# Global Bioenergies: production scale-up

## Successful first full-scale fermenter run: 180 m³

## Transfer of main units from the Leuna demo plant to the Pomacle facility

## Launch of value chain as of 2022

**Paris, 17 May 2021 - Global Bioenergies has taken a major step towards scaling up its isobutene bio-production process and is setting up a new supply chain to sell high value-added ingredients to cosmetics sector players from 2022.**

Global Bioenergies recently announced the upcoming launch of its very own cosmetics brand called LAST®, the key ingredient of which is renewable isododecane. For the first time, renewable isododecane makes it possible to combine a high level of naturalness with longwear, waterproof and transfer-resistant performances.

Marc Delcourt, co-founder and CEO of Global Bioenergies, explained: "We will provide clear evidence that consumers no longer have to choose between performance and naturalness in longwear make-up. But we're not stopping with the launch of this range. This is only the beginning: we plan to develop this innovation on an exponential scale and contribute meaningfully to the environmental transition, which will be the biggest challenge of the twenty-first century."

### Production of isobutene in existing large-scale facilities

Over the past few months, Global Bioenergies has developed a new version of its isobutene process, now comprising two consecutive stages. The first step covering the entire chain up until isobutene precursor can now be done using tollers' existing fermentation capacities in order to produce very large volumes. This improvement makes the manufacturing process more flexible and economically efficient.

Only the second step, during which the precursor is converted into isobutene, needs to be carried out in a specific explosion-proof reactor (ATEX), such as those built by Global Bioenergies at its 500-litre pilot plant in Pomacle, near Reims (France), and the 5 m³ fermenter at its demo plant in Leuna (Germany). This second step is extremely productive and requires only a small reaction volume compared to the first step.

### Successful first full-scale fermenter run: 180 m³

A first full-scale test of the first stage has just been successfully completed at Pomacle in the 180 m³ industrial fermenter by ARD, Europe's leading developer of fermentation processes and a longstanding subcontractor of Global Bioenergies.

The second stage was also successfully tested at pilot scale.

Frédéric Ollivier, Global Bioenergies Chief Technical Officer, made the following comments: "We've just hit a historic milestone: just a few months ago, only one new plant housing special fermenters was capable of large-scale production. We can now use tollers for the upstream part of the fermentation process, as we do already for the downstream stage in which isobutene is converted into cosmetic grade isododecane."

In the wake of this success, Global Bioenergies has decided to move key equipment from its Leuna plant to the ARD facility at Pomacle, including the 5 m³ fermenter which will be assigned to the second stage, in lockstep with the ARD large fermenter used for the first stage. This means the

entire new process can be run on a large scale at optimised cost at a single location by a single team.

Bernard Chaud, Head of Industrial Strategy at Global Bioenergies, said: "The equipment will be transferred and final technical adjustments made during the second half of 2021, at a cost of under €1.5 million. As from H1 2022, we will have a value chain enabling us to convert to naturalness over 10 million longwear make-up units per year."

Marc Delcourt concluded: "10 million units, that's 1% of the global longwear cosmetics market with a retail value of around €200 million. That's more than LAST® can sell; we will therefore offer this innovative ingredient to other cosmetics sector players, so that they too can increase the proportion of natural ingredients in their ranges. The sale of innovative ingredients will provide Global Bioenergies with a second source of recurring revenues. By 2023, we expect to be producing this ingredient in large enough volumes to make over 200 million make-up units more natural, by continuing to work with manufacturers for the first stage of production while incurring limited capital expenditure on the second stage and downstream conversion chain. This scale-up will also allow us to investigate related skincare and haircare markets, as well as other non-cosmetic markets."

## About GLOBAL BIOENERGIES

Global Bioenergies has developed a process to convert plant-derived resources into a key family of ingredients used in the cosmetics industry. The process was first developed in a laboratory, where the Company is further enhancing performance. It now operates as a pilot and a demo plant, with sufficient capacity to enable the Company to access the market by first creating a long-lasting makeup home brand. The Company is gradually increasing its production capacities and is looking to improve the environmental footprint of not only the cosmetics industry but also that of other areas such as transportation and materials. Global Bioenergies is listed on Euronext Growth Paris (FR0011052257 – ALGBE).

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