



Global Bioenergies, Clariant and INEOS receive major EU funding to demonstrate the production of isobutene derivatives from straw

European financing package amounting to €9.8 million, of which €4.4 million for Global Bioenergies

Industry consortium led by Global Bioenergies and bringing together Clariant, INEOS, IPSB, TechnipFMC and Linz University

Aim: converting agricultural residues (wheat straw) into isobutene derivatives for use in numerous applications

Evry (France), 09 May 2017 - Global Bioenergies today announces the signature of a grant agreement aiming at demonstrating a new value chain combining its Isobutene process with technologies developed by Clariant and INEOS, two of Europe's leading chemical companies. The aim is to convert currently poorly valorised residual wheat straw into second generation renewable isobutene for subsequent conversion into oligomers usable in the lubricants, rubbers, solvents, plastics, or fuels. The intense R&D cooperation for the next 48 months starts on June 1st 2017.

The agreement signed recently between the Bio-Based Industries Joint Undertaking (BBI-JU) and the project partners focuses on the demonstration of a new value chain, based on the combination of the technologies and know-how of the participants from four EU member states:

- Conversion of straw into glucose- and xylose-rich hydrolysates by Clariant Sunliquid® technology (Germany),
- Fermentation of the straw hydrolysates into bio-isobutene by Global Bioenergies (France and Germany),
- Conversion of bio-isobutene to oligomers by INEOS (a world leader in Belgium and France),
- Preliminary engineering of an hydrolysate-to-isobutene plant and overall integration with a straw-to-hydrolysate plant, by TechnipFMC and IPSB (France), and
- Assessment of the sustainability and environmental benefits by the Energy Institute at the University of Linz (Austria).

The BBI-JU, a public-private partnership between the European Union and the Bio-Industries Consortium (BIC), is dedicated to realizing the European bio-economy potential, turning biological residues and wastes into greener everyday products through innovative technologies and bio-refineries, expected to become the heart of the bio-economy.

The BBI-JU selected this project under the name OPTISOCHEM (N°744330), in the frame of the European HORIZON 2020 programme for research and innovation, following a very selective and competitive process led by independent experts.

The programme covers a total budget of €16.4 million. €9.8 million will be provided by the BBI-JU, with the remainder being contributed by the participants. Global Bioenergies will receive

funding amounting to €4.4 million for its R&D activities at its Evry site, its pilot plant in Pomacle (both located in France), and its demo plant in Leuna (Germany).

Markus Rarbach, Head of Biofuels & Derivatives of Clariant declares: "This project will demonstrate a key value chain within the bio-economy: advanced bio-refineries based on agricultural residues. We will deliver from our pre-commercial plant in Straubing (Germany) second generation sugars to Global Bioenergies' facilities for conversion to bio-isobutene, having already demonstrated in 2016 the perfect technology fit between our Sunliquid® platform and Global Bioenergies' Isobutene process. The larger scale demonstration will now prove technological and economic feasibility for commercial production in the future."

Jan Vermeersch, Commercial Director Oligomers-Europe at INEOS, declares: "INEOS has over fifty years of experience in Oligomerisation of isobutene based products which are used in markets such as lubricants, rubbers, cosmetics, plastics, solvents, and fuels. Being a global chemical producer, INEOS is delighted to be able to test this innovation which will help to increase the share of renewable products on the market. It might also allow INEOS to diversify its feedstock base and supply its customer with bio-based products"

Marc Delcourt, CEO of Global Bioenergies concludes: "This support from the BBI-JU will further anchor our European presence and our strategy to diversify resources: our isobutene process is up and running in the Leuna demo plant based on first-generation sugars. Under this agreement, we will demonstrate the suitability of second-generation sugars, such as straw hydrolysate and prepares the full-scale deployment of this new value chain."

Disclaimer: this press release reflect only the author's view and the BBI-JU is not responsible for any use that may be made of the information it contains

About GLOBAL BIOENERGIES

Global Bioenergies is one of the few companies worldwide, and the only one in Europe, that is developing a process to convert renewable resources into hydrocarbons through fermentation. The Company initially focused its efforts on the production of isobutene, one of the most important petrochemical building blocks that can be converted into fuels, plastics, organic glass and elastomers. Global Bioenergies continues to improve the performance of its process, operates an industrial pilot, has started operations at its demo plant in Germany, and is preparing its first full-scale plant through a joint venture with Cristal Union, named IBN-One. Global Bioenergies is listed on Alternext, Euronext Paris (FR0011052257 – ALGBE).

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