



Assistance for Action

Aviation and Climate Change Seminar

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A New Approach for Sustainable Biofuels

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Agenda

1. Airbus Commitment to CO2 industry Targets
2. Airbus Involvement in Alternative Fuels
3. Sustainability is a must
4. Airbus Alternative Fuels Projects
5. Implementing best practices for « Perfect Flights »...
6. Value Chains Socio-Economic benefits
7. Alternative Fuels and Land Restoration
8. The Airbus Alternative Fuels strategy

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7. Alternative Fuels and Land Restoration



Airbus' commitment to industry CO2 targets

Aircraft Technology
Eco-efficient Aircraft

- A320neo**: -15% fuel burn, Lower noise levels – up to 17dB below ICAO Ch4 standard, NOx emissions 50% below CAEP6 Standards
- A350 XWB**: -25% fuel burn, Lower noise levels – up to 16dB below ICAO Ch4 standard, NOx emissions 35% below CAEP6
- A380**: -20% fuel burn, Lower noise levels – up to 17 dB below ICAO Ch4 standard

Aircraft Technology
Eco-efficient Aircraft

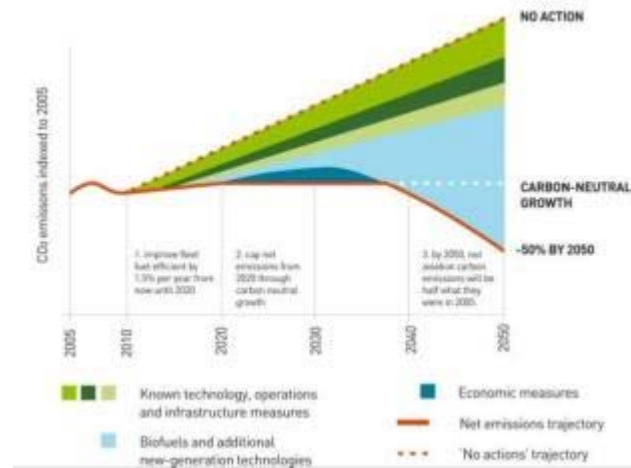
AIRBUS a catalyst for sustainable Bio-Jet Fuels

Airbus is a catalyst for sustainable aviation fuels, offering a complete value chain from feedstocks to aircraft.

Alternative Fuels
Value Chains



Aviation CO2 emissions roadmap



ATM
ProSky, SESAR

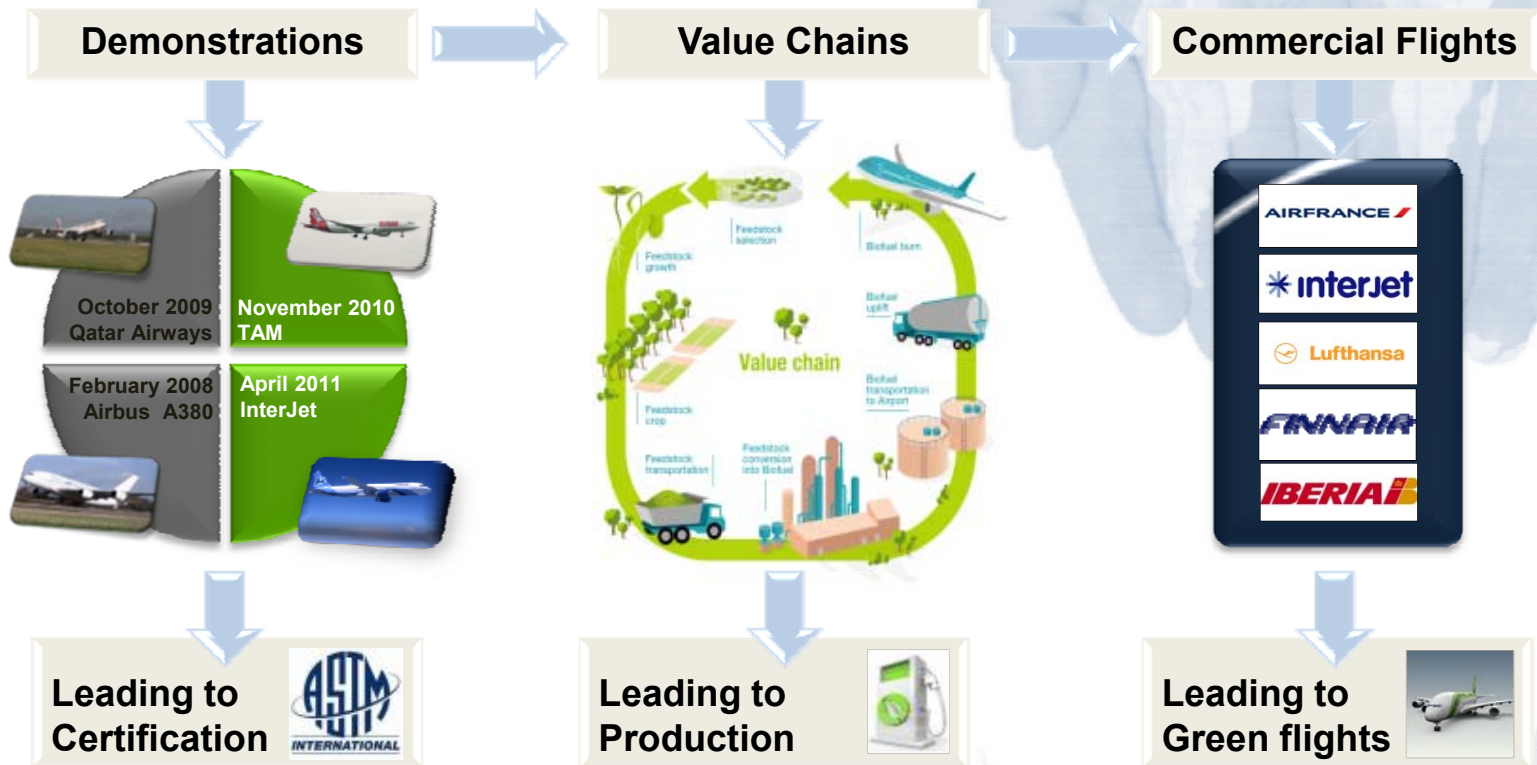
ATM
ProSky, SESAR



Operations



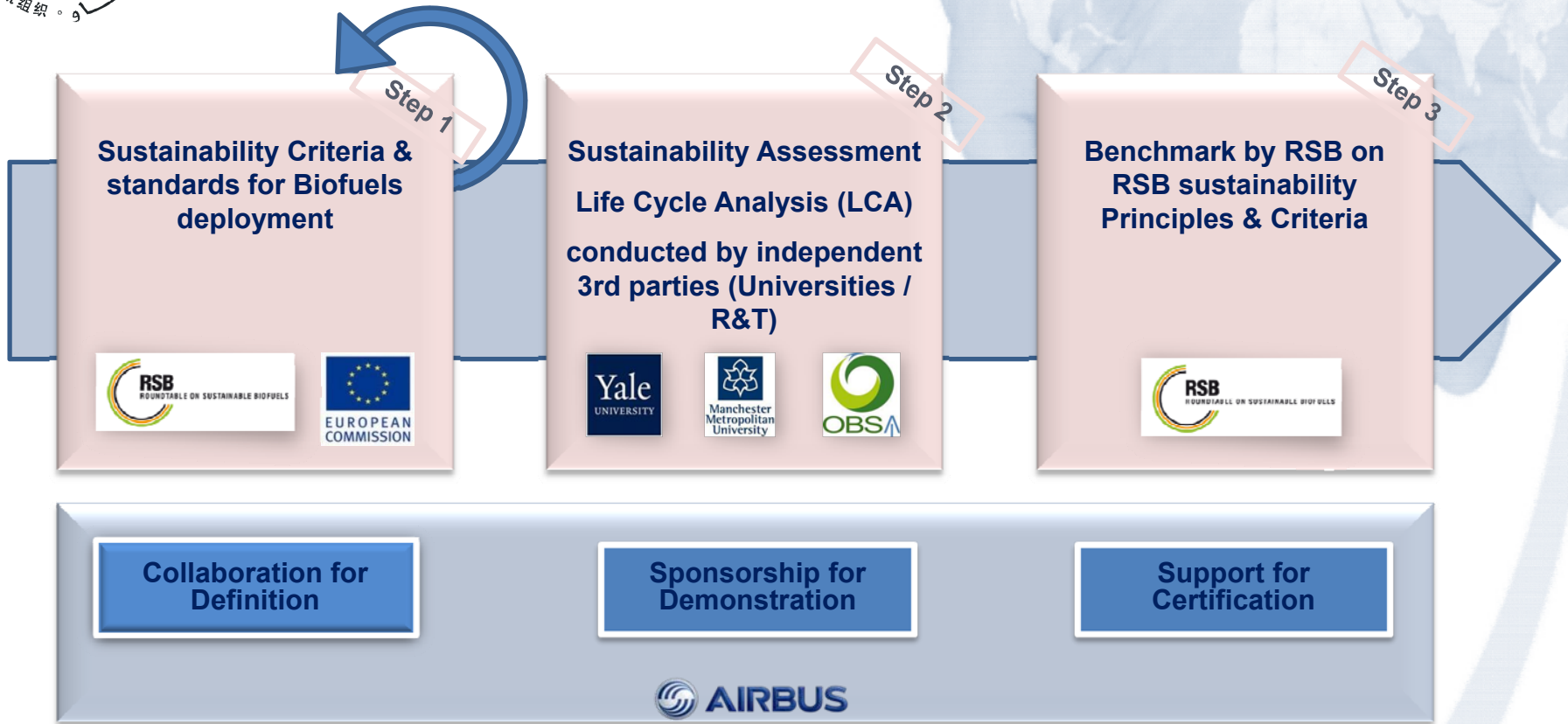
Airbus involvement in Alternative Fuels



Airbus Drivers
Customers, CO2 Reduction, Commercialisation, Aviation Industry



Sustainability is a must



Airbus' key objective is to ensure :a well balanced equilibrium between Economic, Social and Environment pillars

AIRBUS ALTERNATIVE FUELS PROJECTS



- Sustainability Study
- Value-Chain feedstock
- R & T
- Flights



What is Airbus doing?

Implementing Sustainable best practices for a “Perfect Flight”...

THE PERFECT FLIGHT -40%^{co}2

Aircraft
Technology



ATM &
Operations



Alternative
Fuels

18 June 2012: Airbus and Air Canada made North America's first ever Perfect Flight (over 40% of CO₂ reduction compared to a similar regular flight)

14 October 2011: Airbus and Air France completed the world's first greenest commercial flight (50% of CO₂ reduction compared to a similar regular flight)

In pursuing the Perfect Flight, Airbus believes that its scale-up can start today to shrink the environmental footprint of an aircraft's flight to a minimum. This can be achieved through the combination of all best practices currently available such

as operating the most eco-efficient aircraft, using sustainable alternative fuels, implementing streamlined Air Traffic Management (ATM) procedures and systems and optimizing Operations.

AIRFRANCE 

AIR CANADA 



What is Airbus doing?

Implementing Sustainable best practices for a “Perfect Flight”...

AIR France “Total Green” Flight October 13th 2011

- Commercial flight on the Toulouse-Paris shuttle
- A321, all engines blend 50% Alternative Fuels - A/C fuelling by AIRBUS in Toulouse
- 50% blend of HEFA kerosene supplied by SkyNRG in all engines – Cooking Oil feedstock



« Total Green » Flight

1. Fuel 50% blend with Alternative Fuels
2. Optimized navigation procedures for consumption reduction
3. A/C weight reduction (approx. 500Kg reduction)

44g CO₂/Km per passenger

More than 3 times less compare to a normal flight

AIRFRANCE

 **AIRBUS**
AN AIRBUS COMPANY

 dgac
DSNA

 SkyNRG
Sky Energy | The Fuel Future



What is Airbus doing?

Implementing Sustainable best practices for a “Perfect Flight”...

Air Canada – Airbus Perfect Flight

18th of June

- Commercial Flight Toronto – Mexico City
- Airbus A319 – Flight AC991
- Flight duration 4h45
- Optimized ATM & Operations
- Use of Alternative Fuels - Used Cooking Oil (50%)
- Weight reduction → approx. 500kg



More than 40% of CO2 emissions reduction compared to a normal Flight.

AIR CANADA



ValueChains socio-economic benefits



Propose solutions to keep profitability for Airlines → more than 30% of their operating costs are linked to Fuel purchase

Create Jobs all along the Value Chain → 100 Jobs per refining plant in Australia



Ensure feedstock production sustainability with the diversification of the production in Brazil, the rotation of the crops or the use of degraded lands in Spain (positive LUC).



Offer innovation for local new opportunities lower dependencies on unique pathways.



Support Local investments in production capacities → Ensuring a market demand allows industrial investments in Romania

Biofuels and Land Restoration

Land restoration concept:

- Restoration of ecologically degraded lands for bioenergy is an opportunity to demonstrate how bioenergy from agricultural or forestry feedstocks can enhance ecosystem services such as carbon sequestration, without competing with or displacing food production or placing additional pressure on existing cultivated land.

The targets:

- Support sustainable strategy and project dealing with CO2 reduction & energy supply for aviation.
- Demonstrate how Biofuels can be developed in degraded landscapes, alongside ecosystem restoration activities on a specific and tangible production project.

Key activities:

Categorize degraded lands and select lands suitable for sustainable production



1



Identify degraded lands and monitor restoration



2



Support Value Chain deployment and ensure sustainability conformance



3





Airbus Alternative fuels strategy

- Propose integrated solutions to Airlines (extend Perfect or optimum flights)
- Promote innovative Alt Fuels pathways and prepare sustainable deployments (feasibility studies)
- Promote and Ensure Sustainability: Standards; LCA and RsB Certification; LandUse and Restoration
- Support Qualification and Certification of Alt fuels on Systems, Engines and Aircraft



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