Alternative Jet Fuels: Challenges & Opportunities

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Environmental Protection that Allows Sustained Aviation Growth

**ENVIRONMENT AND ENERGY GOALS**

**NOISE**
Reduce the number of people exposed to significant noise around U.S. airports

**AIR QUALITY**
Reduce significant air quality impacts attributable to aviation

**CLIMATE**
Reduce emissions that impact climate

**ENERGY**
Develop and deploy alternative aviation fuels
Environmental and Energy Strategy

FAA VISION
Reach the next level of safety, efficiency, environmental responsibility and global leadership

IMPROVE
• Adapt roadmaps
• Fill research pipeline

EVALUATE
• Progress toward goals
• Mitigation opportunities

GOALS
• Noise
• Air Quality
• Climate
• Energy

PLAN
• Environment and Energy Statement
• U.S. Aviation State Action Plan
• Research roadmaps

ADVANCE SCIENCE AND INTEGRATED MODELING
• Source characterization
• Propagation and dispersion
• Health and welfare impacts
• Aviation Environmental Tool Suite

IMPLEMENT
• Technology
• Alternative Fuels
• Operations
• Policy

ENVIRONMENT
U.S. Aviation State Action Plan

Submitted to ICAO in June 2015
Follows five pillar environment and energy strategy
Summarizes efforts across U.S. Government
Includes innovations providing positive impacts on the economy from:

- New aircraft technology
- Alternative jet fuel use
- Air Traffic Management and operations improvements

State Action Plans (including the U.S. plan) are available at:
http://www.icao.int/environmental-protection/Pages/ClimateChange_ActionPlan.aspx
Challenges

• Time and resources to evaluate and approve new fuels
• Feedstock production infrastructure
• Logistics and supply chain development
• Demonstration and scaling of conversion technologies
• Investment in commercial scale fuel production infrastructure
• Achieving competitive cost
• Ensuring Sustainability
Alternative Jet Fuel must be “drop-in” – have equivalent safety and better environmental performance and must be cost competitive.

Aviation should be lead user of alternative fuels.

Government Role is to assist in overcoming barriers.

Rely on Public-Private Partnerships.

Credit the use of Alternative Jet fuels in CORSIA.

Fund university research.

Address the whole supply chain.

Leverage domestic and international expertise and resources.

Enable all possible fuels that meet criteria.
How Our Approach Has Led to Success

In the United States:
- Government efforts have helped with certification of new fuels
- Public-Private Partnership through CAAFI has facilitated a 15-fold growth in alternative jet fuel use in the U.S.
- Industry has the desire to see increased alternative jet fuel usage, the government helps when barriers arise (e.g., need to certify fuels)

Policies for alternative fuel should be specific to States – ICAO plays a key role coordinating and country and regional policies make the most sense and allow consideration of unique circumstances
ICAO’s Role in Alternative Fuels

Excellent Forum for Coordination

– Work in CAEP/Alternative Fuels Task Force among experts from Member States, industry, and civil society
– Mexico City conference can enhance coordination and learning among ICAO Member States to enable increased alternative fuel deployment

Develop Synergies among Solutions

– Creating a method to account for benefits from Alternative Fuels in CORSIA can help further incentivize
– Facilitating technical and information exchanges among ICAO Member States
Summary

Three Key Points:

1. Alternative fuels provide economic benefits and are key to meeting ICAO goals.
2. Public-private partnerships have proven successful in the United States.
3. Approaches to advancing alternative fuel development and deployment should be State and Region based, with ICAO serving to coordinate.