

First production in history of fully renewable ETBE

Evry (France), 07 February 2017 - In a historic first, Global Bioenergies today announces the production of ETBE purely from renewable resources. The breakthrough heralds a new opportunity for increasing the proportion of biofuels in gasoline.

Current standards limit the inclusion of traditional biofuels because of their physical and chemical properties. For example, the French standard caps ethanol content at 5% in 95-octane and 98-octane unleaded gasoline, and at 10% in unleaded 95-E10 gasoline.

The majority of countries in the world impose this type of limit – commonly known as the "blend wall", but if biofuels are to become more widely used in the future, this limit will have to be addressed. Global Bioenergies offers a new method for getting beyond the blend wall: fully renewable ETBE.

Historically, partially renewable ETBE (ethyl-tert-butyl ether) is obtained by combining a molecule of renewable ethanol with a molecule of fossil isobutene using a simple and proven process. It is used as an additive in vehicle fuel, up to a maximum of 23%. The global market for the product is currently valued at more than €2 billion, or more than 3 million tonnes annually. The innovation consists of using this same process to combine renewable ethanol with renewable isobutene obtained using Global Bioenergies' technology. This purely renewable ETBE holds the potential for incorporating 2.7 times more renewable energy in gasoline than with traditional biofuels. It will also help to cut greenhouse gas emissions even further.

Bernard Chaud, Head of Industrial Strategy at Global Bioenergies, says: *"Fuels like 95-octane and 98-octane unleaded gasoline are blends of several types of fuels with different properties. Introducing new biofuels with very similar properties to gasoline components will increase the portion of renewable energy, while also complying with current standards. It is vital to prepare for the depletion of fossil resources and to act now to reduce the amount of greenhouse gases released into the atmosphere."*

Daniela Pufky-Heinrich, Project Manager at the Fraunhofer Center for Chemical-Biotechnological Processes, concludes: *"We have used commercial fermentative ethanol and renewable isobutene produced by Global Bioenergies, which is a perfect match for the specifications required for this reaction. We are proud to have been selected to produce this first batch of 100% renewable ETBE, which could be a game changer in fuel additives."*

This first production of entirely renewable ETBE was supported by a grant of the German Ministry of Education and Research (BMBF).

Philippe Marlière, co-founder and partner of Global Bioenergies, adds: *"The conversion into purely renewable ETBE adds to our previous successes converting renewable isobutene to chemical products, materials and iso-octane fuel. The increasing number of applications underscores the value of our strategy to give priority to isobutene as a target from the company's earliest beginnings and strengthens it in its innovative approach to reforming the global energy model."*

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. The company also replicated its achievement to propylene and butadiene, two members of the gaseous olefins family, key molecules at the heart of petrochemical industry. Global Bioenergies is listed on Alternext, Euronext Paris (FR0011052257 – ALGBE).

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