



Focus on:

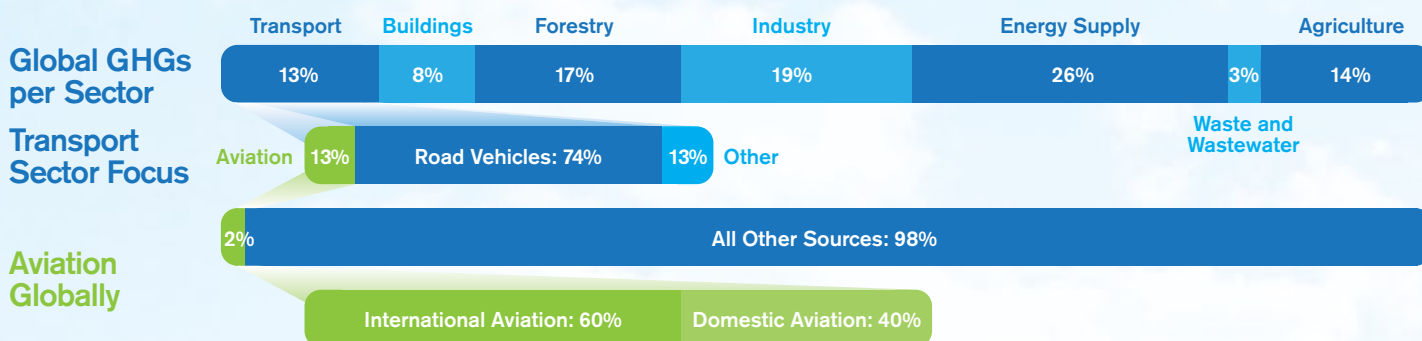
Environment



The Focus on Climate Change

Sound Policies based on Sound Information

Total CO₂ emissions from aviation (domestic and international operations) currently account for approximately 2% of total global CO₂ emissions (*IPCC 4th Assessment Report in 2007*); approximately 60% of that 2% are from international aviation ($\approx 1.2\%$).

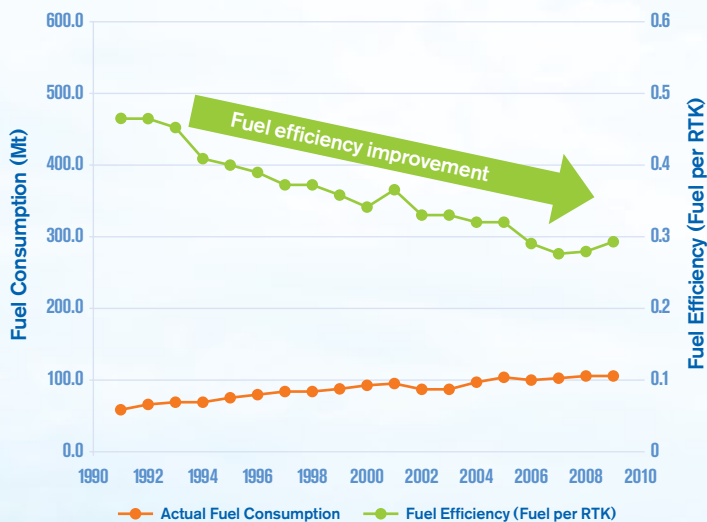


Although the contribution of aviation operations to total global CO₂ emissions is relatively small, forecasted traffic growth ($\approx 4.7\%$ per year) raises questions on the future contribution of aviation activity to climate change and on the most effective way to address CO₂ emissions from the sector.

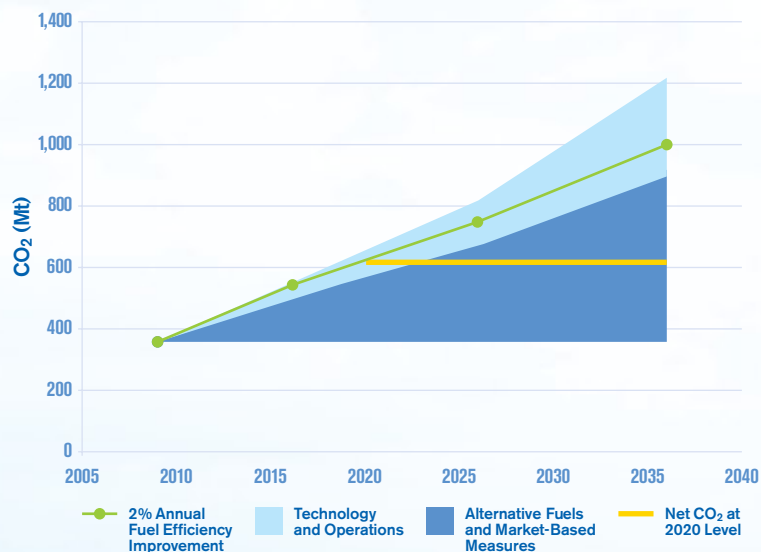
Trends and Mitigation Options for International Aviation

Aircraft engine emissions' Standards set by ICAO and the investments in technologies and improved operational procedures allow aviation's CO₂ footprint to grow at a rate slower than the demand for air travel. Efficiency is expected to continue to improve.

Fuel Consumption and Fuel Efficiency



Future CO₂ Trends



ICAO Agreement on International Aviation and Climate Change

During the last three years, ICAO has been especially active in developing a global strategy to address international aviation and climate change. The decision by the 36th Session of the ICAO Assembly in 2007 which called for the development of an aggressive programme of action on climate change created the momentum for ICAO to make landmark achievements in addressing this issue.

With the global agreement reached at the 37th Session of the ICAO Assembly in October 2010, international aviation is the first sector with a shared global commitment to environmental goals of increasing fuel efficiency and stabilizing its global CO₂ emissions in the medium term.

ICAO member States together with industry have also agreed on an ambitious work programme to continue on the path towards sustainability.

Main Provisions of the ICAO Resolution on International Aviation and Climate change

- Further endorsement of the **global aspirational goal of 2% annual fuel efficiency improvement** up to year 2050;
- A **medium-term global aspirational goal from 2020** that would ensure that while the international aviation sector continues to grow, its global CO₂ emissions would be stabilized at 2020 levels;
- Further work to explore the feasibility of a **long-term global aspirational goal** for international aviation;
- Development of a global **CO₂ Standard** for aircraft aiming for 2013;
- Development of a **framework for market-based measures**, including further elaboration of the guiding principles adopted by the Assembly, and **exploration of a global scheme** for international aviation;
- Concrete steps to **assist States in contributing to the global efforts**;
- *De minimis* provisions to ensure that **States with small contributions** to the global air traffic are **not burdened disproportionately**; and
- **States' action plans**, covering information on CO₂ emissions reduction activities and assistance needs.

“ICAO Assembly improves aviation cleanness, safety, security.”

— Xinhua News Agency

“A step in the right direction. . . Very significant”

— European Union

“Historic. . . Prepares way for future achievements”

— IATA

“Shared global vision . . . a step forward”

— Airports Council International

“Welcome first step”

— Civil Air Navigation Services Organization

“Unprecedented commitment”

— US Department of State

“Breakthrough. . .”

— greenaironline.com





ICAO: UNITING AVIATION ON CLIMATE CHANGE

**ACT»»
GLOBAL**

From Policy to Implementation

The outcome of the 37th Assembly shifts ICAO's role from policy setting to implementation mode.

ICAO and its member States committed to work together to achieve their collective global goals through:

A multi-faceted approach — a basket of mitigation measures from which States can choose to contribute to reaching the global goals:

Green aircraft technologies

Fleet renewal, lighter materials, higher engine performance, aerodynamics improvements, new emissions certification Standards, etc...

Operational measures

Flexible use of airspace, air traffic flow management, dynamic and flexible route management, terminal area design and management, aerodrome design and management, performance based navigation, etc...

Market-based measures

Emission trading, charges, carbon offsetting... under ICAO's framework, and a future global scheme...

Alternative fuels for aviation

Sustainable drop-in fuels (jatropha, camelina, algae, etc...)

States' voluntary action plans and enhanced assistance to States:

- Just as global air transport assures the highest level of safety and security as a result of ICAO's Audit Programmes, these action plans on aviation and climate change will allow States to identify their mitigation measures and assistance needs, and enable ICAO to monitor progress towards reaching the global goals and address specific needs of States.
- ICAO is developing guidance, will conduct training to assist States in the preparation of their action plans and will facilitate the provision of technical and financial assistance.

What's Next?

- Reviewing the progress/feasibility of global aspirational goals.
- Developing the framework for market-based measures.
- Elaborating on the *de minimis* provision to market-based measures.
- Assisting States in their preparation of action plans.
- Facilitating the provision of technical and financial assistance to States.
- Facilitating the development and deployment of sustainable alternative fuels for aviation.
- Enhancing cooperation with UN and other international bodies.

The Path to Sustainable Aviation

The future of air transport as a catalyst for the economic, social and cultural development of our global society is directly related to our collective ability to reach and maintain the sustainability of international civil aviation operations worldwide.

Roberto Kobeh González, President of the Council of the International Civil Aviation Organization

ICAO's Leadership: A History of Consensus and Action

As the UN specialized agency for international civil aviation, ICAO has, for more than 40 years, excelled in bringing the international community together around increasingly stringent regulations for aircraft noise and emissions. As a result, air transport operations today are 70% more fuel efficient and 75% quieter than they were 40 years ago.

ICAO's 37th Assembly Resolution

The global agreement reached at the 37th Assembly reflects the collective determination of ICAO's member States to contribute to the global efforts on climate change, and provides an ambitious work programme to continue on the path towards sustainable future of international aviation.

Scheduled passenger traffic worldwide forecast to grow at $\approx 4.7\%/yr$

Contributing up to 8% of the global economy

2.3 billion passengers per year carried worldwide

Fast, reliable and safe mode of transport

First sector with a special IPCC report (1999)

No comparative travel alternatives for long-haul passenger transport



**ICAO's
Environmental
Goals**

To limit or reduce:

- the number of people affected by significant aircraft noise
- the impact of aviation emissions on local air quality
- the impact of aviation greenhouse gas emissions on the global climate

Sustainable Alternative Fuels for Aviation

Sustainable alternative fuels for aviation offer one of the most exciting and promising opportunities for reducing aviation's greenhouse gas emissions while improving local air quality.

The first ever ICAO Conference on Aviation and Alternative Fuels in November 2009 established the Global Framework on Aviation and Alternative Fuels (www.icao.int/AltFuels) – a platform for sharing information on best practices and initiatives worldwide to facilitate the development and deployment of sustainable alternative fuels for aviation on a global basis.

Many flight tests and fuel certification have demonstrated that drop-in alternative fuels are a technically sound solution that will not require changes to aircraft or fuel delivery infrastructure. ICAO is now facilitating the regulatory and financial frameworks to ensure that alternative fuels are available in a timely manner and in sufficient quantities for use in aviation.

ICAO Carbon Emissions Calculator

The ICAO Carbon Emissions Calculator is an internationally accepted tool that estimates CO₂ emissions from air travel.

It provides consistent and unbiased estimates of CO₂ emissions, and is:

- Transparent
- Easy-to-use
- Publicly available
- Suitable for use within offset programs



The Calculator is also used in support of the UN Climate Neutral initiative to compute air travel emissions inventories.

2010 Environmental Report

The Report contains comprehensive and reliable information on aviation and climate change. It focuses on recent aviation achievements in this area, including the policy on international aviation and climate change adopted at the 37th session of the Assembly.



The Report covers:

- Aviation's contribution to climate change
- Aircraft technology improvements
- Operational opportunities
- Economic instruments
- Alternative fuels
- Adaptation
- Financing
- Cooperation with other UN bodies

The Report and the Calculator are available free of charge on the ICAO website: www.icao.int



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