VIABILITY OF AVIATION BIOFUELS REMAINS DISTANT, SAY EXPERTS

News / Airlines



Biofuels for **aviation** continue to face multiple challenges, the most daunting of which centers on ways to make production economical, according to a recent report jointly released by the French Académie des Technologies and Académie de l'Air et de l'Espace. The experts admit the environmental benefit, although proven in principle, is difficult to quantify. They consider hydrotreated esters and fatty acids (HEFA) made from vegetable oil the only option immediately available.

A biofuel intrinsically costs more to make than a fossil fuel, due to the expense associated with renewal costs, or the growth of the plant. Consequently, a biofuel for aviation costs more than its road transportation counterpart, the report notes. Technical requirements, such as the need to eliminate oxygen, are more stringent. Biojet fuel costs at least 30 percent more to produce than conventional fuel, French energy research center IFP-ENestimates, and the final price will total at least twice that of conventional kerosene.

Recurring cost presents only one problem. Should biofuels cover all of air transport’s needs, the investment in production facilities would require hundreds of billion dollars, the report continues. More realistically, biofuels would cover just a few percent of midterm needs. The European Union, for instance, has set a goal of 3.5 percent of the total aviation fuel consumption on the continent in 2020, or two million metric tons. The experts called the goal unachievable.

The main point behind the use of biofuels centers on a desire to cut greenhouse gas (GHG) emissions. Measuring precisely how much gets cut, however, has proved difficult. “It is a bit early

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to evaluate the gain from field to wing," said Bruno Jarry, one of the authors and a specialist in biotechnology. Depending on the path,GHG emission savings fall in the 60- to 90-percent range, according to IFP-EN expert Alain Quignard.

The HEFA path resides in the 60-percent class but authorities in the field consider it "mature, industrially proven…and having a strong synergy with developing vegetable oil resources." Therefore, said the report, current research appears unlikely to develop another path until 2020. The biomass-to-liquid path uses the Fischer-Tropsch process, historically well known in aviation, but suffers from the need to organize the collection of its raw material—essentially waste from forestry activities. It nevertheless retains a strong potential for high-volume production and GHG reduction.

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