



**WORKING PAPER**

**COUNCIL — 195TH SESSION**

**Subject No. 50: Questions relating to the environment**

**REPORT ON THE RESULTS OF THE AD-HOC WORKING GROUP  
ON MARKET-BASED MEASURES (MBMs)**

(Presented by the Chairperson of the Ad-hoc Working Group on MBMs)

**EXECUTIVE SUMMARY**

During the first meeting of the 195th Session of the Air Transport Committee held on 23 January 2012, the President of the Council mentioned his intention to create a group with a view to accelerating the work on market-based measures (MBMs). An Ad-hoc Working Group consisting of Council members with participation from the aviation industry was established. It was determined that the Group would further define and reduce options for a global MBM scheme and report on the recommended options during the 195th Session of the Council.

The Ad-hoc Working Group consists of six Council members nominated from each ICAO region (Australia, Denmark, Guatemala, Nigeria, the United Arab Emirates and the United States) and an industry representative (i.e. International Air Transport Association (IATA)). The Group nominated Captain Aysha Al Hamili, Representative of the United Arab Emirates, as the Chair of the Group. The Group held four meetings during the period 2 February to 1 March 2012, with technical support provided by the experts on MBMs nominated from each ICAO region and the industry representative.

This paper reports on the discussion and conclusions of the Ad-hoc Working Group, including the recommended four options for a global MBM scheme, and the evaluation criteria by which the recommended options would be further evaluated.

**Action:** The Council is invited to:

- a) agree on the four options for a global MBM scheme recommended by the Ad-hoc Working Group as described in paragraph 2.1 and Appendix A, as the basis of further evaluation;
- b) endorse the use of the evaluation criteria contained in Appendix B for the further evaluation of the four options in accordance with the steps outlined in paragraph 3;
- c) request the Secretary General to report to the Council during its 196th Session on the results of the evaluation of the options; and
- d) request the Secretary General to continue further work on the framework for MBMs in line with paragraph 13 of Resolution A37-19.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective C – Environmental Protection and Sustainable Development of Air Transport.
<i>Financial implications:</i>	Actions will be funded by the Regular Programme Budget and/or through voluntary contributions.
<i>References:</i>	Assembly Resolutions in Force (Doc 9958) C-WP/13798 C-WP/13799 AT-SD/195-1

## 1. DISCUSSION

1.1 The Ad-hoc Working Group initiated discussions based on the following six options for a global MBM scheme:

- Global Departure Levy (Option No. 1);
- Global Carbon Levy (Option No. 2);
- Global Offsetting (Option No. 3);
- Global Emissions Trading (Option No. 4);
- Global Departure Levy and Offsetting combined (Option No. 5); and
- Global Carbon Levy and Offsetting combined (Option No. 6).

1.2 Several members expressed the view that Global Departure Levy (Option No.1) would only create the suppression of demand without incentivising the improvement of fuel efficiency; Global Carbon Levy (Option No.2) would involve unresolved legal issues; and that both of these two options would not facilitate the access to carbon markets and thus lead to a higher economic burden for the mitigation of GHG emissions from international aviation. Also in light of less compatibility with guiding principles compared to the other options, the Group agreed that it would not be worthwhile to further elaborate on Option Nos. 1 and 2. In light of the views expressed by the Group on Option Nos. 1 and 2, the Group was also not in favour of Global Departure Levy and Offsetting combined (Option No. 5) or Global Carbon Levy and Offsetting combined (Option No. 6).

1.3 The Group recognized the technical and implementation challenges of the remaining options.

1.4 There was general agreement that the mandatory Global Offsetting (Option No.3) would be one of the options to move forward for further evaluation. The Group recognized that it could be a practical and cost effective option to achieve carbon neutral growth from 2020; ICAO already had developed the Calculator to estimate CO<sub>2</sub> emissions from air travel; practical experience existed on voluntary carbon offsetting for aviation operations; and that it may comply with many of the guiding principles.

1.5 The Group felt that there might be benefit in complementing Global Offsetting (Option No. 3) with a revenue generation mechanism to allow flexibility for investment in the international aviation sector in order to further reduce GHG emissions and the provision of assistance to States. The Group recognized that such revenue could be generated by adding a transaction fee to the surrender of offsets or per tonne of CO<sub>2</sub> emitted, or multiplying reported emissions by an agreed price which would sufficiently cover the cost of offsets and the revenue necessary for further mitigation purposes.

1.6 There was also general agreement that Global Emissions Trading (Option No.4) would be another avenue to retain. Clarification was sought on the different features between a Cap & Trade System and a Baseline & Credit System, and it was recognized by the Group that the Baseline & Credit System may not give certainty of achieving specific emissions reductions goals, e.g. carbon neutral growth from 2020, but could be used to achieve fuel efficiency goals.

1.7 The Group also discussed the elements of the evaluation criteria, built upon the guiding principles adopted by the Assembly, which would serve for the further evaluation of advantages and disadvantages of the recommended options by the Group.

## 2. CONCLUSION

2.1 The Ad-hoc Working Group concluded that, in light of discussions above, the following four options for a global MBM scheme and their variations, as described in Appendix A, were recommended for further evaluation:

- a) Global Mandatory Offsetting;
- b) Global Mandatory Offsetting complemented by a revenue generation mechanism;
- c) Global Emissions Trading (Cap & Trade System); and
- d) Global Emissions Trading (Baseline & Credit System).

2.2 The Ad-hoc Working Group also recommended that the evaluation criteria contained in Appendix B be used for the further evaluation of the recommended options and their possible variations.

## 3. NEXT STEPS

3.1 Further evaluation of the recommended options and their possible variations needs to be undertaken. The Ad-hoc Working Group was of the view that there would be value in continuing to provide guidance and advice to advance the Secretariat work, and its members were ready to provide such support, with a view to reporting the results of the evaluation to the Council during its 196th Session.

3.2 The Ad-hoc Working Group strongly felt that expert support from Member States and international organizations will continue to be needed to advance the work of the Secretariat on the further evaluation of the four options for a global MBM scheme and the development of the framework for MBMs.

-----



## APPENDIX A

### RECOMMENDED OPTIONS FOR A GLOBAL MBM SCHEME

#### Setting the Scene:

- In 2010, international aviation passenger levels were approximately 1.1 billion, with total CO<sub>2</sub> emissions from international aviation of 400 Mt.
- Traffic is forecasted to grow at 5% per year (FESG), the 2% fuel efficiency target will result in 3% overall growth.
- This growth will result in forecasted emissions of approximately 650Mt in 2020.
- The price of carbon in the European market is currently 11.75 USD per tonne of CO<sub>2</sub>; CERs are trading at 6.33 USD/tonne (Point Carbon).
- The choice of MBMs depends on the environmental objectives that they are intended to deliver.

#### Consideration of Guiding Principles (Annex to A37-19):

- In the table below, inconsistencies or potential issues with the guiding principles have been highlighted.
- Pursuant to guiding principle m), an established *de minimis* approach could be applied to all MBMs.

#### Common Features:

- Registries to track transfers, surrender and cancellations.
- International aviation emissions must be monitored, reported and verified.
- Types (e.g. CER, VER) and quality (e.g. permanence) of allowances and credits eligible for MBMs need to be defined.
- Aviation's access to carbon markets would affect the supply and demand of credits and allowances, and potentially affect carbon prices.
- Aviation's access to carbon markets, through linking with other systems, needs further consideration.
- Form of legal instruments between States and with ICAO needs to be determined, including the roles of States and potential role of ICAO.
- Legal and administrative complexity of the options involving the collection and distribution of revenues needs to be further assessed.
- Revenues from MBMs could possibly be used for mitigation and adaptation, as well as assistance to and support for developing States.

<b>a) Global Mandatory Offsetting</b>			
<b>Measure Description</b>	<b>Variations / Questions to be resolved</b>	<b>Guiding Principles (Annex to A37-19)</b>	<b>Implementation Features</b>
<ul style="list-style-type: none"> <li>- International aviation emissions are offset through surrender of emissions allowances and credits.<sup>1</sup></li> <li>- Level of offsetting has to be established and based on the quantity of CO<sub>2</sub> emissions.</li> <li>- Agreed international criteria for the recognition of sources and quality requirements for offsets.</li> <li>- Offsets can only originate in other sectors (if you create offsets in the aviation sector you end up with double-counting).</li> <li>- No specific aviation allowances created.</li> <li>- No revenue to be collected.</li> </ul>	<ul style="list-style-type: none"> <li>- Offsetting can be at any levels up to 100% of emissions, e.g. % of each participant emissions, all emissions above a specific baseline.</li> <li>- If a baseline is used, this requires a method to distribute the baseline amongst individual participants (benchmarking or grandfathering).</li> <li>- If % of each participant emissions is used, there is no certainty to achieve a specific environmental outcome / emissions reduction.</li> <li>- Choice of criteria for the recognition of sources and quality requirements for offsets.</li> </ul>	<p>d) in the case of benchmarking/grandfathering, administrative complexity may be added.</p> <p>k) appropriate access to all carbon markets could be affected by the system design, including the eligibility criteria.</p>	<p>Need for globally harmonized approaches to:</p> <ul style="list-style-type: none"> <li>• Distributing any baseline amongst individual participants</li> <li>• Monitoring, reporting and verification</li> <li>• Enforcement</li> <li>• Registries to track transfers, surrender and cancellation</li> <li>• Offset quality standards</li> </ul> <p>Agreement may be needed with systems supplying allowances or credits to aviation.</p>

<sup>1</sup> Types of allowances and credits eligible for offsetting need to be defined

<b>b) Global Mandatory Offsetting Complemented by a Revenue Generation Mechanism</b>			
<b>Measure Description</b>	<b>Variations / Questions to be resolved</b>	<b>Guiding Principles (Annex to A37-19)</b>	<b>Implementation Features</b>
<p>- There are two broad approaches for delivering this option: Approach A:</p> <ul style="list-style-type: none"> <li>• International aviation emissions are to be offset by participants as per option #1;</li> <li>• In addition, revenues are raised for further mitigation purposes; and</li> <li>• This would require a transaction fee to be fixed and applied, for example, to the surrender of offsets or per tonne of CO<sub>2</sub> emitted.</li> </ul> <p>Approach B :</p> <ul style="list-style-type: none"> <li>• International aviation emissions are to be offset and revenue collected by a centralized entity or entities;</li> <li>• Revenues collected from participants are calculated by multiplying reported emissions by an agreed price;</li> <li>• The agreed price should sufficiently cover the cost of offsets and the revenue necessary for further mitigation purposes; The agreed price needs to be fixed for each compliance period (e.g. updated annually).</li> </ul>	<ul style="list-style-type: none"> <li>- Offsetting can be at any levels up to 100% of emissions, e.g. % of each participant emissions, all emissions above a specific baseline.</li> <li>- If a baseline is used, this requires a method to distribute the baseline amongst individual participants (benchmarking or grandfathering).</li> <li>- If % of each participant emissions is used, there is no certainty to achieve a specific environmental outcome / emissions reduction.</li> <li>- Choice of criteria for the recognition of sources and quality requirements for offsets.</li> <li>- Level of the transaction fee/agreed price.</li> <li>- The amount of offsets or the tonnes of CO<sub>2</sub> emitted to which the transaction fee/agreed price is applied.</li> </ul>	<p>d) in the case of benchmarking/grandfathering, administrative complexity may be added.</p> <p>h) / j) level of the transaction fee/agreed price should not impose unfair or inappropriate economic burden on international aviation.</p> <p>k) appropriate access to all carbon markets could be affected by the system design, including the eligibility criteria.</p> <p>n) ensuring that revenues are used for intended purposes.</p>	<p>Need for globally harmonized approaches to:</p> <ul style="list-style-type: none"> <li>• Monitoring, reporting and verification</li> <li>• Enforcement</li> <li>• Registries</li> <li>• Offset quality standards</li> </ul> <p>Specific agreement necessary for calculation of the transaction fee / agreed price.</p> <p>Agreement may be needed with systems supplying allowances or credits to aviation.</p> <p>Specific agreement necessary for the use of revenues, for example:</p> <ul style="list-style-type: none"> <li>- Purchase and surrender of offsets.</li> <li>- Contribution to mitigating the environmental impact of aircraft engine emissions.</li> <li>- Contribution to mitigation and adaptation, as well as assistance to and support for developing States.</li> </ul>

<b>c) Global Emissions Trading (Cap &amp; Trade System)</b>			
<b>Measure Description</b>	<b>Variations / Questions to be resolved</b>	<b>Guiding Principles (Annex to A37-19)</b>	<b>Implementation Features</b>
<ul style="list-style-type: none"> <li>- Overall cap set for all international aviation emissions for a specified compliance period.</li> <li>- Creation of allowances for all emissions under the cap (one allowance equivalent to one tonne of CO<sub>2</sub>).</li> <li>- Distribution of allowances to participants based on allocation methodology.</li> <li>- Participants must surrender allowances equal to their emissions for each compliance period.</li> <li>- Participants may trade allowances.</li> <li>- Participants able to surrender allowances and credits from other carbon markets, according to established rules<sup>2</sup>.</li> <li>- Agreed international criteria for the recognition of sources and quality requirements for offsets.</li> </ul>	<ul style="list-style-type: none"> <li>- Choice of methods for distribution of allowances:                             <ul style="list-style-type: none"> <li>• Auctioning</li> <li>• Free allocation (benchmarking)</li> <li>• Free allocation (grandfathering)</li> <li>• or combination of above.</li> </ul> </li> <li>- Level of auctioning could be varied. If free allocation, methodology would need to be agreed.</li> <li>- Level of the cap.</li> <li>- Choice of criteria for the recognition of sources and quality requirements for allowances and offsets.</li> <li>- Nature of the links to other systems supplying allowances</li> </ul>	<p>d) administrative complexity may be added depending on allocation methodologies chosen.</p> <p>h) cap and requirements for access to offsets/allowances would need to be set in a way that is equivalent to contributions from other business sectors.</p> <p>i) Under grandfathering methodology, could be difficult to recognize past achievements</p> <p>k) appropriate access to all carbon markets could be affected by the system design, including the eligibility criteria.</p> <p>n) ensuring that revenues are used for intended purposes.</p>	<p>Need for globally harmonized approaches to:</p> <ul style="list-style-type: none"> <li>• Monitoring, reporting and verification</li> <li>• Enforcement</li> <li>• Registries to track transfers, surrender and cancellation</li> <li>• Offset quality standards</li> </ul> <p>Agreement may be needed in order to link with other trading systems.</p> <p>Specific agreement necessary for the use of revenues, for example:</p> <ul style="list-style-type: none"> <li>- Contribution to mitigating the environmental impact of aircraft engine emissions.</li> <li>- Contribution to mitigation and adaptation, as well as assistance to and support for developing States.</li> </ul>

<sup>2</sup> Types of allowances and credits eligible for use need to be defined



<b>d) Global Emissions Trading [ Baseline &amp; Credit System ][ Relative Trading System ]</b>			
<b>Measure Description</b>	<b>Variations / Questions to be resolved</b>	<b>Guiding Principles (Annex to A37-19)</b>	<b>Implementation Features</b>
<ul style="list-style-type: none"> <li>- A benchmark performance level is set (e.g. CO<sub>2</sub> per ATK).</li> <li>- Participants monitor, report and verify performance relative to this benchmark.</li> <li>- Participants generate credits if their efficiency is above the benchmark performance level, and must submit credits if their efficiency is below the level.</li> <li>- Participants can trade credits.</li> <li>- Offsets permitted based on agreed international criteria for the recognition of sources and quality.</li> </ul>	<ul style="list-style-type: none"> <li>- Choice of benchmark.</li> <li>- Level of benchmark.</li> <li>- Possibility for, and nature of any links to other systems.</li> <li>- Ensuring the liquidity of carbon market (e.g. through the length of compliance periods, restriction on banking).</li> <li>- Possibility for different benchmarks for various flight ranges, types.</li> </ul>	<p>c) no absolute cap on emissions so would not give certainty of achieving a specific emissions reduction target, but could be used to achieve fuel efficiency goals.</p> <p>d) administrative complexity may be added due to additional need for calculating the benchmark</p> <p>g) depending on benchmark it could create market distortions (e.g. between combination/all-cargo, short haul/long haul)</p> <p>k) appropriate access to all carbon markets could be affected by the system design, including the eligibility criteria.</p> <p>n) ensuring that revenues are used for intended purposes.</p>	<p>Need for globally harmonized approaches to:</p> <ul style="list-style-type: none"> <li>• Monitoring, reporting and verification</li> <li>• Enforcement</li> <li>• Registries to track transfers, surrender and cancellation</li> </ul> <p>Need to agree on choice and setting of benchmarks.</p> <p>Agreement may be needed in order to link with other trading systems.</p>

-----



**APPENDIX B**

**ELEMENTS TO BE CONSIDERED IN THE EVALUATION OF GLOBAL MBMS**

<b>Guiding Principles (Annex to A37-19)</b>	<b>Evaluation Criteria</b>
a) MBMs should support sustainable development of the international aviation sector;	Contribution to 3 pillars of sustainability (economic, social and environmental)
b) MBMs should support the mitigation of GHG emissions from international aviation;	<p>Improvement of fuel efficiency within the international aviation sector</p> <p>Reduction of CO<sub>2</sub> emissions within the international aviation sector</p> <p>Reduction of net CO<sub>2</sub> emissions by the international aviation sector, including those from other economic sectors</p>
c) MBMs should contribute towards achieving global aspirational goals;	Ability to deliver global aspirational goals referred to in paragraphs 4 and 6 of Resolution A37-19
d) MBMs should be transparent and administratively simple;	<p>Ability to be administratively transparent</p> <p>Administrative complexity of linking with other MBMs</p> <p>Complexity of design (i.e. number of items to be decided upon such as caps, rates, baselines, use of revenues, allocation method etc.)</p> <p>Administrative burden, including the level of administrative costs for participants relative to the costs of complying with MBMs</p> <p>Administrative burden, including costs for State regulatory authorities and ICAO</p>
e) MBMs should be cost-effective;	Abatement cost per tonne of CO <sub>2</sub>

Guiding Principles (Annex to A37-19)	Evaluation Criteria
f) MBMs should not be duplicative and international aviation CO <sub>2</sub> emissions should be accounted for only once;	Self-explanatory
g) MBMs should minimize carbon leakage and market distortions;	Ability to treat participants / markets equally Possibility to avoid unintended changes/shifts in the international aviation system due to the design and scope of MBMs
h) MBMs should ensure the fair treatment of the international aviation sector in relation to other sectors;	(To be determined, requires political guidance)
i) MBMs should recognize past and future achievements and investments in aviation fuel efficiency and in other measures to reduce aviation emissions;	Self-explanatory
j) MBMs should not impose inappropriate economic burden on international aviation;	Cost impacts to the industry Cost impacts to the passengers and cargo shippers Potential impacts on trade and sustainable development, particularly in developing countries Stability of carbon price
k) MBMs should facilitate appropriate access to all carbon markets;	Availability of allowances and credits to international aviation in developed and developing countries Effects of international aviation's demand on the carbon markets Ease of linking with other carbon markets
l) MBMs should be assessed in relation to various measures on the basis of performance measured in terms of CO <sub>2</sub> emissions reductions or avoidance, where appropriate;	(Already covered in principle e), in the case of global MBMs)
m) MBMs should include <i>de minimis</i> provisions;	Ease of introducing <i>de minimis</i> provisions Economic and environmental impacts associated with <i>de minimis</i> provisions Ability to address <i>de minimis</i> provisions in alternative ways

<b>Guiding Principles (Annex to A37-19)</b>	<b>Evaluation Criteria</b>
<p>n) where revenues are generated from MBMs, it is strongly recommended that they should be applied in the first instance to mitigating the environmental impact of aircraft engine emissions, including mitigation and adaptation, as well as assistance to and support for developing States; and</p>	<p>If and the extent to which revenues are generated from MBMs</p> <p>Ability to ensure that revenues are used for intended purposes, including access to financial resources, technology transfer and capacity building, particularly to developing countries</p>
<p>o) where emissions reductions are achieved through MBMs, they should be identified in States' emissions reporting.</p>	<p>Compatibility with States' emissions reporting requirements</p>
<p>(New) Implementation practicability</p>	<p>Level of compatibility with relevant existing legislation e.g. Convention on International Civil Aviation, UNFCCC, Kyoto Protocol (including Kyoto Mechanisms), State legislation, WTO rules, customary international law</p> <p>Extent to which new legislative mechanisms are necessary to operationalize MBMs e.g. bilateral/multilateral/global agreements</p> <p>Extent to which existing and new mechanisms are required to enforce compliance; Estimated timescale until entry into force</p>