



WORKING PAPER

**HIGH-LEVEL MEETING ON INTERNATIONAL AVIATION
AND CLIMATE CHANGE**

Montréal, 7 to 9 October 2009

Agenda Item 2: Proposals for strategies and measures to achieve emissions reductions

**PROPOSALS FOR STRATEGIES AND MEASURES TO ACHIEVE EMISSIONS
REDUCTIONS**

(Presented by the Secretariat)

SUMMARY

This paper presents measures identified by the GIACC, proposals emanating from the UNFCCC process and proposals from industry on how to address emissions from international aviation, for the consideration of the HLM-ENV.

Action by the HLM-ENV is in paragraph 7.

1. INTRODUCTION

1.1 The Assembly Resolution A36-22 Appendix K “ICAO Programme of Action on International Aviation and Climate Change” requested the Council to develop an aggressive Programme of Action that encompasses strategies and measures to achieve emissions reduction.

**2. GLOBAL NATURE OF EMISSIONS FROM
INTERNATIONAL AVIATION**

2.1 Greenhouse gas (GHG) emissions from international aviation are the direct result of the combustion of fossil fuels on board aircraft. The emissions from this sector are global in nature and are not restricted to national boundaries. Although the fuel is loaded in one country, the vast majority is consumed (and the associated emissions are released) within the territory of other States or in areas outside of recognized national boundaries such as the upper atmosphere and over the high seas. Due to their global nature, actions on international air transport operations taken by a State could have a direct impact on the aircraft operations to and from another State.

2.2 GHG emissions from international aviation (and maritime transport) are not subject to the limitation/reduction provisions of the UNFCCC and its Kyoto Protocol. Under both of these multilateral

agreements, governments are required to estimate GHG emissions from international aviation, but these emissions are excluded from the national totals and are reported separately. Although the UNFCCC does not contain specific provisions on how these emissions should be dealt with, the Kyoto Protocol (Article 2, paragraph 2) states that: *“The Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively”*.

2.3 Given the strong will of all governments around the world to work cooperatively in order to address GHG emissions from international aviation, it is imperative that the ICAO and UNFCCC process work together towards the establishment of an effective global framework for the sector. Such a framework would need to take into account the specific circumstances of international aviation and those of all countries involved.

3. PROPOSALS EMANATING FROM THE UNFCCC PROCESS

3.1 The ongoing negotiations under the UNFCCC process, in the context of the Bali Roadmap,¹ have focused on key elements such as: a shared vision; mitigation efforts by both developed and developing countries; adaptation efforts; investment and finance needs; and development, deployment, dissemination and transfer of technology.

3.2 The issue of how to address GHG emissions from international aviation (and maritime transport) in a future agreement on climate change is one of the many contentious issues within the UNFCCC negotiating process. Current negotiations under the UNFCCC process on a new global agreement to address climate change beyond 2012 have touched upon different aspects of dealing with GHG emissions from international aviation. Such aspects include: targets and baselines; guiding principles (e.g., the principles and provisions on common but differentiated responsibilities and respective capabilities under the UNFCCC and the Kyoto Protocol); means for implementation (including financial issues); and the specific roles of ICAO and UNFCCC. Thus far, no agreement has been achieved on any of these issues. The negotiations are ongoing and are expected to intensify over the next few months since a global agreement is expected as the outcome of the upcoming UNFCCC meeting in Copenhagen in December 2009.

3.3 The latest version of the draft negotiating text of the UNFCCC consolidates the proposals put forward by Parties. In relation to targets and baselines, the draft text contains proposals that provide for the adoption of reduction/limitation targets without, however, specifying the level of these reductions/limitations or the target year (both left subject to negotiations). An associated issue (also linked to the discussion on guiding principles) is which Parties (all Parties or just Annex I Parties) should undertake such commitments. Furthermore, there are different views among Parties on how to establish these targets with some Parties favouring a negotiating process under the UNFCCC while others supporting the coordination of all aspects of international aviation by ICAO.

3.4 During the negotiations, Parties have been debating how to reconcile the principles of non-discrimination and equal and fair opportunities to develop international aviation set forth in the Chicago Convention with the principles and provisions on common but differentiated responsibilities and

¹ This encompasses the Bali Action Plan (developed to address climate change under the Convention) and the continuation of the negotiating process on further commitments for Annex I Parties under the Kyoto Protocol.

respective capabilities under the UNFCCC and its Kyoto Protocol. In relation to means of implementation, the negotiations have revolved around: the possible use of cooperative sectoral approaches and sector specific actions for the international aviation sector; the possible development of instruments for financing mitigation and adaptation activities using funds collected through fiscal policies (e.g. levies) for international aviation; and the use of nationally appropriate mitigation actions (NAMAs) to facilitate the prioritization of technology transfer and financial support for developing countries.

3.5 Although the debate on all of the above-mentioned issues will continue over the coming months, the general sense from the UNFCCC negotiations is that governments are willing to work together to identify appropriate actions to address GHG emissions from international aviation. In addition, it has been broadly recognized that all of these different approaches should be considered with a view to agreeing upon a comprehensive, cost-effective and thorough framework for international aviation.

3.6 The proposals as contained in the current version of the negotiating texts developed as a result of the UNFCCC climate talks held in Bonn, Germany in June 2009 are included in the Appendix to this paper.

4. MEASURES IDENTIFIED FROM GIACC

4.1 The GIACC/3 agreed to form a market-based measures (MBMs) working group to progress work in this area. In the GIACC/4 meeting, the MBM working group presented several papers (GIACC/4-WP/3, IP/7 and IP/8) and reported that it had reviewed the past work of ICAO, received input from various sources including the CAEP and industries, and discussed the various MBMs that could be applied to international aviation. The working group generally agreed that MBMs implemented by States or by Regions with different policies and parameters, in the absence of a framework developed by ICAO, were far from optimal. The summary of GIACC discussions on MBMs is provided in HLM-ENV/09-WP/8.

4.2 The GIACC recommended a basket of measures from which States may choose to reduce international aviation emissions, covering aircraft-related technology development, improved air traffic management and infrastructure use, more efficient operations, economic/market-based measures, and regulatory measures. Each State would retain the ultimate authority to choose the portfolio of measures appropriate to its circumstances, consistent with the global aspirational goals, and should be encouraged to develop and file with ICAO individual action plans.

4.3 Furthermore, specific measures agreed by the GIACC and adopted by the Council include an aspirational goal on fuel efficiency improvement (2% per year until 2050), the development of an aviation CO₂ emissions Standard, and the establishment of a process to develop a framework for market-based measures for international aviation.

5. POSITIONS FROM INDUSTRY

5.1 During the deliberations by the GIACC and under the UNFCCC process, various air transport observer organizations such as International Air Transport Association (IATA), the International Coordinating Council of Aerospace Industry Associations (ICCAIA) and Airports Council International (ACI) provided their inputs on proposals to address emissions from international aviation, and of note is the following positions presented by the IATA and the Aviation Global Deal (AGD) group. All information provided to the GIACC is available at: http://www.icao.int/env/meetings/Giacc_Root.html.

5.2 **International Air Transport Association (IATA)**

5.2.1 IATA submitted its paper to GIACC/4 (GIACC/4-IP/6), in which the airline industry reiterates its support to ICAO and endorses ICAO as the appropriate United Nations body for making aviation-specific recommendations in the upcoming Copenhagen climate negotiations to develop a sectoral approach to address aviation emissions.

5.2.2 The airline industry believes that policy measures to address emissions from international aviation must be developed at a global sectoral level to avoid the unilateral imposition of targets and measures and to avert creating a patchwork of conflicting and potentially overlapping national and regional policies. Achieving its goals of carbon neutral growth in the mid-term followed by absolute CO₂ emission reductions will require a multi-faceted approach through continual investments in technology, operations and infrastructure as well as development of market-based measures with strong commitment from all aviation stakeholders, i.e. airlines, manufacturers, airports, and air navigation service providers.

5.2.3 Furthermore, the airline industry believes that governments must urgently make the necessary investments to modernize air traffic management and establish the right legal and fiscal frameworks to promote investment in low carbon sustainable alternative jet fuels, as well as the potential use of cost-effective economic measures and full and unrestricted access to all available abatement measures outside the sector (offsets). The positions of IATA related to market-based measures are summarized in HLM-ENV/09-WP/8.

6. **NEXT STEPS**

6.1 From the above, it is evident that as States explore all measures available to address GHG emissions from international aviation, there is broad agreement on certain basic elements of various proposals, in particular on the employment of a broad range of approaches including a suite of technological and operational measures. However, more information would be desirable in order to enable States to take informed decisions on the most comprehensive, cost-effective and thorough framework of strategies and measures to achieve reductions in aviation emissions through the full assessment of the implications of all measures at their disposal.

7. **ACTION BY THE HIGH-LEVEL MEETING**

7.1 The HLM-ENV is invited to:

- a) acknowledge commitment to ICAO's leadership role in fully addressing all matters related to the contribution of international aviation to climate change;
- b) confirm commitment to a comprehensive approach, consisting of technological, operational and market-based measures to reduce aviation emissions, which is necessary to achieve the sustainable development of international aviation;
- c) acknowledge the need to further evaluate the extent to which each of the above-mentioned measures will deliver the expected global emissions reductions in the future; and

- d) request ICAO to commission, on an urgent basis, a study to undertake the evaluation mentioned in sub-paragraph c) above, for consideration by the 37th Session of the ICAO Assembly in 2010.

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APPENDIX

SPECIFIC PROPOSAL ON EMISSIONS FROM INTERNATIONAL AVIATION AND MARITIME TRANSPORT IN THE REVISED UNFCCC NEGOTIATING TEXTS

(Excerpt from FCCC/AWGLCA/2009/INF.1 dated 22 June 2009)

II. Enhanced action on adaptation and its means of implementation

...

C. Means of implementation

...

36. [Sources of new and additional financial support for adaptation [may] [shall] include assessed contributions, [auctioning of assigned amounts and/or emission allowances; [levies on CO₂ emissions] from Annex-I Parties in a position to do so; taxes on carbon-intensive products and services from Annex I Parties; [levies on international and maritime transport]]; shares of proceeds on the clean development mechanism (CDM), joint implementation and emissions trading; [levies on international transactions;] [fines for non-compliance with commitments of Annex I Parties and Parties with commitments inscribed in Annex B to the Kyoto Protocol (Annex B Parties)]; additional ODA and bilateral, regional and other multilateral channels (in accordance with Article 11.5 of the Convention).9]

Alternatives to paragraph 36:

...

Alternative 3

[Sources of new and additional financial support for adaptation may include assessed contributions from developed country Parties and other developed Parties included in Annex II of the Convention, auctioning of assigned amounts and/or emission allowances; taxes on carbon-intensive products and services from Annex I Parties; share of proceeds from measures to limit or reduce emissions from international aviation and maritime transport; shares of proceeds on the clean development mechanism (CDM), joint implementation and emissions trading; ; fines for non-compliance with commitments of Annex I Parties and Parties with commitments inscribed in Annex B to the Kyoto Protocol (Annex B Parties); additional ODA and bilateral, regional and other multilateral channels (in accordance with Article 11.5 of the Convention).]

Alternative 5

[Sources of new and additional financial support for adaptation must meet the full agreed incremental costs of adaptation and initially be within a minimum range of USD 50–86 billion per annum and regularly updated in light of new emerging science, financial estimates and the degree of emissions reductions achieved. Providing financial support shall be additional to developed countries' ODA targets and may include assessed contributions, auctioning of assigned amounts and/or emission allowances; levies on CO₂ emissions; taxes on carbon-intensive products and services from Annex I Parties; levies on international and maritime transport; shares of proceeds on the clean development mechanism (CDM), joint implementation and emissions trading; levies on international transactions; fines for non-compliance with commitments of Annex I Parties and Parties with commitments inscribed in Annex B to the Kyoto Protocol (Annex B Parties); additional to ODA targets and bilateral, regional and other multilateral channels (in accordance with Article 11.5 of the Convention).]

III. Enhanced action on mitigation

...

A. Mitigation [commitments] by [developed countries] [Parties]

Proposals for an additional section on Policies and measures by all Parties

...

x.2 The Parties shall pursue limitation or reduction of emissions of greenhouse gases not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.

D. Cooperative sectoral approaches and sector-specific actions

...

International bunker fuels

135. [All sectors of the economy [, in particular those of Annex I Parties,] should contribute to limiting emissions, including international maritime shipping and aviation. [Multilateral collaborative action would be the most appropriate means to address emissions from international aviation and the maritime transport sector, the International Civil Aviation Organization and the International Maritime Organization dealing with this issue should prevent the adoption of trade restrictions and take into account the special economic conditions of developing countries and the principles of equity and of common but differentiated responsibilities and capabilities.] [Global][Sectoral approaches could address emissions that cannot be attributed to any particular economy, and multilateral collaborative action by all Parties would be the most appropriate means to address emissions from international aviation and the maritime transport sector.]]

Alternative to paragraph 135:

[Those developed country Parties that are not Parties to the Kyoto Protocol shall undertake measures within the context of their national appropriate mitigation commitments to reduce emissions from international aviation and international maritime transport.

Developing country Parties may undertake actions to reduce emissions from international aviation and international maritime transport within the context of nationally appropriate mitigation actions.]

136. [Option 1]

The International Maritime Organization shall be encouraged to continue without delay its activities for the development of policies and measures to reduce GHG emissions, and specifically:

(a) [To achieve, through the use of its policies and mechanisms, total GHG emission reductions which are at least as ambitious as the total GHG emission reductions under the Convention;]

[To establish an ambitious global goal for the reduction or limitation of greenhouse gas emissions from ships to be achieved through the implementation of its policies and measures.]

(b) To report regularly to the COP {and its subsidiary bodies as appropriate} on relevant activities, emission estimates and achievements in this respect;

(c) To report to the COP {at its seventeenth session} on policies, established measures, measures under development, and expected emission reductions resulting from these measures.]

Alternative to paragraph 136 [in the form of a draft decision by the COP]:

[Reduction of greenhouse gas emissions from international shipping

The Conference of the Parties,

[Being aware of the role of the IMO established in the IMO Convention, the UN Charter and UNCLOS....]

Recognizing that in order to achieve a necessary two degree scenario, global greenhouse gas emissions should follow a pathway that includes a peak year no later than 2015 and results in emission reductions of 50- 85per cent by 2050, in accordance with findings in the 4th Assessment Report of the IPCC,

Welcomes the report presented by the Secretary General of the International Maritime Organization (IMO) on policies and activities related to reduction of Greenhouse Gas Emissions from international shipping,

Recognizing the role of the International Maritime Organization in developing global actions to limit or reduce greenhouse gas (GHG) emissions from international shipping,

Recognizing further that the IMO has undertaken a comprehensive assessment of the total greenhouse gas emissions from international shipping, and that these emissions constitutes a significant share of the global anthropogenic emissions,

Recognizing the need to develop a long-term goal as well as intermediate targets for emission reductions from the maritime sector, in order to facilitate transformation to a low carbon economy,

Being aware that the IMO activity has identified technical and operational measures which can contribute significantly to emission reductions,

Encourages the IMO to continue without delay the ongoing activities to develop policies and measures to reduce GHG emissions, and in doing so invites the IMO to:

1. achieve, through the use of its policies and mechanisms, total GHG emission reductions which are at least as ambitious as the total GHG reductions to be achieved by the UNFCCC Copenhagen agreement,

2. report regularly to COP [and its subsidiary bodies as appropriate] on relevant activities, emission estimates and achievements in this respect, and especially

3. report to COP [17] on IMO policies, established measures, measures under development, and expected emission reductions resulting from these measures, and

Requests the Secretariat of the UNFCCC to continue co-operating with the Secretariat of the International Maritime Organization.]

137. [Option 2]

Parties shall take the necessary action to reduce emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels.

[Global reduction targets for such emissions from aviation and marine bunker fuels shall be set as equal to, respectively, {X per cent} and {Y per cent} below {year XXXX} levels in the commitment period {20XX to 20XX}. Units from existing and potential new flexibility mechanisms may contribute towards achieving these targets.]

Parties shall work through the International Civil Aviation Organization and the International Maritime Organization to enable effective international agreements to achieve these targets to be approved by 2011. Such agreements should not lead to competitive distortions or carbon leakage. Parties shall assess progress in the implementation of this work, and take action to advance it, as appropriate.]

138. [Option 3]

[Taking into account the interests of developing countries,][All Parties][Developed country Parties][Parties][Annex I Parties] shall pursue limitation or reduction of emissions of GHGs not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization and the International Maritime Organization, respectively.]

138.1 Option 4

[The Parties should pursue a collective reduction of [X per cent] below [year XXXX] for emissions of anthropogenic greenhouse gases not controlled by the Montreal Protocol from international aviation bunker fuels and [Y per cent] below [year XXXX] levels for emissions of anthropogenic

greenhouse gases not controlled by the Montreal Protocol from international marine bunker fuels in the commitment period [20XX to 20XX].]

The Parties should commence negotiations on two global sectoral agreements to address, respectively, international aviation and maritime emissions in 2010 with a view to concluding by COP-17 in 2011, taking into account work already done in ICAO and IMO.

IV. Enhanced action on financing, technology and capacity-building

A. Enhanced action on the provision of financial resources and investment

...

2. [Generation][Provision] of financial resources

172. [The [generation][provision]of financial resources [shall][should] be guided by agreed objective criteria the principles of the Convention the economic capacity of Parties, and the objective of internalizing appropriate climate change costs [, in particular the principles of equity and common but differentiated responsibilities and respective capabilities, taking into account the ability to pay and emissions [[and take into account [the consideration of] [[the polluter pays principle,] [and] historical responsibilities]]]].The public sector shall be the major source of funds, while market mechanisms and other private sector sources would play a complementary role in addressing climate change.

Alternatives to paragraph 172:

...

Alternative 3

[Funding for the Multilateral Fund for Climate Change (defined below) shall be provided by the following sources:

...

(b) A levy placed on international maritime transport and international aviation. Such a levy shall be developed in collaboration with the International Maritime Organization and the International Civil Aviation Organization;

...]

173. [New and additional financial resources {shall}{should} be generated through a combination of various sources, including, inter alia :

...

[Option 4

[Levies on] [Funding from instruments addressing] emissions from international aviation {and maritime transport}, [for developed countries] may be auctioned through emission allowances under an international regulation scheme.

[Option 5

[An international air passenger [adaptation levy/green] levy on air fares [, except on journeys originating in and destined for LDCs].]

Alternative to Options 4 and 5:

[Share of proceeds from measures to limit or reduce emissions from international aviation and maritime transport;]

Alternative to Option 5:

[An international air adaptation levy on airfares except on journeys originating from LDCs and SIDS.]

...]