

Challenges in the Transition to a Low Carbon Society
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Moving towards a Low-Carbon Transport System:
**Can the growth of aviation be
reconciled with a Low Carbon
Economy?**

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Who are we?

- The AEF is the principal environmental association in the United Kingdom concerned specifically with all the environmental and amenity effects of aviation.
- Established in 1975, its membership comprises over 100 organisations representing local planning authorities, residents' groups, amenity and environmental organisations and others.
- Works with industry, government, the European Commission and Parliament, the European Civil Aviation Conference, and has observer status to the UN's International Civil Aviation Organisation where it is active on the working groups of the Committee on Aviation Environmental Protection.

Aviation and climate change

From the IPCC's 4th Assessment Report 2007:

In 2004, the transport sector produced 6.3 GtCO₂ emissions (23% of world energy-related CO₂ emissions);

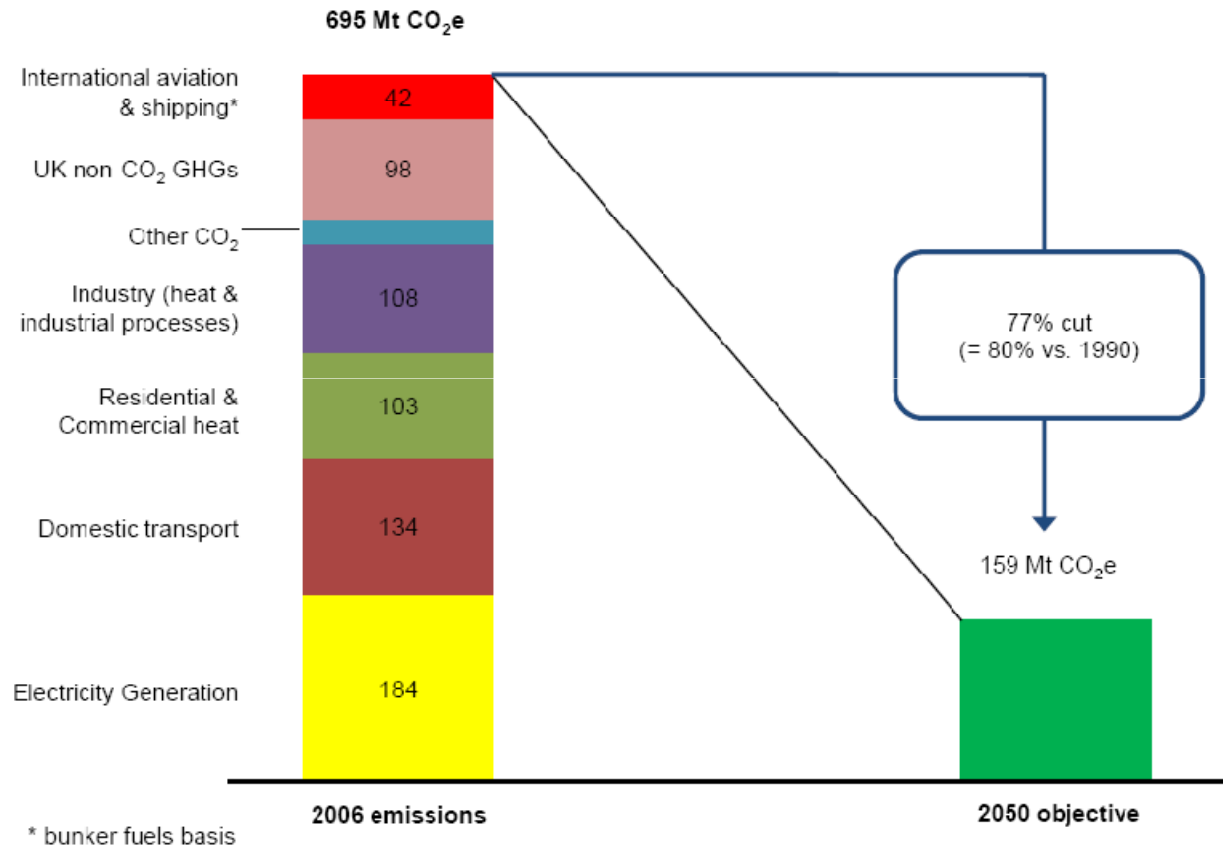
2% of global carbon emissions from aviation, and; around 3% of the total anthropogenic radiative forcing (RF) in 2005 (range 2–8%);

Government cites aviation's contribution as 6.3% of UK carbon, rising to 13% of UK greenhouse gas emissions.

Updated by Lee et al 2009:

IPCC estimate based on data for 2000. Between 2000 - 05, total aviation RF increased by 14% (3.5% of total anthropogenic RF). Between 2000 and 2007 passenger traffic grew by 38%.

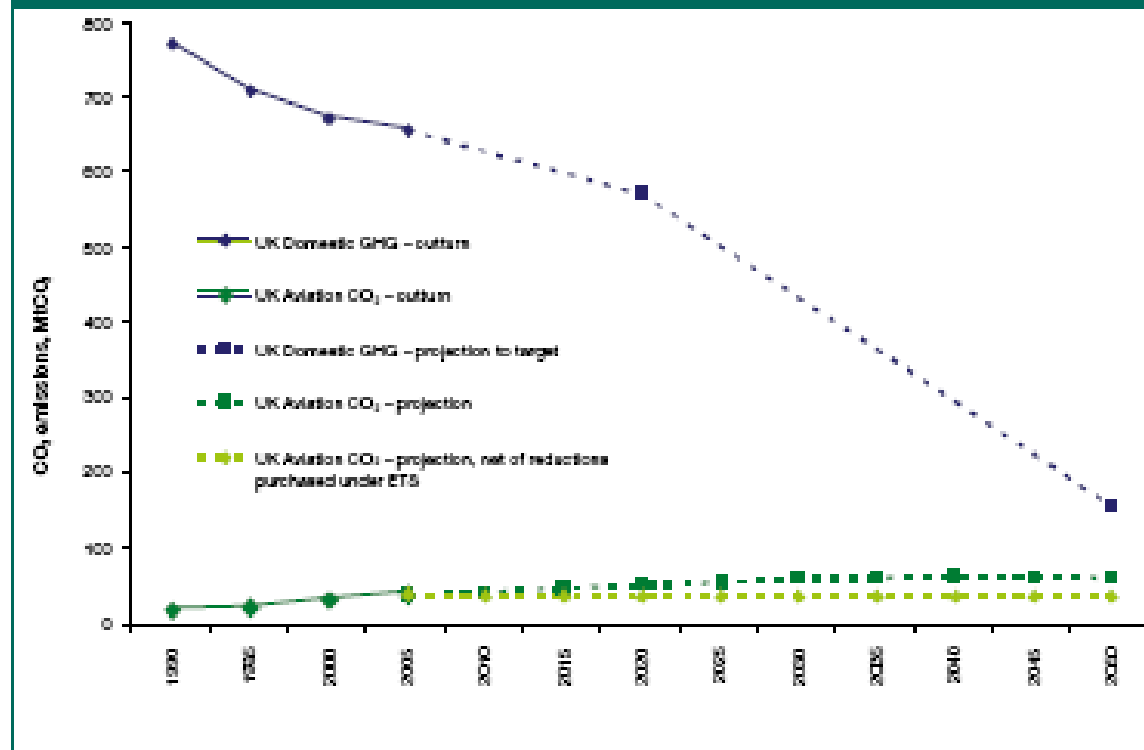
UK emissions



Source: Committee for Climate Change, 2009

Growth in UK aviation emissions

Figure 3.3: UK national and aviation CO₂ forecasts 2005-2050⁶⁰



Source: Dept of Transport, 2009

What are we doing about it?

Emissions from international aviation excluded from Kyoto Protocol. KP requests states to work through the International Civil Aviation Organisation (ICAO);

Wide support for a global measure, but requires a framework. ICAO has assessed and rejected the role of taxes, charges and closed emissions trading, but supports aviation's inclusion in an open emissions trading scheme;

ICAO rejected the opportunity to work on a global trading scheme for aviation in 2004, preferring to develop guidance for states that wished to act;

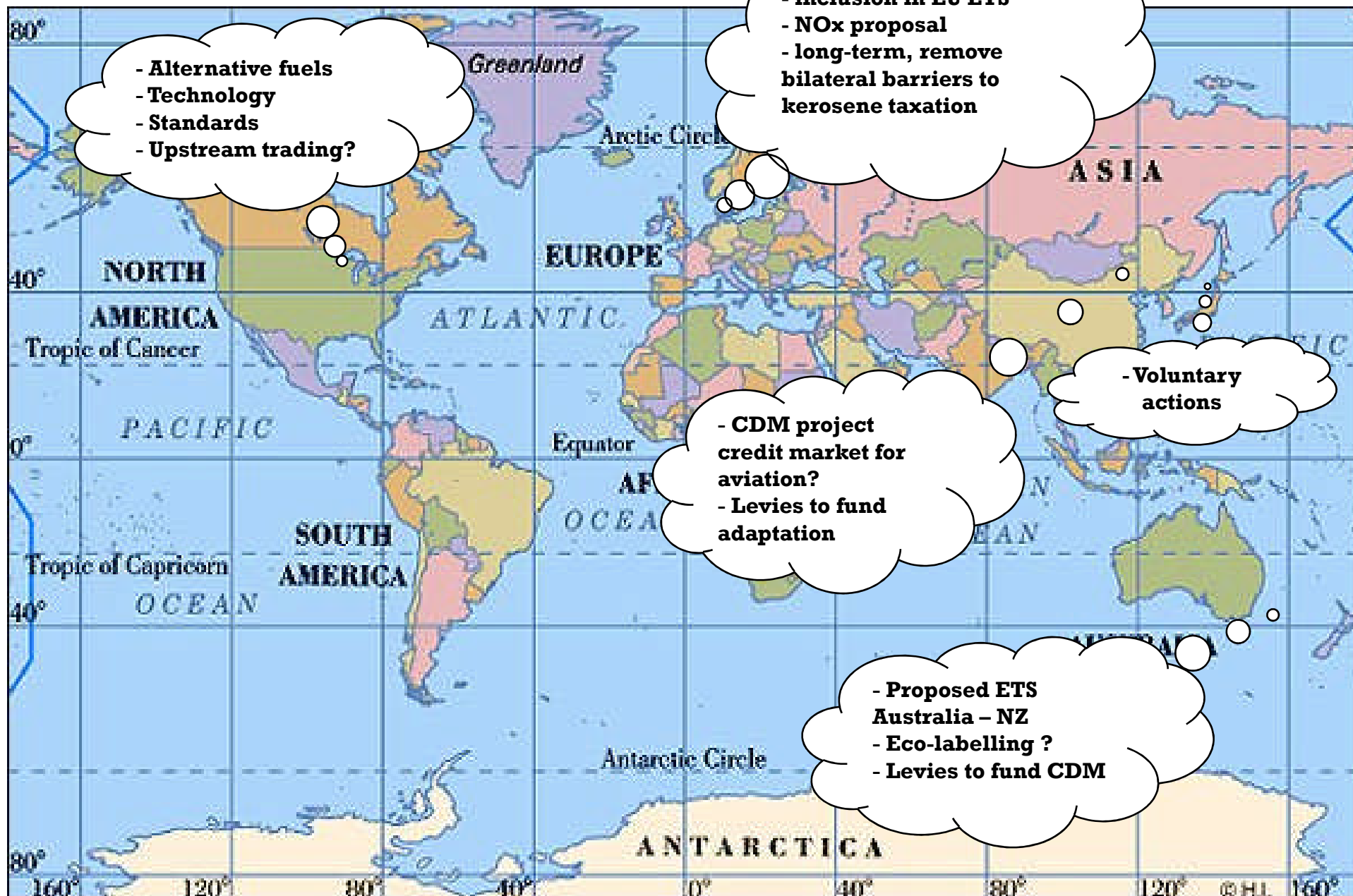
Current framework supports regional approaches e.g. Aviation's inclusion in the European Emissions Trading Scheme

Diverging views

So will a post-2012 regime be any different?

Competing principles:

- Non-discrimination (ICAO)
- Common but differentiated responsibilities (UNFCCC)



- Alternative fuels
- Technology
- Standards
- Upstream trading?

- inclusion in EU ETS
- NOx proposal
- long-term, remove bilateral barriers to kerosene taxation

- CDM project credit market for aviation?
- Levies to fund adaptation

- Voluntary actions

- Proposed ETS Australia - NZ
- Eco-labelling ?
- Levies to fund CDM

GIACC Recommendations

Commitment to improve the average fuel efficiency of the in-service fleet at the rate of 2% per annum through to 2050 (expressed as a "goal" through to 2012, a "recommendation" through to 2020, and an "aspirational goal" from 2021 to 2050).

Industry response?

IATA commitment to carbon-neutral growth completes a set of three sequential goals for air transport:

(1) a 1.5% average annual improvement in fuel efficiency from 2009 to 2020;

(2) carbon-neutral growth from 2020 and

(3) a 50% absolute (net) reduction in carbon emissions by 2050.

Industry response?



IATA Four Pillar Strategy

➤ **Technology**

- Airframe, engine
- Cleaner bio-fuels, new energy sources

➤ **Infrastructure**

- Improve air routes, ATM & airport procedures

➤ **Aircraft operations**

- Drive for maximum efficiency & minimum weight

➤ **Economic instruments**

- Incentives to finance technology R & D
 - Carbon offsets & trading
-

But ...

(1) Technology

- Ambitious targets but need to focus on up take as well e.g. Do current economic measures and regulations provide the right incentives for accelerated fleet renewal? No standards for cruise phase currently – fuel efficiency standard in the future?
- Alternative fuels: synthetic fuels require carbon capture and storage, and biofuels require careful assessment of lifecycle emissions and food production displacement. Can existing infrastructure accommodate it? Can supply meet demand?

(2) & (3) Infrastructure & Operations

- Improve air routes, ATM and airport procedures. Potential often stated to be 10-12%, but CANSO claim this is out of date – 4% already delivered since 1999 and trade-offs between optimum and noise and safety will mean another 4% will never be realised.

More butts ...

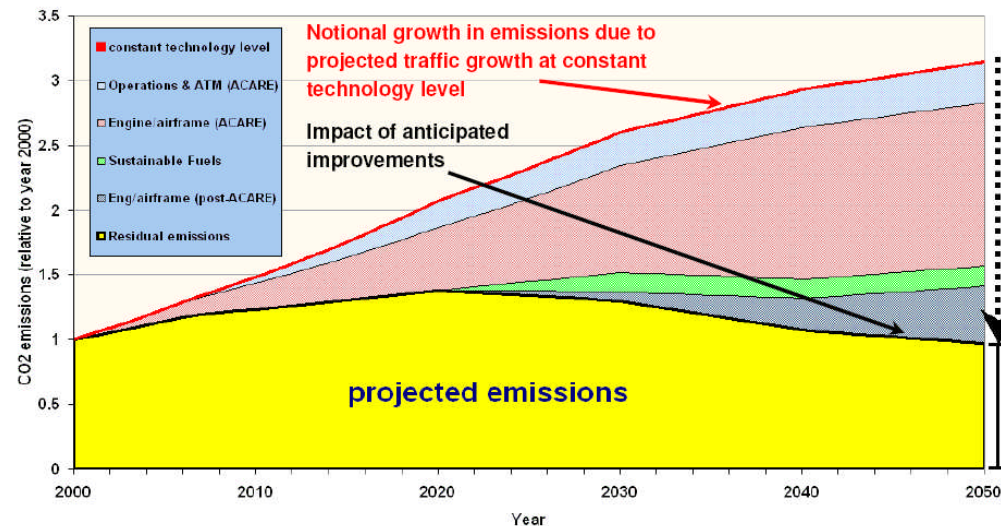
(4) Economic instruments

- Support for well designed emissions trading schemes, but other instruments probably required in parallel

(Aviation Global Deal Group – inclusion in UNFCCC framework with an open emissions trading scheme providing revenues for developing countries)

Conclusions - incentives to act?

- No shortage of “tools”, but the absence of a binding, sectoral commitment may not realise full potential
- Although outside of UK carbon budgets, Government has created an incentive related to Heathrow capacity: if a third runway goes ahead, capacity will be limited to 605,000 movements per annum
- Role for Committee for Climate Change, in 2020, advising on Sustainable Aviation Commitment to keep UK aviation CO2 at or below 2000 levels by 2050.



Thank you

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