



Alternative Aviation Fuel Essential to Aviation's Future

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Introduction to ACA

International Aviation Consulting Firm

- Founded 1989 as an aviation consulting and financial advisory firm specializing in the airline, airport and aerospace industries.
- Alternate energy practice <http://www.aca-assoc.com/alternative.php>.



A review of trends
in the airline and
commercial jet
aircraft industries.





Outline

Why Aviation Needs Alternative Fuels

Progress to Date

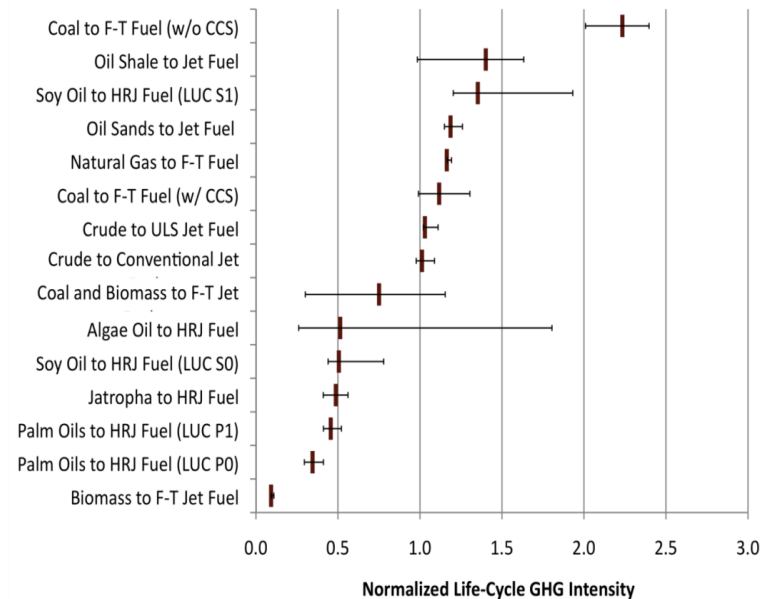
Why do Business with Aviation?



Environmental Drivers

Global Climate

- ICAO goal
 - Carbon neutral growth by 2020
 - 50% reduction 2050
- Alternate fuel life cycle greenhouse gas output can be lower than petroleum-based



Graphics from CAAFI presentation

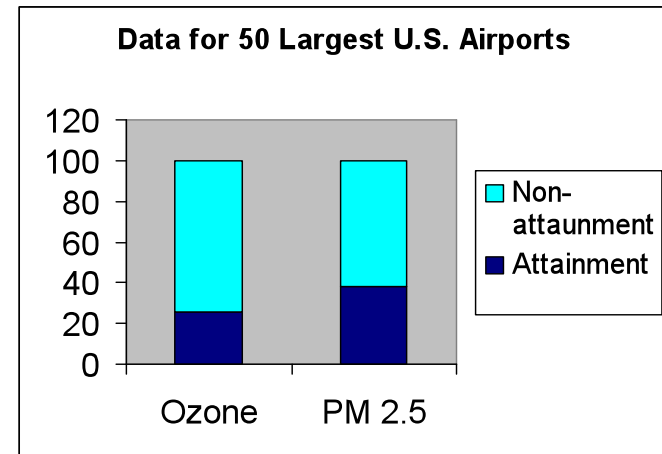




Environmental Drivers

Air Quality

- Majority of 50 largest U.S. airports in areas that don't meet EPA air quality measures for ozone and/or particulate matter
- Non-attainment limits critical capacity additions
- Alternate jet fuel is usually lower in PM emissions than petroleum-based fuels



Graphics from CAAFI presentation





Financial Challenge

Deployment goals by 2013

- Three domestic U.S. projects
- Three international projects

\$1 to \$2 billion challenge



ACA's Goals

Help CAAFI arrange off- take commitments for first HRJ facility

Help FAA and USDA improve effectiveness of existing programs

Advance Port Authority of New York & New Jersey's alternative fuel work

Deploy CAAFI's resources to help a joint Canada/US project

Support alternative aviation fuel projects in Brazil with Rio team

Support FAA's & CAAFI's efforts in the Pacific



Major Progress

2009	<ul style="list-style-type: none">• Inter-American Development Bank focused on alternative aviation fuel market
2009	<ul style="list-style-type: none">• Brazil engaged in alternative aviation fuel
2009	<ul style="list-style-type: none">• Fischer Tropsch aviation fuel certified
2010	<ul style="list-style-type: none">• USDA & DOE engaged on alternative aviation fuel financing issues
2010	<ul style="list-style-type: none">• USDA extends support to foreign-owned projects in U.S.
2010	<ul style="list-style-type: none">• USDA/ATA/FAA Farm-to-Fly Initiative



Coordinated U.S. Government Policy

- **FAA**
 - Fuel testing & certification
 - Aviation lifecycle GHG analysis
 - CAAFI sponsorship
- **USDA**
 - Grants & loan guarantees
 - Feedstock improvement R&D
 - Biomass crop assistance program
 - Price support
- **DOE**
 - Grants & loan guarantees
- **EPA**
 - Renewable fuel standards (RFS)
 - Environmental measurements
- **Department of Defense**
 - Leaders in supporting development
 - Fuel test & certification
 - Joint Airline/Defense Task Force



Alternate Fuel Initiatives

Regional Projects

Key projects

- **Northwest**
 - Seattle/AltAir
- **North Central**
 - Ohio
- **South East**
 - Georgia
- **North East**
 - Port of New York Authority
- **Hawaii**

Transportation Research Board

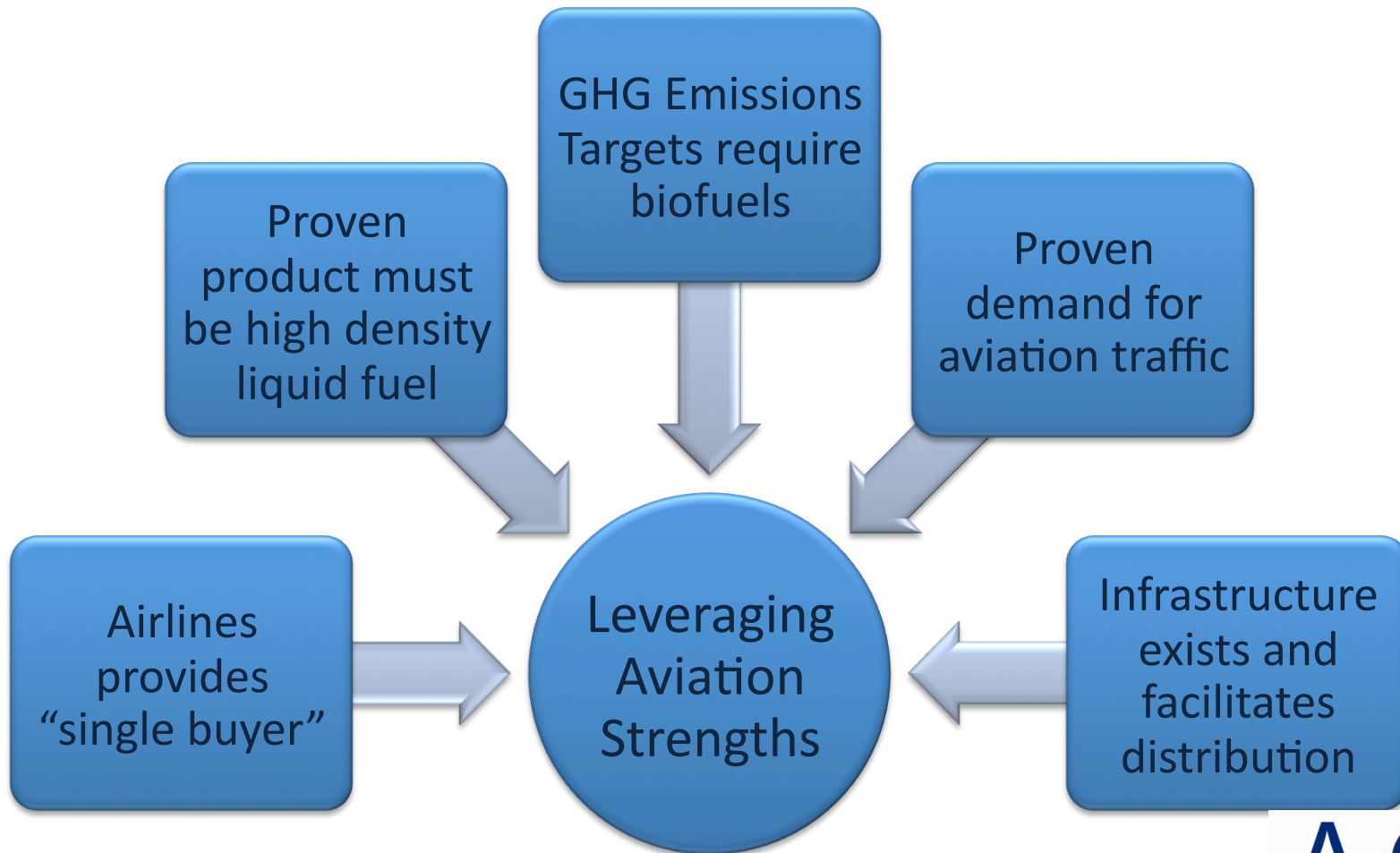
- **ACRP 02-23 Airport Particulate Emissions**
- **ACRP 02-18 Alternative Aviation Fuel Production at Airports**
 - Develop handbook for airports and fuel supply chain
- **ACRP 02-36 Alternative Fuels Distribution at Airports**
 - Distribution of advanced drop-in fuels





New Business Opportunity

Alternative Aviation Fuels





CAAIFI Support for Suppliers

- Educate/introduce suppliers to aviation
- Provide support with governmental agencies
 - Expedite fuel certification, feedstock development, etc.
 - Feedstock and process agnostic
- Airlines assigned to work with specific projects



Canada's Opportunity

Lead the Effort

Canadian Opportunity

- Agriculture production
- Alternative fuel industry
- Aviation industry

Utilize CAAFI's Work

- Use U.S. airlines for risk sharing
- Leverage U.S. investments through strategic partnerships



BECOME INVOLVED – CONTACT US

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