

# **Aviation and the Environment Asia Pacific Perspectives**

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Association of Asia Pacific Airlines**

**Asia Forum 2007: The future of aviation  
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## **Presentation Outline**

- **Asia Pacific Aviation**
- **Sustainable Growth**
- **Global Climate Change**
- **Environmental policies**
- **Future Direction**

## Asia Pacific

- **Diverse geographic region**
- **Home to 4 billion people**
  - 62% of the world's population
- **Generates 26% of global GDP**
- **Wide range of income levels**
- **Dynamic economies**
- **Aviation recognised as a key contributor to economic and social development**



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## Asia Pacific Aviation

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## Asia Pacific Aviation: combined overview



### *All Asia Pacific based airlines*

US\$ 110 billion operating revenue

US\$ 2 billion operating profit

510 million passengers

340 million domestic

170 million international

13 million tonnes of cargo

3,270 aircraft

**Asia Pacific aviation global market share:**

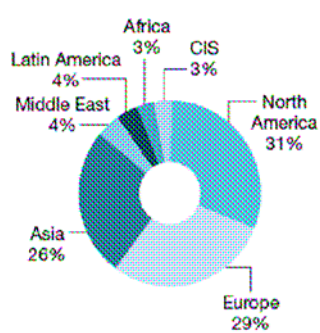
**24% global passenger traffic**

**39% global cargo traffic**

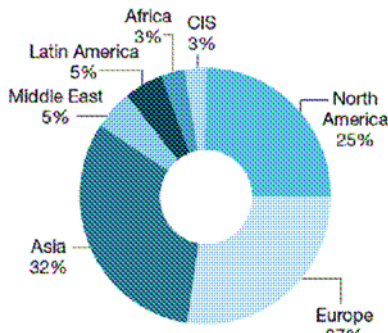
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Data: 2006 estimates for combined AAPA + non-AAPA airlines GMT+7 to GMT+12

## Asia Pacific's share of world traffic is growing



World traffic at end 2005  
4.1 trillion RPKs



World traffic at end 2025  
10.5 trillion RPKs

*Some challenge whether such growth is sustainable*

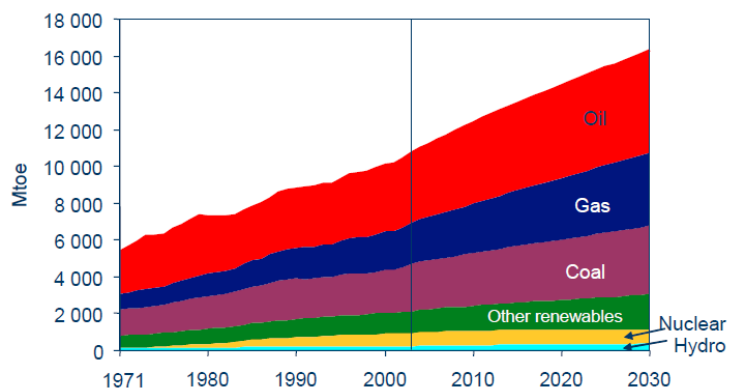
Source: Airbus

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# Global Climate Change



## World energy demand: carbon dependent



World energy demand rises by 52% between now and 2030 in the reference scenario

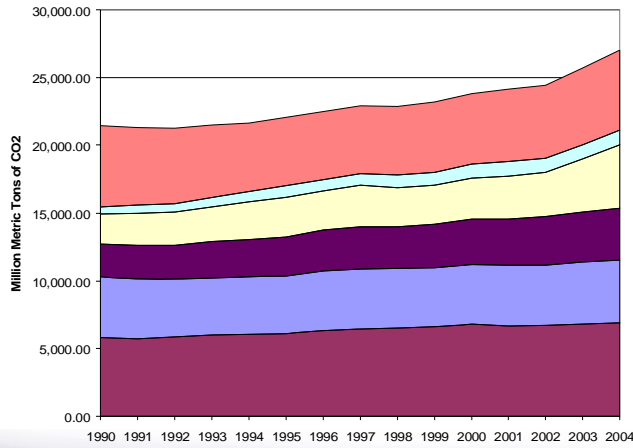
**Surprisingly modest average annual growth rate ~ 2%**

Source: IEA



## Global CO<sub>2</sub> Emissions

1990 - 2004



- Rest of the World
- India
- China
- Asia\*
- Europe
- North America

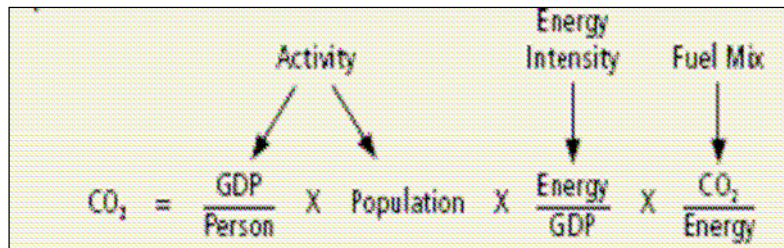
\* Excluding China and India

Data: 2004  
Source: IEA

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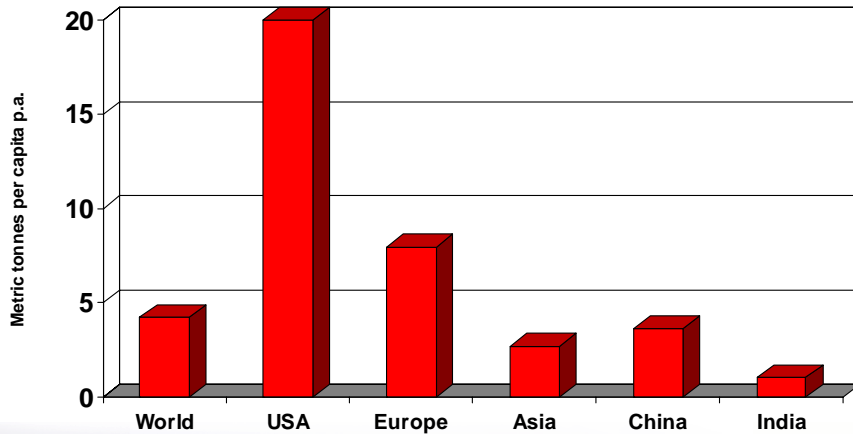
## Global emissions: key drivers

Population x Income x Lifestyle x Technology



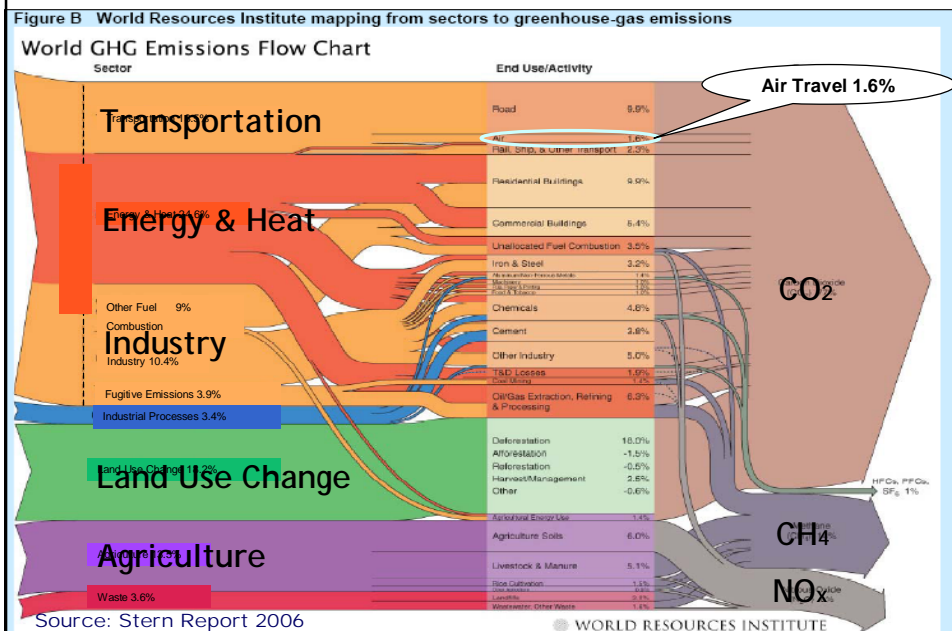
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## Lifestyle: CO<sub>2</sub> emissions per capita by region

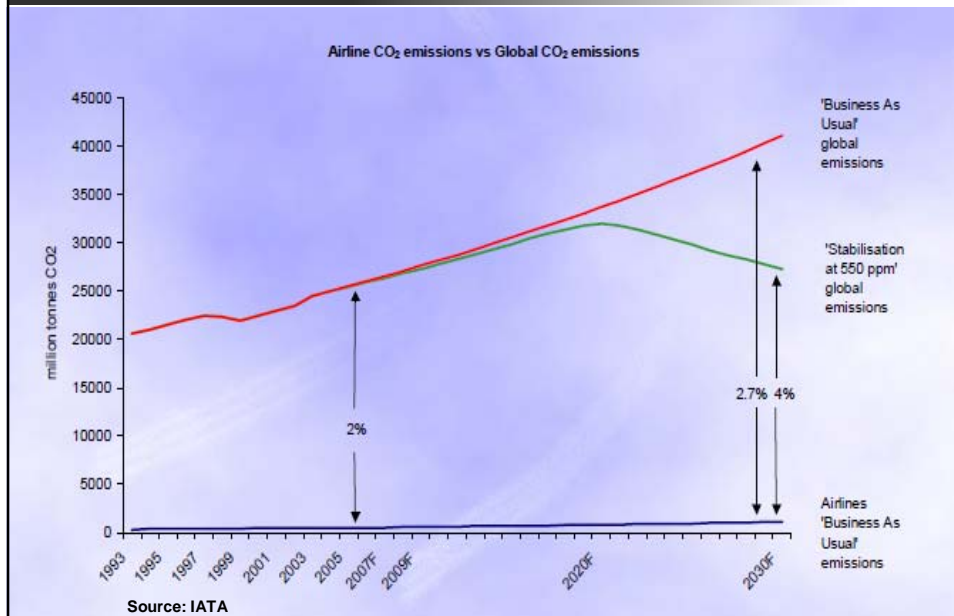


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## Sources of emissions by industry sector



## Aviation growing but only a minor contributor to global CO<sub>2</sub> emissions



## Yet aviation is under attack

Some media headlines:

*"There is no technological answer for the emissions from aviation."*

*"If we really want to live sustainably we are going to have to accept the knocks and give up things like flying. In the end they are unsustainable."*

*"It is only a matter of time before the pressure to take global warming more seriously results in significantly higher taxes on air travel."*

*"Cheap travel comes at a price ... green taxes will inevitably bring this era of mass tourism to an end."*



**Such sentiments are driving the political agenda**

Source: media reports 2006

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## Airlines responding with enhanced communications



### Danger CO<sub>2</sub>W

Climate change is our greatest and most urgent global responsibility. As a responsible airline, we at British Airways, understand the urgent need to reduce our CO<sub>2</sub> emissions and to do so in a way that is socially, economically and environmentally sound.

By following the example of the airline industry, we can reduce our CO<sub>2</sub> emissions and do so in a way that is socially, economically and environmentally sound. We are committed to this and will continue to work with our partners to reduce our CO<sub>2</sub> emissions and do so in a way that is socially, economically and environmentally sound.

Flying's a wonderful thing  
The commitment is supported by British Airways and British Airways.



### It's growing. But it'll still be small in 2050

People love to see a tree grow. But it's not the same for an airport's growth. Airport growth is a global challenge. There is a limit to how much an airport can grow. And it's not the same for an airport's growth.

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### Our 2020 vision means we're not short-sighted

An eye for an eye. It's not just a saying. It's a vision. The vision for the future. The vision for the future. The vision for the future.

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### To cut carbon emissions, we followed the crows

There are many ways to fly. But the best way is to fly like a crow. The best way is to fly like a crow. The best way is to fly like a crow.

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### Air, Traffic, Control. Three words that say it all

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### Why cleaner planes mean cleaner air

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### To preserve the ice caps, we've cut down on the cubes

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clearer vision cleaner skies

Visit [www.enviro.aero](http://www.enviro.aero) for everything you need to know about aviation and the environment

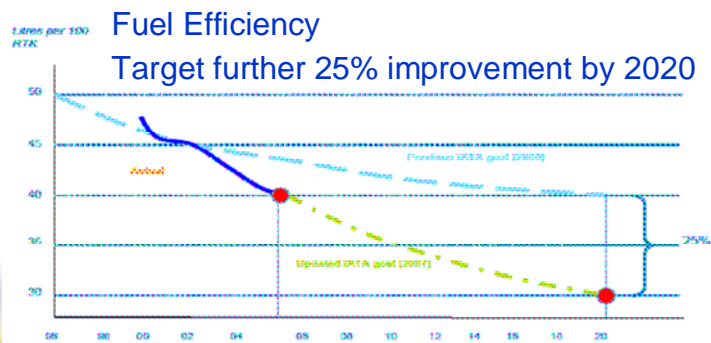
- Latest industry news
- Facts & figures
- Case studies of environmental best practise
- Contact information for press contacts
- Sign-up for industry media briefings
- Access to industry experts
- Information about upcoming events
- Links to industry websites

# Environmental Policies



## Technology is part of the solution ...

- Investing in modern aircraft and engine technologies
- More efficient airspace management
- Continuous improvements in fuel efficiency of 1%-2% p.a.
- Researching alternative fuels



## ... but will not offset the growth in aviation

- The aviation industry is growing at a compound 5% p.a.
- Sustainable aviation needs to be seen to be paying the full cost of its emissions
- Even with targeted improvements in fuel efficiency, aviation emissions are projected to double in size by 2025
- In the context of commitments to reduce overall emissions, aviation needs to show a willingness to make a wider contribution to global efforts to address the challenge of climate change
- Further environmental policy measures are inevitable

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## Other environmental policies impacting aviation

- Several airlines are introducing passenger funded voluntary offset programs, but so far take up has been limited
- Some governments are introducing costly “green” taxes, even though these will not be effective in reducing emissions or curbing demand growth
- Open emissions trading schemes (ETS) could be a more effective market-driven approach towards reducing global emissions
- International aviation was excluded from Kyoto targets on the basis that ICAO should be responsible for the development of globally harmonised policy measures

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## EU environmental policy agenda

- Environment is a mainstream political issue
- Committed to Kyoto Protocol
  - Introduced EU ETS covering major industries
  - Goal of reducing CO<sub>2</sub> emissions by 20% by 2020
- Aviation
  - Strict regulation of noise and emissions
  - Plans to cover international aviation in the EU ETS
  - Introducing additional aviation taxes and charges
  - Promoting alternative transport modes e.g. subsidies for rail travel
- Insensitivity about extra-territorial impacts

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## How ETS works

- Cap on total CO<sub>2</sub>
- Allowances to emit CO<sub>2</sub>
- Companies receive allocation of tradeable allowances
- For each trading period, surrender allowances to cover actual emissions
  - Need more? Buy on market
  - Have surplus? Sell on market
- Open trading allows some sectors to grow whilst channelling funds to other sectors, where there are greater opportunities to improve energy efficiencies, and realistic possibilities of switching to less carbon intensive technologies

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## Developing a global carbon emissions market

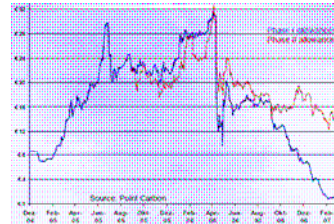
2005: 800 million tonnes CO<sub>2</sub> for US\$12 bn

2006: 1,600 million tonnes CO<sub>2</sub> for US\$30 bn

- Indicative permit costs for 1 tonne of CO<sub>2</sub>

EU ETS Phase 2 ~ US\$20

- Pricing extremely volatile
- Very sensitive to the cap-setting process and expectations of the future policy framework
- Limited international participation
- Currently Kyoto dependent



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## How much is all this going to cost?

- Aviation accounts for ~650 million tonnes CO<sub>2</sub> p.a.
- 2,200 million passengers p.a.
- On average: 0.3 tonnes CO<sub>2</sub> per passenger
- At a carbon cost of US\$20 per tonne CO<sub>2</sub> the additional cost would be around US\$6 per passenger
- US\$13 billion p.a. compared to annual industry revenues of US\$470 billion
- Fares would have to rise by around 3%
- Bearable, provided any scheme is applied uniformly to all airlines and does not distort competition

***Aviation would be 100% carbon-neutral,  
sustaining future growth and development***

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## Working towards a global solution for aviation

- Other governments dispute EU's ability to impose ETS on international airlines without mutual consent
- Ongoing debate in run up to ICAO Assembly meeting in September 2007
- Urgent need to develop a global consensus if meaningful progress is to be achieved
- Failure to do so risks further damaging proliferation of arbitrary taxes on aviation
- Globally harmonised emissions trading therefore remains the preferred approach for aviation
- Industry needs to show leadership and build governmental support through ICAO

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## Conclusions

- Aviation is a key contributor to economic and social development
- But as a carbon-dependent industry, our "license to grow" is contingent on continuing public/political support
- Aviation must be seen to be paying the full cost of its environmental impact, and a willingness to make a wider contribution to global efforts to address the challenge of climate change
- Climate change initiatives must reconcile varying states of development and principles of equity
- The aviation industry needs to demonstrate clear leadership if we are to shape our own future

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