

Understanding Each Other

Civil Perspective: Making optimum use of airspace and how this affects operations and environment

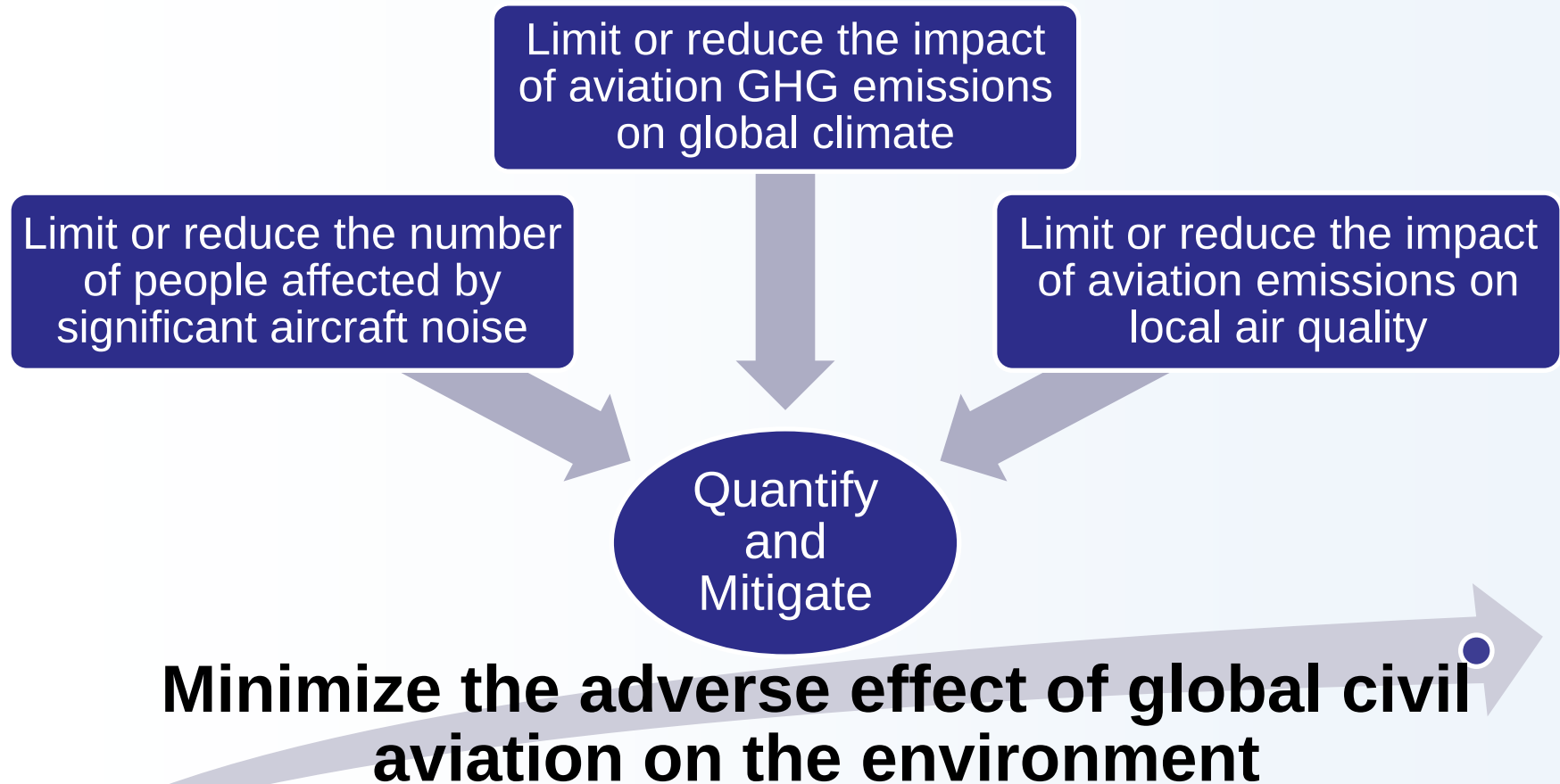
Jane Hupe
Chief – Environment Section
Air Transport Bureau
International Civil Aviation Organization



**Global Air Traffic Management Forum on
Civil/Military Cooperation**
(Montréal, 19 to 21 October 2009)

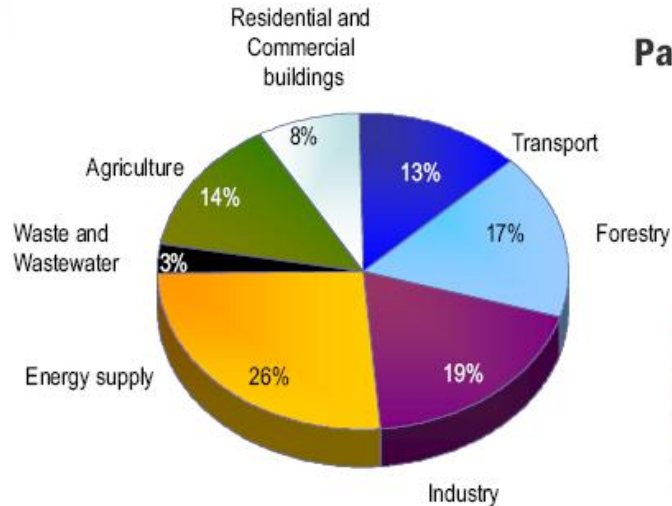


ICAO Environmental Goals



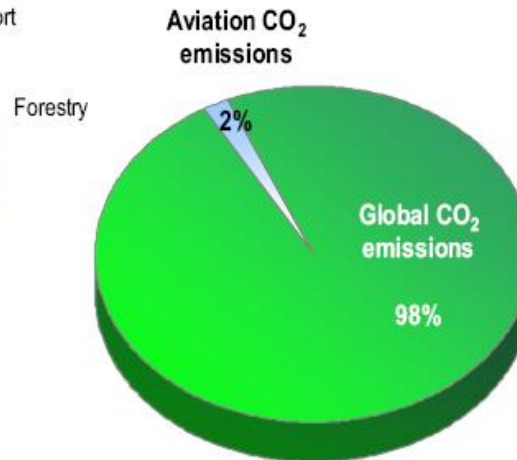
Aviation's Emissions in Context

Global GHG by Sector, 2004 (IPCC)



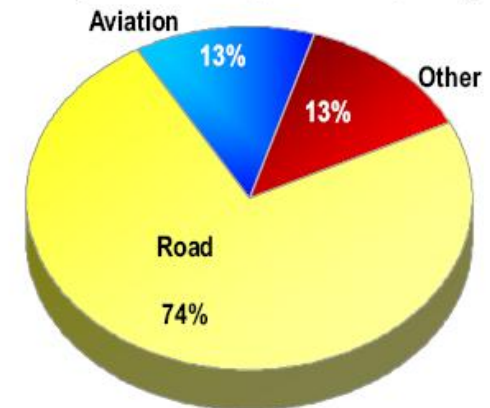
In 2004, the entire global transport sector was responsible for 13% of all greenhouse gases emissions.

Part of Aviation Global CO₂ Emissions



Total aviation (domestic and international) accounts for about 2% of all global CO₂ emissions.

Global CO₂ emissions per transport (%)

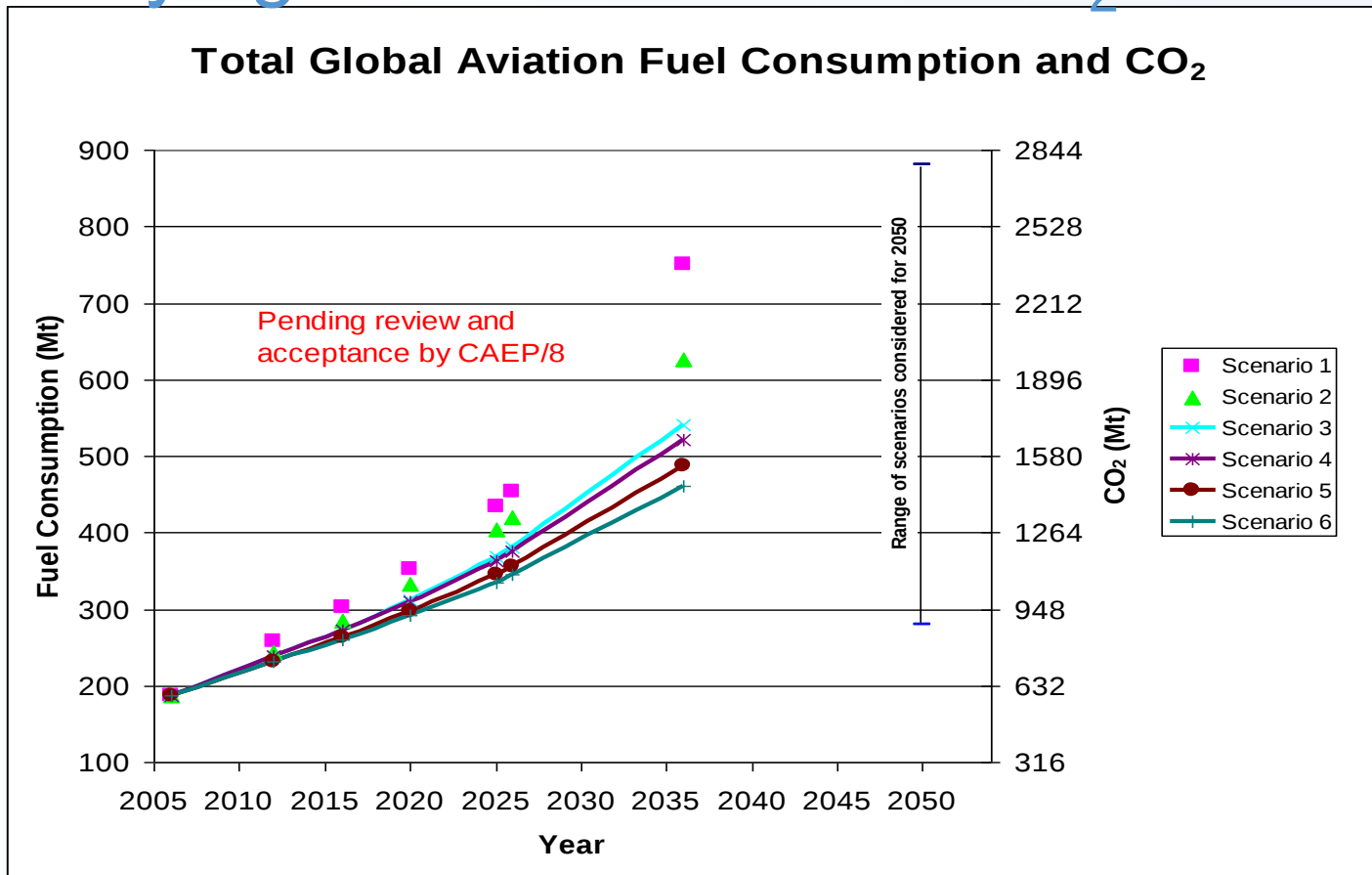


Total aviation accounts for about 13% of CO₂ emissions from transport sources compared to 74% of total transport CO₂ emissions from road transport.

Source: 2007 IPCC Fourth Assessment Report



Quantifying Aviation's Future CO₂ Emissions



Preliminary estimates of global aviation fuel consumption and CO₂. These results have not yet been reviewed or accepted by CAEP and should therefore be considered preliminary.



Mitigation Measures



Technology

(Annex 16 Standards, Mid and Long Term Goals)



Operations

(Global Air Navigation Plan, Operational Opportunities to Minimize Fuel Use and Reduce Emissions)



Market Based Measures

(charges, taxes, offsets, trading)



Sustainable Alternative Fuels



Operational Means to Reduce Aviation Emissions

Global Air Navigation Plan (Doc 9750)

- **Flexible Use of Airspace (inc Civ/Mil)**
- Air Traffic Flow Management
- Dynamic and Flexible Route Management
- Terminal Area Design and Management
- Aerodrome Design and Management
- Performance Based Navigation

STRATEGIC

Operational Opportunities to Minimize Fuel Use and Reduce Emissions (Cir 303)

- Airport Operations
- Ground-Based Activities including Maintenance
- Fuel-Saving Opportunities by Operators

TACTICAL

Civil/Military Cooperation

(Montréal, 19 to 21 October 2009)



Looking Forward

- **Implementation of a flexible and cooperative approach to airspace organization and management**
- **Improve civil/military cooperation and coordination in support of an optimum use of airspace by all users**

**Among other benefits,
reduce the aviation impact
on climate change**

Clear blue skies

**...that's how
it should be**



More information on ICAO Activities on Environmental Protection



ICAO Web Page

- <http://www.icao.int>

ICAO Workshop on Aviation Alternative Fuels

- <http://www.icao.int/waaf2009>

ICAO Environmental Report 2007

- http://www.icao.int/icao/en/env/pubs/Env_Report_07.pdf

Thank you!

