A Global Framework For Addressing Aviation CO₂ Emissions

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Aviation is a key driver of socio-economic development

- 2.3 Billion passengers
- 32 Million jobs
- 8% of global GDP (US$ 3.5 trillion)
- 2% of global man-made CO$_2$ emissions
- Major driver of tourism and trade
Aviation faces emissions challenge...

**CO₂ emissions from the global fuel burn of commercial airlines**

- **Pre-recession ICAO forecast**
- **Post-recession IATA forecast**

*Source: IATA*
.....but our track record is strong

Fuel efficiency, litres/100 TKP

CO2 Emissions at frozen 1990 technology

3.3 Billion tonnes of CO2 saved

Actual Emissions

3.3 Billion tonnes of CO2 saved
Industry Commitment on Climate Change 2008
Our four-pillar strategy:

- Invest in new technology
- Fly more efficiently
- Build and use efficient infrastructure
- Use effective economic measures
Global industry targets

2010
1.5% p/a fuel efficiency
Working towards CNG

2020
CNG from 2020
Implementation of global sectoral approach

2050
50% reduction in net CO₂ emissions over 2005 levels
CO₂ Abatement cost curve in 2020

Carbon price
65 US$/tCO₂

Jet fuel price;
100 $/barrel

Source: IATA Carbon Model
Emissions reduction roadmap

- No action
- "Frozen technology" emissions
- Gross emissions trajectory

CO₂ emissions

2005 2010 2020 2030 2040 2050

(schematic)

-50% by 2050

CNG 2020

No action
Emissions reduction roadmap

- “Frozen technology” emissions
- Known technology, operations and infrastructure measures
- Carbon-neutral growth 2020
- Gross emissions trajectory

Emissions reduction roadmap (schematic)

CO₂ emissions

2005 2010 2020 2030 2040 2050

No action

Tech Ops Infra

CNG 2020

-50% by 2050
Emissions reduction roadmap

- "Frozen technology" emissions
- Known technology, operations and infrastructure measures
- Biofuels and additional technology
- Carbon-neutral growth 2020
- Gross emissions trajectory
- Economic measures

CO₂ emissions

2005 2010 2020 2030 2040 2050

(schematic)

-50% by 2050

No action

CNG 2020

Biofuels + add. Tech

Tech Ops Infra
Our biggest opportunity is sustainable biofuels

- Second & third generation biofuels - e.g. camelina, algae
- Potential to reduce our carbon footprint by up to 80%
- Full certification by Q1 2011
- Next step: sustainability criteria, scaling up and commercialisation
IATA carbon offset program

- 17 Airlines – 6% of global traffic
- TAP Air Portugal - UNESCO “Planet Earth Award” in 2010.
- Offer passengers a portfolio of compliance grade CERs offsets
  - large geographical coverage
  - social and economic benefits for local communities.
- IATA Carbon Calculator
  - ICAO methodology - enhanced with real airline data.
- Government approved offset program (DECC-UK QA)
- Phase II – extension to corporate travel/online agents.
- Challenges: Non recognition by States of voluntary offsets
How can governments help?

- Invest in ATM improvements – e.g. NextGen and SESAR
- Invest in R&D funding for new technology
- Promote scaling up and of sustainable biofuel production
How can governments help?

By agreeing

- A coordinated policy approach
- A global framework under ICAO

By avoiding

- A fragmented policy approach
- Unilateral use of national/regional measures
Uncoordinated patchwork

“Green” taxes

$3.5bn  $1.2bn  $0.2bn  $100m

Emissions trading

$ 1-13 bn  $ 4 mn

The ICAO 37th Assembly 2010

Outcomes:

- First ever global sectoral agreement to reduce carbon emissions
- Reflects aspirational industry goal of carbon-neutral growth from 2020
- Lists 15 principles for MBMs
  - Transparency and simplicity
  - No duplication
  - Minimize leakage and distortion
  - Appropriate access to all carbon markets
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