

# Overview of FAA Alternative Jet Fuel Efforts

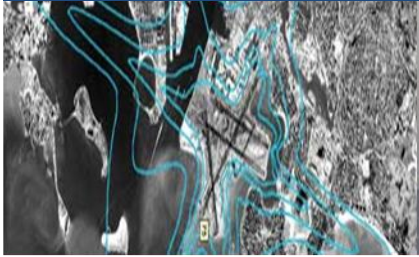
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Federal Aviation Administration



# Aviation Environmental Challenges

## NOISE



## AIR QUALITY



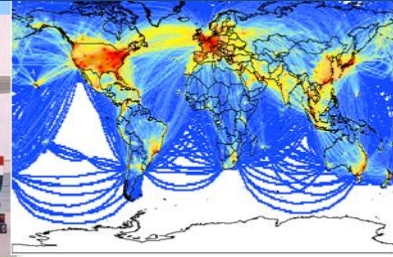
## WATER QUALITY



## ENERGY



## GLOBAL CLIMATE



- Aviation impacts community noise, air quality, water quality, energy usage, and climate change
- Environmental impacts from aviation emissions could pose a critical constraint on capacity growth
- Alternative jet fuels could reduce the environmental impact of aviation:
  - Carbon neutral growth by 2020 compared to 2005
  - 1 billion gallons of renewable jet fuel in use by aviation by 2018



## Alternative Fuels Principles – FAA view

- Alternative Jet Fuels must be “drop-in”, have equivalent safety and better environmental performance than petroleum Jet fuel
- Government role to address key barriers
- Enable all possible fuels that meet criteria
- Work through Public-Private Partnerships
- Address the whole supply chain
- Leverage expertise and programs of other States
- Aviation should be a lead user of alternative fuels





# FAA Programs supporting Alternative Jet Fuels



## Aviation Sustainability Center (ASCENT)

- Center of Excellence for Alternative Jet Fuels and Environment
- University team led by WSU and MIT



## Continuous Lower Energy, Emissions and Noise (CLEEN)

- Reduce aircraft fuel burn, emissions and noise through technology & advance alternative jet fuels
- CLEEN I: 2010-2015 (\$125M with 1:1 minimum cost share)
- CLEEN II: 2015-2020 (\$100M with 1:1 minimum cost share)



## Commercial Aviation Alternative Fuels Initiative (CAAFI)

- Public-Private coalition for commercial aviation to engage the emerging alternative fuels industry



## Current FAA Alternative Jet Fuel Activities

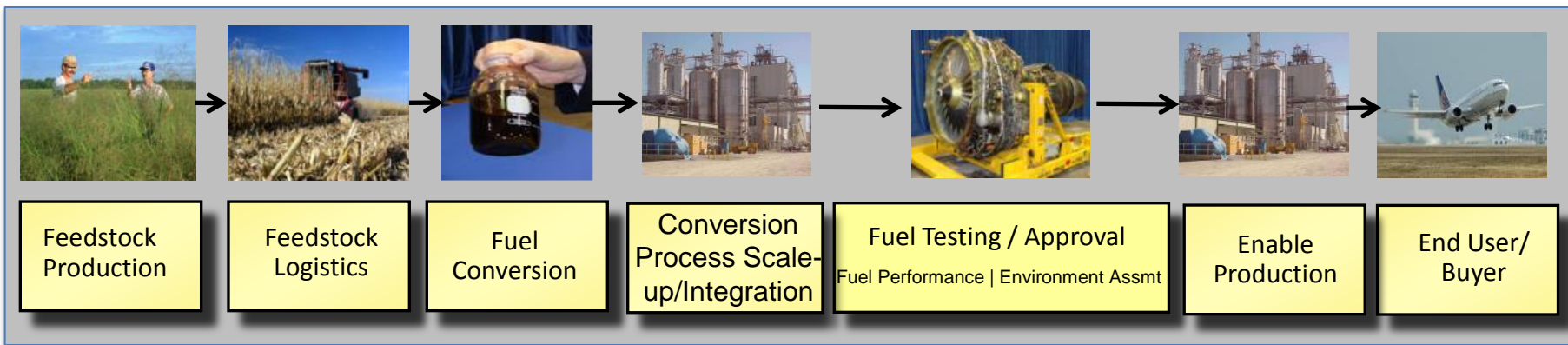
- Testing
  - Material compatibility
  - Certification / Qualification
  - Emissions measurements
- Analysis
  - Environmental sustainability
  - Techno-economic analysis
  - Future scenarios
- Coordination
  - Interagency
  - Public-Private
  - State & Regional
  - International







# Coordinating U.S. Agency Efforts across Supply Chain Facilitating Deployment and Investment



# Commercial Aviation Alternative Fuels Initiative

- **Public-Private coalition for commercial aviation to engage the emerging alternative fuels industry**
- **Coordinate development of alt jet fuels:**
  - Equivalent safety/performance (drop-in)
  - Comparable cost
  - Environmental improvement
  - Security of Energy supply
- **Four teams for key issues:**
  - Environment Team
  - Certification-Qualification Team
  - R&D Team
  - Business Team
- **State and Regional Support**
- **International Cooperation**



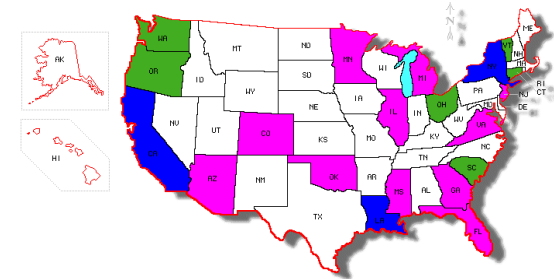
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We Connect the World





# Farm to Fly 2.0 Agreement

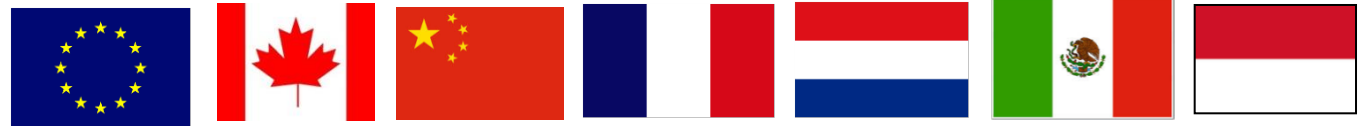
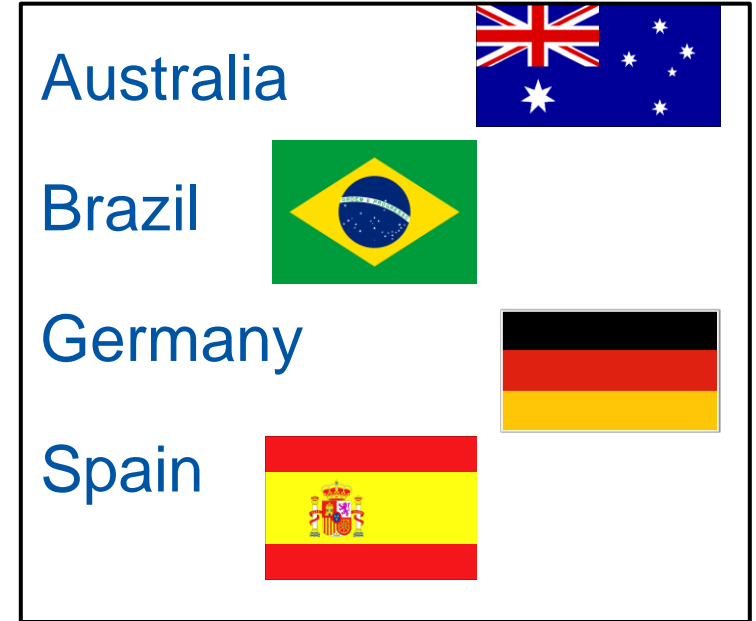
... “THEREFORE, AS OUR GOAL, we the undersigned, jointly signify our intent to continue working together over the next five years in an expanded collaboration entitled “Farm to Fly 2.0”, to **enable commercially viable, sustainable bio-Jet Fuel supply chains in the U.S. that are able to support the goal of one billion gallons of bio-Jet Fuel production capacity and use for the Aviation Enterprise by 2018”**





# International Engagement

- Bilateral Cooperation Agreements
- Coordination with counterparts, and R&D organizations
- U.N. International Civil Aviation Organization



## Alt Fuels Development Progress

- ASTM International approval of Synthesized Iso-Paraffinic (SIP) fuel (June 2014), additional ballots under preparation
- Engine tests of novel fuels continue
- ASCENT analysis projects established
- Continued domestic and international engagement



# Summary

- Advancing use of alternative jet fuels is key for meeting U.S. environmental goals
- Testing efforts accelerate alt fuel technology development
- Analysis efforts improve environmental impacts quantification and decision-making
- Coordination among government agencies and across the supply chain is key to deployment
- Partnership between government & industry vital to success
- Global engagement will support sector goals





ICAO

ENVIRONMENT

# Thank You

