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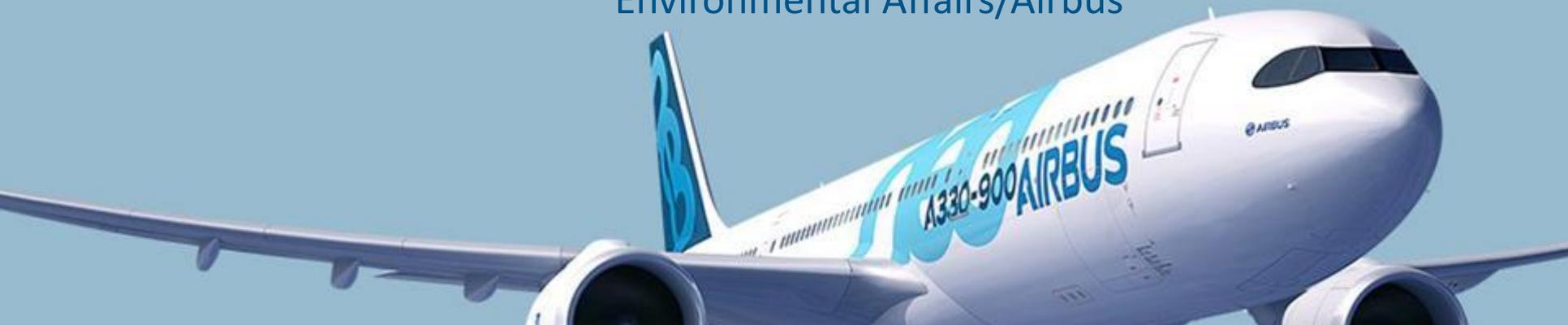
ICAO Environmental
Symposium 2019

DESTINATION GREEN: THE NEXT CHAPTER

Sustainable Aviation Fuels – Foster Emergence

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Environmental Affairs/Airbus





Aviation growth raises more and more environmental challenges...



Air traffic will double in the next 15 years

2014-2034
4.6%

1.5%
IMPROVEMENT IN FUEL EFFICIENCY PER YEAR

STABILISE NET CO₂ EMISSIONS FROM THE SECTOR AT **2020** LEVELS THROUGH CARBON-NEUTRAL GROWTH

-50%
CO₂ EMISSIONS FROM AVIATION BY 2050 (2005 BASELINE)

... but the context is evolving

- **CORSIA** (global Carbon Offsetting and Reduction Scheme for International Aviation) adopted as an annex of Chicago convention
- **ICAO Aircraft CO₂ Standard** defined
- **Environment is no longer an option**, the whole industry is committed at ICAO/CAEP level

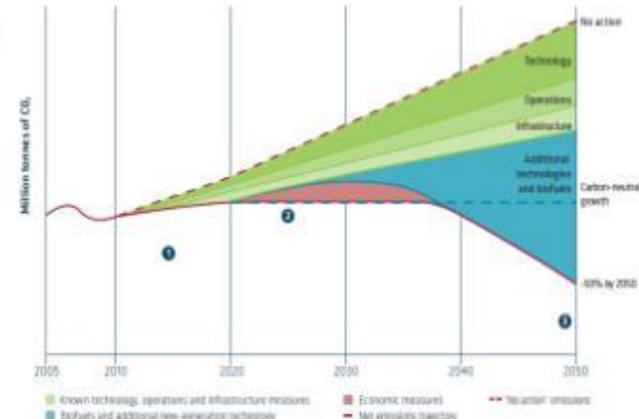


Setting the scene

- Aviation will continue burning Jet-A1 fuel in the next decades.
- Future technology developments such as hybrid electric propulsion may decrease the demand for jet fuel in the future.
- Aviation faces two major long term challenges for continued air traffic growth:
 1. Energy supply: growing competition for sustainable oil products between sectors
 2. Environmental impacts
- Sustainable aviation fuels are jet fuels made from renewable and alternative raw material in replacement of petroleum based fuels and complying with sustainability criteria (land use, water footprint, etc.)

Mapping out the industry commitments

- ❶ improve fleet fuel efficiency by 1.5% per year from now until 2020
- ❷ cap net emissions from 2020 through carbon neutral growth
- ❸ by 2050, net aviation carbon emissions will be half of what they were in 2005.



Sustainable fuels are a key pillar to reduce GHG emissions from aviation





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Airbus actions on SAF



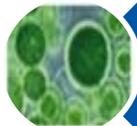
Engagement
With Airlines &
States



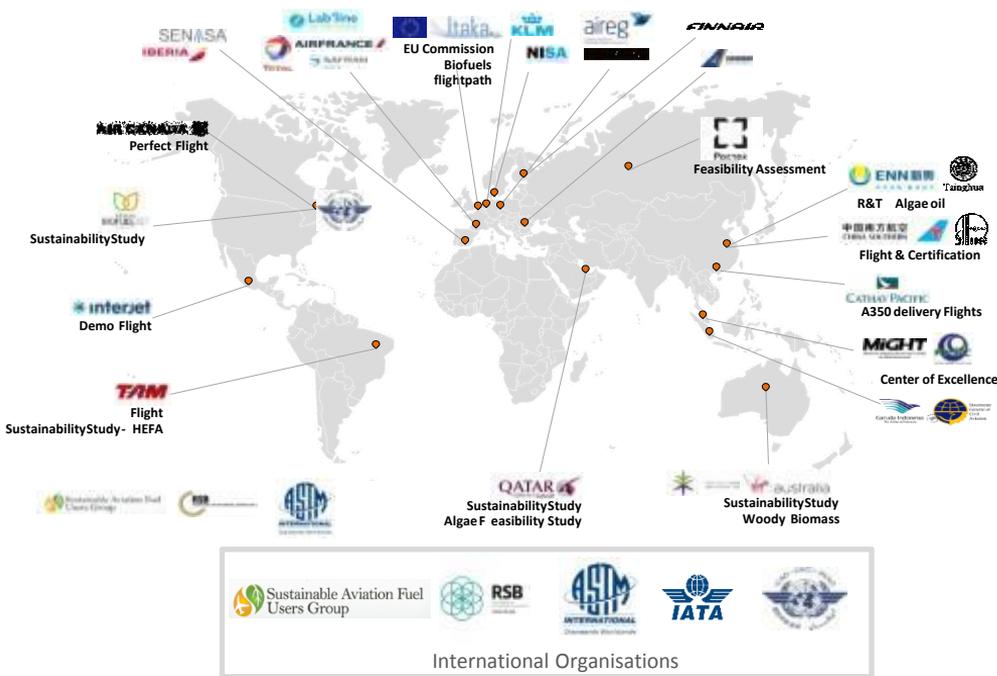
Policies, Standards
and
Communication



Fuel Approval



Innovation & R&D



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Sustainable Aviation Fuels deliveries

- From 2016 onwards Airbus started to propose A/C deliveries to its customers with biofuel.



Cathay Pacific

A350 Deliveries with alternative fuels

More Airlines to come as requests for delivery flights with SAF is growing.

China Airlines

A350 Deliveries with alternative fuels



Iberia

A350 Deliveries with alternative fuels

China Southern Airlines

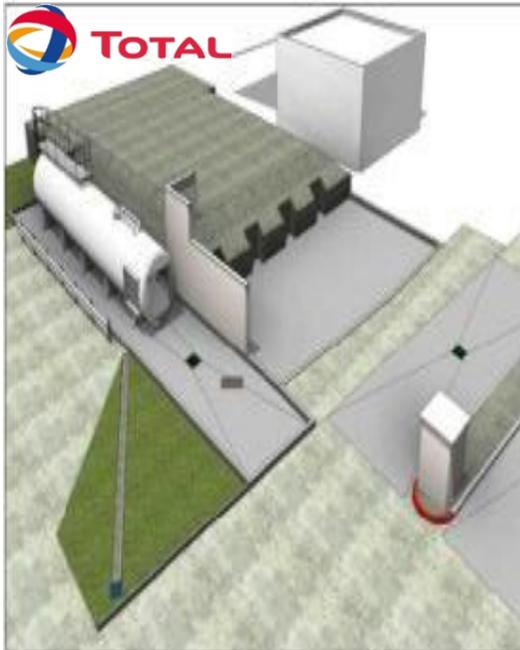
Single Aisle delivery with alternative fuels



AIRBUS



The SAF delivery platform in Toulouse



1. 50 m3 storage capacity of pure Biojet
2. Fully connected to the existing fuelling facility
3. 10% DSHC/SIP blend done on a monthly basis
4. Transparent aircraft fuelling operations
5. Quality checks performed regularly on samples (JET-A1 ASTM compliance)



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The SAF initiative in South-east US



- **Phase 1** : Airlines Delivery flights
 - 1st Flight performed from Mobile (Alabama) on Sept19th – Total of 10 flights (acceptance & ferry) in 2018
 - 15,5% blend UCO Fuel supplied by AirBp
- **Ambition** : Regular delivery flights from Mobile with SAF for all Airlines.

AIRBUS



Key Challenges and Way Forward

- Support **clearance and qualification** (safety and performance 1st).
- Prepare **favourable framework** for sustainable JET A1 for long-term use (ICAO/CAEP, Eligibility (LCA +Sustainability) & CORSIA MRV).
- Actively stimulate the aviation sector by promoting **initiatives and demonstrations to attract investment** (States plans – extended partnerships – Offtake agreements)
- Launch **collaborative local opportunities** to continue promoting sustainable JET A1 production and use (more ambitious collaborative projects)
- Promote sustainable JET A1 and **equalize competition** on feedstock and facilities between the **road transport and aviation** (more balanced mechanisms and policy)



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