



Press release

## Cosun Beet Company and Avantium join forces with the ambition to produce plant-based glycols from sugars

DINTELOORD and AMSTERDAM, 22 April 2021, 07:00 CET – Innovative sugar beet processor Cosun Beet Company, part of Royal Cosun, and Avantium N.V., a leading technology company in renewable chemistry, announce their ambition to jointly construct and operate the first commercial plant for the production of plant-based glycols using Avantium's Ray Technology™. To this end, Cosun Beet Company and Avantium entered into a Term Sheet to establish a joint venture in which Cosun Beet Company will take a substantial share.

Cosun Beet Company and Avantium plan to form the joint venture in 2021 with the aim to make an investment decision for the foreseen commercial plant in the first half of 2023 and commercial operations commencing in 2025. The joint venture is envisioned to be a world class producer of plant-based glycols to actively contribute to a fossil-free future.

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**Avantium's** Ray Technology™ converts sugars into glycols: plantMEG™ (mono-ethylene glycol) and plantMPG™ (mono-propylene glycol). MEG is a blockbuster commodity intermediate and plantMEG™ is a fully recyclable plant-based product used in broad applications like packaging, polyester textiles, and antifreeze. PlantMPG™ is non-toxic, plant-based and used for airplane deicing and in unsaturated polyester resins used in modern windmill blades and as heat transfer fluid in solar panels. **Avantium** currently produces plantMEG™ and plantMPG™ at its demonstration plant in Delfzijl, the Netherlands using **Cosun Beet Company's** beet sugar as the renewable feedstock. The products are being validated in commercially relevant applications by **Avantium**. The current collaboration between **Cosun Beet Company** and **Avantium** serves as a strong foundation for the envisioned joint venture business.

The Term Sheet describes the intention and conditions for the joint venture to acquire a Ray Technology™ license from **Avantium** as well as the key commercial terms for a long-term sugar supply agreement to secure the feedstock for the commercial plant.

As part of its licensing business model, **Avantium** will continue to develop and license its Ray Technology™ globally. **Cosun Beet Company** will continue to explore opportunities to expand its bio-based portfolio as part of the company's strategy.

Paul Mesters, **Cosun Beet Company** CEO, comments: "We have the ambition to be the greenest, most innovative, and most successful sugar beet processor in the world. The collaboration with **Avantium** is an exciting example of our aim to maximise the valorisation of sugar beets while actively contributing to a fossil-free future. We look forward to growing and deepening our partnership with **Avantium** in the coming years."



Albert Markusse, CEO **Royal Cosun** comments: "This innovative partnership between **Cosun Beet Company** and **Avantium** with the aim to turn the potential of plants into practical solutions for societal challenges, is at the heart of the **Cosun** vision. Together with our growers, we are well positioned to produce plant based solutions for a better future."

**Avantium** CEO Tom van Aken comments: "The contemplated joint venture with **Cosun Beet Company** is a major development in the commercialisation of our breakthrough Ray Technology™. We aim to create value for all our stakeholders by bringing this game-changing technology to produce plant-based glycols to market along with our FDCA and PEF products. With **Cosun Beet Company**, we plan to construct the world's first RAY sugars-to-glycols plant and enable the commercial launch of plant-based glycols in broad applications to help fulfill **Avantium's** vision for a fossil-free world. Our partnership with **Cosun Beet Company** combines our complementary competencies and shared ambition to create solutions for a sustainable future."

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#### **About plantMEG™ and plantMPG™**

With its Ray Technology™, Avantium has found a way to produce mono-ethylene glycol (MEG) from plant-based feedstocks rather than fossil sources: plantMEG™. Currently, MEG is widely used as an important chemical building block for plastic bottles and packaging, polyester textiles for clothing and furniture, and antifreeze applications. The current MEG market is estimated at €24 billion in 2021. The vast – and ever-growing – market for MEG, however, poses a threat to the environment. At Avantium, we see plantMEG™ as the answer. PlantMEG™ gives brands the option of a sustainable, recyclable, and innovative ingredient that will attract environmentally conscious consumers. Avantium's Ray Technology™ single-step catalytic process means plantMEG™ is cost-competitive with the petroleum-based incumbent while being identical to fossil-based MEG in quality and performance. By using the Ray Technology™, the plantMEG™ produced at the intended facility is expected to significantly reduce greenhouse gas emissions compared to fossil-based MEG. Avantium is expected to communicate results from an environmental life cycle assessment later in the year.

Ray plantMPG™ is a non-toxic, plant-based, high purity chemical used in airport operations for the deicing of airplanes, for use in unsaturated polyester resins, for example in modern windmill blades, as well as heat transfer fluid in solar panels. The global mono-propylene glycol (MPG) demand represents an estimated €3 billion market in 2021.

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#### **About Cosun Beet Company (formerly known as Suiker Unie)**

The ambition of Cosun Beet Company is to be the greenest, most innovative and most successful sugar beet processor in the world. With some 850 employees, we are already one of the most efficient sugar producers in Europe. As well as developing, producing and selling sugar and sugar specialties, we process all parts of the sugar beet into natural ingredients for food, energy, biobased and related industries. All components of the beet are used, nothing is wasted. Corporate sustainability is woven into our strategy for the benefit of our customers, growers and staff.

#### **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<sup>®</sup> plant-to-plastics-technology that catalytically converts plant-based sugars into a wide range of chemicals and plastics, such as PEF (polyethylene furanoate). Avantium has successfully demonstrated the YXY<sup>®</sup> Technology at its pilot plant in Geleen, the Netherlands. The Ray Technology<sup>™</sup> catalytically converts industrial sugars to plant-based MEG (mono-ethylene glycol): plantMEG<sup>™</sup>. Avantium is scaling up its Ray Technology<sup>™</sup> and the demonstration plant in Delfzijl, the Netherlands opened in November 2019. 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 likeminded 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). Avantium is included in the Euronext Amsterdam SmallCap Index (AScX). Its offices and headquarters are in Amsterdam, the Netherlands.

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#### **Forward-looking information / disclaimer Avantium**

This press release may include forward-looking statements. Other than reported financial results and historical information, all statements included in this press release, including, without limitation, those regarding our financial position, business strategy and management plans and objectives for future operations, are forward-looking statements. These forward-looking statements are based on our current expectations and projections about future events and are subject to risks and uncertainties that could cause actual results to differ materially from those expressed in the forward-looking statements. Many of these risks and uncertainties relate to factors that are beyond Avantium's ability to control or estimate precisely, such as future market conditions, the behavior of other market participants and the actions of governmental regulators. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release and are subject to change without notice. Other than as required by applicable law or the applicable rules of any exchange on which our securities may be traded, we have no intention or obligation to update forward-looking statements.

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