



LanzaTech, Mibelle Group, and Fraunhofer IGB Achieve Technology Breakthrough with Production of Palm Oil Substitute

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Revolutionary technology has potential to expand feedstock for HEFA pathway for SAF, while eliminating palm oil dependency across industries

CHICAGO, Sept. 02, 2025 (GLOBE NEWSWIRE) -- LanzaTech Global, Inc. (NASDAQ: LNZA) ("LanzaTech" or the "Company"), a leader in carbon management solutions, is proud to announce an innovative advancement with the potential to transform global sustainable aviation fuel (SAF) production. Having successfully commercialized its technology to produce ethanol for SAF via the Alcohol-to-Jet (ATJ) process, the team's breakthrough expands LanzaTech's capability for producing SAF via the Hydroprocessed Esters and Fatty Acids (HEFA) pathway. This groundbreaking innovation offers a sustainable palm oil substitute, leveraging LanzaTech's versatile technology which is pivotal for decarbonization efforts across various sectors.

Collaboratively developed with the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB and the Mibelle Group, this palm oil alternative replicates essential functional properties needed in the cosmetics industry. Moreover, this development potentially introduces a novel route to the HEFA pathway for SAF production, circumventing the sustainability and supply challenges currently present with conventional oil crops and waste oils typically used in this process.

"This innovation is the result of our long-standing partnership with LanzaTech and a milestone for the cosmetics industry. Combined with the innovative strength of the Fraunhofer Institute, we are setting new standards for the entire industry and underlining our commitment to taking responsibility for the future of our planet while making supply chains more robust," says Peter Müller, CEO of the Mibelle Group.

"The Mibelle Group, as the original innovator behind this idea, has been instrumental in assembling the right partners and driving success, alongside the Fraunhofer Institute's outstanding innovators who have focused on developing and scaling this solution," said Jennifer Holmgren, CEO of LanzaTech. "This collaboration reflects how revolutionary ideas can generate wide-ranging impacts, from reducing reliance on deforestation-linked ingredients in cosmetics to enabling the production of sustainable aviation fuel, thereby creating change that extends beyond initial objectives."

The Environmental Challenge and the Innovative Solution

Palm oil is a critical raw material due to its high yield, long shelf life, and heat resistance. However, the global dependency on palm oil has resulted in extensive deforestation, biodiversity loss, and significant CO₂ emissions, highlighting the urgent need for sustainable alternatives.

The unique dual fermentation technology, pioneered by LanzaTech and Fraunhofer IGB, transforms waste CO₂ gases into alcohol and further into a palm oil-like fat using non-GMO oil yeasts in a secondary fermentation process. Following successful laboratory trials at Fraunhofer IGB and promising application tests at Mibelle laboratories, efforts are now focused on scaling up production. This process is currently underway at Fraunhofer's Center for Chemical-Biotechnological Processes in Leuna, representing a crucial step toward commercial production.

Addressing Aviation's Decarbonization Challenge

Alcohol from the LanzaTech process is already an ideal feedstock for SAF production. Via the Alcohol to Jet Process, LanzaTech's technology enables the production of advanced sustainable aviation fuels (SAF) and when the ethanol is made from CO₂ and green hydrogen, e-fuels.

The versatility of LanzaTech's technology could potentially now extend into another route to SAF, namely the Hydroprocessed Esters and Fatty Acids (HEFA) pathway: transforming ethanol into synthetic oils that function as alternatives to conventional HEFA feedstocks.

This innovation advances LanzaTech's position at the forefront of the rapidly expanding SAF market, offering airlines and fuel producers a new tool in their decarbonization arsenal while demonstrating how circular carbon solutions can transform entire industries.

About LanzaTech

LanzaTech Global, Inc. (NASDAQ: LNZA) is a carbon management solutions company that transforms industrial emissions, gasified solid waste and carbon dioxide into recycled carbon ethanol via proprietary bio-fermentation technology. Ethanol is a crucial building block in the world – a key feedstock for Sustainable Aviation Fuel (SAF) and other downstream chemical derivatives. Operating commercially at six assets today, LanzaTech's technology unlocks value across the supply chain, reducing the carbon footprint of hard-to-abate sectors while shepherding recycled carbon fuels and products to the world, building a circular carbon economy. www.lanzatech.com

About Mibelle Group

The Mibelle Group, a Persán company, operates in the personal care & beauty, home care, and nutrition sectors and is a leader in the private label business. It also produces and distributes its own renowned brands as well as state-of-the-art and highly effective active ingredients for the cosmetics industry through Mibelle Biochemistry. The Mibelle Group employs around 1,400 people and has production sites in Switzerland, France, the United Kingdom, and the United States. The company also has distribution sites in the Netherlands and Australia.

Further information: <https://www.mibellegroup.com>

About Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB

Combining biological and process engineering expertise, Fraunhofer IGB develops and optimizes processes, technologies, and products for health, sustainable chemistry, and environmental and climate protection. Complete solutions from laboratory to pilot scale are among the institute's strengths. At the institute's branch in Leuna, the Fraunhofer Center for Chemical-Biotechnological Processes CBP, pilot plants are available for scaling to

product-relevant dimensions.

www.igb.fraunhofer.de

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