

Aviation Alternative Fuels

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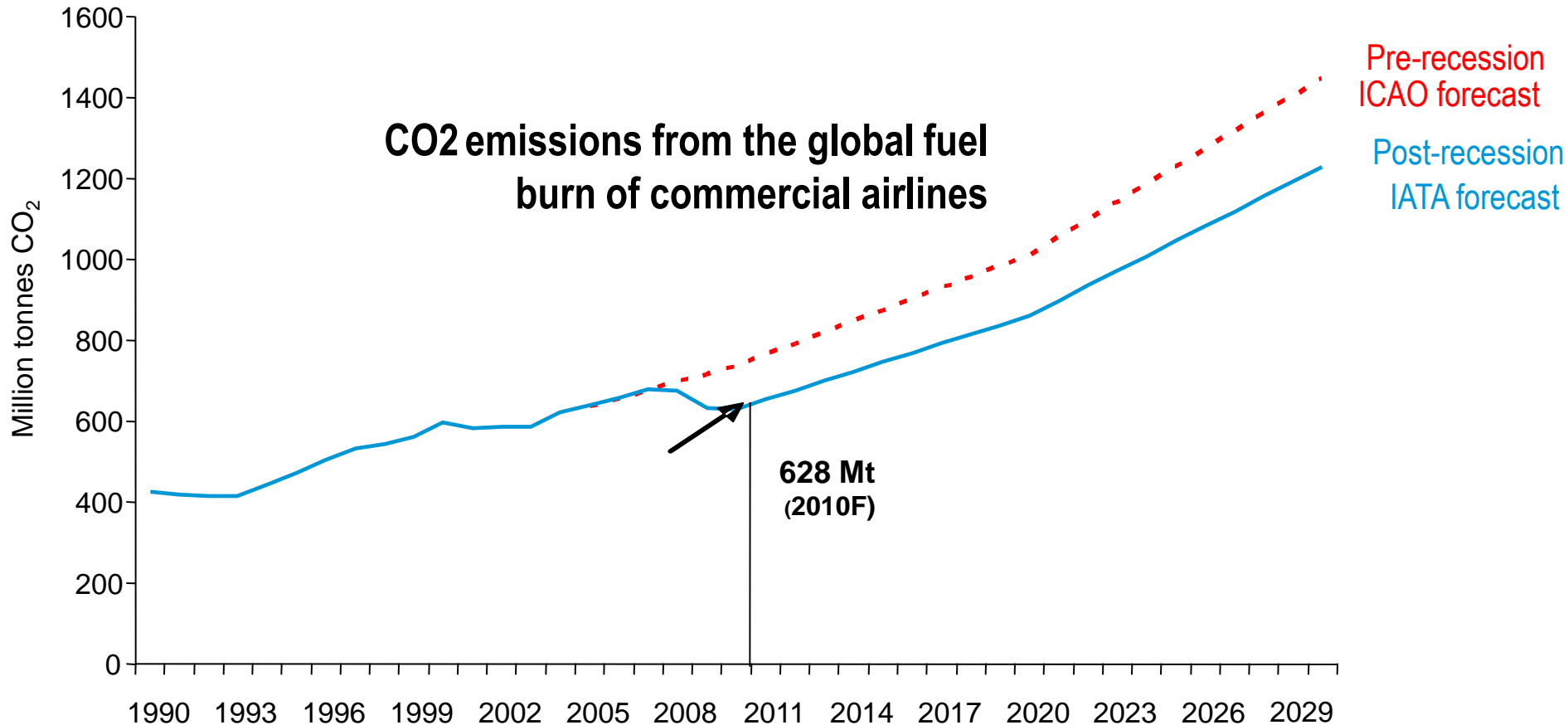
ABRABA - Executive Director





Aviation 2% of man-made CO₂ emissions
3% of global greenhouse gas emissions
Set to triple by 2050 if no action taken

Aviation faces an emissions challenge

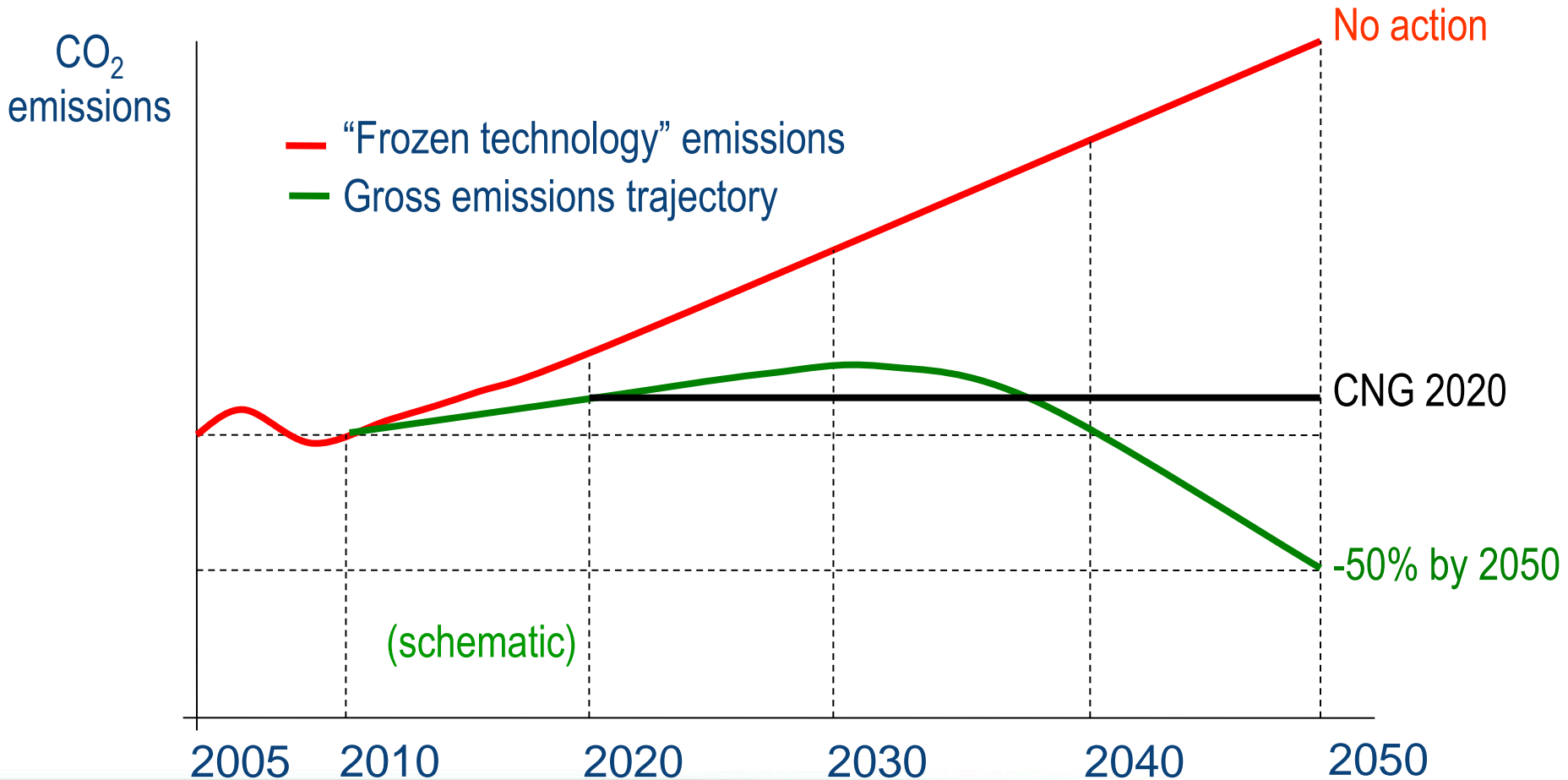


Source: IATA

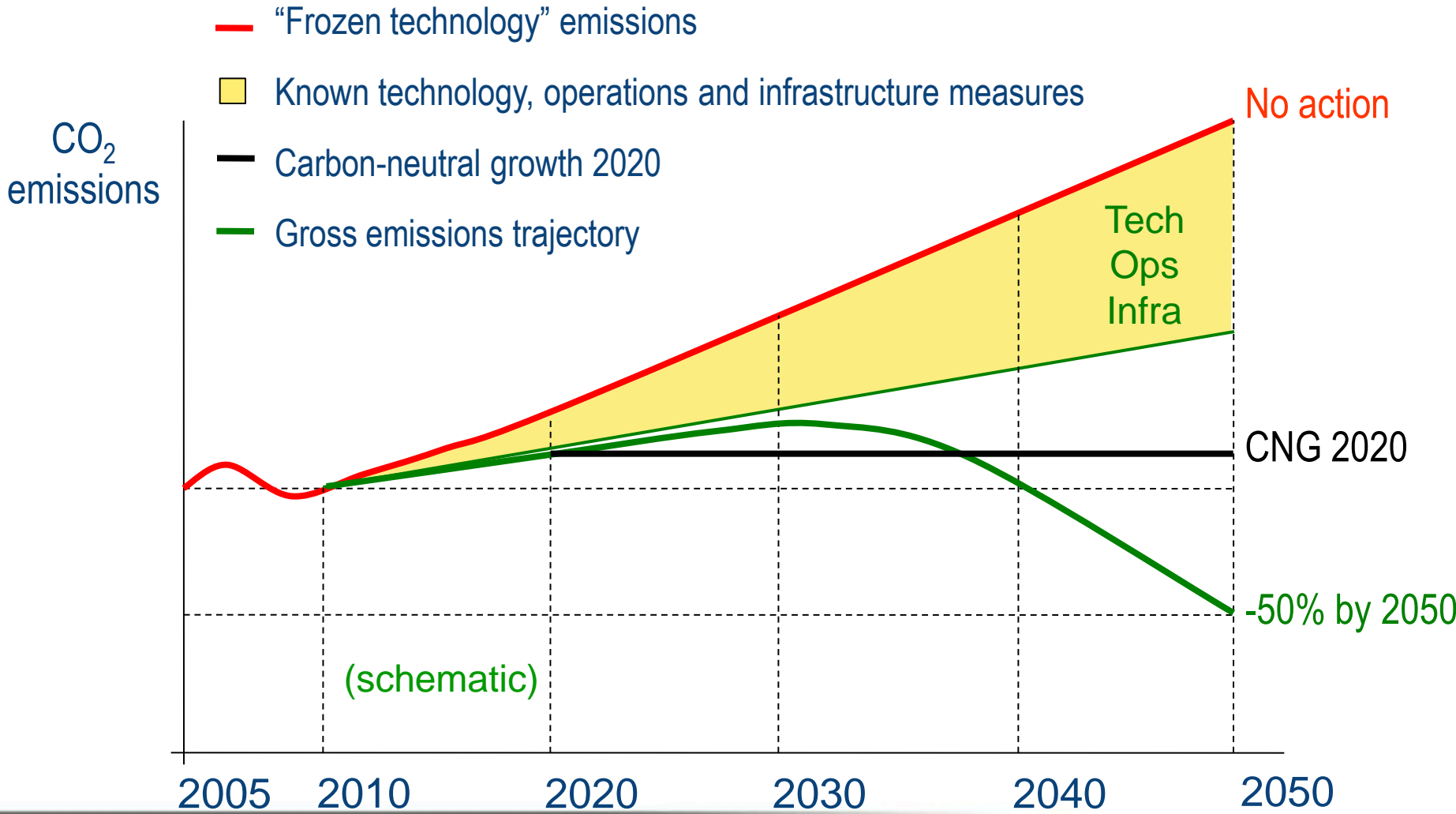
1. Invest in **new technology**
 - Including sustainable aviation **biofuels**
2. Fly using more **efficient operations**
3. Build and use **efficient infrastructure**
4. Use effective **economic measures**



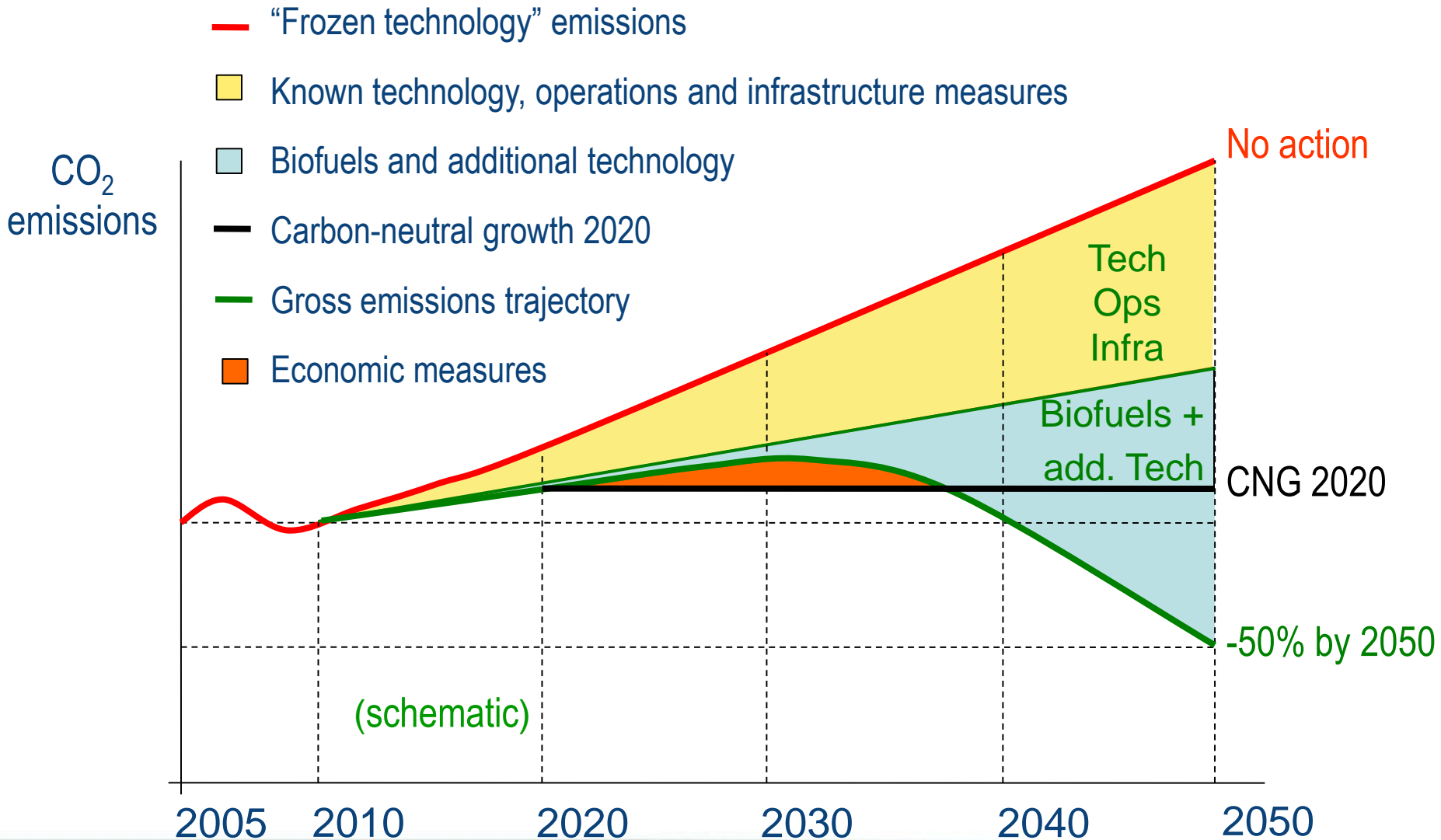
Emissions reduction roadmap



Emissions reduction roadmap



Emissions reduction roadmap



Powering the future of flight
The six easy steps to growing a viable aviation biofuels industry

World Economic Forum Report Identifies Biofuels as the 'Game Changer' to Achieve Aviation Emissions Targets

Submitted by joanne on May 24, 2011 - 3:03 pm

(GreenAirOnline) An aviation sustainability report identifies the industry's target of halving its carbon dioxide emissions by 2050 and investment by airlines in new aircraft technology identifies four key levers to achieve this goal: increasing aircraft efficiency, improving ground operations, increasing aircraft efficiency, and increasing aircraft efficiency.

No Comment

... finds that achieving this challenge given an 85% reduction in CO2 emissions will require a \$6 trillion investment in infrastructure. The report also identifies the need for a new regulatory framework.

U.S. Military in Hunt for Bio-based Jet Fuel

Looking for a few good crops
By PRACHI PATEL-PREDD / AVIATION WEEKLY

Email Print

Progress on alternative jet fuels "stunning", says aviation industry, but commercialization is now the major challenge

Mon 2 Aug 2010 - Environmental executives from Boeing, Airbus and IATA lined up at the recent Farnborough Air Show to proclaim rapid progress in the development of alternative sustainable jet fuels but warned of the challenges ahead in bringing them to commercial scale. Producers and end users came together during the show to put on a series of briefing sessions on biofuel developments. "Stunning is the only word I can use to describe how much progress has been made in the last three years," said Paul Steele, IATA's Director of Aviation Environment and head of the industry coalition Air Transport Action Group. "We have seen a huge amount of activity in driving this forward. Certification has been the prime focus to begin with because safety is a key issue. We believe commercial biofuel flights are now three to five years away - some may say sooner than that."

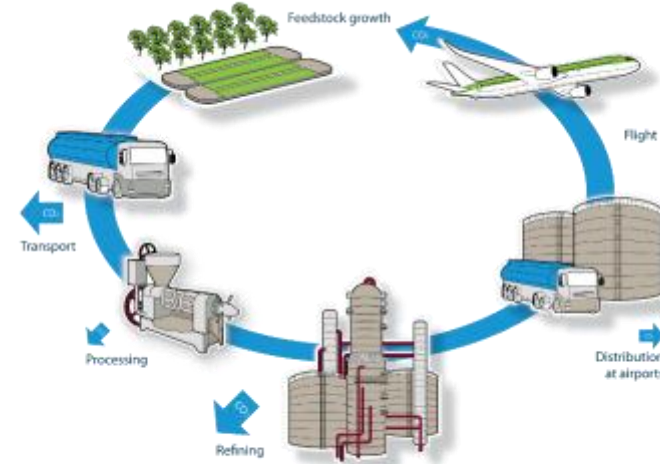
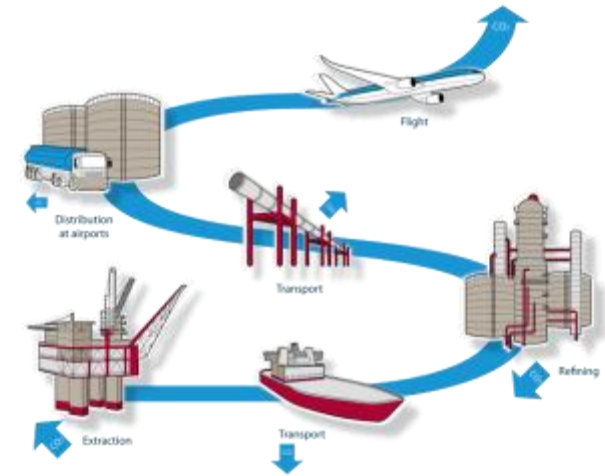
Billy Glover, Boeing Commercial Airplane's Managing Director for Environmental Strategy, said the common wisdom just five years ago was that biofuels for commercial aviation were impossible.



(photo: Solazyme)

Sustainable Biofuels for aviation?

- **A long way in a few years...**
 - From 'no way' to 'dream' to reality
- **Low carbon**
 - Could reduce aviation emissions up to 80%+
- **Diversified supply**
 - Moving away from one fuel source
- **No changes in engines and airplanes**
 - Drop-in fuels



Sustainability requirements



Land use



Water and air quality

AVIATION BIOFUELS



Food security



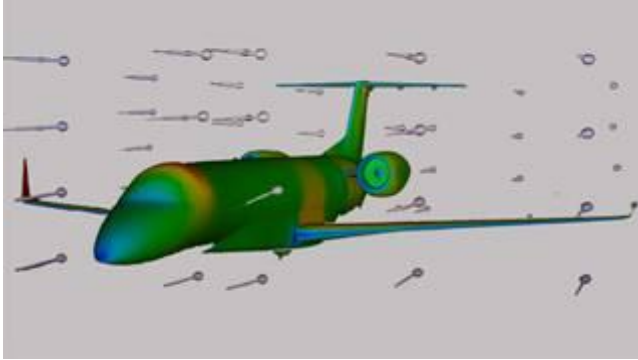
Societal development



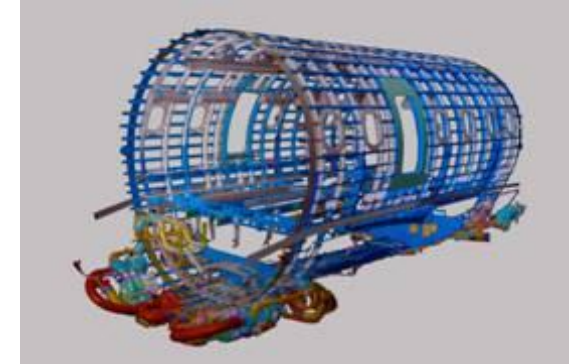
Soil and biodiversity



Embraer Alternative Fuel Program



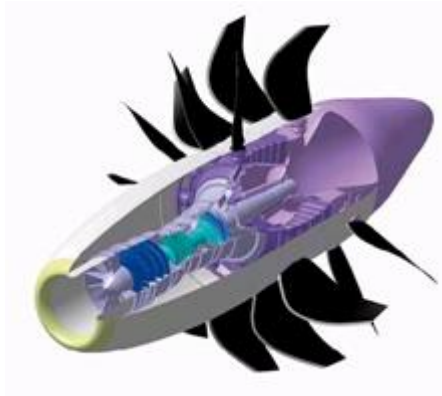
Design & Aerodynamics



Structures



Biofuels

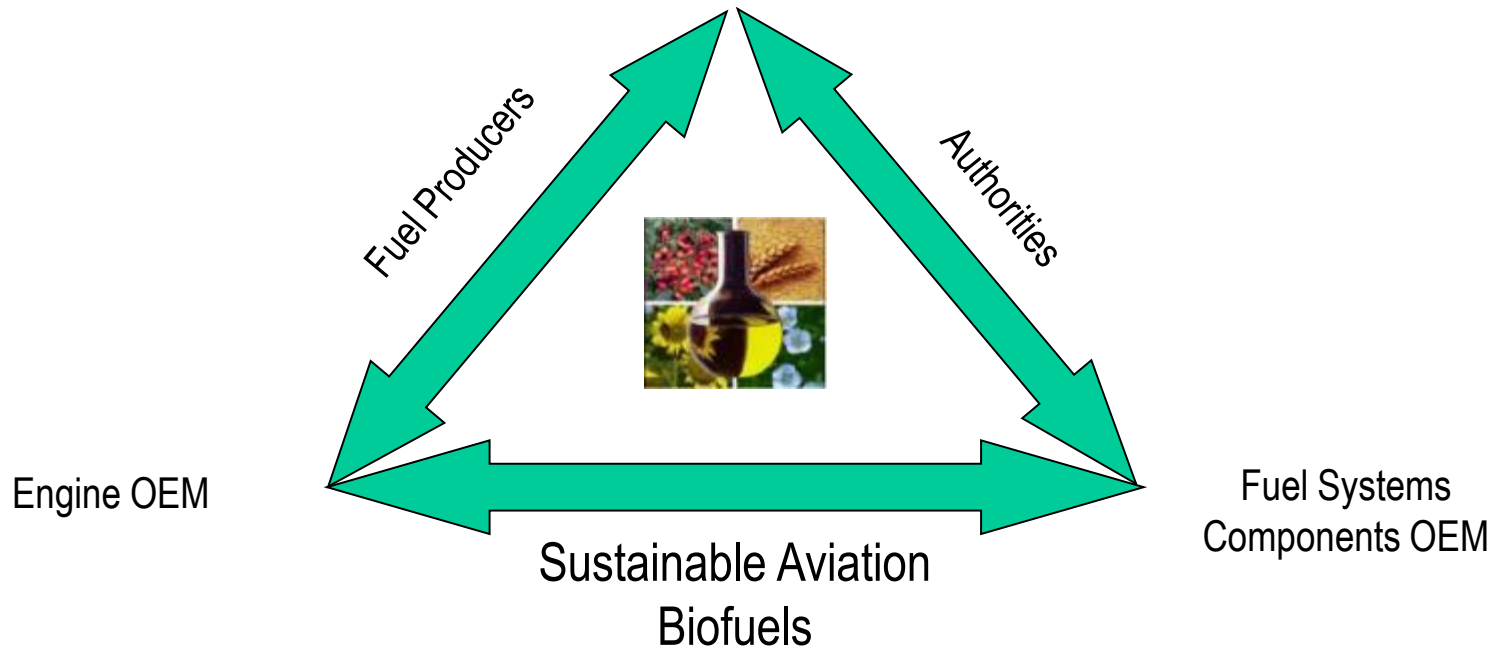


Powerplants



Systems

Program Integrator



Fermented Renewable Jet Fuel (FRJ)



GE
Aviation
AVIATION





abraba

aliança brasileira para
biocombustíveis de aviação

Launched in São Paulo: May, 2010

Formed by:

- Airlines
- Biofuel researchers
- Biomass producers
- Manufacturers

Objectives:

- Support aviation industry commitment to act on climate change
- Foster the development of sustainable biofuels
- Support the production scaling up



ALGAE



ABPPM
associação brasileira dos
produtores de pinhão manso



THANK YOU

