

Air Transport Symposium – Abuja, Nigeria

28 to 30 April 2008

ICAO's activities on
environmental protection
and cooperation with other
bodies

ICAO - International Civil Aviation Organization

Jane Hupe – Chief, Environmental Unit

International Civil Aviation Organization

- Specialized Agency of the United Nations
- Created in 1944 by the Convention on International Civil Aviation (Chicago Convention)
- Membership: 190 Contracting States
- Mission: to ensure the safe and orderly development of international civil aviation

Noise

dB

Key Environmental Issues



CO

HC

CO₂

NO_x

Aircraft Engine Emissions

ICAO's Work on the Environment

- ICAO has been working with environmental issues since 1960s – specifically on the evaluation of the environmental impact of international aviation emissions climate since 1971;
- ICAO's activities on the environment are mainly quantification of the impact, mitigation measures and disseminating information on aviation's impact; Activities are largely carried out ICAO's technical committee of the ICAO Council - Committee on Aviation Environmental Protection (CAEP).

ICAO Assembly

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graph TD; A[ICAO Assembly] --> B[Council]; B --> C[Air Transport Committee]; B --> D[Air Navigation Commission]; B --> E[Committee on Aviation Environmental Protection];
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Council

**Air Transport
Committee**

**Air Navigation
Commission**

Committee on **A**viation
Environmental **P**rotection

Committee on Aviation Environmental Protection - CAEP

- Established by the ICAO Council in 1983, superseding the Committee on Aircraft Noise (CAN) and the Committee on Aircraft Engine Emissions (CAEE).
- Assists the ICAO Council in formulating new policies and adopting new Standards on aircraft noise and aircraft engine emissions.
- It has 22 members and 13 observers.
- Undertakes specific studies related to control of noise and emissions.

1970
CAN
(Noise)

1977
CAEE
(Emissions)

1983
CAEP

- Technical feasibility
- Environmental effectiveness
- Economic reasonableness
- Interdependencies of measures

CAEP Members and Observers

Argentina

Australia

Brazil

Canada

China

Egypt

France

Germany

India

Italy

Japan

Netherlands

Poland

Russian Fed.

Singapore

South Africa

Spain

Sweden

Switzerland

Tunisia

United -Kingdom

United States

CAEP Members and Observers

Greece

EC

ICCAIA

Norway

ICSA

IFALPA

ACI

IATA

UNFCCC

ACAC

IBAC

WMO

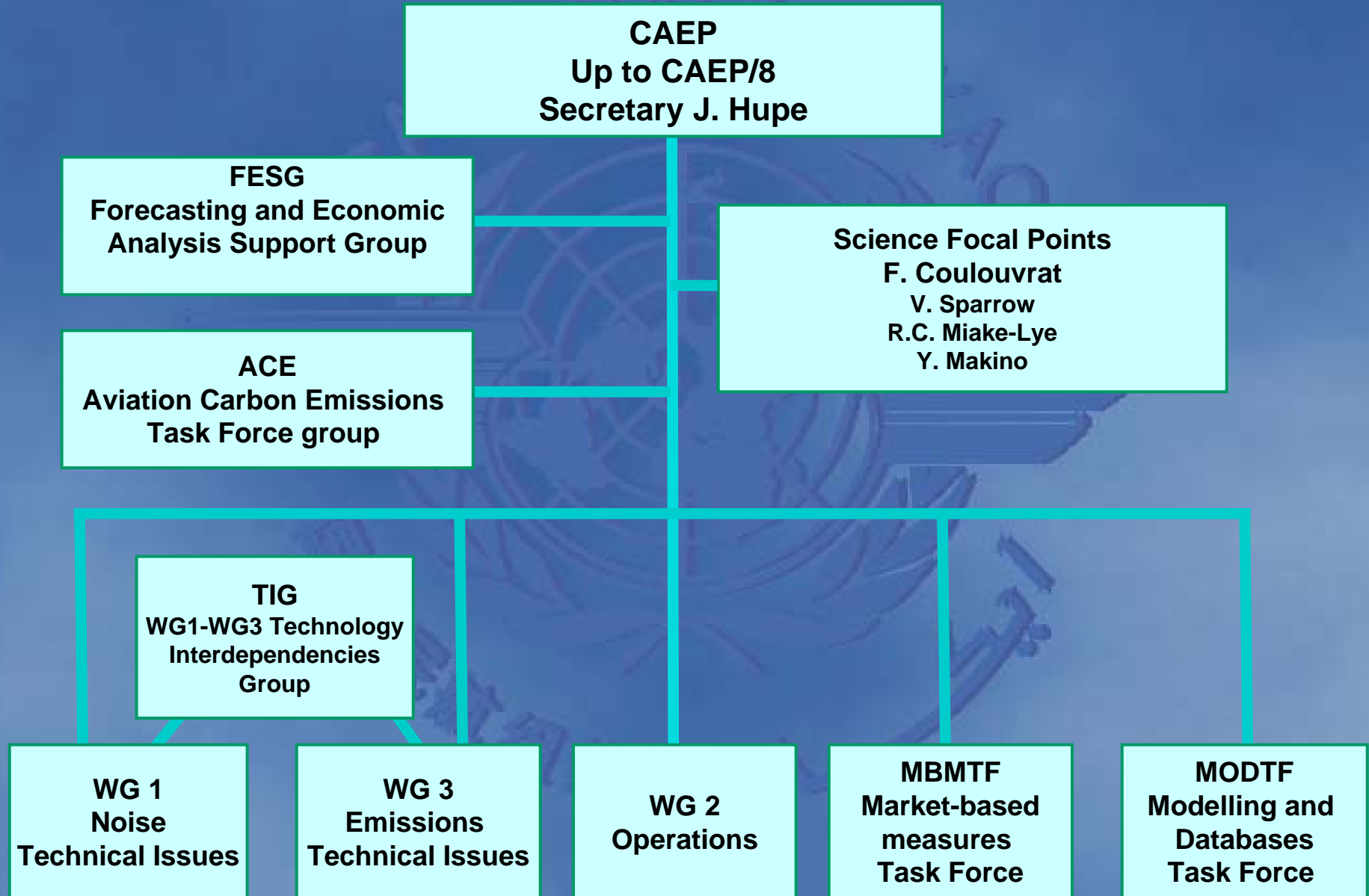
CANSO

Structure of CAEP

3 working groups; 2 task forces and 1 support group

- WG1 – Noise Technical issues
- WG2 – Emissions Technical issues
- WG3 – Operations
- MBMTF – Market based measures Task Force
- MODTF – Modelling and Databases Task Force
- FESG – Forecasting and Economic Analysis Support Group

CAEP STRUCTURE LEADING TO CAEP/8



Developments in ICAO

- Seventh meeting of the Committee on Aviation Environmental Protection (CAEP/7) - Montreal, 5 to 16 February 2007
- Colloquium on Aviation Emissions – May 2007
- Release of ICAO's 1st Environmental report – September 2007 - <http://www.icao.int/env/>
- 36th Session of the ICAO Assembly (A36) - Montreal, 18 to 28 September 2007
- First meeting of the Group on International Aviation and Climate Change (GIACC) - 25 to 27 February 2008

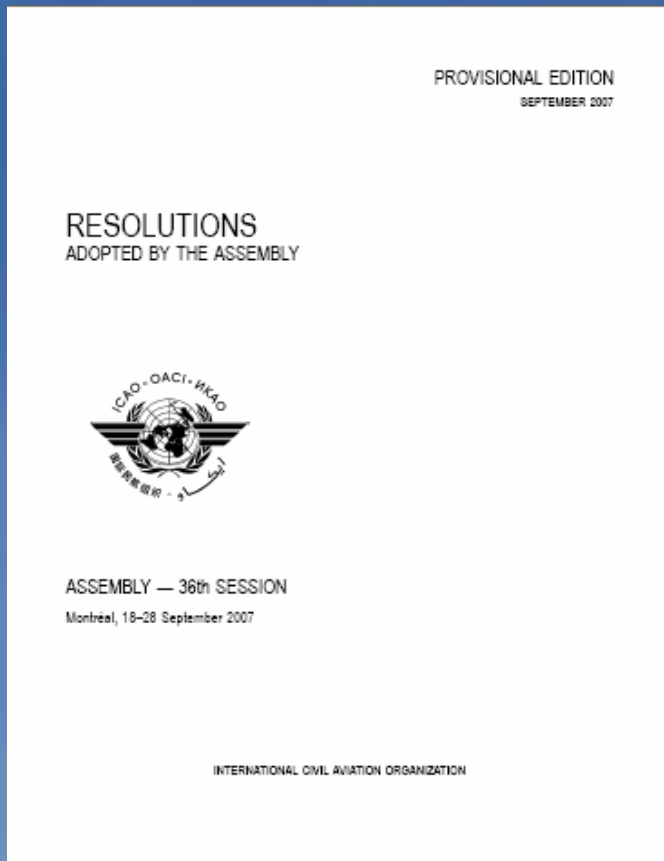
ICAO Policies

36th Session of the ICAO Assembly

- 18 to 28 Sept 2007
- 1488 delegates registered
- 179 Delegations
- 44 Observer Organizations

New

Consolidated statement of continuing ICAO policies and practices related to environmental protection



ICAO Environmental Goals

- Limit or reduce the number of people affected by significant aircraft noise;
- Limit or reduce the impact of aviation emissions on local air quality; and
- Limit or reduce the impact of aviation greenhouse gas emissions on the global climate.

A36-22

- Appendix A: General
- Appendix B: Development of Standards, Recommended Practices and Procedures and/or guidance material relating to the quality of the environment

A36-22

- Appendix C: Policies and programmes based on a “balanced approach” to aircraft noise management
- Appendix D: Phase-out of subsonic jet aircraft which exceed noise levels in Volume I of Annex 16

A36-22

- Appendix E: Local noise-related operating restrictions at airports
- Appendix F: Land-use planning and management
- Appendix G: Supersonic aircraft – the problem of sonic boom

A36-22

➤ Appendix H: Aviation impact on local air quality

New

➤ Appendix I: Aviation impact on global climate – Scientific understanding

New

➤ Appendix J: Aviation impact on global climate – Cooperation with UN and other bodies

New

A36-22

- Appendix K: ICAO Programme of Action on international aviation and climate change
- Appendix L: Market-based measures, including emissions trading

New

New

Programme of action on International Aviation and Climate change (Appendix K)

- **Group on International Aviation and Climate Change (GIACC)**
 - **Senior Government Officials**
 - **Aggressive Program of Action**
 - **Implementation Framework: strategies and measures that States can use to achieve emissions reductions**
 - **Voluntary measures**
 - **Effective dissemination of technology**
 - **More efficient operational measures**
 - **Improvements in air traffic management**
 - **Positive economic incentives**
 - **Market-based measures**

Group on International Aviation and Climate Change (GIACC)

- GIACC/1 (Feb 08) reviewed aviation emissions-related activities within ICAO and internationally
 - GHG on going activities in CAEP
 - Cooperation with UN Bodies (UNFCCC/IPCC)
 - Information on National/regional activities
 - Information from Industry on possible actions to reduce aviation emissions (airlines; airports; air navigation services; and business aviation);
 - Discussion and exchange of views on elements of a framework for action;
 - Aspirational goals
 - Future Schedule

ICAO's mandate within the UN

A36-22 (J): Aviation impact on global climate - Cooperation with UN and other bodies

- Ensure that ICAO exercise continuous leadership on environmental issues relating to international civil aviation, including GHG emissions
- Continue to study policy options to limit or reduce the impact of aircraft engine emissions and to develop concrete proposals and provide advice as soon as possible to the Conference of the Parties of the UNFCCC
- Continue to cooperate with organizations involved in policy-making in this field, notably UNFCCC and SBSTA

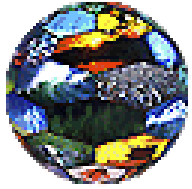
Setting the scene

- IPCC report generated unprecedented momentum in 2007: Climate change is happening and accelerating and the costs of inaction will far exceed the costs of action
- UNDP's Human Development Report: majority of climate change effects on the poorest and most vulnerable
- Bali Conference launched negotiations on a new international climate change agreement by the end of 2009
- Developed countries need to take a clear lead, but success is possible only if all countries act
- UN overview report aims to develop a coordination structure with key clusters of activity and specific lead agencies - Climate Change requires all to join forces

ICAO and other UN Bodies

- UNFCCC* - main policy/all areas
- IEA - quantification
- IPCC - assessment/reporting
- WMO* - assessment/adaptation
- UNEP - mitigation/adaptation
- UNCSD - millennium goals
- WHO - health effects
- IMO - policy/mitigation
- UNWTO - policy/mitigation

* Observers to CAEP



Intergovernmental
Panel on
Climate Change

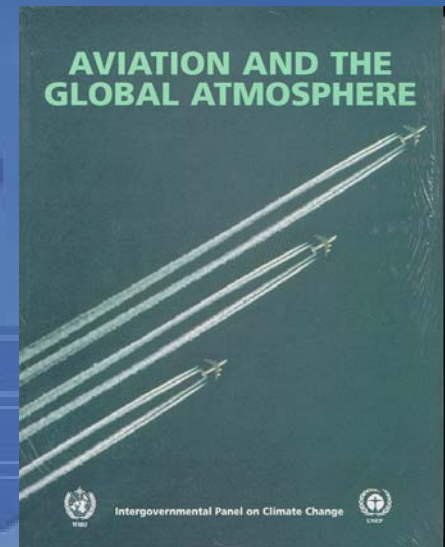
QUANTIFICATION / METHODOLOGICAL ISSUES

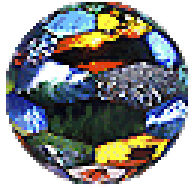
Special Report on *Aviation and the Global Atmosphere*

- Prepared at ICAO's request
- Completed April 1999
- Covered both climate change and ozone depletion

IPCC to update information on
aviation in 4th Assessment Report
(AR4)

- Published in 2007





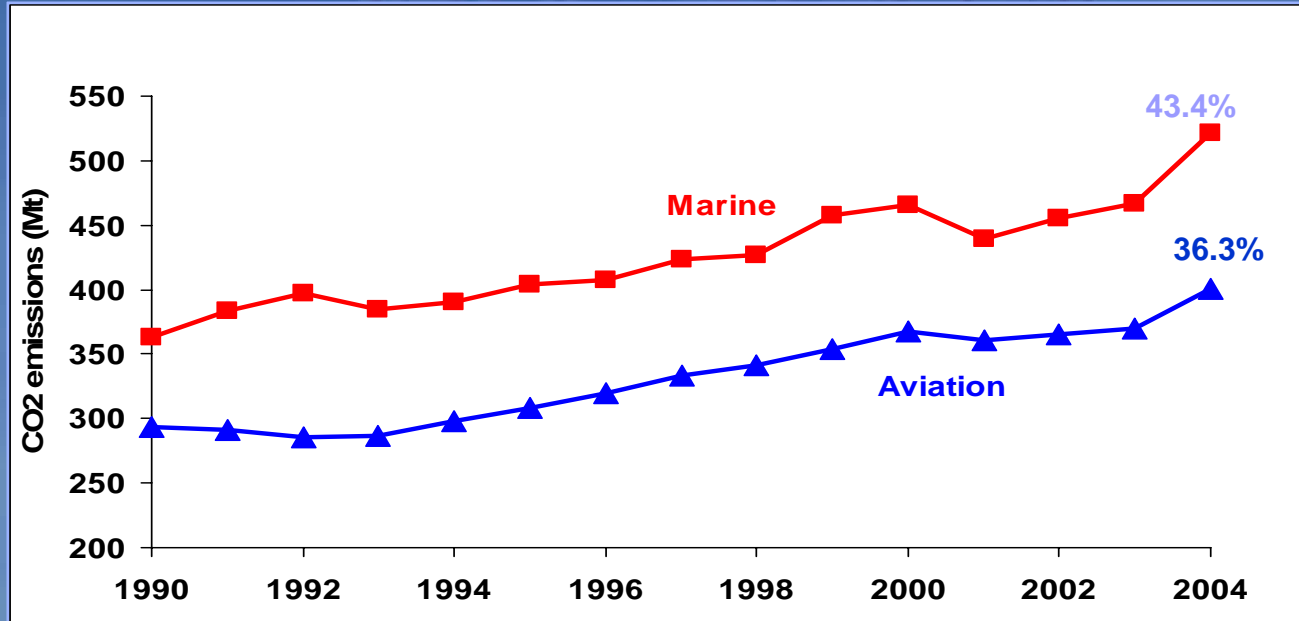
Intergovernmental
Panel on
Climate Change

QUANTIFICATION / METHODOLOGICAL ISSUES

- ICAO cooperated with the revision of the 1996 IPCC Guidelines which includes an update of the aviation emissions factors and other parameters
- Guidelines approved by IPCC in 2006 and new requests for the updates of the emissions factors database received
- Follow-up of the activities of the IPCC Emissions Scenarios Group

IEA – International Energy Agency

- Provide statistics on fuel consumption, including total fuel sold for aviation
- Many Countries use their statistics in their reporting activities to the UNFCCC



CO2 World emissions from international aviation and maritime transport

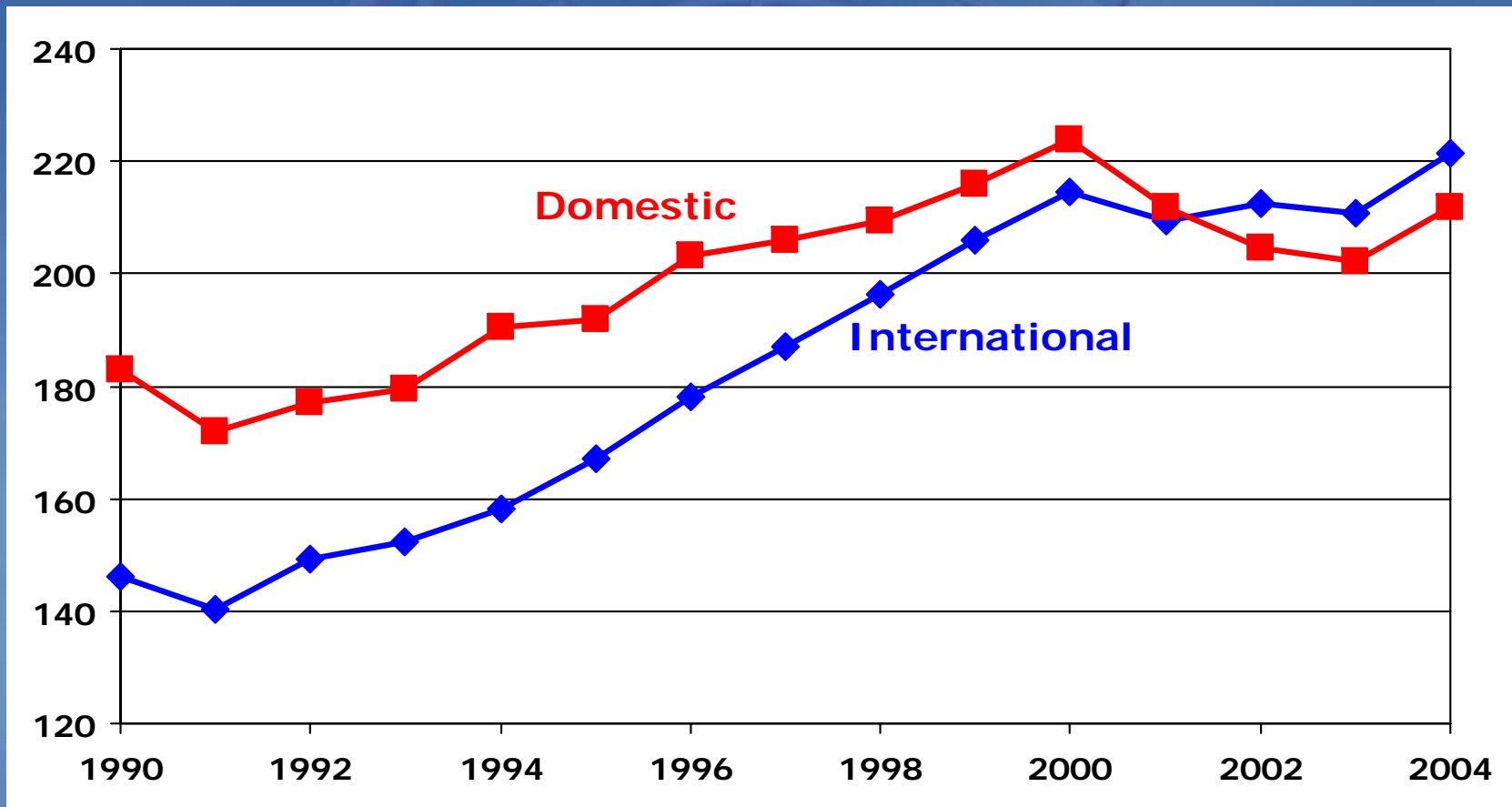
(Source IEA)



UNFCCC – POLICY ON CLIMATE CHANGE

- ALL parties have to report to the Convention on their emissions, including aviation emissions
- For Annex I - Domestic aviation emissions included in national totals
- International aviation emissions *reported*

International and domestic aviation CO₂ emissions (Mt) for all Annex I Parties*



* Excl. Russian Federation



UNFCCC – SBSTA

METHODOLOGICAL ISSUES

- ICAO cooperates with SBSTA on methodological issues related to aviation bunker fuels
- ICAO provided informal briefings and prepared a side event on the quality of aviation emissions and provided to SBSTA/22 (2005) a comparison study on aviation emissions inventory data with ICAO modeled data. No further progress was achieved in SBSTA on this item
- SBSTA 28 will be held in June 2008

Emissions - Kyoto Protocol

- Adopted in 1997/into force Feb. 2005 - Covers 2008 to 2012 - New Road Map post 2012
- Commits Annex I Parties (developed Countries) to individual, legally-binding targets to limit or reduce greenhouse gas emissions
- Reductions of at least 5% between 2008-2012 compared to 1990 levels
- Pursue limitation or reduction of emissions of greenhouse gases from aviation bunker fuels, working through ICAO (art.2.2)

RECENT DEVELOPMENTS

- The Bali Conference, delivered important progress on adaptation, technology and deforestation; and launched negotiations on a new international climate change agreement by the end of 2009
- The agreement will have to map out emission limitation commitments; agree on essential action to adapt to the impacts of climate change; and mobilize the necessary financing and technological innovation. The Plan will ultimately lead to a post-2012 international agreement on climate change financing and technological innovation

RECENT DEVELOPMENTS

- Article 1b4: enhanced national/international action on mitigation, including consideration of sectoral approaches and sector-specific action to enhance implementation of Article 4.1(c) of UNFCCC
- Process shall be conducted by the Ad hoc group on long term cooperative action (AWGLCA) under the Convention and shall present its work to the COP/15

UNFCCC Bangkok Climate talks

31 March – 4 April 2008

- 1st Session of AWGLCA and the 5th Session of the Ad hoc Working Group on further commitments for Annex I parties under the Kyoto protocol (AWG 5);
- ICAO presented the need to further strengthen the cooperation between the two organizations building upon and making the best use of their expertise – the symbiosis between AWGLCA and the GIACC process was highlighted;

UNFCCC Bangkok Climate talks

31 March – 4 April 2008

- AWGLCA discussed sectoral approaches. Some states proposed the inclusion of aviation into national targets. It was generally agreed that sectoral approaches should not replace targets but could be a complementary tool to achieve them.
- AWG 5 also discussed sectoral approaches and how to consider bunker fuels in further commitments. It was concluded that the group will further discuss how to taken into consideration bunker fuels in next meetings.

Future Schedule - GIACC and AWGLCA

ICAO/GIACC PROCESS

GIACC/1 – 25-27 Feb08

GIACC/2 – 14-16 Jul08

GIACC/3 – 16-18 Feb09

GIACC/4 – 1-3 Jun09

High Level Meeting in
connection with
COP/15 (date tbd)

CAEPSG/2-Sept08

CAEPSG/3-Jun09

CAEP/8-Feb10

UNFCCC/AWLCA PROCESS

AWGLCA/1 – 31Mar-4Apr08

AWGLCA/2 – 2-13 Jun08

AWGLCA/3 – Aug/Sept08

AWGLCA/4 – 1-12 Dec08

AWGLCA/5 – Mar09

AWGLCA/6 – 1-12Jun09

AWGLCA/7 – Aug/Sept09

AWGLCA/8 – 30Nov-11Dec09

(COP/15)

WORKSHOPS/INFORMAL
GROUPS

UNEP

- Many thematic areas – Main interest: Climate Change
- Governing Council/Global Ministerial Environment Forum – Discusses all matters related to environment at a Ministerial level
- United Nations Inter-Agency Cooperation -The Environmental Management Group (EMG) is chaired by UNEP - UN Carbon Neutral Initiative
- Scientific Advisory Groups
- The Intergovernmental Panel on Climate Change (IPCC)

UNEP Carbon Neutral Initiative

- UN launched the Carbon Neutral Initiative in 2007
- ICAO developed a harmonized and transparent, per-passenger emissions calculation methodology and reference tools
- The methodology is currently under CAEP revision and approval
- The methodology and the calculation tool will be placed on the ICAO public website in May 2008

CARBON OFFSET PROGRAMMES

- Carbon offsetting involves calculating the emissions created by one activity (e.g. aviation) and then compensating for the emissions produced with an equivalent amount of carbon dioxide (CO₂) savings from emission-reduction projects.
- Many programmes are available on the web
(i. e. Action carbon, The carbon neutral company, Sustainable Travel International, Climate Care, Carbon Fund, Climate Friendly, Zerofootprint, Australian Greenhouse Office (Greenhouse Friendly) , Balance carbon, Terrapass, Origin Energy, My Climate, Easy Jet.....)

Relations with other agencies

- WMO* - assessment/adaptation
- UNCSD – millennium goals
- WHO – health effects
- IMO - policy/mitigation (art.2.2)
- UNWTO - policy/mitigation



**ICAO
Environmental
Report 2007**



For more
information

www.icao.int/icao/env

Gateway to the
UN System's work
on Climate Change
www.un.org/climatechange

Thank you!

ICAO • OACI • ИКАО



國際民航組織 • ICAO

ICAO Data Activities

ICAO Fuel consumption estimates

- **ICAO develops fuel consumption estimates by:**
 - **City-pair**
 - **Traffic flow**
 - **Country of departure, arrival**
 - **Country of airline registration**
 - **International / domestic (definition)**
- **Estimates based on airline schedules:**
 - **Non-scheduled (charter) flights are not accounted for**
 - **Flight cancellations are not accounted for**
 - **Flights additions are not accounted for**