



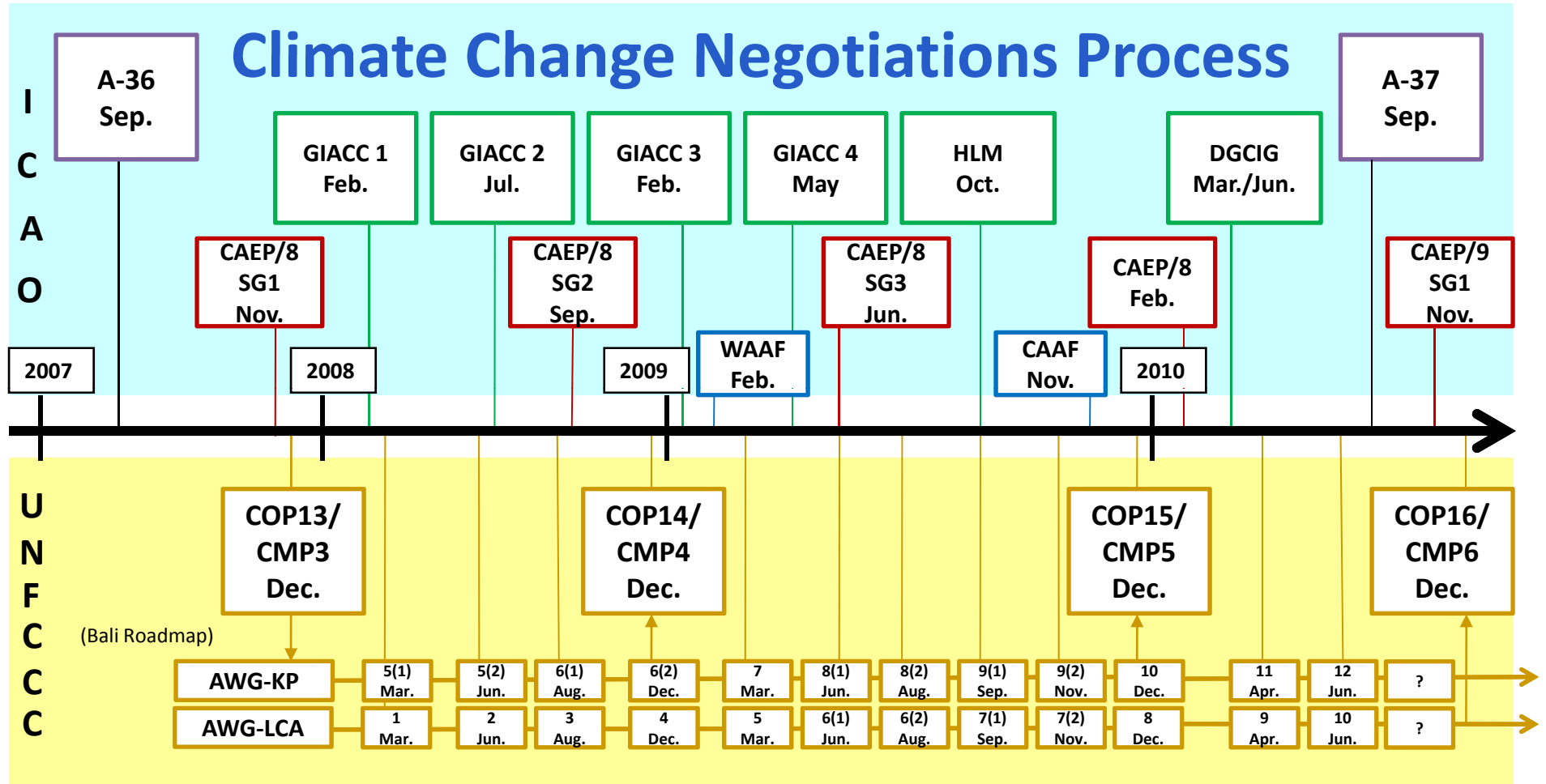
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ICAO: UNITING AVIATION ON CLIMATE CHANGE

# ICAO Colloquium on Aviation and Climate Change

## Session 9: Programme of Action on International Aviation and Climate

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**Legend**

**A-36 / A-37:** 36<sup>th</sup> ICAO Assembly / 37<sup>th</sup> ICAO Assembly  
**GIACC:** Group on International Aviation and Climate Change  
**HLM:** High-level Meeting on International Aviation and Climate Change  
**DGCIG:** Directors General Informal Climate Group  
**CAEP:** Committee on Aviation Environmental Protection  
**CAEP SG:** CAEP Steering Group  
**WAAF:** Workshop on Aviation and Alternative Fuels  
**CAAF:** Conference on Aviation and Alternative Fuels

**COP:** Conference of the Parties to the UNFCCC  
**CMP:** Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol  
**AWG-KP:** Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol  
**AWG-LCA:** Ad Hoc Working Group on Long-term Cooperative Action under the Convention



## **Steps from last Assembly Resolution:**

- **Group on International Aviation and Climate Change (GIACC) to develop an ICAO Programme of Action on International Aviation and Climate Change**
- **High-level Meeting in October 2009 adopted the Programme of Action – the first and only globally harmonized agreement from a sector on a goal to address its CO<sub>2</sub> emissions**



# ICAO Programme of Action on International Aviation and Climate Change (1/5)

## Global Goals

- 1) States and relevant organizations will work through ICAO to achieve a global annual average fuel efficiency improvement of 2% over the medium term until 2020 and an aspirational global fuel efficiency improvement rate of 2% per annum in the long term from 2021 to 2050, calculated on the basis of volume of fuel used per revenue tonne kilometre performed**



# ICAO Programme of Action on International Aviation and Climate Change (2/5)

## Global Goals (cont'd)

- 2) Taking into account the relevant outcomes of the UNFCCC COP15, and recognizing that this declaration shall not prejudice the outcome of those negotiations, ICAO and its Member States, with relevant organizations will also keep working together in undertaking further work on medium and long-term goals, including exploring the feasibility of goals of more ambition including carbon-neutral growth and emissions reductions, taking into account the collective commitments announced by ACI, CANSO, IATA and ICCAIA on behalf of the international air transport industry, the special circumstances and respective capabilities of developing countries and the sustainable growth of the international aviation industry, for consideration by the 37th Session of the ICAO Assembly



# ICAO Programme of Action on International Aviation and Climate Change (3/5)

## Mitigation Measures

- 3) develop a global CO<sub>2</sub> Standard for aircraft - CAEP
- 4) facilitate the development and deployment of sustainable alternative fuels for aviation - CAAF
- 5) facilitate the implementation of operational changes and the improvement of air traffic management and airport systems - Circular 303, Global Air Navigation Plan (Doc 9750) etc.



# **ICAO Programme of Action on International Aviation and Climate Change (4/5)**

## **Mitigation Measures (cont'd)**

- 6) develop a framework for market-based measures in international aviation**
  
- 7) elaborate on measures to assist developing States as well as facilitate access to financial resources, technology transfer and capacity building**



# ICAO Programme of Action on International Aviation and Climate Change (5/5)

## Progress Monitoring

- 8) States are encouraged to submit their action plans and annual reporting on international aviation CO<sub>2</sub> emissions to ICAO
  
- 9) ICAO will regularly report CO<sub>2</sub> emissions from international aviation to the UNFCCC, as part of its contribution to assessing progress made in the implementation of actions in the sector





## UNFCCC COP15

- Debates were focused on the principles of CBDR and on financing for adaptation activities rather than mitigation actions
- Questions concerning transparency and the need to ensure a democratic process
- Informal high-level negotiations resulted in a political agreement called “Copenhagen Accord”, which was “taken note” by COP15
- No specific decision on how to address GHG emissions from international aviation at COP15



# Next Steps - Political Challenges

- **High-level Meeting Recommendations:**
  - More ambitious goals
  - Framework for market-based measures
  - Assistance to States
- **How to find an appropriate balance between aviation's future growth and its climate impacts ?**
- **How to apply both ICAO's non-discrimination principle and UNFCCC's CBDR principle ?**
- **Adaptation - Levies on international aviation (UNFCCC/AGF)**



# Next Steps - Technical Challenges

- **2 degree C target by Copenhagen Accord – what it means for aviation ?**
- **CO<sub>2</sub> Standard**
- **Technological and Operational Goals**
- **Circular 303**
- **Mechanism for fuel consumption reporting by States to ICAO**
- **Structure of States' action plans (format, content etc.)**

## How States and Industry can help ?

- Assembly (Sep.), CAEP SG (Nov.), COP16 (Dec.) in 2010
- “Cooperation, Coordination, Communication” are the key for success !!!
  - ✓ Provide data, resources, best practices, global solutions etc. to overcome political and technical challenges
  - ✓ National coordination – better recognition of ICAO’s achievement in other bodies (UNFCCC)
  - ✓ Industry’s support
  - ✓ Improve perception
  - ✓ ACT



## Setting the Scene

Australia

China

Brazil

EU

UAE

USA

ATAG

ICSA

## States' Action Plans Common Themes

- **Baselines, goals and timeframes**
- **Quantification / footprinting**
- **Monitoring, reporting and verification**
- **Technological Advances**
- **Operational Initiatives**
- **Economic Measures**
- **Alternative Fuels**



## Environmental Benefits of Operational Measures (reported during Colloquium)

	ICAO	ASPIRE	CANADA	NEW ZEALAND	SESAIR/AIRE
Ground	DATA LINK 21.9 M kg fuel 69.2 M kg CO2		SEQUENCING 550,000 t CO2e CAD \$178M	AIRPORT 15,000 kW.h / year	TAXI 45-105s / flight 6-60 t fuel 30 s / app trajector
Dep / Arr					CCD, CDA, TA 80-1250 kg CO2 / flight 25% fuel / descent
En-Route	RVSM 80kg fuel / flight 10000 flights / day 290000 t fuel / year 913500 t CO2 / year 4350 t NOx / year		ADS-B 678,000 t CO2e CAD \$245M Surveillance 1,275,000 t CO2e CAD \$447M RVSM 3,970,000 t CO2e CAD \$1256M		SPACE OPTIMIZATION 90-1050 kg CO2 / flight
PBN	489 t fuel / day 3.9M t CO2 \$400-700M		RNAV 1,759,000 t CO2e CAD \$440M RNP 231,000 t CO2e CAD \$82M	RNAV STAR 1,170 t CO2 RNP AR APP 46 diversions 40 flight CNL	
Combination		ASPIRE Flights 32386 kg fuel 101986 kg CO2	4.35M t CO2e CAD \$331M 1M t GHG	28000 to 5000 min delay / month  1 ASPIRE flight 3500 kg fuel 11000 kg CO2	TOTAL 1152 trials 400 t CO2  1 AIRE flight 2-3 t fuel 6-9 t CO2



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## ICAO Colloquium on Aviation and Climate Change

# ICAO's 2nd Environmental Report

The ICAO Environmental Report 2010 will provide a comprehensive account of the work of ICAO including a synthesis of key developments from CAEP/8 and other recent developments

## ICAO ENVIRONMENTAL REPORT 2010



**AVIATION** and  
**CLIMATE CHANGE**





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# THANK YOU

For more information on our activities please visit ICAO's website or our stand outside the Assembly Hall

**[HTTP://WWW.ICAO.INT](http://www.icao.int)**