

## **ICARUS - International cooperation for sustainable aviation biofuels**

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### **Background**

All aviation forecasts anticipate ongoing international growth in the industry's future. Returning to pre-pandemic activity levels will likely take some time, with certain estimates projecting a recovery extending into 2024 and beyond. This revival will be influenced by factors such as traveler willingness, workforce availability, and other variables. Nevertheless, the long-term outlook suggests that aviation will continue to expand due to its inherent value in providing safe, efficient, and high-speed transportation of goods and people for society. This growth will lead to increased demand for fuel, necessitating a boost in sustainable fuel production.

Aviation poses one of the greatest challenges in transitioning away from fossil fuels because the quality of its fuel must adhere to strict specifications set by ASTM. However, the aviation industry has set ambitious emissions reduction targets, and the process to achieve these objectives for international aviation is currently being developed in collaboration with the United Nations' International Civil Aviation Organization (ICAO).

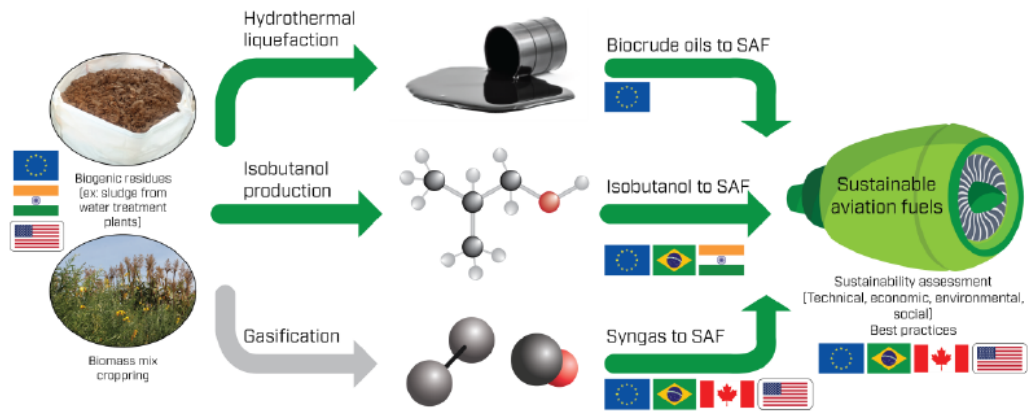
### **Icarus Project**

The Icarus Consortium, an international coalition of esteemed partners, is making significant strides in the advancement of Sustainable Aviation Fuel (SAF) production technologies. The consortium has identified critical technology barriers currently limiting the broader deployment of three pivotal SAF production routes: biocrude from hydrothermal liquefaction to SAF, isobutanol from lignocellulosic biomass to SAF, and synthetic Fischer-Tropsch from biomass gasification to SAF.

These three value chains have been strategically chosen by Icarus due to their proximity to market deployment and their indispensable role in achieving European and international SAF deployment targets. Icarus is committed to enhancing these technologies with innovative solutions while addressing the entire value chain. Furthermore, Icarus is exploring novel biomass production concepts, such as sequential cropping and mix cropping, to ensure an increased and sustainable biomass supply for SAF production.

Icarus's approach is comprehensive, encompassing techno-economic, environmental, and social assessments throughout the entire value chain to ensure the sustainability and efficiency of SAF production processes.

Figure 1: ICARUS at a glance



(European Commission, 2023)

The ICARUS project is coordinated by Centre For Renewable Energy Sources And Saving Fondation (CRES). The Icarus Consortium is a collaborative endeavor consisting of 14 renowned partners<sup>1</sup> from 8 different countries, and 6<sup>2</sup> associated partners from 4 countries.

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