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Aviation and Alternative fuels
A promising option in the global strategy for addressing climate change

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The 36th Session of the International Civil Aviation Organization (ICAO) Assembly in 2007 recognized the urgent need for more concerted and effective action to reduce the carbon footprint of international aviation, the importance of research and development in fuel efficiency and alternative fuels, and the value of promoting understanding on the subject.

One of the initiatives undertaken by the Organization was the convening of an Aviation and Alternative Fuels Workshop from 10-12 February 2009, in Montreal, Canada. The event brought together some 150 participants from 114 States and international organizations to explore potential options, challenges to development and deployment, as well as initiatives to promote international cooperation in aviation alternative fuels.

The workshop featured 39 presentations from policy makers, regulatory and certification authorities, international airlines, NGOs, aerospace and fuel industry representatives. There emerged a consensus that aviation alternative fuels can be a win-win solution in reducing aviation's dependence on fossil fuels and helping to reduce the impact of aviation on climate change. It was also noted that alternative fuels should be part of a comprehensive aviation energy strategy that includes technology, operational measures and market-based measures. Finally, because of its pioneering technological innovations, it was felt that aviation could and should be the "first mover" on a global scale for alternative fuels.

Workshop results

Over the past two years, a number of successful in-flight tests using various blends of alternative fuels have been conducted and much progress has been achieved. Expectations are high for greater use of environmentally friendly drop-in biofuels for aviation in the short to medium term. It was concluded that, given sufficient demand or incentive, significant supplies of biofuels offering a 50% or more reduction in lifecycle carbon dioxide emissions could be available in 15 years.

In order to fully assess the environmental impact of alternative fuels, there will have to be a standardization in the quantification of life-cycle carbon footprints of all fuels. This will be essential to not only compare alternative fuels in terms of their environmental benefits, but also support the development and use of such initiatives as market-based schemes, themselves incentives to use environmentally-friendly alternative fuels.

If we are to realize the environmental potential of alternative fuels, international cooperation is paramount. Thus far, regional and national consortia have done an excellent job of bringing together the expertise to consider technical issues and advance the state-of-the-art. As a global industry, however, international aviation requires global harmonization and consistency for optimum efficiency of operations. As the only recognized forum to deal with international aviation, ICAO is committed to fulfill its leadership role in achieving effective coordination among all aviation stakeholders, be they States, industry or specialized agencies.

The way forward

The workshop was designed as a preparatory event to a major conference in November 2009 that will establish a roadmap for the implementation of alternative fuels for aviation.

At this stage, it is envisaged that the global roadmap will include:

- coordination mechanisms among the major international specification groups on new fuel specification and simplified approvals of new alternative fuels;
- rules and standard methodologies for calculating lifecycle (well-to-wake) carbon footprints;
- a globally harmonized way of assessing technology-readiness levels of aviation fuels;
- a standardized vocabulary and definition of terms used in alternative fuels;
- guidance to facilitate airport/airline/distributor/fuel supplier costs and benefits;
- alignment of several broad feedstock-centric research roadmaps and programmes to ensure biofuel supply development is coordinated between aviation, agriculture and renewable fuel interests; and
- alignment of various national and government-backed infrastructure investments in synthetic and biofuel pilot plants and possibly full scale production facilities.

For more information and to view the presentations: **http://www.icao.int/waaf2009/**

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