

FIRST PRODUCTION OF LIQUID HYDROCARBONS FROM BIOLOGICAL FEEDSTOCK USING THE ISOBUTENE PROCESS

First batch of « renewable oil »
Ground and air transportation fuels
Perspective of new industrial sectors
Prevention of climate change

Evry (France), May 12th, 2015 - Global Bioenergies announces today having converted renewable resources into gaseous isobutene, and secondarily into liquid fuels similar to those extracted from oil. This mix of fuels can be compared to light oil, and thus be considered as « renewable oil ».

Gaseous isobutene is one of the main building blocks of the petrochemical industry. Fifteen million tons of isobutene are derived each year from oil, and converted into fuels, plastics and elastomers.

Global Bioenergies develops and scales-up a synthetic biology process to produce isobutene alternatively, from sugar, cereals, and agricultural or forestry waste.

For the first time, a batch of isobutene produced and purified on ARD's Pomacle-Bazancourt site, located close to Reims in France, has been shipped in pressurized containers to the Fraunhofer Institute on the Leuna refinery platform, close to Leipzig in Germany.

This batch has been run through an industrially relevant catalytic unit resulting in stringing isobutene molecules one to the other. A mix has been produced containing isooctane (string of two isobutene molecules), isododecane (string of three), isocetane (string of four), as well as longer strings. These compounds are associated with large markets:

- Isooctane is the gold standard for gasoline engines, and corresponds to « unleaded 100 » when used pure.
- Isododecane is one of the very few bio-sourced molecules well suited to be blended in jet fuel; its registration as « bio-jet fuel » is underway in the United States of America.
- Isocetane is a heavier fuel that can be used as an additive for diesel engines.
- Longer molecular chains are used in the manufacturing of industrial lubricants.

Rick Bockrath, Vice President for chemical engineering at Global Bioenergies, states: "Industrial fermentation of a gas such as isobutene has numerous advantages, which will translate into a reduced OPEX. We have now successfully aligned our Isobutene process with a technology leading to a liquid hydrocarbon mix resembling to light oil. Our target will now be to purify the different components of this mix. Getting high-purity isooctane is one of the main goals of our alliance with Audi."

Marc Delcourt, CEO of Global Bioenergies, concludes: "Our process, now integrated, allows us to convert plant feedstock into liquid hydrocarbons within days, in comparison to geological eras, expressed in million years, necessary to produce oil. Through alliances with agribusiness companies, such as for example Cristal Union already present as a shareholder, this process will allow us to access an unlimited flow of 'renewable oil'. Global Bioenergies contributes through its breakthrough innovation to enhance the energy access of human populations, while limiting CO₂ emissions and thus preventing climate change."

Global Bioenergies recently announced the start of the construction in Germany of a 100 tons/year capacity Demo Plant, the last step before large scale commercial exploitation of its isobutene process.



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 performances of its process, operates its industrial pilot and has begun the construction of its demo plant. 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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