



Global view on today's biojet fuel industry

Thomas Rötger, IATA
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To represent, lead and serve the airline industry



IATA IN BRIEF – FOUNDED 1945

Global trade association for the world's airlines

250 passenger and cargo carriers

84% of global air traffic

Meeting our members' needs

Annual financial
settlement \$400 billion

Our mission is to represent, lead and serve the airline industry. 

Global aviation industry targets

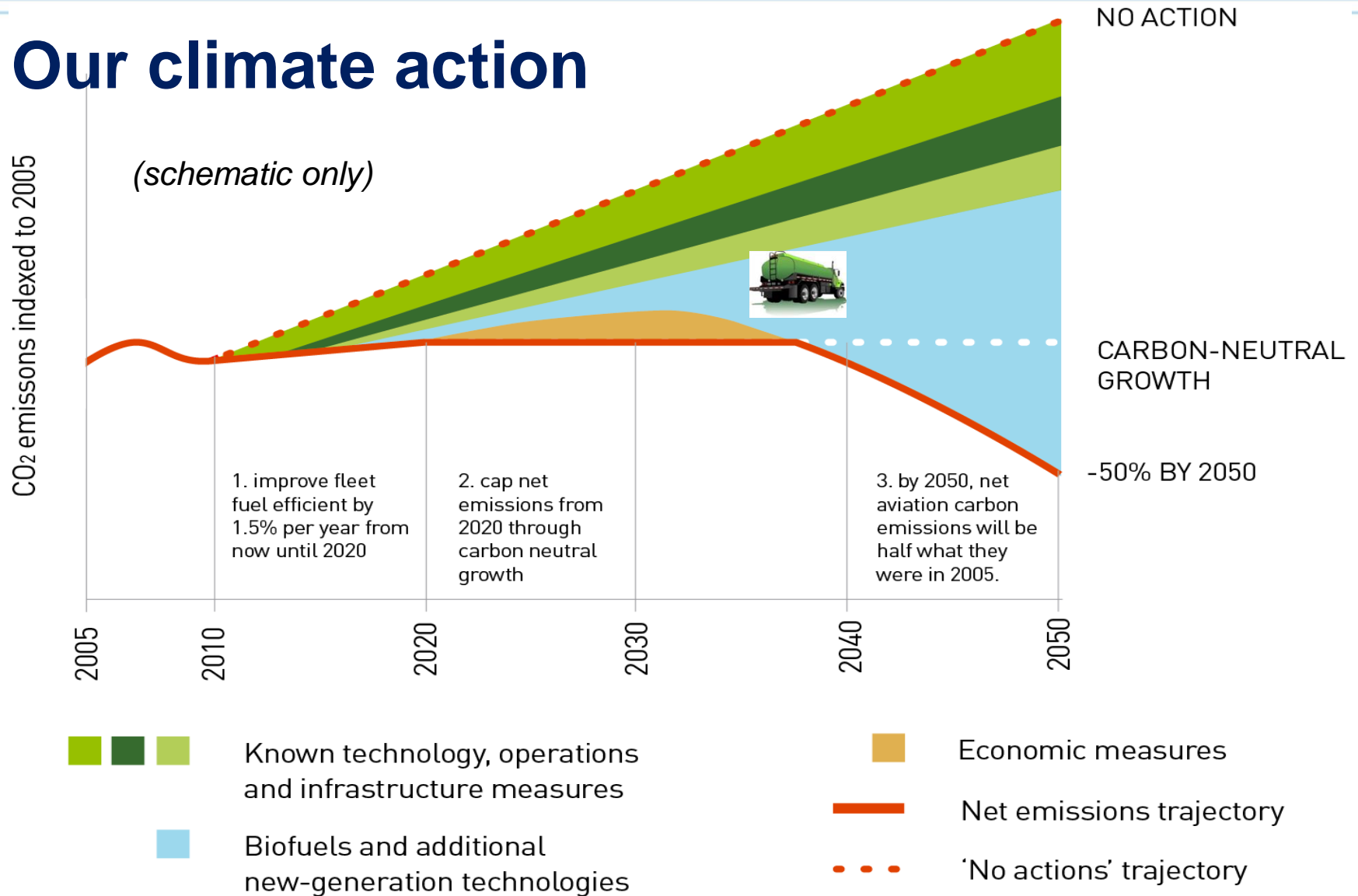
1.5%
IMPROVEMENT IN
FUEL EFFICIENCY
PER YEAR

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

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



Our climate action



Sustainable aviation fuels: Status

- Aviation will depend on liquid fuels for the next decades
 - Contrary to land transport, aviation has no other sustainable alternative
- Aviation needs “drop-in” fuels
 - Chemically almost identical to conventional jet fuel (contrary to automotive biodiesel and bioethanol)
 - Meeting strict safety requirements
 - Avoids costly separate infrastructure
 - But production expensive
- Tested since 2008 and technically certified for commercial use
- Over 1700 commercial flights with 22 airlines since 2011
- Potential to reduce aviation’s carbon footprint by up to 80%



Already over 1700 passenger biofuel flights



Jatropha:



Algae:



Camelina:



Various HEFA:



Sugarcane SIP:

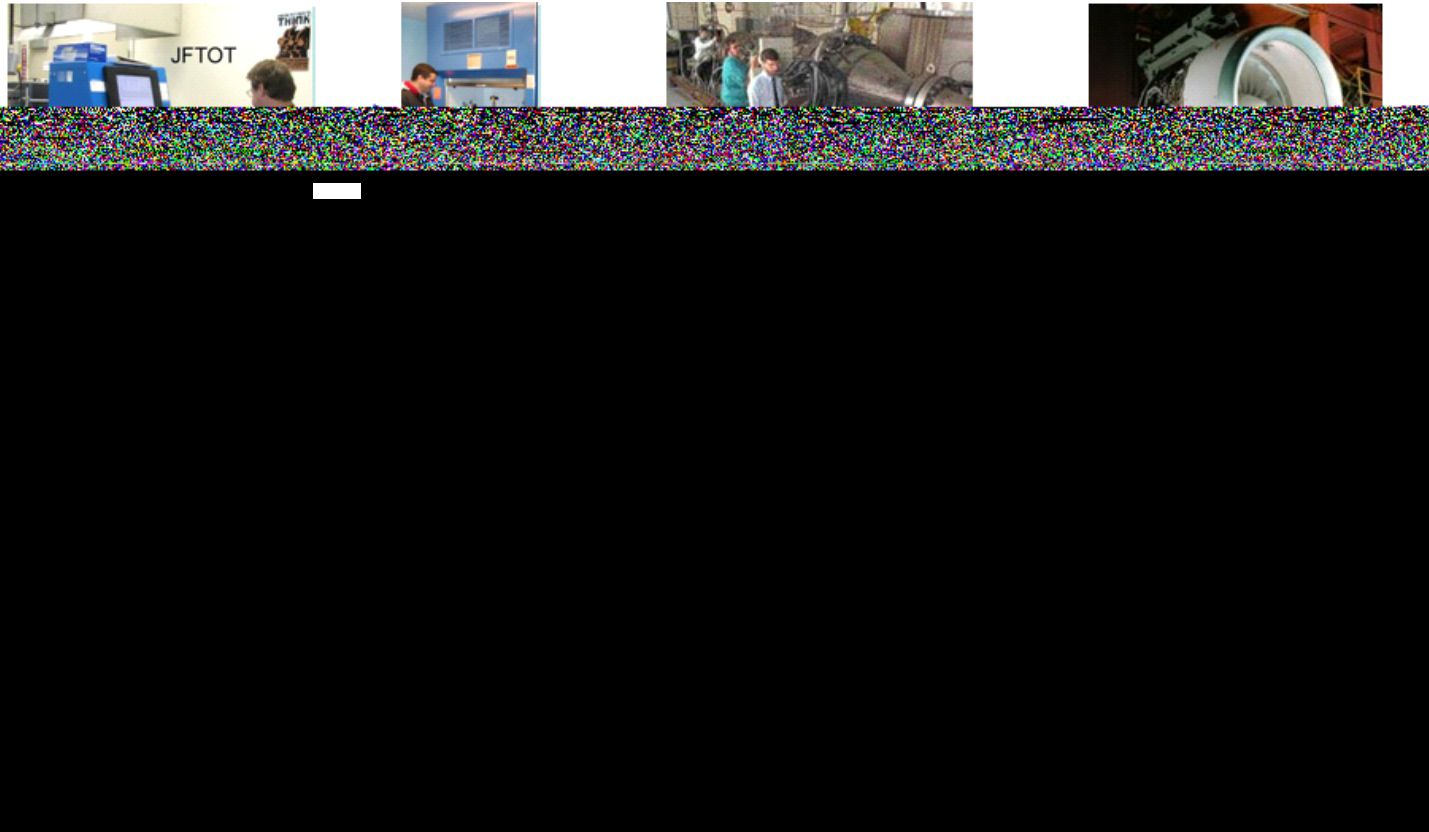


Certification of biojet fuel pathways

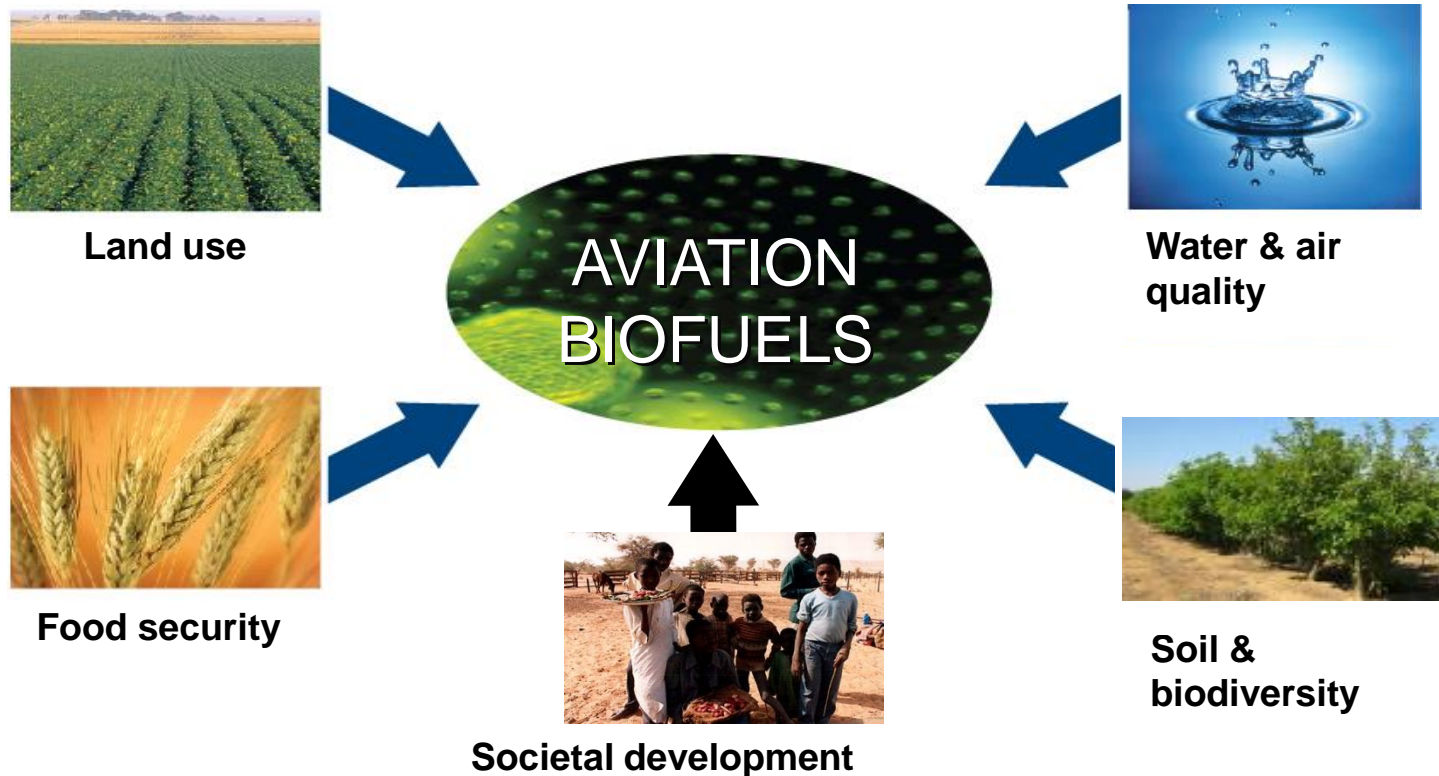
↗ 3 pathways certified, 3 more expected in 2015/16, more to come



Fuel certification



Sustainability requirements



IATA member of Roundtable on Sustainable Biofuels (RSB)
SAFUG members must sign sustainability pledge
Regulations implemented in EU and US – global harmonisation necessary

Incentives for biojet fuel

➤ EU situation



- Renewable Energy Directive (RED): 10% renewable transport fuel in 2020
 - So far only NL recognizes sustainable aviation fuel as eligible
- Biofuel meeting RED is exempted from EU ETS

➤ US situation



- RIN incentives quite effective
- Various biojet fuel pathways recognized

➤ International

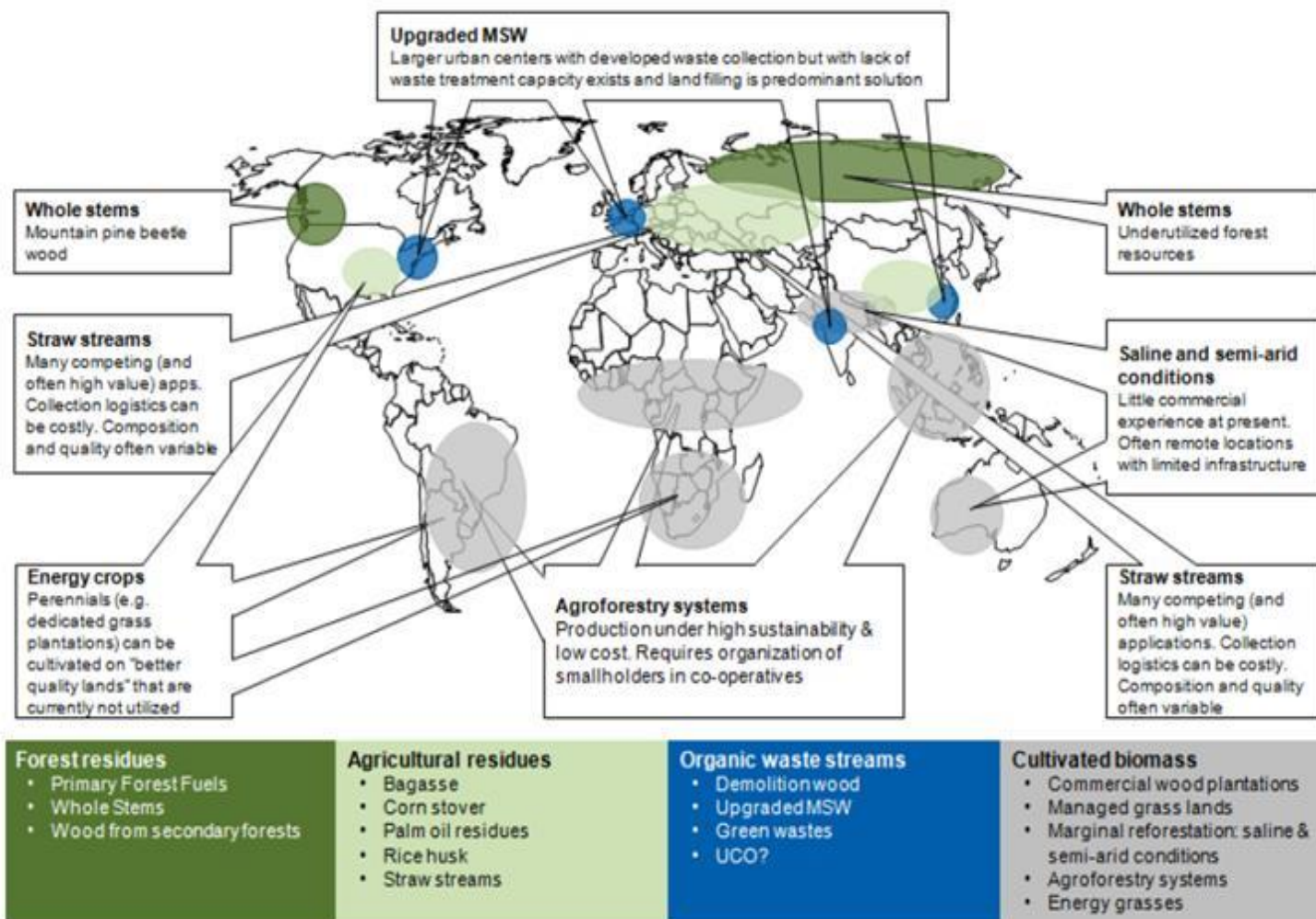


- Global market-based mechanism for international aviation being developed under ICAO

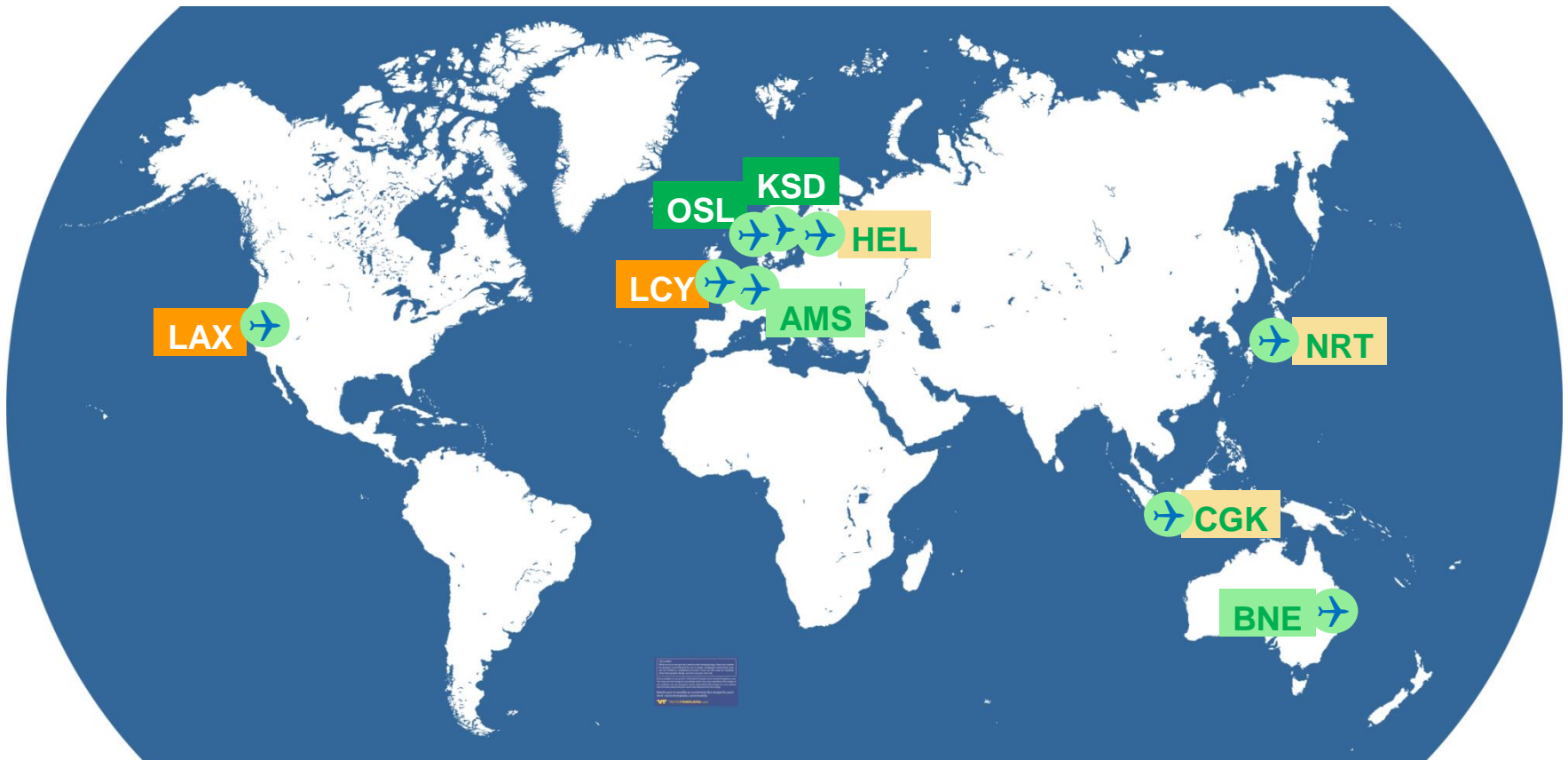
➤ But currently no level-playing field between transport modes

- Strong incentives for automotive biofuels
- Comparable incentives for sustainable aviation fuels desirable

Worldwide feedstock availability



Future biojet supply worldwide



KSD Bioport inaugurated

AMS Multi-airline bioport in preparation

LAX Single-airline bioport in preparation

HEL Multi-airline bioport planned

United Airlines / AltAir agreement



- 17 000 t/year
- Delivery from Q3/2015
- Min. duration 3 years
- Uplift at LAX



- Non-edible oils and agricultural wastes
- Converted idle refinery
- Price-competitive with Jet A

British Airways / Solena agreement



- British Airways / Solena
- 50 000 t/year
- Delivery from 2017
- Min. duration 10 years
- Uplift at LCY

- Plant under construction east of London
- Uses municipal waste
- City of London pays for waste removal
- Investment by BA
- Financing by Barclays

Cathay Pacific / Fulcrum agreement



- Cathay Pacific / Fulcrum
- 100 000 t/year
- Delivery from 2017
- Min. duration 10 years
- Uplift at LAX

- Waste to renewable jet
- First plant in Nevada
- More plants planned in USA and Asia

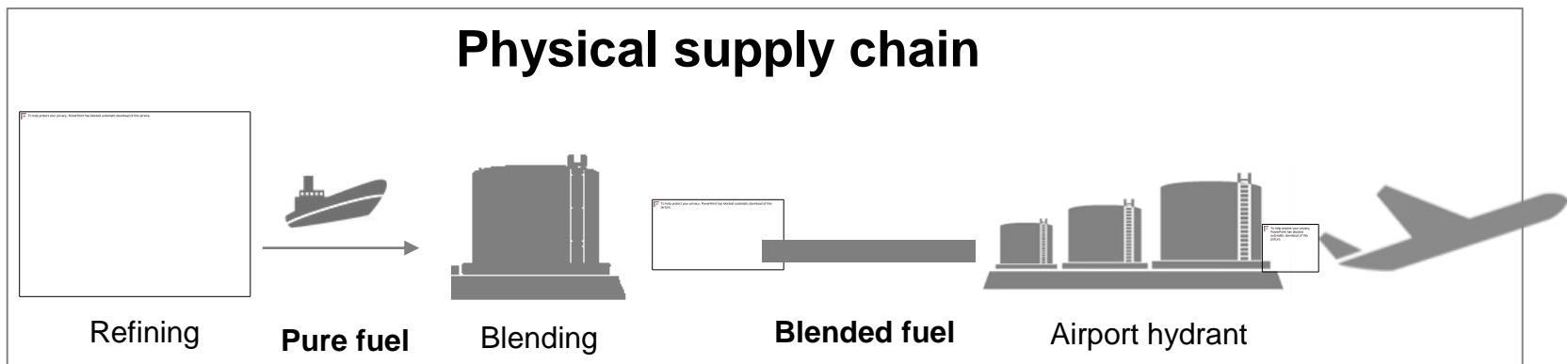
Aviation biofuel deployment: Bioports

- A bioport creates demand for sustainable jet fuel and enables the necessary investment and collaboration of regional supply chains
- Key elements:
 - Sourcing and development of sustainable feedstock
 - Development of new and existing conversion technologies
 - End user incentives



The Bioport concept

- Scale is required to reduce the cost
- Regional sustainable jet fuel supply chains
- Feedstock most appropriate to the region
- Use existing infrastructure
- Benefits can go beyond carbon reduction



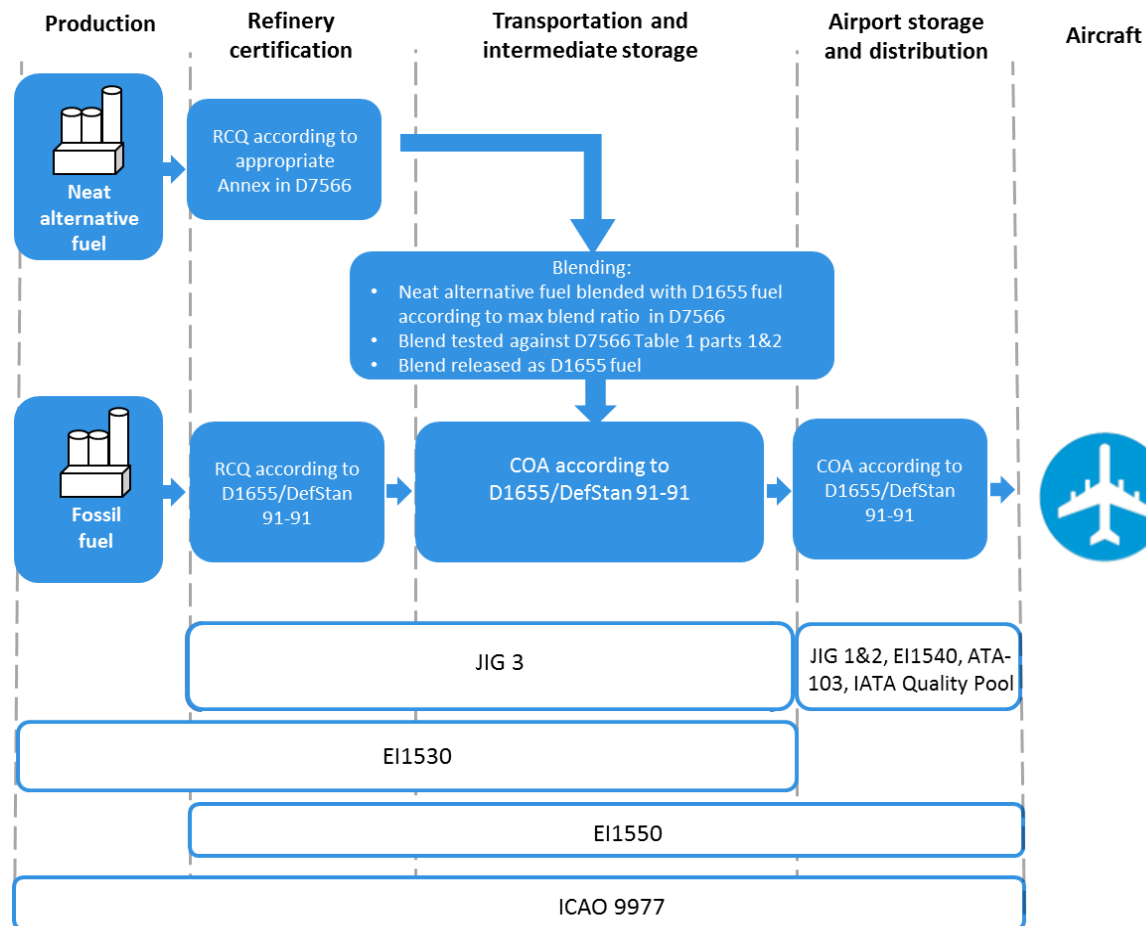
The Bioport concept

Some examples:

- Brisbane Bioport
- BioPort Holland – start planned end 2015
- Karlstad BioPort – inaugurated 2014



The biojet fuel supply chain



Conclusions

- Aviation biofuel is a young industry impact of aviation
- 3 pathways already certified, more to come
- Over 1700 commercial flights with 22 airlines so far
- First airline/supplier offtake agreements are taking place
- Bioports will provide biofuel supply to all airlines
- Sustainability very important for aviation
- Economics is a prominent barrier rather than technical impediments
- Further policy support desirable
- The first regular commercial production commences in 2015!



Thank you!

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