

## Position Paper

15 December 2008

### AEA CONTRIBUTION TO A GLOBAL APPROACH FOR INTERNATIONAL AVIATION EMISSIONS

#### SUMMARY

The AEA proposal for a global approach is based on the following key elements:

- International aviation to be included as a sector in any post-Kyoto multilateral agreement on climate change;
- ICAO to represent the aviation sector at the Copenhagen negotiations;
- Reconciliation of the Chicago principle of non-discrimination between operators and the Kyoto principle of differentiated responsibilities between countries;
- Countries to be grouped into 3 Blocks according to the maturity of their aviation market;
- Differentiated target-setting for the 3 Blocks, but equal treatment of all air carriers operating within the same Block;
- Block A - Fixed emissions reduction target: carbon neutral growth, namely stabilization of aviation emissions at 2005 levels by 2020;
- Block B – Relative target of energy intensity, namely fuel efficiency;
- Block C – Neither absolute nor relative targets but an obligation to monitor, report and verify operators' emissions;
- For traffic between 2 Blocks, application of the lowest target to all air carriers regardless of nationality;
- Targets and classification of countries within the Blocks to be reviewed and adjusted by ICAO overtime.

#### BACKGROUND

1. Emissions from international aviation are not included in the Kyoto Protocol of 1997, because of the difficulty in allocating them to specific countries. *'For example, which country should be responsible for emissions involving an airline from the Americas flying over the Middle East, between a country in Europe and another in Asia?'*<sup>1</sup>

---

<sup>1</sup> ICAO 1997, Page 1

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

2. States were nevertheless required to pursue the objective of limiting or reducing aircraft emissions through ICAO (International Civil Aviation Organisation). To comply with this Kyoto requirement, a number of actions have been undertaken by ICAO's CAEP (Committee on Aviation Environmental Protection): commissioning scientific and economic reports, establishing guidelines for the implementation of emission charges and trading schemes, recommending the inclusion of international aviation into an open ETS as the most cost-effective way of reducing emissions. However, progress towards a meaningful multilateral policy to control aviation emissions has been slow and at the ICAO Assembly in November 2007, States were divided on the most appropriate way to address the issue.
3. The lengthy process involved in reaching an international consensus opens the door for unilateral action. Such measures are currently being taken in different regions of the world, and particularly in Europe, resulting in a series of uncoordinated national and regional policies ranging from national taxation - for example the UK Air Passenger Duty - to the recently adopted EU Directive to include aviation in the EU ETS (Emissions Trading Scheme).

## RATIONALE FOR THE AEA TO TACKLE THE ISSUE

4. The AEA considers that:
  - A global approach is the most effective way to manage international aviation's contribution to climate change;
  - In the absence of a global approach, European carriers would bear the majority of the burden of a mandatory regional ETS, thus leading to unacceptable distortions of competition between carriers and regions;
  - A geographically limited ETS would result in 'carbon leakage', as transfer traffic could be deviated around Europe in order to avoid inclusion in the ETS;
  - **A post-Kyoto multilateral approach is only achievable through ICAO and UNFCCC**, (United Nations Framework Convention on Climate Change).
5. In light of the above, the AEA is submitting the present proposal with a view to convincing EU policy makers to adopt an approach that would be acceptable to non-EU States, in order to avoid the uncoordinated application of unilateral policies.

## GUIDING PRINCIPLES OF A GLOBAL APPROACH

6. The AEA has taken into account the following basic principles when developing its proposal:
  - Global treatment of international aviation emissions within a comprehensive economy-wide framework,
  - Harmonised approach to stringency and procedures for the international aviation sector,

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

- Recognition of the need to adjust objectives to reflect 'common but differentiated responsibilities',
- This might result in differentiated target-setting in the context of projected growth in aviation emissions and technology development,
- Strong incentives to improve technology, ATM and operational efficiency.

## TIMELINE

7. The AEA would like to take full advantage of the three golden opportunities offered by the UNFCCC, ICAO and the EU, which together are trying to achieve a post-Kyoto global arrangement :
  - 2009: UNFCCC to achieve the Bali Roadmap at its Copenhagen meeting,
  - 2010: ICAO General Assembly to decide on proposals which will be submitted by its newly created GIACC (Group on International Aviation and Climate Change),
  - 2012: EU to revise and adapt its current ETS according to a possible post-Kyoto global agreement.

## AVIATION EMISSIONS WITHIN A COMPREHENSIVE ECONOMY-WIDE FRAMEWORK

8. Any policy related to aviation emissions should be global and should also be consistent with the general regime applied to the other sectors, whilst taking into account the specific characteristics of the aviation sector. In December 2007, the UNFCCC launched the 'Bali Roadmap' to advance multilateral cooperation and action to address climate change, including a new negotiation process.
9. The Bali initiative provides a unique opportunity to consider the incorporation of international aviation into a post-2012, multilateral climate agreement. AEA believes that the aviation sector should be involved in the UNFCCC discussions via ICAO, **and therefore strongly requests that the European authorities play an active role in the Copenhagen negotiating process, with the objective of achieving a global agreement on climate change covering all sectors, including international aviation.**

## SECTORAL APPROACH FOR INTERNATIONAL AVIATION

10. Annual emissions from international aviation account for around 2% of both CO<sub>2</sub> and total anthropogenic greenhouse gas (GHG) emissions (IPCC 2007) and are forecast to triple by 2050 under a business as usual scenario (Stern Report 2007). As mentioned earlier, these emissions are not included in national inventories or national emissions reduction targets because of the difficulty in allocating them to specific countries.
11. The key weakness of the Kyoto Protocol is its focus on differentiation by country. While there may be good reason for this focus with regard to national sovereignty or inter-State equality, the competitiveness of companies in international markets and the resulting carbon leakage are often overlooked. The flexible mechanisms set by Kyoto seem to be appropriate, provided they are made available to all sectors.

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

12. If international aviation emissions were to be part of a post-2012 climate agreement, ***the AEA strongly recommends that emissions from the aviation sector should be considered globally, instead of using the current Kyoto country-by-country model.***
13. The way in which international aviation sector would be integrated in the future global agreement needs to be defined. The AEA has reviewed relevant literature and noted that several options exist<sup>2</sup>. Further technical assessment is necessary to determine the most appropriate legal instrument, and the AEA is prepared to investigate and discuss this point with the European authorities.

## COMMON OBJECTIVE BUT DIFFERENTIATED RESPONSIBILITIES

### ***Need to reconcile UNFCCC and Chicago Convention Principles***

14. A fundamental principle of both the 1992 UNFCCC and the 1997 Kyoto Protocol is that of ‘common but differentiated responsibilities’, which essentially means that the States’ contribution towards emissions reduction will not be equal. This principle is based on the recognition that industrialised countries have a greater historical responsibility, because their industries have been constantly emitting CO<sub>2</sub> into the atmosphere over the last century. On the other hand, developing countries also have a responsibility for future emissions and cannot simply repeat the pattern of historical emissions followed by the industrialized countries, thus reproducing the same negative impact on the climate.
15. Given the global nature of aviation, one of the fundamental principles of the 1944 Chicago Convention on International Civil Aviation is that of fair and equal treatment of air carriers, which essentially means that there is no discrimination between countries. ***There is therefore a potential conflict between the principles of Chicago and Kyoto, and any future climate policy should reconcile these conflicting principles.***

<sup>2</sup> Four ways to incorporate sectoral approaches into an international climate policy framework are considered by Bradley et al (2007) and Bodanski (2007):

- *Addition* – Assuming a comprehensive agreement for one group of countries (e.g. industrialised countries) exists, this is supplemented by sectoral agreements that engage additional countries.
- *Complementary* - A specific sectoral agreement is defined that complements the broader agreement. A given sector in some countries would participate in two regimes applicable to the sector. Unlike the addition model, this model is more appropriate for certain international sectors since it provides a common global framework under which all key countries would engage.
- *Carve-out* – Assuming there is a single comprehensive agreement a particular sector is excluded and treated separately. This approach is similar to the complementary model but emissions targeted by the sectoral agreement are excluded from the comprehensive accord.
- *Integration* – Special sectoral provisions are integrated within an otherwise comprehensive agreement. Provisions could include the level of harmonisation, accounting measurement and so on.

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

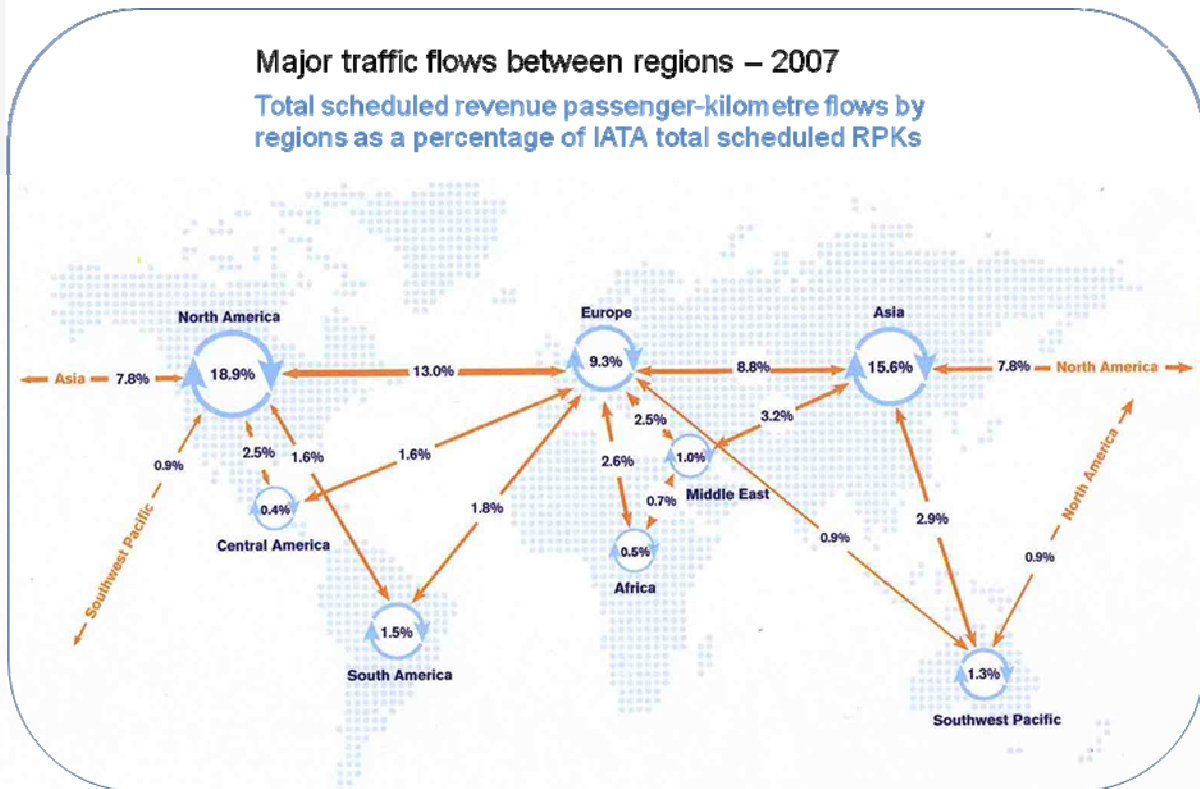
**General objective for the aviation sector**

16. The AEA thinks that a sectoral approach would partially resolve the conflict, because all air carriers would be covered by the sectoral agreement, regardless of nationality. Within a post-Kyoto multilateral agreement, one can assume that **a general objective would be assigned to the aviation sector in proportion to its contribution to climate change and its technological emissions reduction potential.**

**Replacement of the ‘country-approach’ by the concept of ‘aviation markets’**

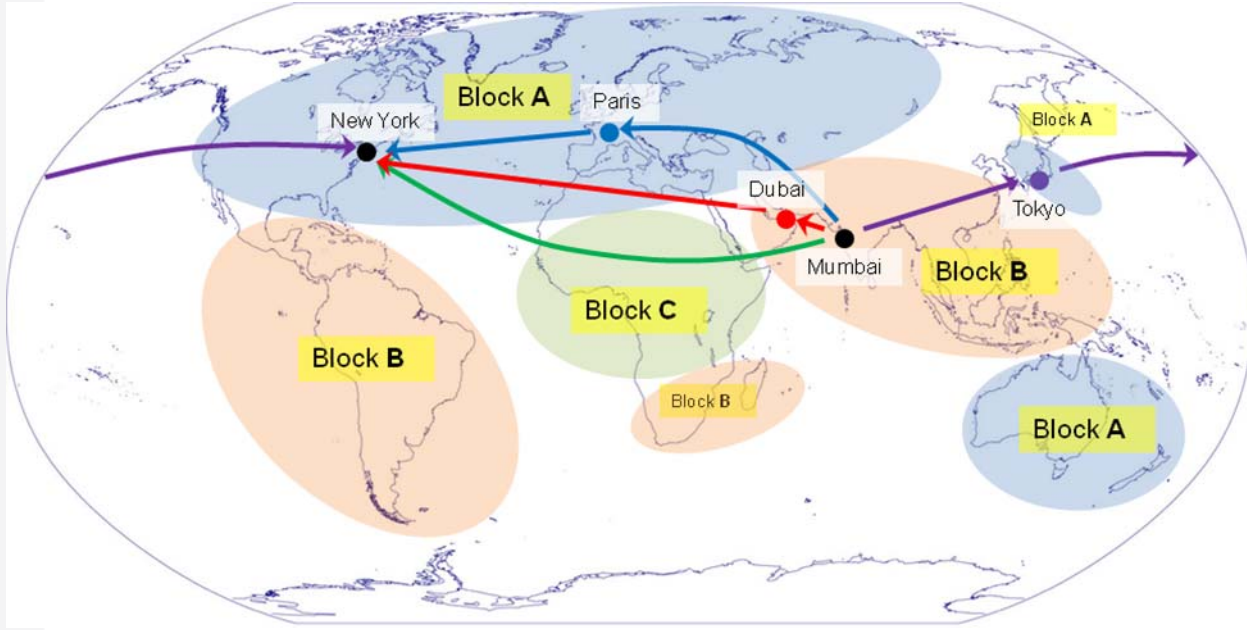
17. There remains the question of differentiated responsibilities. The AEA fully acknowledges the need to ensure equal treatment of air carriers whilst respecting nations’ differentiated obligations to emissions reductions.

18. To solve this difficulty **the AEA has deliberately disregarded individual countries**, and instead **considered regions according to their traffic flows.** From its analysis and as shown in the map below, the AEA observed that the concept of blocks of ‘aviation markets’ based on objective criteria could validly replace the country-by-country approach.



- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

**Illustrative aviation blocks**



**Correlation between UNFCCC classification of countries and blocks of 'aviation markets'**

19. Just as the UNFCCC determined a classification of countries in order to differentiate climate responsibilities, the post-Kyoto agreement will require a similar categorization<sup>3</sup>. Categorization of the world into 'aviation markets' can be

<sup>3</sup> The Convention divides countries into three main groups according to differing commitments:

**Annex I** Parties include the industrialized countries that were members of the OECD (Organisation for Economic Co-operation and Development) in 1992, plus countries with economies in transition (the EIT Parties), including the Russian Federation, the Baltic States, and several Central and Eastern European States.

**Annex II** Parties consist of the OECD members of Annex I, but not the EIT Parties. They are required to provide financial resources to enable developing countries to undertake emissions reduction activities under the Convention and to help them adapt to adverse effects of climate change. In addition, they have to "take all practicable steps" to promote the development and transfer of environmentally friendly technologies to EIT Parties and developing countries. Funding provided by Annex II Parties is channelled mostly through the Convention's financial mechanism.

**Non-Annex I** Parties are mostly developing countries. Certain groups of developing countries are recognized by the Convention as being especially vulnerable to the adverse impacts of climate change, including countries with low-lying coastal areas and those prone to desertification and drought. Others (such as countries that rely heavily on income from fossil fuel production and commerce) feel more vulnerable to the potential economic impacts of climate change response measures. The Convention emphasizes activities that promise to answer the special needs and concerns of these vulnerable countries, such as investment, insurance and technology transfer.

The 49 Parties classified as **least developed countries** (LDCs) by the United Nations are given special consideration under the Convention on account of their limited capacity to respond to climate change and adapt to its adverse effects. Parties are urged to take full account of the special situation of LDCs when considering funding and technology-transfer activities.

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

a transposition of the corresponding UNFCCC classification of countries, thereby avoiding unnecessary debate on the grouping of countries. ***The AEA believes that the post-Kyoto UNFCCC classification of countries should be taken as the basis for its proposal.***

20. However, if some discrepancies do appear between the UNFCCC classification and the blocks of 'aviation markets', then adjustments would be needed through ICAO.

***Different commitments for different aviation blocks, but equal treatment of all air carriers within and between the blocks***

21. The key elements of the proposed AEA approach are the following :

- ***Depending on the degree of maturity of their aviation markets, the different blocks will be assigned different targets.***
- ***All air carriers operating within the same blocks will be subject to the same target, regardless of their nationality.***
- ***All air carriers operating between two different blocks will be subject to the lowest target of the two blocks, regardless of their nationality.***
- ***Depending on the evolution of their respective markets, the blocks' targets could be revised over time.***

22. The AEA is convinced that this concept reconciles the principle of equal treatment of operators with the need to respect States' differentiated obligations. Furthermore, by taking into account the respective contribution to climate change of the different aviation blocks, the AEA necessarily makes the link between aviation and the general economic development of the different blocks, and ultimately of the individual countries which compose the blocks.

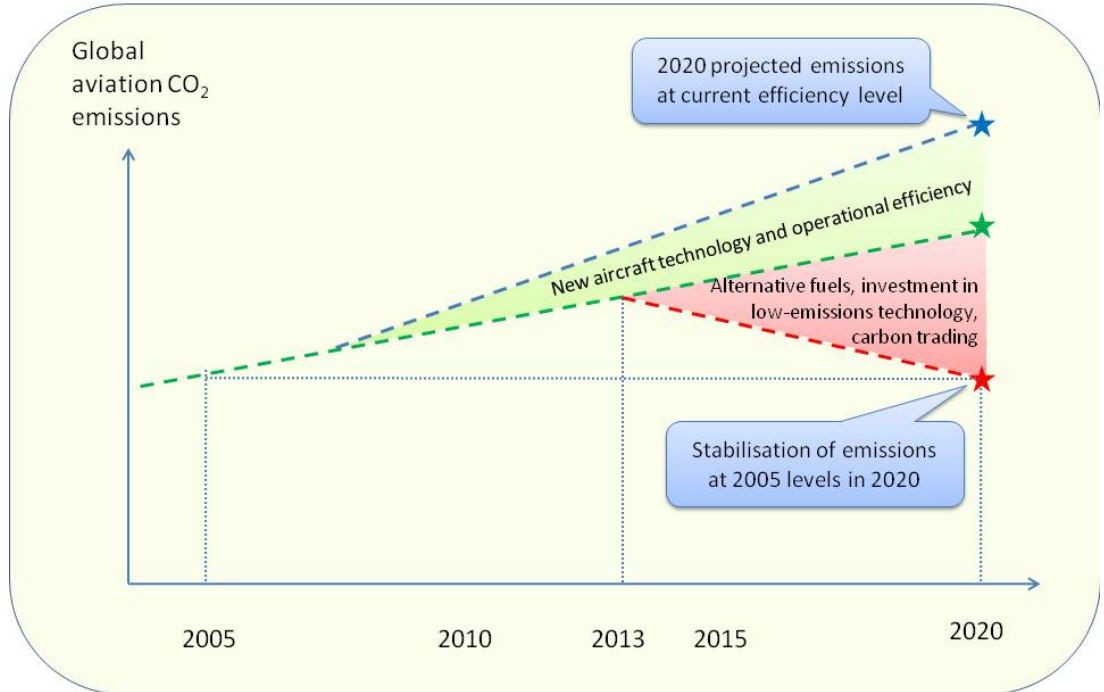
23. It should be underlined that such reconciliation could only be achieved if ***aviation is treated as a sector within an economy-wide framework.***

**ABSOLUTE TARGETS IN THE CONTEXT OF PROJECTED GROWTH OF AVIATION EMISSIONS AND TECHNOLOGY DEVELOPMENT**

24. AEA reconfirms its Emissions Containment Policy based on 4 pillars, namely technological progress, infrastructure improvements, operational procedures and market-based measures.

25. As shown in the Graph below AEA considers the short to mid-term objectives by taking into account the projected growth of aviation emissions, the reductions expected from technology development (including alternative fuels), improvements in Air Traffic Management, operating procedures, and finally economic measures.

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways



26. As a result of its analysis, the AEA proposes the following differentiation by aviation market blocks :

- Within and between countries which aviation market belongs to **Block A**
  - 2013 to 2020: **Fixed emissions reduction commitment (Carbon neutral growth). In other words, stabilisation of emissions at 2005 levels in 2020** by any means, i.e. technology, infrastructure optimisation and operations.
  - As complementary measures, air carriers could buy international allowances. **A global and open ETS could be the proper instrument** for the countries concerned by this Block.
  - 2020 and onwards: a minimum requirement is to maintain the stabilisation of emissions at 2005 levels, pending definition of new targets taking into account traffic evolution and technological developments, particularly with regard to alternative fuels.
- Within and between markets of **Block B, between Block B and Block A markets**
  - No absolute target but a relative **energy intensity target, i.e. fuel efficiency.**
  - If air carriers do not attain the average fuel efficiency of the whole Block, there will be penalties; in other words, these air carriers will be obliged to buy international allowances to offset their emissions above the average threshold.

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

- Within markets of **Block C and between Block C and any other Block markets**
  - **Neither absolute nor relative targets, but an obligation to monitor, report and verify air carriers' emissions.**

27. All carriers operating within the same blocks and between different Blocks will be subject to the same target, regardless of their nationality. This is to ensure non-discrimination between air carriers whilst at the same time respecting the concept of differentiated targets for blocks.

## PENDING QUESTIONS

### ***Need for proper database on O-D traffic***

28. The traffic flows used to define the aviation blocks are determined by so-called O-D traffic, namely passengers and cargo flying from the points of Origin to their final Destinations, whatever the routing. The existing ICAO and Member State databases provide valuable information on OD traffic - both direct flights and connecting flights operated by the same air carrier (code-share flights are also easily identifiable). However, not enough data is available, and that which does exist is probably not accurate enough to identify OD traffic in cases where passengers use different operators or purchase separate flight coupons.

29. Identification of the OD traffic is important because it determines the volume of traffic within and between the blocks. It would also limit carbon leakage and deviation of traffic via different intermediate points located in different blocks. However, administrative costs should be minimised.

### ***Need to define proper MRV (Monitoring, Reporting, Verification) rules***

30. Some regions, such as the EU, have a good knowledge or even practical experience of MRV. The AEA believes that ICAO should develop guidance on this subject, because all the blocks would need MRV, although for Block C this would be the only requirement.

## CONCLUSION

31. The AEA is conscious that the Bali/Copenhagen negotiating process is highly political and very complex. However, given the importance of the impact of the EU ETS on European carriers and the risk of irreversible damage to the competitiveness of the entire European aviation industry, the AEA urges the EU authorities to revise their initial unilateral approach and to give a real chance to international negotiation.

- Adria Airways
- Aer Lingus
- AeroSvit
- Air France
- Air Malta
- Air One
- Alitalia
- Austrian
- bmi
- British Airways
- Brussels Airlines
- Cargolux
- Croatia Airlines
- Cyprus Airways
- Czech Airlines
- DHL
- Finnair
- Iberia
- Icelandair
- Jat Airways
- KLM
- LOT
- Lufthansa
- Luxair
- Malev
- Olympic Airlines
- SAS Scandinavian Airlines
- Spanair
- SWISS
- TAP Portugal
- TAROM
- TNT Airways
- Turkish Airlines
- Ukraine International Airlines
- Virgin Atlantic Airways

32. The AEA is also conscious that an international solution could only be found through ICAO. It therefore urges the EU authorities to use the channel of the GIACC to steer the discussions towards a meaningful and mutually acceptable political agreement.
33. By presenting its proposal, the AEA confirms that it takes its environmental responsibilities very seriously. The AEA would like to contribute efficiently and constructively towards a global solution for aviation emissions, including a global ETS involving the key regions.

*For further information, please contact Mrs. Le Thi Mai – General Manager Environment - + 32 2 639.89.70 – [le.thi.mai@aea.be](mailto:le.thi.mai@aea.be)*