

International Civil Aviation Organization

REPORT OF THE HIGH-LEVEL MEETING ON INTERNATIONAL AVIATION AND CLIMATE CHANGE

Montréal, 7–9 October 2009

*Approved by the Council and
published by its decision*



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ICAO: UNITING AVIATION ON CLIMATE CHANGE





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LETTER OF TRANSMITTAL

To: President of the Council

From: Chairman, High-level Meeting on International Aviation and Climate Change (HLM-ENV/09)

I have the honour to submit the Report on the work of the High-level Meeting on International Aviation and Climate Change (HLM-ENV/09), held at ICAO Headquarters in Montréal from 7 to 9 October 2009.

Yap Ong Heng
Chairman
High-level Meeting on
International Aviation and
Climate Change

Montréal, 9 October 2009

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INTRODUCTION

Site and duration of the Meeting

1. The HLM-ENV/09 was convened in the Assembly Hall of the Headquarters of the International Civil Aviation Organization (ICAO) in Montréal from 7 to 9 October 2009.

Attendance

2. The following 73 member States of ICAO were represented at the Meeting:

Afghanistan	Iceland	Republic of Korea
Algeria	India	Romania
Argentina	Indonesia	Russian Federation
Australia	Iran (Islamic Republic of)	Saint Vincent and the Grenadines
Austria	Ireland	Saudi Arabia
Botswana	Italy	Senegal
Brazil	Japan	Singapore
Cameroon	Kenya	South Africa
Canada	Kuwait	Spain
Chile	Libyan Arab Jamahiriya	Sweden
China	Malaysia	Switzerland
Colombia	Mexico	Thailand
Cuba	Mozambique	Tunisia
Czech Republic	Namibia	Turkey
Denmark	Netherlands	Uganda
Dominican Republic	New Zealand	Ukraine
Ecuador	Nigeria	United Arab Emirates
Egypt	Norway	United Kingdom
El Salvador	Pakistan	United Republic of Tanzania
Ethiopia	Paraguay	United States
Finland	Peru	Uruguay
France	Philippines	Venezuela
Germany	Poland	Zimbabwe
Ghana	Portugal	
Greece	Qatar	

3. The following 26 Observer Delegations attended the Meeting:

Arab Air Carriers Organization (AACO)
 Arab Civil Aviation Commission (ACAC)
 Airports Council International (ACI)
 Association of European Airlines (AEA)
 African Civil Aviation Commission (AFCAC)
 Civil Air Navigation Services Organisation (CANSO)

European Commission (EC)
European Civil Aviation Conference (ECAC)
European Low Fare Airlines Association (ELFAA)
Helicopter Association International (HAI)
Interstate Aviation Committee (IAC)
Inter-American Development Bank (IDB)
International Air Transport Association (IATA)
International Business Aviation Council (IBAC)
International Coordinating Council of Aerospace Industries Associations (ICCAIA)
International Coalition for Sustainable Aviation (ICSA)
International Federation of Air Line Pilots' Associations (IFALPA)
International Federation of Air Traffic Controllers' Associations (IFATCA)
International Federation of Helicopter Associations (IFHA)
International Maritime Organization (IMO)
Latin American Civil Aviation Commission (LACAC)
Organization for Economic Co-operation and Development (OECD)
Palestinian Authority
United Nations Framework Convention on Climate Change (UNFCCC)
United Nations World Tourism Organization (UNWTO)
World Bank (WB)

4. A list of participants in the Meeting is given in Appendix A to this report.

Mandate

5. The Assembly of the International Civil Aviation Organization (ICAO), at its 36th Session (Montréal, 18 to 28 September 2007), adopted Resolution A36-22: *Consolidated statement of continuing ICAO policies and practices related to environmental protection*. Particularly through Appendix K¹ of this Resolution, the Assembly recognized, *inter alia*, “the critical importance of providing continuous leadership to international civil aviation in limiting or reducing its emissions that contribute to global climate change”².

6. Furthermore, the Assembly requested that the Council “facilitate action by States by vigorously developing policy options to limit or reduce the environmental impact of aircraft engine emissions, developing concrete proposals and providing advice as soon as possible to the Conference of the Parties of the UNFCCC, encompassing technical solutions and market-based measures, while taking into account potential implications of such measures for developing as well as developed countries”³. In order to achieve this, the Assembly requested the ICAO Council:

6.1 To “form a new Group on International Aviation and Climate Change ... for the purpose of developing and recommending to the Council an aggressive Programme of Action on International Aviation and Climate Change”⁴; and

¹ The complete text of Appendix K is provided in Appendix B to this report.

² Resolution A36-22, Appendix K, first paragraph of the preamble.

³ Resolution A36-22, Appendix K, operational paragraph 1.

⁴ Resolution A36-22, Appendix K, operational paragraph 2 a).

6.2 To “convene at an appropriate time, taking into account the fact that the fifteenth meeting of the Conference of the Parties (COP15) of the UNFCCC will be held in December 2009, a high-level meeting to review the Programme of Action recommended by the Group”.⁵

Programme of Action on International Aviation and Climate Change

7. In response to the mandate mentioned in paragraph 6.1 above, the Council established the Group on International Aviation and Climate Change (GIACC), which developed a Programme of Action on International Aviation and Climate Change and submitted it to the Council for its consideration. The Council fully accepted the Programme of Action in June 2009 as a positive development to limit or reduce aviation’s climate impact.⁶

8. Results of the Council’s deliberations included an agreement on fuel efficiency goals, the need to adopt a basket of measures to address aviation emissions, the establishment of a mechanism to collect traffic and fuel consumption data and the concept of States’ action plans.

9. Areas for further work were also identified, including medium- and long-term goals, the development of a CO₂ standard, a framework for market-based measures, and exploring of approaches to provide technical assistance in the reporting process for developing States.

Opening of the Meeting

10. Mr. R. Kobeh González, President of the Council, opened the Meeting with the following opening address:

Ladies and gentlemen, on behalf of the Council and of the Secretary General of ICAO, I welcome you all to this High-level Meeting on International Aviation and Climate Change.

This meeting is about one thing and one thing only – LEADERSHIP.

Leadership from ICAO and its Contracting States in limiting or reducing emissions from international civil aviation that contribute to global warming.

Leadership from ICAO and its Contracting States in developing concrete proposals and providing advice to the COP15 next December on how best to address international aviation emissions under a post-Kyoto agreement on climate change.

In other words, leadership from ICAO and its Contracting States in tackling one of the greatest and most pressing challenges ever to face our global society.

I am fully confident that this first-ever ICAO meeting exclusively dedicated to aviation and climate change will succeed in affirming our leadership on all counts.

⁵ Resolution A36-22, Appendix K, operational paragraph 2 b).

⁶ Relevant excerpts of the Council decision are listed in Appendix C to this report.

We have a good basis from which to start – the Programme of Action prepared by the Group on International Aviation and Climate Change, known as GIACC. GIACC’s mandate from the 36th Session of the ICAO Assembly was to develop and recommend such a Programme of Action based on consensus, and reflecting the shared vision and strong will of all Contacting States.

The GIACC submitted its report in May of this year and the Council reviewed it in June. The Council fully recognized the value of the work of the GIACC, accepted the recommended Programme of Action and provided further guidance. The Council also decided that this High-level Meeting would prepare recommendations for COP15.

Let me be clear – we are not here to renegotiate the results of GIACC. We are here to: identify actions that build on the Council’s recommendations; translate the outcome of that process into a strategy to guide the international aviation sector in its environmental work; and incorporate relevant elements into a proposed set of recommendations to COP15.

We must keep in mind that the framework we are to develop must include four key elements: aspirational goals and implementation options; strategies and measures to achieve emissions reductions; means to measure progress; and financial and human resources needed to implement the goals.

We must also identify a broad range of solutions including technological innovations, operational improvements and market-based instruments. Another consideration is how to integrate the development and deployment of alternative aviation fuels as a promising option for effectively reducing greenhouse gas emissions from aircraft.

This is a major undertaking, but we have never shied away from our responsibilities. While we are a relatively young and vibrant sector, we have consistently shown maturity when it comes to the protection of the environment. Over the years, we have achieved remarkable results, including:

- fuel efficiency improvements of more than 70%;
- current engines with 40% less NOx emissions; and
- aircraft today which are 75% quieter than their counterparts of 40 years ago.

And we are definitely becoming greener!

Ladies and gentlemen, we have in this room the experience, the expertise and the imagination required to transform our enviable track record, the ICAO Council recommendations and our common determination to succeed, into an effective strategy to combat climate change.

We may never have another opportunity such as this one to influence global decisions affecting aviation and climate change. As the world works hard to find solutions to address climate change, we have to make sure that the international aviation sector is a vital part of the discussions.

This High-level Meeting can demonstrate our collective determination to ensure a sustainable future for international aviation operations. It must be an expression of strong political

will on the part of all States, under ICAO, to work together with the aviation industry to reduce emissions contributing to climate change.

We need to do our share to protect life on the planet and to develop the required institutional, organizational and financial mechanisms that are within our sphere of influence.

Let me assure you in closing that the Council of ICAO is anxiously waiting for the results of your deliberations, and your recommendations to COP15.

I am also looking forward to your political Declaration, one that reflects your leadership on actions to address emissions from international aviation.

Above all, let us be united in our determination to ACT Global!

11. After his opening address, the President introduced a video address by Mr. Yvo de Boer, Executive Secretary of the UNFCCC. Mr. de Boer highlighted the need for action by the international aviation sector in order to ensure that governments adopt a comprehensive strategy on how to address climate change at UNFCCC COP15. A transcript of Mr. de Boer's address is given in Appendix D to this report.

Secretariat

12. At the invitation of the President, Mr. Raymond Benjamin, ICAO Secretary General was nominated the Secretary of the Meeting. Mr. Benjamin, also welcomed the participants and introduced the Meeting Secretariat.

13. The advisers to the Secretary of the Meeting were Mrs. F. Odotola, Director, Air Transport Bureau and Mr. J. Begin, Chief of Coordination, Revenue and Communication Office. The Deputy Secretary of the Meeting was Mrs. J. Hupe, Chief of Environment Section, Air Transport Bureau. The Assistant Secretaries were Mr. T. Tanaka and Mr. S. Pesmajoglou, Environmental Officers of Environment Section, supported by Mr. E. Jahangir and T. Thrasher, Environmental Officers of Environment Section, Mr. S. Da Silva, Technical Officer of Air Traffic Management Section, Air Navigation Bureau, and Mr. B. Verhaegen, Legal Officer, Legal Bureau. A number of other staff provided support and the full resources of the Secretariat were at the disposal of the Meeting.

Election of the Chairman and Vice-Chairman of the Meeting

14. On the nomination of Saudi Arabia, seconded by South Africa, Mexico, Egypt, Qatar and Ecuador, Mr. Yap Ong Heng, Director-General, Civil Aviation Authority of Singapore was elected Chairman of the Meeting, and Mr. Valery M. Okulov, Deputy Minister of Transport of the Russian Federation was elected Vice-Chairman of the Meeting.

Agenda

15. The Meeting adopted the following agenda which had been approved by the Council and presented in HLM-ENV/09-WP/1 (Rev. No. 1):

Agenda item 1: Aspirational goals and implementation options;

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

Agenda item 3: Means to measure progress;

Agenda item 4: Financial and human resources; and

Agenda item 5: Review of programme of action on international aviation and climate change and recommendations to COP15.

Structure and rules of procedure

16. The Meeting also adopted the organizational matters included in HLM-ENV/09-WP/2. The rules of procedure were the *Standing Rules of Procedure for Meetings in the Air Transport Field* (Doc 8683).

Documentation

17. A list of the documentation associated with the work of the Meeting is presented in Appendix E. All papers prepared for the HLM-ENV/09 are available on the ICAO web site (<http://www.icao.int/HighLevel2009/>).

18. In addition to working and information papers, the Secretariat prepared two documents (HLM-ENV/09-SD/1 (Rev. No. 1) and SD/2 (Rev. No. 1)) containing summaries of the discussions during the Meeting. These summaries provide a record of the key issues identified under each Agenda Item. These papers were not agreed by the Meeting.

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Agenda Item 1: Aspirational goals and implementation options**1.1 Documentation**

1.1.1 The Meeting reviewed the following working papers and information papers from the Secretariat, States and international organizations:

Secretariat (HLM-ENV/09-WP/3) presented the decision of the ICAO Council on the work of the GIACC. The Council, at its 187th Session, fully accepted the Programme of Action, and highlighted the importance and urgency in finding a means of limiting or reducing the impact of GHG emissions from international civil aviation on the global climate. It recognized the progress achieved to that end by the GIACC and that, building upon GIACC's work, ICAO needed to prepare a message to be presented to COP15;

Secretariat (HLM-ENV/09-WP/4 – information paper) presented the results of the meetings and deliberations of the GIACC and the Programme of Action that was agreed by consensus by the GIACC and subsequently approved by the 187th Session of the ICAO Council. The paper also contained a set of recommendations prepared under the responsibility of the Chairman and Vice-Chairman of the fourth meeting of GIACC;

Secretariat (HLM-ENV/09-WP/5) presented the aspirational goals in the Programme of Action on International Aviation and Climate Change, a brief discussion on the use of metrics for fuel efficiency goals, an estimate of the cumulative effects of the fuel efficiency goals recommended by the GIACC and accepted by the Council, proposed goals by the aviation industry, and proposals on international aviation submitted and being considered under the UNFCCC process;

Sweden, on behalf of the European Community and its Member States and by the other States Members of the European Civil Aviation Conference (ECAC) (HLM-ENV/09-WP/14) outlined a proposal for measures that should be taken with regard to aspirational goals for the sector. The proposed goals include: a 2% annual fuel efficiency improvement from 2010 to 2012; emissions reduction by 2020 below 2005 baseline, with secondary goal of 2% annual fuel efficiency improvement for 2013 to 2020 from technological and operational contributions; and emissions reduction consistent with the 2°C target for long-term;

Canada, Mexico and United States (HLM-ENV/09-WP/25) outlined a proposal that incorporated the endorsement of the aspirational goals of the Programme of Action and the establishment of a process that would develop proposals for more ambitious aspirational goals. This process would aim to complete its work in time for the next ICAO Assembly in 2010;

Australia (HLM-ENV/09-WP/21) proposed that a mechanism should be established in order for ICAO to respond promptly to the outcome of COP15 and to progress all issues relating to international aviation and climate change before the 2010 Assembly. Such mechanism would need to take into consideration, among other things, the necessity for more ambitious aspirational goals and the potential role of market-based measures. In particular, Australia proposed carbon neutral growth during the medium term (2012-2020) using 2005 as the base year; and significant net carbon reductions over the long term (2020-2050);

United Arab Emirates (HLM-ENV/09-WP/24) presented its position on aviation emissions management, which is based on the outcome of the GIACC and the views of the aviation industry. In particular, it proposed a medium term goal of carbon neutral growth by 2020; and a long-term goal of 50% reduction by 2050 based on 2005. The paper also proposed that actions on international aviation should recognize the ‘early movers’ principle and should avoid multi-layered, regional schemes and local taxes to address emissions from international aviation;

ACI, CANSO, IATA AND ICCAIA (HLM-ENV/09-WP/19 Revised) presented the collective commitment of the air transport industry that builds on the GIACC outcome and proposes a global sectoral approach that provides for 1.5% annual improvement in CO₂ efficiency until 2020, carbon neutral growth from 2020 onwards, subject to critical aviation infrastructure and technology advances achieved by the industry and government, and 50% reduction of CO₂ emissions in 2050 compared to 2005 levels;

IBAC (HLM-ENV/09-WP/22) highlighted the support of the business aviation community in respect to aspirational goals to be included in a strong, comprehensive, cost-effective and thorough framework for international aviation. It also proposed that ICAO considers an alternative metric (to revenue tonne kilometres) appropriate to small emitters in general and business aviation operations;

Secretariat (HLM-ENV/09-IP/1) reproduced Resolution A36-22: *Consolidated Statement of Continuing ICAO Policies and Practices Related to Environmental Protection* adopted by 36th Session of the ICAO Assembly in 2007;

Secretariat (HLM-ENV/09-IP/2) reproduced extracts from the Minutes of the 13th and 14th Meetings of the 187th Session of the ICAO Council, regarding the progress report of the GIACC;

Secretariat (HLM-ENV/09-IP/3) presented the “Declaration of the Leaders of the Major Economies Forum on Energy and Climate” (G8 Summit 2009, L’Aquila, Italy, 9 July 2009); and

Secretariat (HLM-ENV/09-IP/4) included preliminary results of the assessment of present and future global aviation CO₂ emissions, conducted by the Committee on Aviation Environmental Protection (CAEP).

1.2 Discussion

1.2.1 All States expressed their appreciation for the work of the GIACC and their support for the ICAO Council decision. They recognized that the Programme of Action on International Aviation and Climate Change is a positive first step in the efforts of the ICAO on addressing GHG emissions from international aviation. They also recognized the need for the aviation sector to continue to develop in a sustainable manner.

1.2.2 There was general support for ICAO to continue to exercise its leadership and the need for ICAO to provide concrete input to the UNFCCC process and COP15 on how the impact of international aviation on climate change would be addressed. It was also indicated that, given the expected growth of the sector over the coming decades, the aspirational goals of annual 2 per cent fuel efficiency improvement recommended by GIACC would not lead to absolute reductions of CO₂ emissions in the long-term.

1.2.3 The Meeting acknowledged that more ambitious medium-term and long-term goals for international emissions reductions would be required to address the projected growth of greenhouse gas emissions from international aviation. There was extensive discussion on possible more ambitious aspirational goals in line with the proposals of several States in their working papers.

1.2.4 Some States were in favour of the adoption of more ambitious medium- and long-term goals consistent with the proposals of the air transport industry.

1.2.5 Other States suggested that a process be established to develop proposals on more ambitious goals with the aim of finalizing the position of ICAO at the 37th Assembly in 2010, taking into account the outcome of COP15.

1.2.6 A large number of States expressed the view that it would be difficult to agree on more ambitious goals during this Meeting. They indicated that, in light of the mandate given by the Assembly (Resolution A36-22 Appendix K) and taking into account the principle of common but differentiated responsibilities and respective capabilities (CBDR) of the UNFCCC, the consensus position developed by the GIACC on the short-, medium- and long-term fuel efficiency goals should be maintained.

1.2.7 The aviation industry explained that, although its proposed short-term goal for fuel efficiency improvement (1.5 per cent) was lower than that proposed by GIACC, it was expected that the additional 0.5% would be the result of added government commitment, rather than its own financial resources.

1.2.8 IBAC, supported by several States, proposed that ICAO consider the development of metrics other than volume of fuel used per revenue tonne kilometre performed that could be used for defining fuel efficiency goals for small operators.

1.2.9 Due to the divergent views expressed on this subject, and with a view to facilitating further discussions on aspirational goals, the Chairman established an informal group under his authority,

consisting of representatives from States⁷. The Chairman informed the Meeting that any recommendations from the informal group would be presented back to the Plenary for the consideration of the Meeting.

⁷ Representatives from the following 18 States participated in the informal group: Australia, Brazil, Canada, Chile, China, Egypt, France, India, Mexico, Nigeria, Russian Federation, Saudi Arabia, Singapore, South Africa, Sweden, UAE, UK and US. New Zealand joined the informal group at a later stage. Industry was invited to provide additional clarifications to the group on their emissions-reduction goals proposal.

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

2.1 Documentation

2.2.1 The Meeting reviewed the following working papers from the Secretariat, States and international organizations:

Secretariat (HLM-ENV/09-WP/6 Revised) discussed the global nature of the emissions from international aviation; outlined the status of the discussions on emissions from international aviation under the UNFCCC; described the measures identified in the Programme of Action on International Aviation and Climate Change and proposals from the air transport industry;

Secretariat (HLM-ENV/09-WP/7 Revised) provided an overview of ICAO's work and achievements on technical and operational means to reduce aviation emissions. It outlined the progress that has been made in establishing technology goals for reducing aircraft greenhouse gas emissions. It also informed of the progress in the establishment of an aircraft CO₂ Standard and associated certification methodology;

Secretariat (HLM-ENV/09-WP/8) provided information on the GIACC discussions related to market-based measures, on relevant work carried out by ICAO and on a proposal put forward by the aviation industry. It also outlined some key issues of the work under the UNFCCC on market-based measures, including: the international aviation sector's access to market-based measures under a new climate change agreement; and the use of financial resources generated from the use of market-based measures for the international aviation sector e.g. for mitigation and adaptation activities;

Secretariat (HLM-ENV/09-WP/9) summarized the key outcomes of the ICAO Workshop on Aviation and Alternative Fuels that took place in February 2009 (WAAF2009) and presented the next steps for the organization of the Conference on Aviation and Alternative Fuels in Rio de Janeiro, in November 2009 (CAAF2009) that aims to stimulate a dynamic exchange of views and to establish a global roadmap that would constitute an integral element of ICAO's input to COP15;

Sweden, on behalf of the European Community and its Member States and by the other States Members of the ECAC (HLM-ENV/09-WP/15) outlined a proposal for ICAO to commence its work on the basket of measures identified in the Programme of Action on International Aviation and Climate Change. The paper also highlighted the necessity to consider the specific circumstances of developing States and to develop a process for the establishment of an ICAO framework for market-based measures;

Nigeria, on behalf of African States (HLM-ENV/09-WP/28) expressed support for the global aspirational goals in the Programme of Action and opposed unilateral action on market-based and other economic measures by States and Regions across national borders. It also reaffirmed Africa's belief in ICAO's leadership role in overcoming the challenges of international aviation emissions and that the principle of common but

differentiated responsibilities should be applied in all ICAO's ongoing efforts in mitigating international aviation emissions;

Egypt (HLM-ENV/09-WP/20) presented recommendations in relation to the principles that should be taken into consideration when ICAO defines its input to the UNFCCC. It highlighted the special circumstances of developing States and expresses opposition to unilateral action on international aviation emissions;

United Arab Emirates (HLM-ENV/09-WP/23 – information paper) described relevant government policies and programs as well as initiatives by the aviation sector in the country on environmental protection and reduction of GHG emissions;

India (HLM-ENV/09-WP/26 – information paper) described various measures that have been taken by its regulatory authority, airlines, air navigation service provider and airport operators in managing the carbon emissions from their respective activities;

United Nations World Tourism Organization (HLM-ENV/09-WP/13) highlighted the potential impacts of climate change on tourism and linked the work of the UNWTO with the work under ICAO. It proposed that a collective approach would be necessary regarding economic instruments for mitigation of GHG emissions from international aviation, taking into consideration potential impacts on other sectors of the economy (such as tourism), particularly, of developing States; and

International Maritime Organization (HLM-ENV/09-WP/27 – information paper) provided information on progress achieved on addressing GHG emissions from international shipping. The paper highlighted some key outcomes of the Marine Environment Protection Committee (MEPC), including: the assessment of present and future global CO₂ emissions from international shipping; and the development of technical and operational measures e.g. Energy Efficiency Design Index and Ship Energy Efficiency Management Plan. IMO also provided information on the discussions on market-based measures for international shipping that are currently being considered by the MEPC. Concrete proposals on such market-based measures will take into account the outcome of COP15 and are expected to be finalized in 2011.

2.2 Discussion

2.2.1 There was general agreement that ICAO should continue to provide leadership in addressing international aviation matters related to the environment. There was also general agreement that a comprehensive approach would be necessary to achieve reductions in aviation's emissions. There was broad support for ICAO to: continue the development of a basket of measures, including measures to provide assistance to developing countries; establish a process to develop a framework for market-based measures in international aviation; and continue with facilitating the development and use of alternative fuels for aviation.

2.2.2 There was also general agreement on the importance and strong support of the Organization to continue to develop necessary Standards, and guidance to States, on technical and operational measures to reduce aviation emissions.

2.2.3 The discussions on the application of market-based measures reflected the divergent views expressed during the GIACC deliberations. Many States reflected the need for ICAO to undertake the necessary steps to develop a framework for market-based measures building upon the outcome of this Meeting and of COP15. Several States proposed specific issues be taken into consideration in the development of such framework, including:

- a) evaluating the potential contribution of market-based measures to the expected global emissions reductions efforts for the international aviation sector;
- b) ways in which the international aviation sector could have access to market-based measures;
- c) the potential for raising resources from the use of market-based measures; and
- d) how any such resources should be best utilized taking into account the needs of different States and specific needs for mitigation and adaptation activities.

2.2.4 Due to the limited time for discussions, the Meeting could not conclude on an all encompassing structure for the development of a framework for market-based measures, however, the issues proposed by States above would be taken into account during further consideration of this matter.

2.2.5 Several States stated that any strategies to reduce greenhouse gas emissions from international aviation should take into account relevant principles of the Chicago Convention and of the UNFCCC. They also supported the view that the successful implementation of measures depended on specific national circumstances, technology needs and capacities and on the provision of sufficient financial resources.

2.2.6 States recognized the potential role that alternative fuels can play in reducing greenhouse gas emissions from aviation. It was noted that the use of alternative fuels is linked to specific national circumstances. Participants noted that a Conference on aviation and alternative fuels will take place in Rio de Janeiro in November 2009 and that the results of this Conference should be brought to the attention of the UNFCCC.

Agenda Item 3: Means to measure progress**3.1 Documentation**

3.1.1 The Meeting reviewed the following working papers from the Secretariat and States:

Secretariat (HLM-ENV/09-WP/10) outlined the work by ICAO to estimate GHG emissions from international aviation, summarized the discussions by the GIACC on means to measure progress toward achieving emissions reduction goals for international aviation, and briefly described the reporting requirements under the UNFCCC. The paper highlighted that the current scope of collected data under Article 67 of the Chicago Convention is not sufficient to meet all the needs of ICAO regarding measuring progress of actions to address GHG emissions from international aviation, and therefore this needed to be complemented by additional modelling capabilities. It recognized the importance for ICAO to have adequate aviation emissions-related information and modelling capabilities in order to assess and measure progress made in implementing measures to reduce its contribution to climate change. It also emphasized the need for States to develop and report action plans which outline policies and actions to address emissions from their international aviation sector and to continue to support the efforts of ICAO on enhancing the reliability of measuring/estimating global GHG emissions from international aviation through, inter alia, the improvement of the modelling capabilities of the Organization; and

Sweden, on behalf of the European Community and its Member States and by the other States Members of the ECAC (HLM-ENV/09-WP/16) outlined measures that should be taken by ICAO with regard to measuring progress in the implementation of mitigation activities. These included the development of a mechanism for ICAO to collect data on traffic and fuel consumption from States taking into account the need for consistency with reporting requirements under the UNFCCC; the need for new methodologies ensuring that there is no duplication of effort; provisions for States to develop and submit to ICAO their action plans; and special circumstances of countries with little international aviation activity.

3.2 Discussion

3.2.1 There was general agreement that ICAO should take the lead on the establishment of a mechanism to measure/estimate, monitor and verify global GHG emissions from international aviation. There was also agreement on the importance of States supporting ICAO in providing traffic and fuel consumption data under Article 67 of Chicago Convention as recommended by GIACC and in enhancing its modelling capabilities.

3.2.2 The Meeting recognized the need for the Council to further consider a reporting system that would not impose additional burden to States and the industry, taking into account existing reporting requirements, including those under the UNFCCC. In line with the Council decision, there was

recognition on the need to provide technical and financial assistance in the reporting process to developing States, and the important role that ICAO could play in this regard.

3.2.3 There was general agreement that ICAO should regularly report CO₂ emissions from international aviation to the UNFCCC, as part of its contribution to assessing progress made in the implementation actions in the sector.

3.2.4 In relation to the Council's decision on States' action plans, the majority of States expressed the view that ICAO should develop, as soon as possible, the necessary guidance for States and should consider a de-minimis exception to avoid unnecessary administrative burden for States that do not have a substantial international aviation activity. At the same time, it was recognized that a de-minimis exception should not automatically lead to an exemption from technical and financial assistance for the preparation of action plans. Such assistance will be crucial, particularly for some of the least developed States, as it would help States to enhance their capabilities as regards possible future reporting requirements.

Agenda Item 4: Financial and human resources

4.1 Documentation

4.1.1 The Meeting reviewed the following working papers from the Secretariat and States:

Secretariat (ENV-HLM/09-WP/11) presented some of the key considerations of the GIACC discussions related to financial and human resources and the possible role of ICAO. In particular, it noted that on global aspirational goals, it was recognized that “to achieve these goals will require a significant investment in technological development”; on the development of a basket of measures, it is stated that “the basket includes measures to facilitate access to assistance, particularly for developing countries” and “measures to assist developing countries, as well as access to financial resources, technology transfer and capacity building”; and on measuring, reporting and verifying GHG emissions, it was recommended that the Council sought “to develop approaches for providing technical and financial assistance in the reporting process to developing countries”; and

Sweden, on behalf of the European Community and its Member States and by the other States Members of the ECAC (ENV-HLM/09-WP/17) outlined a proposal on activities regarding financial and human resources of ICAO. In particular, it highlighted the need to ensure that ICAO has the necessary resources to carry out its mandated work.

4.2 Discussion

4.2.1 There was general agreement that, in order to move forward on the implementation of the recommendation by the GIACC related to financial and human resources, as referred in ENV-HLM/09-WP/11, it was necessary for ICAO to act as a facilitator to assist States in need to get access to financial resources and to cooperate with other agencies in this regard.

4.2.2 Some States expressed the view that market-based measures for international aviation in a future climate change agreement could play a significant role for generating financial resources for developing States, including possible application of flexible mechanisms under UNFCCC, such as the Clean Development Mechanism (CDM), to international aviation. Other States expressed the view that the extent of assistance to developing States in terms of financial resources, technology transfer and capability building would, to a large extent, determine the extent of implementation of the action plans and achievement of the goals by developing States.

4.2.3 Regarding the States’ financial support for environment-related activities of the Organization, all States recognized the need for adequate resources to support ICAO’s environment-related activities in line with the leading role expected from ICAO in this area. The Meeting acknowledged the importance of States contributing to the environmental voluntary funds to support

environment-related activities, and that due priority be given to such activities in the ICAO's next Programme budget reflecting the importance of the issue for the work of the Organization.

Agenda Item 5: Review of Programme of Action on International Aviation and Climate Change and recommendations to COP15

5.1 Documentation

5.1.1 The following working papers from the Secretariat and States were available under Agenda Item 5:

Secretariat (ENV-HLM/09-WP/12, Rev. No. 1) compiled the Draft Declaration of the Meeting and Recommendations on all agenda items based upon the discussions and decisions taken by the HLM-ENV/09; and

Sweden, on behalf of the European Community and its Member States and by the other States Members of the ECAC (ENV-HLM/09-WP/18) outlined elements that should be included in ICAO's recommendations to COP15.

5.2 Discussion

5.2.1 The informal group that was established to assist the Chairman on aspirational goals under Agenda Item 1 also undertook discussions, under the guidance of the Chairman, on a Draft Declaration of the HLM-ENV/09. The members of the informal group elaborated both a Draft Declaration and related Recommendations regarding further work of the ICAO Council, for the consideration of the HLM-ENV/09.

5.2.2 After the finalization of the discussions at the informal group, the Chairman presented HLM-ENV/09-WP/12 Rev. No. 1 during the closing Plenary. The Chairman read out a proposed amendment to the WP/12 Rev. No. 1 and invited the Meeting to approve the Draft Declaration and Recommendations as amended. After a discussion, both the Draft Declaration and Recommendations as amended were approved by the Meeting. The approved texts for the Declaration and the Recommendations are included in HLM-ENV/09-WP/12 Rev. No. 2.

5.2.3 The Meeting also agreed that the approved Declaration and Recommendations be delivered to the ICAO Council for its consideration in order to provide the basis for the input of ICAO to the on-going negotiations under the UNFCCC.

5.3 Declaration by the HLM-ENV

The High-Level Meeting on International Aviation and Climate Change, convened by the International Civil Aviation Organization (ICAO) at its Headquarters in Montreal on 7 to 9 October 2009 was attended by Ministers and other high-level officials representing 73 States (responsible for 94% of the global international aviation traffic⁸) and 26 international organizations:

Whereas the 36th Session of the ICAO Assembly requested the Council to convene a high-level meeting to review the Programme of Action on International Aviation and Climate Change recommended by the Group on International Aviation and Climate Change, taking into account that the fifteenth meeting of the Conference of the Parties (COP15) of the United Nations Framework Convention on Climate Change (UNFCCC) will be held in December 2009;

Welcoming the Decision of the ICAO Council to fully accept the Programme of Action on International Aviation and Climate Change, which includes global aspirational goals in the form of fuel efficiency, a basket of measures and the means to measure progress, as an important first step in the work of Member States at ICAO to address greenhouse gas (GHG) emissions from international aviation;

Reaffirming ICAO as the lead United Nations agency in matters involving international civil aviation, and *emphasizing* ICAO's commitment to provide continuous leadership in addressing international civil aviation matters related to the environment;

Acknowledging the principles and provisions on common but differentiated responsibilities and respective capabilities, and with developed countries taking the lead under the UNFCCC and the Kyoto Protocol;

Also acknowledging the principles of non-discrimination and equal and fair opportunities to develop international aviation set forth in the Chicago Convention;

Reemphasizing the vital role which international aviation plays in global economic and social development and the need to ensure that international aviation continues to develop in a sustainable manner;

Acknowledging that international aviation emissions, currently accounting for less than 2 per cent of total global CO₂ emissions, are projected to grow as a result of the continued development of the sector;

Recognizing that the international aviation sector must play its part to confront the global challenge of climate change, including by contributing to the reduction of global GHG emissions;

Noting the scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C;

Noting the continuous efforts of the sector to minimise aviation's impact on climate change and the improvement in fuel efficiency achieved over the last 40 years, resulting in aircraft today that are 70 per cent more fuel efficient per passenger kilometre;

Affirming that addressing GHG emissions from international aviation requires the active engagement and co-operation of States and the industry, and noting the collective commitments announced by ACI, CANSO, IATA and ICCAIA on behalf of the international air transport industry to

⁸ expressed in Revenue Passenger Kilometre.

continuously improve CO₂ efficiency by an average of 1.5 per cent per annum from 2009 until 2020, to achieve carbon neutral growth from 2020 and reducing its carbon emissions by 50 per cent by 2050 compared to 2005 levels;

Recognizing the different circumstances among States in their capacity to respond to the challenges associated with climate change and the need to provide necessary support, in particular to developing countries and States having particular needs;

Recognizing that the aspirational goal of 2 per cent annual fuel efficiency improvement is unlikely to deliver the level of reduction necessary to stabilize and then reduce aviation's absolute emissions contribution to climate change, and that goals of more ambition will need to be considered to deliver a sustainable path for aviation;

Declares that:

1. The HLM endorses the ICAO Programme of Action on International Aviation and Climate Change as accepted by the ICAO Council;

2. In pursuing the implementation of the ICAO Programme of Action on International Aviation and Climate Change, States and relevant organizations will work through ICAO to achieve a global annual average fuel efficiency improvement of 2 per cent over the medium term until 2020 and an aspirational global fuel efficiency improvement rate of 2 per cent per annum in the long term from 2021 to 2050, calculated on the basis of volume of fuel used per revenue tonne kilometre performed;

3. Taking into account the relevant outcomes of the 15th Conference of the Parties to the United Nations Framework Convention on Climate Change, 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;

4. Such fuel efficiency improvements or other aspirational emission reduction goals would not attribute specific obligations to individual States. The different circumstances, respective capabilities and contribution of developing and developed States to the concentration of aviation GHG emissions in the atmosphere will determine how each State may contribute to achieving the global aspirational goals;

5. ICAO will establish a process to develop a framework for market based measures in international aviation, taking into account the conclusions of the High-level Meeting and outcome of the UNFCCC COP 15 and bearing in mind relevant ICAO Assembly resolutions and the appendices with a view to complete this process expeditiously;

6. ICAO will regularly report CO₂ emissions from international aviation to the UNFCCC, as part of its contribution to assessing progress made in the implementation actions in the sector based on information approved by its Member States;

7. States are encouraged to submit their action plans, outlining their respective policies and actions, and annual reporting on international aviation CO₂ emissions to ICAO;

8. ICAO and its Member States will strongly encourage wider discussions on the development of alternative fuel technologies and the promotion of the use of sustainable alternative fuels, including biofuels, in aviation in accordance with national circumstances.

5.4 Recommendation by the HLM-ENV

In addition to the recommendations from the GIACC as accepted by the Council, the High-level Meeting on International Aviation and Climate Change recommended, in order to progress the work leading to the upcoming 37th Session of the ICAO Assembly in 2010 and beyond, that the ICAO Council:

1. *Work* expeditiously together with the industry to foster the development and implementation of more energy efficient aircraft technologies and sustainable alternative fuels for aviation;
2. *Seek to develop* a global CO₂ Standard for new aircraft types consistent with CAEP recommendations;
3. *Continue* to maintain and update knowledge of the interdependency between noise and emissions in the development and implementation of measures to address GHG emissions from international aviation;
4. *Continue* to work with relevant organizations on the scientific understanding and on measures to limit the non-CO₂ climate impacts of aviation;
5. *Intensify* its efforts in further development of Standards and Recommended Practices for technological and operational measures to reduce international aviation emissions, with the support and expertise from technical panels and committees of ICAO, in consultation with other relevant organizations, in particular on the development of new guidance on operational measures to reduce international aviation emissions;
6. *Commit*, in cooperation with the industry, to facilitate the implementation of operational changes and the improvement of air traffic management and airport systems aiming to reduce emissions from international aviation sector;
7. *Further elaborate* on measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building including possible application of flexible mechanisms under UNFCCC, such as the Clean Development Mechanism (CDM), to international aviation;
8. *Encourage* States and international organizations to actively participate in the Conference on Aviation and Alternative Fuels in Rio de Janeiro in November 2009 (CAAF2009) to share their efforts and strategies to promote such measures, and bring its results to COP15;
9. *Identify* appropriate standard methodologies and a mechanism to measure/estimate, monitor and verify global GHG emissions from international aviation, and States support the work of ICAO on measuring progress through the reporting of annual data on traffic and fuel consumption;

10. *Request* States to continue to support the efforts of ICAO on enhancing the reliability of measuring/estimating global GHG emissions from international aviation;
 11. *Consider* a de-minimis exception for States which do not have substantial international aviation activity levels, in the submission of action plans and regular reports on aviation CO₂ emissions to ICAO;
 12. *Consider*, with due priority, the allocation of resources for environment-related activities under the next ICAO Regular Programme budget and analyse the possibility of establishing voluntary contributions;
 13. *Explore* the relevance of the GIACC's fuel efficiency metric to international business aviation;
 14. *Explore* approaches for providing technical and financial assistance in the reporting process to developing countries; and
 15. *Invite* the international air transport industry to further elaborate the implementation framework and strategies for the collective commitment of the international air transport industry.
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CONTRACTING STATES:**AFGHANISTAN**

ATA	M.	CHIEF DELEGATE
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	MENDEZ	E.	DELEGATE
	TEATIN	N.	DELEGATE
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	ALI	M.	DELEGATE
	ASHOAYBI	K.	DELEGATE
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	SOO CHON	K.	CHIEF DELEGATE
	TAY	S.H.	ALTERNATE

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	MENDEZ	D.	ALTERNATE CHIEF DELEGATE
	LOPEZ MEYER	G.	DELEGATE
MOZAMBIQUE	SAMUEL	A.V.	CHIEF DELEGATE
	PINTO	A.	ALTERNATE CHIEF DELEGATE
NETHERLANDS	DIERIKX	M.	CHIEF DELEGATE
	BEKEBREDE	G.	ALTERNATE CHIEF DELEGATE
	DIJKSTRA	W.J.	DELEGATE
	LUNTER	M.G.	DELEGATE
NEW ZEALAND	JOHNSON	B.	CHIEF DELEGATE
	HUTTON	M.	ALTERNATE CHIEF DELEGATE
NIGERIA	OMOTOBA	B.	CHIEF DELEGATE
	DEMUREN	H.O.	ALTERNATE CHIEF DELEGATE
	ALIU	O.B.	DELEGATE
	ALAWANI	P.	DELEGATE
NORWAY	EK	O.	CHIEF DELEGATE
	KRAKENES	T.	ALTERNATE CHIEF DELEGATE
	KOFOED	K.	ADVISER
	SVARSTAD	D.	ADVISER
	BAY	B.R.	DELEGATE
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	CIENIUCH	K.	ALTERNATE CHIEF DELEGATE
	RODE	A.	ADVISER
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	DEMÉE DE BRITO	F.	ALTERNATE CHIEF DELEGATE
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	ALAHARAM	A.	DELEGATE
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	MAENG	S.K.	ALTERNATE CHIEF DELEGATE
	YOO	H.J.	ALTERNATE CHIEF DELEGATE
	JO	J.	ADVISER
	SEO	W.S.	DELEGATE
	HWANG	J.	DELEGATE
	LEE	K.S.	DELEGATE
	PARK	H.	DELEGATE
	YU	K.S.	DELEGATE
	SEO	W.	DELEGATE
	PARK	C.	OBSERVER

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	CIORANU	A.	DELEGATE	
	KALMUTCHI	P.	DELEGATE	
	GEORGESCU	M.	DELEGATE	
	MACHITA	D.A.	DELEGATE	
RUSSIAN FEDERATION	RADU	C.	DELEGATE	
	OKULOV	V.	CHIEF DELEGATE	
	NOVGORODOV	A.	ALTERNATE CHIEF DELEGATE	
	DEMIDOV	O.	DELEGATE	
	GRABAR	V.A.	DELEGATE	
SAUDI ARABIA	VOLKOV	S.	DELEGATE	
	JAMJOOM	M.	CHIEF DELEGATE	
SENEGAL	KABLI	T.	ADVISER	
	DIENG	M.	CHIEF DELEGATE	
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	TEO	S.L.	CHIEF DELEGATE	
SOUTH AFRICA	YAP	O.H.	ALTERNATE CHIEF DELEGATE	
	BERNARD	L.	DELEGATE	
	LEE	Y.H.	DELEGATE	
	LOOI	H.S.	DELEGATE	
	NGA	D.	DELEGATE	
	NGIAM	S.Y.	DELEGATE	
	POH	E.	DELEGATE	
	SOH	Y.L.	DELEGATE	
	SOH	P.T.	DELEGATE	
	TAN	D.	DELEGATE	
	TEO	S.F.	DELEGATE	
	YIU	E.	DELEGATE	
	KIM PIN	B.	OBSERVER	
	SPAIN	MPOFU	M.N.	CHIEF DELEGATE
		MBANJWA	K.	ADVISER
PEEGE		T.	ADVISER	
MASEKO		Z.	ADVISER	
SEKO		M.	ADVISER	
BIERMAN		J.	DELEGATE	
SIM		K.	DELEGATE	
ST. VINCENT AND THE GRENADINES	AMEIJERAS	M.	CHIEF DELEGATE	
	AGUADO	D.V.M.	ALTERNATE CHIEF DELEGATE	
	ESPAÑA MORALES	S.A.	ALTERNATE CHIEF DELEGATE	
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ST. VINCENT AND THE GRENADINES	JAMES	R.	CHIEF DELEGATE	

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KELDUSILD	K.	ALTERNATE CHIEF DELEGATE
ANDERSSON	S.	DELEGATE
CHERFILS	I.	DELEGATE
ECKERBERT	B.	DELEGATE
SJYBERG	T.	DELEGATE

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ZIEGLER	U.	ALTERNATE CHIEF DELEGATE
RUHIER	D.	DELEGATE

THAILAND

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WACHARAPRAPAPONG	P.	ADVISER
DUANGKAEW	P.	DELEGATE
KAEOFAEK	K.	DELEGATE
KONGPOOL	S.	DELEGATE
KOTCHARAT	P.	DELEGATE
PATTANAPONG	P.	DELEGATE
PLOYNOI	M.	DELEGATE
SIRIWATANA	P.	DELEGATE
STHALANAND	V.	DELEGATE
UTTARACHAI	P.	DELEGATE
VONGBUNSIN	V.	DELEGATE
WICHIRANON	P.	DELEGATE

TUNISIA

SASSI	I.	CHIEF DELEGATE
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SILYTS'KA	A.	DELEGATE

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AL SUWAIDI	S.	CHIEF DELEGATE
AL HAMILI	A.	ALTERNATE CHIEF DELEGATE
HOOPER	P.	DELEGATE
SALAZAR	J.C.	DELEGATE
AL KAABI	R.	OBSERVER

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JOWERS	D.	DELEGATE
ROSSELL	M.	DELEGATE

UNITED STATES

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LOBUE	N.	ADVISER
NELSON	D.	ADVISER
SPEARS	M.	ADVISER
THOMSON	K.	ADVISER
WEINGART	D.	ADVISER
BURLESON	C.	DELEGATE
CREAMER	S.	OBSERVER

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BLANCO CARRERO	D.	CHIEF DELEGATE
LANZA	C.	OBSERVER

ZIMBABWE

MUDZIGWA	T.A.	CHIEF DELEGATE
BEREJENA	B.	ALTERNATE CHIEF DELEGATE
CHAWOTA	D	DELEGATE
MAGWENZI	L.	DELEGATE

OBSERVER DELEGATIONS:**CAMEROON**

ZOE ETUNDI	E.	OBSERVER
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CUBA

CALDERIN RODRIGUEZ	D.	OBSERVER
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ECUADOR

ARELLANO	I.	OBSERVER
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EL SALVADOR

APARICIO	J	OBSERVER
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ETHIOPIA

MEKONNEN	T.	OBSERVER
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GHANA

ALLOTEY	S.	OBSERVER
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IRAN (ISLAMIC REPUBLIC OF)

SHAHBAZILAR	H.	OBSERVER
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NAMIBIA

MUJETENGA	B.T.	OBSERVER
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PAKISTAN

RAUHULLAH	M.	OBSERVER
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PERU

TRINDADE	L.	OBSERVER
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CAMACHO	L.	OBSERVER
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TURKEY

BILGEN	L.	OBSERVER
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GOKDENIZLER	V.	OBSERVER
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OYTAN	K.	OBSERVER
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UGANDA

TWIJUKE	K.	OBSERVER
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UNITED REPUBLIC OF TANZANIA

BOKANGO	R.	OBSERVER
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URUGUAY

CAPPI	J.	OBSERVER
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VALARDO	J.L.	OBSERVER
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	EL ALJ	M.	OBSERVER
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ELFAA			
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HAI			
	DICAMPLI	E.	OBSERVER
IAC			
	DOROFEYEV	V.	OBSERVER
IADB			
	NETTO	M.	OBSERVER
IATA			
	BISIGNANI	G.	CHIEF OBSERVER
	BROGDEN	L.	OBSERVER
	HERDMAN	A.	OBSERVER
	STEELE	P.	OBSERVER
	WINDMULLER	T.	OBSERVER
	YOUNG	N.	OBSERVER
	COMBER	M.	OBSERVER
	COUNSELL	J.	OBSERVER
	MATSCHNIGG	G.	OBSERVER
	PIERA	A.	OBSERVER
	STEELE	P.	OBSERVER
	KHOSLA	A.	OBSERVER
	COUNCIL	A.	OBSERVER
	GRIFFITHS	P.	OBSERVER
	HARDEMAN	A.	OBSERVER
	JENSEN	D.M.	OBSERVER
	RANEY	L.	OBSERVER
	HAWKINS	B.L.	OBSERVER
	LYNCH	D.	OBSERVER
	WATSON	M.	OBSERVER
	SELLICK	A.	OBSERVER

IBAC	SPRUSTON	D.D.	CHIEF OBSERVER
	INGLETON	P.R.	OBSERVER
	SHUTER	R.	OBSERVER
ICCAIA	DE SAINT AULAIRE	P.	CHIEF OBSERVER
	BAKER	A.	OBSERVER
	BENDANA	P.	OBSERVER
	COUILLARD	F.	OBSERVER
	CSONKA	H.S.	OBSERVER
	ELWELL	D.	OBSERVER
	EPSTEIN	A.	OBSERVER
	FONTA	P.	OBSERVER
	FREIRE	G.	OBSERVER
	HEIJL	M.	OBSERVER
	ITAHARA	H.	OBSERVER
	ROUISSE	L.	OBSERVER
	TAKAMI	H.	OBSERVER
ICSA	JOHNSON	T.	OBSERVER
IFALPA	HURST	K.	OBSERVER
	SCHAFFER	M.A.	OBSERVER
IFATCA	BAUMGARTEN	M.	OBSERVER
IFHA	YORK	D.	OBSERVER
IMO	PALOMARES	M.	OBSERVER
LACAC	OSPINA	M.	OBSERVER
OECD	CRIST	P.	OBSERVER
PALESTINE	HALEIB	S.	OBSERVER
UNFCCC	CASTELLANOS SILVEIRA	F.	OBSERVER
UNWTO	LYLE	C.	OBSERVER
WORLD BANK	SCHLUMBERGER	C.E.	OBSERVER

**RESOLUTION A36-22: CONSOLIDATED STATEMENT OF CONTINUING ICAO POLICIES
AND PRACTICES RELATED TO ENVIRONMENTAL PROTECTION****APPENDIX K****ICAO Programme of Action on international aviation and climate change**

Whereas ICAO and its Contracting States recognize the critical importance of providing continuous leadership to international civil aviation in limiting or reducing its emissions that contribute to global climate change;

Whereas the rapid growth of civil aviation has generally increased the aviation industry's contribution to greenhouse gas emissions;

Acknowledging the principles of non-discrimination and equal and fair opportunities to develop international civil aviation set forth in the Chicago Convention, as well as the principles and provisions on common but differentiated responsibilities and respective capabilities under the UNFCCC and the Kyoto Protocol;

Whereas the ICAO Council has developed policy options to limit or reduce the environmental impact of aircraft engine emissions from civil aviation and work is in progress on technology and standards, on operational measures and on market-based measures to reduce emissions;

Noting that, to promote sustainable growth of aviation, a comprehensive approach, consisting of work on technology and standards, and on operational and market-based measures to reduce emissions is necessary;

Noting that emphasis should be on those policy options that will reduce aircraft engine emissions without negatively impacting the growth of air transport especially in developing economies;

Acknowledging the significant progress made in the aviation sector, with aircraft produced today being about 70 percent more fuel efficient per passenger kilometre than 40 years ago, with airlines of some Contracting States achieving net reductions in emissions over the past several years despite a simultaneous increase in operations, and with the commitment of the international airline industry to achieving a further 25 percent fuel efficiency improvement between 2005 and 2020;

Noting that the next generation of aircraft technology and modernization of air traffic systems are expected to deliver additional improvements in flight and fuel efficiency that can be encouraged by ICAO through its Global Air Navigation Plan;

Recognizing that ICAO Standards and goals for NO_x, although intended to address local air quality, will also help reduce the impact of aviation on the climate;

The Assembly:

1. *Requests* that the Council facilitate action by States by vigorously developing policy options to limit or reduce the environmental impact of aircraft engine emissions, developing concrete proposals

and providing advice as soon as possible to the Conference of the Parties of the UNFCCC, encompassing technical solutions and market-based measures, while taking into account potential implications of such measures for developing as well as developed countries;

2. *Requests* the Council to:

- a) form a new Group on International Aviation and Climate Change composed of senior government officials representative of all ICAO regions, with the equitable participation of developing and developed countries, with technical support provided by the Committee on Aviation Environmental Protection, for the purpose of developing and recommending to the Council an aggressive Programme of Action on International Aviation and Climate Change, based on consensus, and reflecting the shared vision and strong will of all Contracting States, including:
 - 1) an implementation framework consisting of economically efficient and technologically feasible strategies and measures that Contracting States can use to achieve emissions reductions, encompassing *inter alia*:
 - voluntary measures (e.g. offsetting);
 - effective dissemination of technological advances both in aircraft and in ground based equipment;
 - more efficient operational measures;
 - improvements in air traffic management;
 - positive economic incentives; and
 - market-based measures;
 - 2) identification of means by which progress can be measured;
 - 3) identification of possible global aspirational goals in the form of fuel efficiency for international aviation and possible options for their implementation; and
 - 4) reporting progress resulting from the actions implemented by Contracting States and Stakeholders;
- b) convene at an appropriate time, taking into account the fact that the fifteenth meeting of the Conference of the Parties (COP15) of the UNFCCC will be held in December 2009, a high-level meeting to review the Programme of Action recommended by the Group;

3. *Requests* that the Council, working through the Committee on Aviation Environmental Protection, continue to develop and keep up-to-date the guidance for Contracting States on the application of measures aimed at reducing or limiting the environmental impact of aircraft engine emissions and to conduct further studies with respect to mitigating the impact of aviation and climate change;

4. *Encourages* Contracting States and the Council, taking into account the interests of all parties concerned, including potential impacts on the developing world, to evaluate or continue evaluating the

costs and benefits of the various measures, including existing measures, with the goal of addressing aircraft engine emissions in the most cost-effective manner;

5. *Requests* that the Council provide the necessary guidance and direction to ICAO's Regional Offices to assist Contracting States with studies, evaluations and development of procedures, in collaboration with other States in the region, to limit or reduce GHG emissions on a global basis and work together collaboratively to optimize the environmental benefits that can be achieved through their various programmes;

6. *Requests* States to encourage the industry to establish challenging goals to constantly improve its performance in aviation emissions reduction;

7. *Requests* Contracting States to accelerate investments on research and development to bring to market even more efficient technology by 2020;

8. *Requests* States to elaborate and report on a set of actions and plans to reduce by 2020 airspace congestion that is contributing to delays and unnecessary fuel burn;

9. *Request* States to encourage airport operators to improve efficiency of airside operations and to implement ground side efficiency measures to reduce carbon intensity;

10. *Requests* that the Council, working through the Committee on Aviation Environmental Protection:

- a) report on an annual basis on the progress achieved in average in-service fleet fuel efficiency and the aggregate annual amount of fuel burned in international civil aviation working in close cooperation with the industry;
- b) forecast the overall potential for aviation emissions reduction in the in-service fleet; and
- c) evaluate and quantify further reduction opportunities for consideration by the upcoming session of the Assembly;

11. *Requests* the Council to undertake the necessary action in support of the ICAO emissions initiative, including the pursuit of the ICAO objectives to limit or reduce the impact of aircraft emissions, to foster collaboration among its Contracting States, and to monitor and report on progress made in this area. In particular, the Council should:

- a) explore relevant parameters and develop medium and long term technology goals for aircraft fuel burn and report back by the next Assembly;
- b) continue to develop the necessary tools to assess the benefits associated with ATM improvements, and to promote the use of the operational measures outlined in ICAO guidance (Cir 303) as a means of limiting or reducing the environmental impact of aircraft engine emissions;

- c) implement an emphasis on increasing fuel efficiency in all aspects the ICAO's Global Air Navigation Plan;
- d) foster, as appropriate, regional, inter-regional and global initiatives with Contracting States to enhance air traffic efficiencies to reduce fuel consumption;
- e) encourage Contracting States to improve air traffic efficiency, which leads to emissions savings and to report on progress in this area;
- f) request Contracting States to submit an inventory of actions they are taking to reduce aviation emissions in their respective countries; and
- g) promote the use of new procedures and technologies that have a potential to provide environmental benefits on the operation of aircraft;

12. *Requests* the Council to encourage States and stakeholders in promoting and sharing best practices applied at airports in reducing the adverse effects of GHG emissions of civil aviation;

13. *Requests* the Council to encourage States and stakeholders to develop models of flow control and air traffic management that optimize environmental benefits;

14. *Requests* States to:

- a) encourage the necessary research and development to provide more environmentally efficient engine and aircraft designs;
- b) accelerate the development and implementation of fuel efficient routings and procedures to reduce aviation emissions;
- c) accelerate efforts to achieve environmental benefits through the application of satellite-based technologies that improve the efficiency of air navigation and work with ICAO to bring these benefits to all regions and States;
- d) promote effective coordination between their authorities involved in aviation in designing more environmentally beneficial air routes and improved operational procedures for international civil aviation;
- e) reduce legal, security, economic and other institutional barriers to enable implementation of the new ATM operating concepts for the environmentally efficient use of airspace; and
- f) cooperate in the development of a regional measurement and monitoring capability in order to allow for the assessment of the environmental benefits accrued from the measures above;

15. *Encourages* action by Contracting States, and other parties involved, to limit or reduce international aviation emissions through voluntary measures, and to keep ICAO informed, and *requests* the Council to instruct the Secretary General to keep up-to-date guidelines that ICAO has developed for

such measures, including a template voluntary agreement, and to make available such experience to all parties concerned.

Relevant Excerpts from Council Decision on the work of GIACC (C-DEC 187/14)

Progress report on the Group on International Aviation and Climate Change (GIACC)
(Subject No. 50.3)

1. The Council resumed (187/13) and completed its consideration of the above subject, documented in a paper presented by the Secretary General (C-WP/13347), together with a proposed text of the Council's decision on this subject which had been prepared by the fifteen Council Representatives from States represented on the GIACC and reviewed by a large majority of Council Representatives. The proposed Council decision replaced the action indicated in the executive summary of C-WP/13385.
2. In taking the action proposed by the fifteen Council Representatives from States represented on the GIACC, the Council:
 - a) accepted fully the Programme of Action (Attachment A to C-WP/13385) as a positive development to limit or reduce aviation's climate impact;
 - b) reaffirmed the critical importance of addressing climate change, and thus recognized the need to strive to find ways and means to limit or reduce the impact of greenhouse gas (GHG) emissions from international civil aviation on the global climate;
 - c) underscored that the outcome of the GIACC and this decision of the Council would not prejudice the outcome of the negotiations under the UNFCCC and Kyoto Protocol;
 - d) acknowledged the principles and provisions on common but differentiated responsibilities and respective capabilities, and with developed countries taking the lead under the UNFCCC and the Kyoto Protocol;
 - e) also acknowledged the principles of non-discrimination and equal and fair opportunities to develop international aviation set forth in the Chicago Convention;
 - f) noted that while there was no consensus, some GIACC Members were of the view that the Programme of Action did not address the commitments under Article 2.2 of the Kyoto Protocol;
 - g) noted that notwithstanding the substantial fuel efficiency improvements achieved by the aviation sector and the impact of the current economic downturn, the Council recognized that the projected growth of international air traffic would outweigh the gains made by currently projected fuel efficiency improvements resulting in an average year over year increase in total fuel burned;

- h) recommended a strategy for efforts to achieve global aspirational goals. The short term goal to 2012 agreed by the GIACC was for improvements in the in-service fleet average fuel efficiency of international aviation operations at the rate of 2% per annum, calculated on the basis of volume of fuel used per revenue tonne kilometre performed;
- i) supported the GIACC Agreement on goals in the form of fuel efficiency for the medium and longer terms. Specifically, the Council endorsed an annual improvement of 2% over the medium term until 2020. For the long term, the Council endorsed an aspirational global fuel efficiency improvement rate of 2% per annum from 2021 to 2050;
- j) recognized that these goals were established on the basis of forecasts and the Council directed that they be reviewed on a periodic basis in light of scientific and technological advances. To achieve these goals would require a significant investment in technological development;
- k) affirmed that in addition to fuel efficiency goals, the focus was on goals that could indicate stronger ambition. For the medium term, the discussions focused on a goal of carbon neutral growth by 2020. For the long term, there could be discussion of carbon emissions reductions. No consensus existed in either case, but further work was recommended on both medium and long term goals;
- l) recognized that while there was no consensus, some GIACC members were of the view that it would be necessary and feasible to achieve carbon neutral growth in the medium term, relative to a baseline of 2005, and to achieve substantial CO₂ emissions reduction for the long term for global international aviation;
- m) recognized that under the recommended strategy, goals would not attribute specific obligations to individual States. The different circumstances, respective capabilities and contribution of developing and developed States to the concentration of aviation GHG emissions in the atmosphere would determine how each State may contribute to achieving the global aspirational goals;
- n) agreed to adopt the basket of measures developed by GIACC, from which States may choose (<http://www.icao.int/>), covering aircraft-related technology development, improved air traffic management and infrastructure use, more efficient operations, economic/market-based measures, and regulatory measures. The basket includes measures to facilitate access to assistance, particularly for developing countries;
- o) directed that the ICAO Secretariat further develop the initial table showing the basket of measures, and directed that the Secretariat continue to develop, and update as necessary, guidance to States on the adoption of those measures, including measures to assist developing countries, as well as access to financial resources, technology transfer and capacity building;

- p) acknowledged that there remains disagreement on the application of market-based measures across national borders. The Council undertook to establish a process to develop a framework for market-based measures in international aviation, taking into account the conclusions of the High-Level Meeting and the outcome of the UNFCCC COP-15 with a view to complete this process expeditiously;
- q) encouraged States to develop action plans which articulate the proposed approach in that State, and file those plans with ICAO;
- r) directed the Secretariat to develop and implement a mechanism under Article 67 of the Convention to collect annually from States data on traffic and fuel consumption;
- s) would explore approaches for providing technical and financial assistance in the reporting process to developing countries;
- t) directed the Secretariat, working through CAEP, to develop a CO₂ standard for new aircraft types;
- u) directed that the Secretariat report every three years through the Council to the Assembly; and
- v) acknowledged, with thanks, the GIACC for the timely completion of its work, thereby fulfilling its assigned mandate (A36-22 Appendix K).

3. Furthermore, the Council directed that CAEP adjust its activities accordingly and undertake the tasks necessary to deliver the agreed Programme of Action.

4. The President of the Council thanked the fifteen Council Representatives from States represented on the GIACC for having facilitated the work of the Council by providing the text for Council action; the GIACC process had started at the beginning of 2008 and had not been an easy process, but had provided a good product which was today's Council decision. The President invited all Representatives to encourage their authorities to participate in the High-Level Climate Change Meeting which would take place from 7 to 9 October 2009 at ICAO Headquarters, and to provide any papers they wished to submit for that meeting on time for their translation. The minutes recording the Council's discussions on this item (187/13 & 14) would be included in the material to be distributed to the High-Level Meeting. The President trusted that the High-Level Meeting would bring positive results and clear guidance for ICAO in preparation for the COP-15 United Nations Climate Change Conference (Copenhagen, 7 – 18 December 2009) and for its future work related to the environment. The President wished to thank, especially, the Members of the GIACC and the Secretariat who had done excellent work during the GIACC meetings.

**Address by the Executive Secretary
of the United Nations Framework Convention on Climate Change (UNFCCC),
Mr. Yvo de Boer**

Ladies and gentlemen

Copenhagen is the moment when humanity has the opportunity to deal decisively with climate change.

Science tells us that industrialised country emissions must fall 25 to 40 percent by 2020 over 1990 levels to avoid dangerous climate change and developing nations must get support to further limit the growth of their emissions if we are to avoid the worst climate impacts.

We need a further push to raise ambitions to these levels.

But there is also no doubt that in the past few months a common political will to make Copenhagen a success has been rising.

At this historic point in time, ICAO has an urgent role to play to help make this agreement achievable and believable.

First, because aviation already accounts for about two percent of global, man-made, greenhouse gas emissions and the latest forecasts from the Group on International Aviation and Climate Change forecast large rises by 2050, unless they are checked.

Second, because aviation has a high profile and has the power to lead by example in addressing climate change.

As you convene to discuss these GIACC recommendations and consider further steps for the sector, Parties to the UNFCCC are meeting in Bangkok.

They are working in detail on the substance of the negotiating text for Copenhagen.

This contains a number of proposals to include emissions from international aviation in a Copenhagen outcome.

I strongly encourage you to ask yourselves what is required right now to contribute to a meaningful Copenhagen deal.

Proposals from Parties to the UNFCCC on international aviation include:

- setting a global emission reduction target and allowing the use of existing and new market mechanisms to achieve that target;
- working through ICAO to enable an international agreement to be approved by 2011;
- amending Article 2.2 of the Kyoto Protocol;

- commencing negotiations on a sectoral agreement to be concluded at COP-17;
- and raising funds from levies or instruments linked to international aviation emissions to support adaptation and mitigation in developing countries.

The Convention is based on the principle of common but differentiated responsibilities.

ICAO, on the other hand, is based on the fair and equitable treatment of all airlines.

Innovative thinking is needed to apply these principles in a way that proposes actions that can be acceptable both under the UNFCCC and ICAO.

Parties to the Convention delegated the limitation or reduction of these emissions to ICAO twelve years ago.

Possible solutions are available and now is the time to be clear to inform COP-15 of practical actions to regulate international aviation emissions, and to offer the developing world support.

For example, using obtained revenues resulting from any scheme to limit or reduce emissions to assist developing countries in addressing climate change would be in line with the provisions of the Convention.

I hope that your high-level meeting can agree on meaningful goals to limit and to reduce emissions and agree on an effective implementation framework, including deadlines, to achieve this.

I am aware of your work on operational and technical measures to reduce emissions, and of your work towards market-based measures. I hope you can successfully finish this work.

It's encouraging that a group of airlines is calling for the inclusion of aviation in a Copenhagen agreement and ICAO may want to take this into consideration.

Parties to the UNFCCC are looking forward to receiving ICAO's input.

I hope that this meeting will be a major step towards that. Thank you.

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WORKING PAPERS:

HLM-ENV WP	Agenda Item	Title	Languages	Presented by
1 (Revised)	---	Provisional agenda and annotations	E,F,S,R,A,C	Secretariat
2	---	Meeting arrangements and tentative timetable	E,F,S,R,A,C	Secretariat
3	1	Council decision on the work of the Group on International Aviation and Climate Change	E,F,S,R,A,C	Secretariat
4 (IP)	1	Report of the Group on International Aviation and Climate Change	E,F,S,R,A,C	Secretariat
5	1	Aspiration goals and implementation options	E,F,S,R,A,C	Secretariat
6 (Revised)	2	Proposals for strategies and measures to achieve emissions reductions	E,F,S,R,A,C	Secretariat
7 (Revised)	2	Technical and operational means to achieve emissions reductions	E,F,S,R,A,C	Secretariat
8	2	Market-based instruments and climate change	E,F,S,R,A,C	Secretariat
9	2	Aviation alternative fuels	E,F,S,R,A,C	Secretariat
10	3	Means to measure progress	E,F,S,R,A,C	Secretariat
11	4	Financial and human resources	E,F,S,R,A,C	Secretariat
12 (Revised)	5	Elements of an ICAO position for COP15	E,F,S,R,A,C	Secretariat
13	1, 2	Synchronization of tourism and air transport policy on climate change mitigation	E	UNWTO
14	1	Aspirational goals	E,F,S,R,A,C	Presented by Sweden, on behalf of the EC and its Member States and by the other States Members of the ECAC
15	2	Strategies and measures to achieve emissions reductions	E,F,S,R,A,C	Presented by Sweden, on behalf of the EC and its Member States and by the other States Members of the ECAC

HLM-ENV WP	Agenda Item	Title	Languages	Presented by
16	3	Means to measure progress	E,F,S,R,A,C	Presented by Sweden, on behalf of the EC and its Member States and by the other States Members of the ECAC
17	4	Financial and human resources	E,F,S,R,A,C	Presented by Sweden, on behalf of the EC and its Member States and by the other States Members of the ECAC
18	5	Recommendations to COP15	E,F,S,R,A,C	Presented by Sweden, on behalf of the EC and its Member States and by the other States Members of the ECAC
19 (Revised)	1	A global sectoral approach for aviation	E	ACI, CANSO, IATA and ICCAIA
20	2	The view of the Arab Republic of Egypt, as one of the developing countries, on civil aviation emissions trading	E,F,S,R,A,C	Egypt
21	1	GIACC Program of Action and beyond	E,F,S,R,A,C	Australia
22	1	Alternative framework for small GHG emitters	E	IBAC
23 (IP)	2	Emissions reductions: United Arab Emirates contribution	E,A	United Arab Emirates
24	1	Aviation and emissions - position paper	E,A	United Arab Emirates
25	1	Beyond the GIACC Program of Action	E,F	Canada, Mexico and the United States
26 (IP)	2	Measures adopted by civil aviation sector in India	E	India

HLM-ENV WP	Agenda Item	Title	Languages	Presented by
27 (IP)	2	Progress within IMO on control of greenhouse gas emissions from ships engaged in international trade	E	IMO
28	2	African position on the GIACC Programme of Action	E,F	Nigeria, on behalf of African States

INFORMATION PAPERS:

HLM-ENV IP	Agenda Item	Title	Languages	Presented by
1	1	Resolution A36-22: Consolidated statement of continuing ICAO policies and practices related to environmental protection	E	Secretariat
2	1	Minutes of the 13th and 14th meetings of the 187th Session of the ICAO Council	E	Secretariat
3	1	Declaration of the Leaders of the Major Economies Forum on Energy and Climate Change	E	Secretariat
4	1	Aviation's contribution to climate change	E	Secretariat

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