Sustainable Aviation Fuel Users Group

European Section

Governments' Unique Role in Sustainable Aviation Biofuel

COMMITTED TO SUSTAINABLE BIOFUEL
CARBON-NEUTRAL GROWTH 2020

Biofuel Key to Carbon-Neutral Growth
Sustainable aviation biofuel will play a vital role in reducing the carbon footprint of aviation and meeting the industry's global target of carbon neutral growth by 2020 and a 50% reduction in net CO_2 emissions by 2050. The Sustainable Aviation Fuel Users Group (SAFUG) is focused on accelerating the development and commercialisation of sustainable aviation biofuel.

SAFUG was formed in September 2008 with support from the world's leading environmental organisations such as the Natural Resources Defence Council, and the Switzerland based Roundtable for Sustainable Biofuels (RSB).

All members signed a pledge stating that they will support the RSB sustainability standards and use only certified sustainable aviation biofuel.

The SAFUG Pledge States Sustainable Aviation Biofuel:

- Will not displace, or compete with, food crops or cause deforestation
- Minimises impact to biodiversity
- Produces substantially lower life cycle greenhouse gas emissions than conventional fossil fuels
- Certified sustainable with respect to land, water, and energy use
- Delivers a positive socioeconomic impact

Continued Advancement Needs:

- Government support for development of aviation biofuel consistent with international trade commitments
- Policies designed to accommodate the specificities of aviation
- Global harmonised sustainability criteria
- Further research to develop sustainable feed stocks

MEETS JET FUEL SPECIFICATIONS
WITH LOWER CARBON EMISSIONS

An Effective Solution

Sustainable aviation biofuel is one of the most effective solutions to reducing carbon emissions. Sustainable aviation biofuel's total life cycle greenhouse gas emissions are significantly lower than those from fossil fuels.

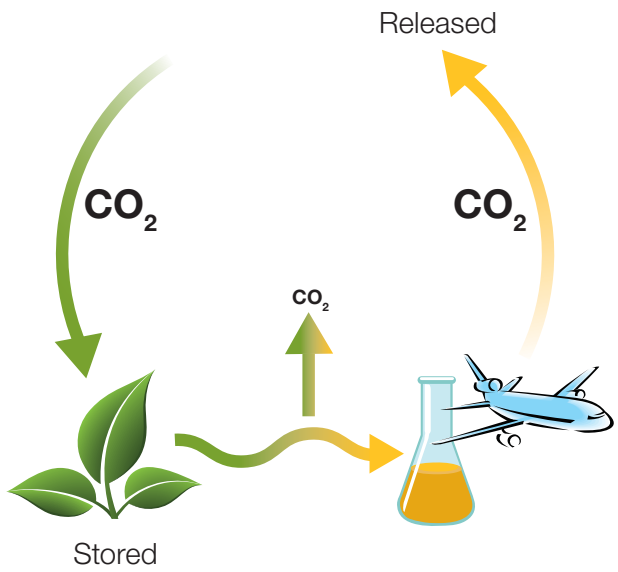
Feed stocks such as plants or algae absorb atmospheric carbon dioxide during photosynthesis and separate the carbon and oxygen for use in growth and metabolism. After being converted to biofuel the stored carbon is returned to the atmosphere during combustion. Biomass from waste feed stocks, such as organic urban waste, can also be used to make biofuel, which avoids the release of methane into the atmosphere.

Biofuel: A Drop-In Fuel

Aviation biofuel needs to be a "drop-in" fuel that meets or exceeds internationally recognised jet fuel specifications. Drop-in fuels do not require any changes to aircraft engine fuel systems, distribution methods, or storage facilities. Some alternative aviation fuels may require new specialized fuel handling systems, which is why the drop-in approach is the only practical solution for aviation.

A series of test flights in 2008 and 2009 demonstrated the viability of a drop-in aviation biofuel. Participants were Virgin Atlantic, Air New Zealand, Continental Airlines, Japan Airlines and KLM Royal Dutch Airlines in cooperation with Boeing, UOP, CFM, Pratt & Whitney, and GE.

Plant Based Fuel



HARMONISED AND ROBUST **SUSTAINABILITY STANDARDS**

A Harmonised Standard
As a global business, aviation needs a harmonised standard to ensure that sustainability criteria are enforceable and equally applied across the industry. A patchwork of standards would inhibit the development of a commercially viable market.

SAFUG members believe the RSB standard is the best candidate today for achieving an effective harmonised system. The RSB sustainability criteria have been developed through a global multi-stakeholder process that ensures the sustainability of production, processing, and implementation.

Robust Sustainability Criteria
A robust sustainability standard provides a consistent and equitable process that ensures airlines, passengers, and governments that certified sustainable aviation biofuel will not displace food crops, not cause deforestation, have minimal impact to the environment, and have a positive socioeconomic effect on a region. Sustainable aviation biofuel will have substantially lower life cycle greenhouse gas emissions than conventional fossil fuels.

Reflecting Life Cycle Carbon Emissions
EU-ETS assigns zero CO_2 emission to biofuel. The zero-rating is a good strategy to help stimulate the adoption of aviation biofuel and catalyse the rate of GHG emissions reduction further.

SAFUG members suggest the zero-rate should remain in effect until the EU adopts and implements a globally harmonised life cycle carbon assessment system for biofuel. At that point the zero-rating may be dropped in favour of one determined by the assessment system.

Increasing Feed Stock Yields and Capacity
Biofuel feed stock production is yet to reach levels necessary to support the aviation industry. Production needs to advance more rapidly with respect to improving sustainability and achieving an economy of scale that delivers an attractive price. Governments can provide research and development support directly or through incentives to the private sector to help advance feed stock production.

GOVERNMENT POLICY CAN BETTER **SUPPORT AVIATION BIOFUEL**

Purchase Based Accounting in EU-ETS: Aviation's only solution

Aviation's fuel infrastructure is built for common fuel handling. Aviation biofuel will be comingled with fossil fuel in storage tanks, tankers, and when loaded into partially fuelled aircraft; therefore knowing the exact percentage of biofuel entering the aircraft is not possible.

The EU-ETS monitoring, reporting, and verification (MRV) system gives airlines credit for biofuel consumed. However, it is impossible and impractical to meet this criterion given today's infrastructure without significant investment in building new fuel handling systems. The ETS MRV system must be based on the purchase of sustainable aviation biofuel, as it is the only practical solution for aviation.

RED Has Unintended Consequences

Under the EU-Renewable Energy Directive (RED) ten percent of all energy in the road transport sector must be from renewable sources in 2020. RED may cause a shift of all available sustainable biomass to road transportation biofuels production, leaving little or none for aviation biofuel. If this is not addressed the emerging aviation biofuel market will collapse before having a chance to develop.

Policy Should not Disadvantage Aviation Biofuel

Aviation is expected to need liquid fuels for the coming decades; unlike ground transportation which has practical alternatives to combustion. Policy should reflect this and ensure aviation biofuel is not disadvantaged compared with other energy products.

RIGHT INCENTIVES AT THE RIGHT TIME **TO ACCELERATE MARKET DEVELOPMENT**

Invest Some EU-ETS Auction Revenue into Sustainable Aviation Biofuel

Regulators have an important role in the short- to medium-term in supporting this emerging new industry. Aviation will generate substantial revenues for European governments under EU-ETS rules. Part of this revenue stream should be reinvested to fund research and development in sustainable aviation biofuel and to provide a method to mitigate risk associated with start-up production; for example, a producers risk fund. Policymakers can further accelerate commercialisation of aviation biofuel by providing deployment incentives.

Biodiesel Incentives Could Halt Aviation Biofuel

The current incentives for biodiesel coupled with EU-ETS carbon dioxide costs creates a significant price gap with aviation biofuel in favour of biodiesel. This may limit the emergence of an effective aviation biofuel market. Regulators need to address this inequity.

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European Section

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August 2010.11