

# Alternative Aviation Fuel CAAFI's History of Success

**Donald P. Schenk**

President & CEO

**ACA Associates, Inc**

+1 646-248-3461

dpschenk@aca-assoc.com

**Petro 2011 Expo**

San Antonio, TX

May 8 – 13, 2011



# 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.

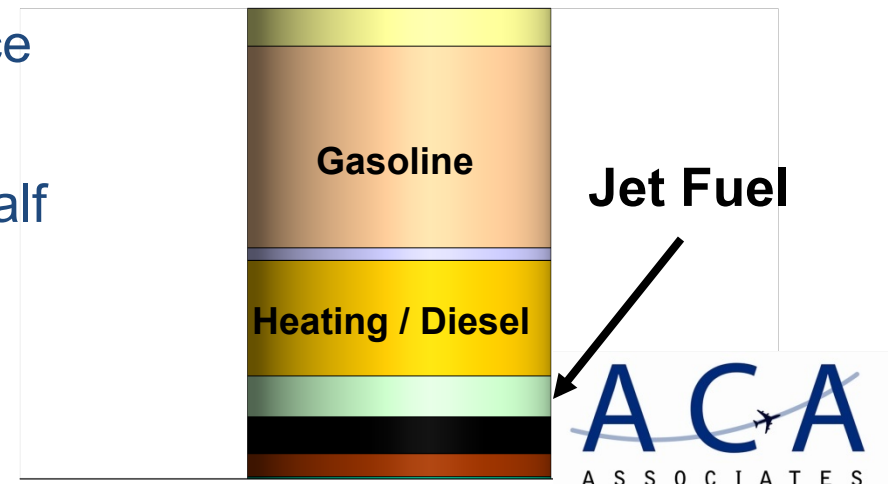
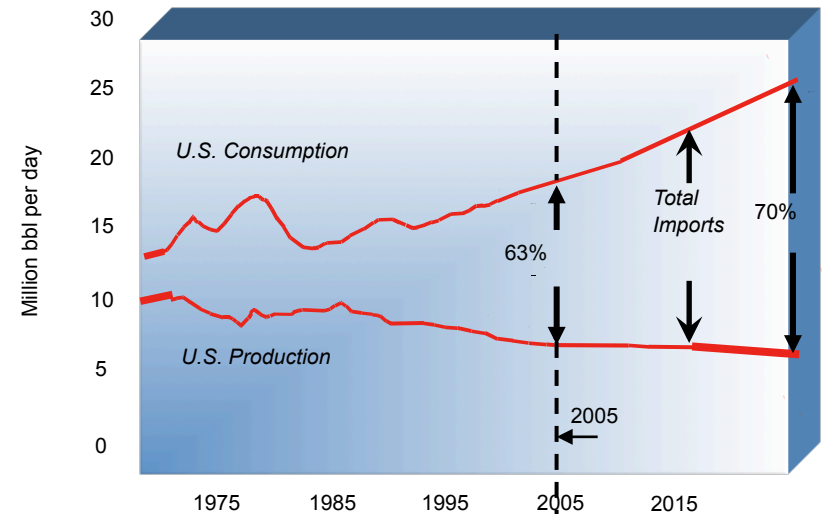
# Outline

- The Need for Alternative Aviation Fuels
- CAAFI – “The Solution”
- Certification Achievements
- Analytical Framework Achievements
- Role of Collaboration
- The Financing Challenges
- Military Importance of Alternative Fuels
- Conclusion



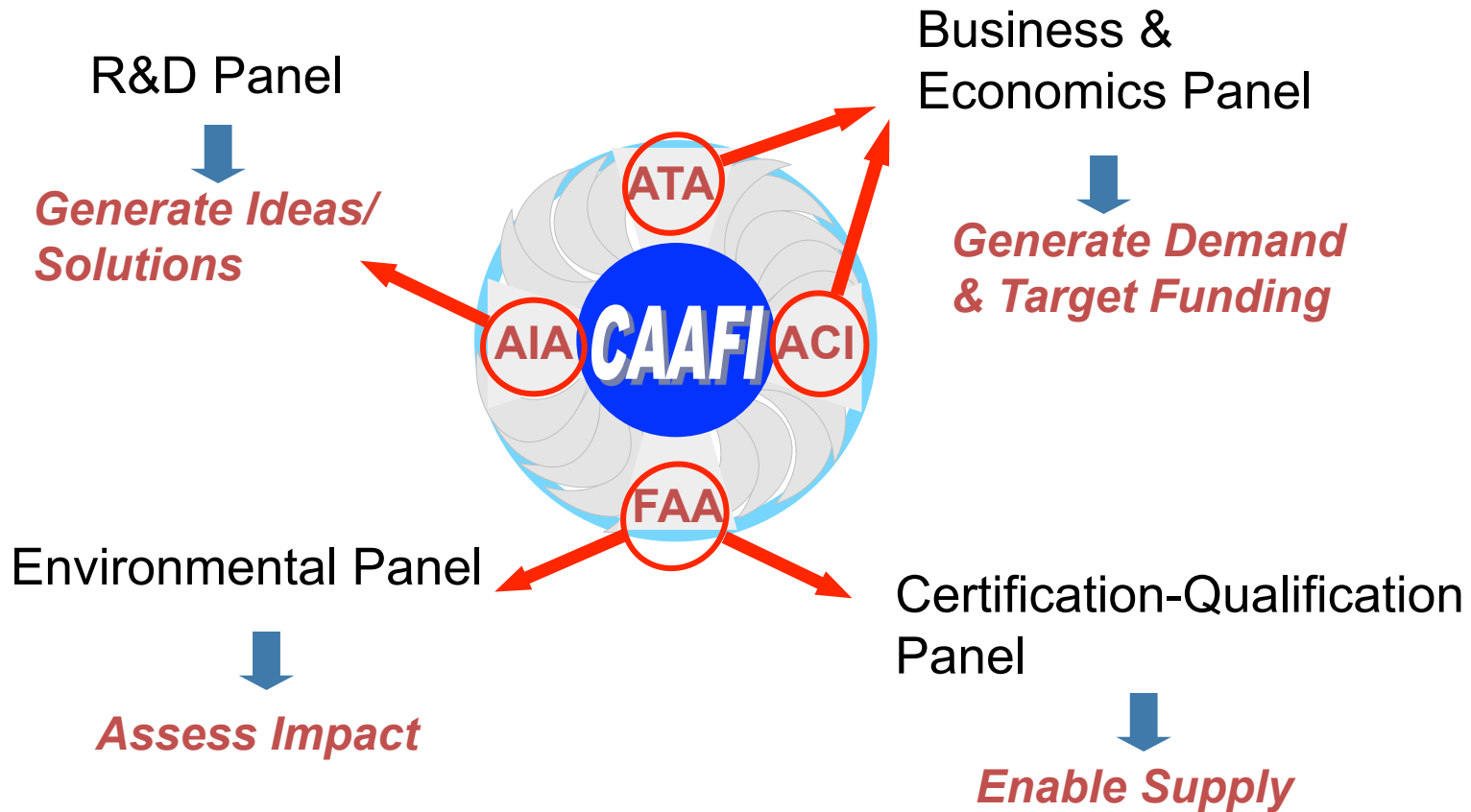
# Need for Alternate Aviation Fuel

- Security of fuel supply
- Improve jet fuel market dynamics
  - 10% of barrel of oil goes to jet fuel
- Civilian and military goals require alternative aviation fuels.
- Liquid hydrocarbons are sole source aircraft fuel
- U.S. Air Force mandate, by 2016 half of all fuel purchased for the continental U.S. fleet must be purchased domestically from alternative fuel sources.





# CAAIFI Teams Leverage Sponsor Strengths



..... Process Owners Drive Outcomes

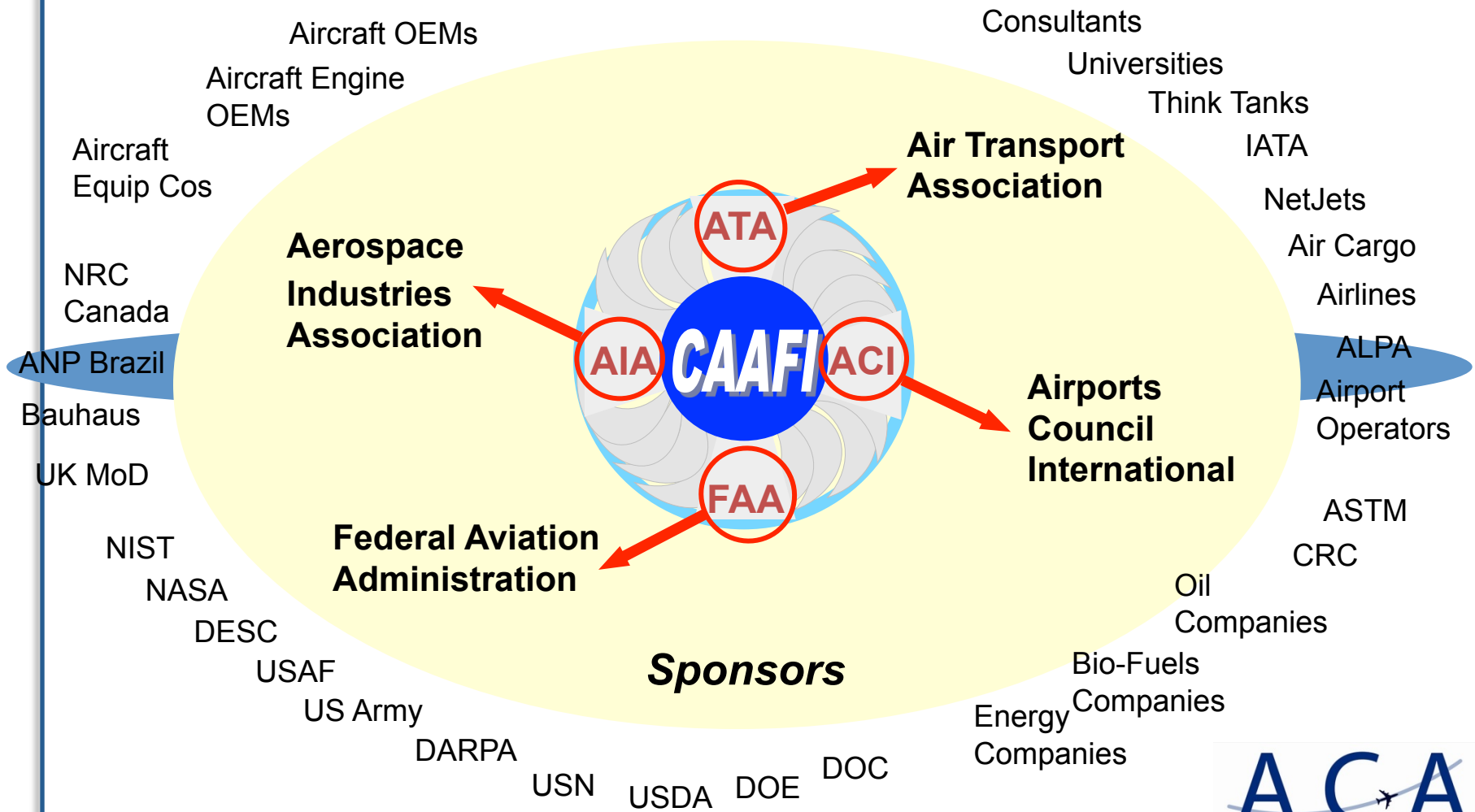
Graphics from CAAIFI presentation





# CAAIFI Teams Leverage Sponsor Strengths

## Stakeholders



...Over 300 Sponsors/ Stakeholders from all Continents





# Certification Achievements

## FAA/DOD Teamwork

- Air Force Research Lab at Wright Patterson AFB
  - Initial fit-for-purpose testing
  - MIL-SPEC testing and certification
- FAA & Civil Engine Manufacturers
  - Static testing & analysis
- ATSM review and approval of new specs

## Results

- Fischer Tropsch certified 2010 (D7566)
- HEFA or HRJ close to being certified

# Collaborative Advances

- Intergovernmental Initiatives
  - FAA/USDA MOU
  - USDA/DOE/EPA
  - State of Hawaii/U.S. Navy
- Government – Industry
  - DLA Energy/U.S. Air Transport Association
  - USDA/Boeing/ATA (“Farm to Fly”)
- International
  - U.S./Brazil MOU



# Activity Throughout U.S.



Arizona

California\*

Florida \*\*

Georgia\*\*

Hawaii\*\*

Illinois

Michigan\*\*

Mississippi\*

Ohio\*\*

New York\*\*

Pennsylvania\*\*

Oklahoma

Tennessee\*\*

Texas\*\*

Washington\*

West Virginia

Wisconsin

Source: Richard Altman, CAAFI

\* airline/producer MOU's \*\* study proposals or pilot plants

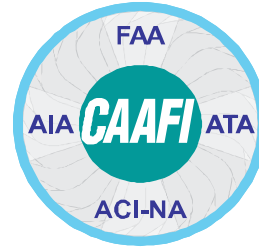
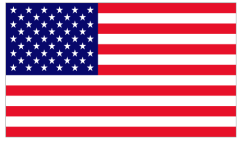




# U.S Suppliers Lead Global Advance

— U.S. entities — Renewable

2006



Altair – Washington / HRJ  
Rentech – Mississippi / BTL  
Rentech – California / BTL  
Gevo – Illinois / Alcohols



Shell - GTL



*SWAFEA /  
AlfaBird*

Solena – BA - MSW- L

Neste – Lufthansa - HRJ

Amyris - Azul – FRJ



*ABRABA*

Air BP – TAM - HRJ

Solena - Qantas -MSW-L



2011



Sustainable Aviation Fuel  
Users Group

Solazyme - Qantas - HRJ



Source: Richard Altman, CAAFI

# Financing Challenge

- 2008 Financial crisis and policy indecision left financial vacuum
- DOE and USDA financed experimental and pilot projects
- Commercial scale alternative aviation fuel projects lacked financing
- Successes
  - Changes in USDA loan guarantee program
  - Involvement of regional development banks
  - Contribute to industry Tool Kits (Metron will elaborate)

## How ACA Associates Can Help

- Identification of regional opportunities
- Structuring contractual agreements
- Identifying regional financing sources
- Risk management tool kits

# How You Can Help

## Become Involved – Contact Us

### **Donald Schenk**

President

ACA Associates, Inc.

Mobile: +1-646-248-3461

[www.aca-assoc.com](http://www.aca-assoc.com)

[dpschenk@aca-assoc.com](mailto:dpschenk@aca-assoc.com)

### **Richard Altman**

Executive Director

CAAFI

+1-860-761-8634

[www.caafi.org](http://www.caafi.org)

[altrich@cox.net](mailto:altrich@cox.net)

### **John Heimlich**

Chief Economist

Air Transport Association

+1-202-626-4180

[www.airlines.org](http://www.airlines.org)

[jheomlich@airlines.org](mailto:jheomlich@airlines.org)

### **Bruno Miller**

Metron Aviation

+1 617 -291-6352

[bruno.miller@MetronAviation.com](mailto:bruno.miller@MetronAviation.com)

