



WORKING PAPER

ASSEMBLY — 37TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 17: Environmental protection

**ADDRESSING AVIATION'S ENVIRONMENTAL IMPACTS THROUGH A
COMPREHENSIVE APPROACH**

(Presented by Belgium on behalf of the European Union and its Member States¹
and by the other States Members of the European Civil Aviation Conference²,
and by Eurocontrol)

EXECUTIVE SUMMARY

Europe strongly supports ICAO's ongoing efforts to address the full range of environmental issues, including its comprehensive approach to emissions reductions - the key strategic environmental challenge to aviation today - and calls on all States and regions to play their full part managing the sector's environmental impacts.

Action: The Assembly is invited to:

- a) welcome and endorse the work programme of the ICAO Council with respect to a comprehensive approach to environmental protection, and call upon States to contribute to the global effort by taking action without delay to bring about significant reductions in the climate impacts of aviation;
- b) acknowledge the need to limit the increase in global average temperature to no more than 2° C, and recognise that 2% annual fuel efficiency improvements on their own will not deliver the necessary emissions reductions;
- c) adopt medium and long term goals for emissions reduction consistent with that target;
- d) establish as a priority a global framework for market-based measures in international aviation to facilitate the introduction of such measures;
- e) acknowledge the continuing need for an active application of all elements of the balanced approach to noise management; and
- f) ask the Council to continue its work to limit or reduce the impact of local air pollution from aircraft.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective C, <i>Environmental Protection – Minimize the adverse effect of global civil aviation on the environment.</i>
<i>Financial implications:</i>	No additional resources required.
<i>References:</i>	No references.

¹ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

² Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Croatia, Georgia, Iceland, Monaco, Montenegro, Norway, Republic of Moldova, San Marino, Serbia, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, and Ukraine.

1. INTRODUCTION

1.1 The focus on aviation's environmental impacts, in particular its climate change effects, has intensified considerably since the last Assembly. Notwithstanding the current economic crisis, demand for air traffic is projected to grow significantly between now and 2030, and the sustainability of this rate of growth is increasingly called into question. In spite of improvements in aircraft noise performance, noise exposure at many European airports is expected to increase due to growth in air traffic, leading to demands for operating restrictions and increasing difficulties in securing support for airport expansion. Aviation's growing contribution to greenhouse gas emissions exacerbates the problem, and climate change has emerged in some European States as a powerful additional argument against aviation growth.

2. CLIMATE CHANGE

2.1 There is now a general recognition that stabilizing greenhouse gas concentrations in the atmosphere, at a level that would prevent dangerous anthropogenic interference with the climate system, requires the increase in global temperature to be kept below 2° Celsius. This in turn will require deep cuts in global emissions, and all sectors of the economy are being looked to for their contribution - including international aviation, widely recognised as representing a significant and growing source of emissions.

2.2 Asked to develop policy options following the last Assembly, the Council charged GIACC with preparing an aggressive Programme of Action. The HLM in October 2009 recognised that the GIACC outputs, which included global aspirational goals in the form of fuel efficiency, were an important first step, but also that because fuel efficiency improvements would not on their own reduce aviation's absolute emissions, goals of greater ambition were needed. In Resolution A36-22, the ICAO Assembly noted that to promote *sustainable* traffic growth, a "comprehensive approach" to reducing emissions was necessary. Europe has since made significant progress in implementing such an approach:

- a) *Reduction at source.* Europe fully supports CAEP's ongoing work to develop new engine emissions standards, in particular to develop a new aircraft CO₂ Standard.
- b) *Research and development.* The EU Framework Programme for Research and Technological Development, which is open to participation by international and third country organisations, currently includes the Clean Sky Joint Technology Initiative, a public-private partnership with a total budget of 1.6 billion Euros for 2008–2013; and funding to support the preparation of pilot plants for the production of 2nd and 3rd generation biofuels. The European Commission's SWAFEA study³ is also undertaking a comparative analysis of different alternative fuel options in the short to medium term.
- c) *Modernisation of air traffic management.* The Single European Sky ATM Research (SESAR), the technological component of Single European Sky (SES), is a € 2.1 billion Joint Undertaking whose targets include a 10% reduction in CO₂ emissions per flight. Europe is also exploring the effectiveness of "Green Flights", such as those using Continuous Descent Approaches, improvements in European ATM efficiency through cooperation with operational stakeholders, and further emissions reductions through the AIRE initiative (Atlantic Initiative for the Reduction of Emissions) in cooperation with the US FAA.

³ 'Sustainable Way for Alternative Fuels and Energy in Aviation'

- d) *Market-based measures.* It is clear that the above initiatives are not together capable of delivering the aggregate emissions reductions necessary in a sufficiently short timeframe. That is why Europe regards market-based measures as indispensable to the achievement of properly ambitious goals. The most cost-effective option, compared to taxes or levies, is offered by open emission trading schemes such as the EU ETS. The inclusion of the aviation sector in the EU ETS will allow the sector to continue to grow, through the purchase of CO₂ allowances from other sectors of the economy where abatement costs are lower.

Aviation in the EU Emissions Trading Scheme (ETS)

2.3 Under the EU ETS, aircraft operators flying to and from airports in 30 European states⁴ from 2012 will surrender allowances in respect of their CO₂ emissions on an annual basis. The large majority (85%) of allowances will be allocated to individual aircraft operators free of charge, based on their respective aviation output (rather than emissions) in 2010, thus rewarding operators that have already invested in cleaner aircraft. The remaining 15% of allowances will be allocated by auction. The scheme also includes a *de minimis* provision under which commercial operators with a low level of aviation activity in Europe⁵ are excluded from its scope. This is likely to mean that many aircraft operators from developing countries will be unaffected by the scheme and, indeed, over 90 ICAO states have no commercial aircraft operators included in the scope of the EU ETS.

2.4 The EU legislation foresees that, where a third country takes measures of its own to reduce the climate change impact of flights departing from its airports, the EU will consider options available in order to provide for optimal interaction between the EU scheme and that country's measures. In such a case, one option could be that flights arriving from the third country would be excluded from the scope of the EU scheme. The EU therefore encourages other countries to adopt measures of their own and is ready to engage in bilateral discussions with any country that has done so. The legislation also makes it clear that if there is agreement at ICAO on global measures, the EU will consider adapting its ETS accordingly.

A global approach

2.5 In addition to its work with ICAO, Europe has also been seeking agreement on a global approach to reduce aviation's greenhouse gas emissions as part of the international climate change negotiations within the UNFCCC. At UNFCCC, the EU approach also recognises the need for specific measures to address the special circumstances and capabilities of different developing States. The Copenhagen Accord, though silent on emissions from international aviation, did however recognise the scientific view that the increase in global temperature should be below 2° C. ICAO now has the opportunity to reach an agreement on a comprehensive global approach consistent with the 2° C objective, that could be subsequently endorsed by the UNFCCC.

2.6 The aspirational goal of a 2% annual improvement in fuel efficiency for both the medium term and long term, presented by the ICAO secretariat at COP15, was less ambitious than the position advocated by the aviation industry, which is to be commended for the positive steps it has taken since the last Assembly. Industry's present targets are nonetheless insufficiently ambitious. Allowing aviation emissions to peak only in 2020 would result in ten years of considerable growth in emissions. Such a target would not see aviation contributing equally to attaining the maximum 2°C temperature rise

⁴ 27 EU Member States plus Iceland, Liechtenstein and Norway.

⁵ Performing fewer than 243 flights to and from EU airports in three consecutive four-month periods, or emitting less than 10,000 tonnes of CO₂ in a year,

objective, which requires global emissions to peak well in advance of 2020. Accordingly the EU has advocated that the global reduction target for greenhouse gas emissions from international aviation should be a 10% reduction by 2020 compared to 2005 levels.

2.7 Global sectoral measures will take time to develop, making it important that ICAO continues in the meantime the process of developing a framework for market-based measures which will facilitate and not impede effective action. A future global framework may well develop through the linking or mutual recognition of measures developed at a State and regional level, and these should therefore be welcomed, as contributing to the global framework. States and regions that have already introduced, or are in the process of adopting, such measures should accordingly be encouraged.

2.8 Work also needs to continue on developing the scientific understanding of the non-CO₂ effects of aviation on climate change, which may prove to be very important. It is therefore important that ICAO continues to cooperate closely with the UNFCCC and IPCC in relation to these impacts.

3. LOCAL ENVIRONMENTAL IMPACTS

3.1 Local environmental impacts also continue to impose significant constraints on future growth in air traffic. Within Europe, given its population density and the proximity of major airports to cities, aviation faces increasing constraints due to local environmental impacts, notably those relating to noise. Europe fully supports the ICAO balanced approach to mitigating noise nuisance, which has been implemented in the EU through Directive 2002/30/EC. In order to reduce aircraft noise at source, ICAO is studying possible future noise stringency options through the CAEP process, which Europe strongly supports. The revised SES legislation offers possibilities for improved operational measures, and the performance regulatory framework will create scope for the imposition of environmental targets, backed by potential sanctions. In relation to local air quality, Europe welcomes the new CAEP/8 NO_x Standard and supports future work on particulate matter. Europe is devoting significant resources to research in these areas, specifically to research on developing aircraft engine PM certification requirements (SAMPLE I and II⁶), to new aircraft technologies under the Clean Sky Joint Technology Initiative and to impacts on health under the Environment and Health part of the EU Research Framework Programme.

4. CONCLUSIONS

4.1 Environmental concerns, including but not limited to climate change, continue to represent a constraint on the future development of the international aviation sector. Europe strongly supports ICAO's ongoing efforts to address the full range of environmental issues, within which it will be important to consider the interdependencies between different impacts. The key *strategic* challenge facing the sector at this moment is climate change: international aviation needs to make a fair and effective contribution to tackling this very real global threat. But regional action on its own will not be enough. A global approach is required, and ICAO has an essential role to play in its development. Europe also urges States and other regions to take concrete action, too, and is ready to engage in bilateral discussions with any country or region that has done so. To be successful, and with its credibility at stake, the international aviation sector will need to show greater ambition than it has to date.

— END —

⁶ The SAMPLE I final report can be accessed at http://www.easa.europa.eu/ws_prod/r/doc/research/SAMPLE_Report_Final.pdf