part out of monoethylene glycol (MEG).
- Avantium has identified a sustainable & efficient process of making a drop-in MEG from glucose.

Abstract:

Petroleum is a finite, non-renewable resource that is growing in demand. At the same time, there is a growing understanding that greenhouse gas emissions and environmental output need to be limited.

Because of this, brand owners are driving an increasing demand of renewable materials and a circular economy. The shift from fossil-based to renewable materials is especially relevant in the plastics industry, with PET being one of the most widely used plastics in the world.

PET and PEF consist for a large part out of monoethylene glycol (MEG), a monomer that currently is primarily produced through a petrochemical process.

Avantium has identified a process of making a drop-in MEG from glucose in a single-step, high atom efficiency process which is competitive with petroleum based MEG.

The current commercial process of producing MEG from glucose (C₆H₁₂O₆) takes four intermediate steps, resulting in a maximum theoretical yield of 67%. Therefore, these production processes for bio-based MEG are too expensive, hampering its widespread use when compared to petrochemical alternatives. Avantium identified a selective catalyst to split the C₆ in glucose in three C₂ fragments through a single-step process, in which a theoretical yield of 100% is possible, and >70% can practically be achieved.)

Taking into account the audience of the 11th International Conference on Bio-Based Materials, the presentation will be focused on a description of the Mekong program, including a view on MEG market dynamics, the need for sustainable and bio-based solutions in the packaging materials space, an overview of Avantium's bio-based MEG process compared to incumbent processes, and the expected steps to commercialization.

Speaker Biography

Eelco Blum is Vice President of Business Development, Renewable Chemistries at Avantium, tasked with commercializing Avantium's portfolio of revolutionary renewable chemistry solutions.

Prior to joining Avantium, Eelco worked for over a decade at Cargill in his native Netherlands, the U.K., South Africa, Belgium, and the U.S. in a variety of roles, mostly focused in strategy- and business development in the biotech & food ingredients arena. At TerraVia (formerly Solazyme, now part of Corbion) Eelco was responsible for product line management of new-to-the world ingredients, such as algae oil, algae butter, and algae DHA.

About Avantium

Avantium (Euronext: AVTX) is a leading chemical technology company and a forerunner in renewable chemistry. Together with its partners around the world, Avantium develops efficient processes and sustainable products made from bio-based materials. Avantium's Renewable Chemistries group focuses on developing and commercializing innovative products and processes in the renewable and sustainable technology space.