



**Written Submission of the International Civil Aviation Organization (ICAO)
to the Workshop on Shared Vision for Cooperative Action
in the Fourth Session of the AWG-LCA**

(Poznan, Poland, 1-10 December 2008)

Shared Vision on International Aviation and Climate Change

Executive Summary

This submission summarizes the on-going efforts of ICAO in the development of a global framework to address GHG emissions from international aviation, which would be relevant to the discussions under the AWG-LCA relating to the Bali Action Plan paragraph 1(a) on “*A shared vision for long-term cooperative action, including a long-term global goal for emission reductions, to achieve the ultimate objective of the Convention, in accordance with the provisions and principles of the Convention, in particular the principles of common but differentiated responsibilities and respective capabilities, and taking into account social and economic conditions and other relevant factors*”.

While emissions from domestic aviation can be considered using the same approach applied to emissions from other sectors situated within a State, emissions from international aviation differ as they are not contained within a single State, and may occur within the territory of other States or in areas outside of recognized national boundaries such as over the high seas. Actions on international air transport taken by a State might have direct impact on the operations in another State. In this context, a well harmonized global framework is indispensable to effectively and globally deploy equitable measures to address international aviation emissions.

ICAO is actively working to develop this global framework through an aggressive *ICAO Programme of Action on International Aviation and Climate Change*, based upon the Resolution adopted in the 36th Session of the ICAO Assembly in September 2007, encompassing three key elements of 1) global aspirational goals for international aviation, 2) comprehensive measures to reduce emissions and 3) monitoring and implementation framework.

ICAO has formed an ad hoc high level group, consisting of 15 senior government officials from States that are geographically representative of developed and developing countries. This Group on International Aviation and Climate Change (GIACC) is tasked to develop the ICAO Programme of Action, a comprehensive framework for addressing the global impact of aircraft emissions. The GIACC has met twice and is currently considering the establishment of short, medium and long-term aspirational goals for fuel burn for the international aviation sector.

It must be emphasized that the development schedule of the Programme of Action by ICAO is aligned with the Bali Action Plan and supports UNFCCC efforts. The Programme of Action will be reviewed at a high-level meeting of ICAO and it is intended to ultimately reflect the shared vision and strong will of all Contracting States of ICAO to address emissions from international aviation. It is important to note that the Contracting States of ICAO represent a virtually identical constituency as the States that are parties to the UNFCCC.

1. CONTEXT : INTERNATIONAL AVIATION'S CONTRIBUTION TO GLOBAL CLIMATE

The ultimate objective of the United Nations Framework Convention on Climate Change (UNFCCC) is to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent an irreversible change in the global climate system. In this regard all activities, independent of their share of the contribution must pursue the means necessary to address their part of responsibility in the global picture.

The most comprehensive assessment to-date concerning aviation's impact on the upper atmosphere is contained in the *IPCC Special Report on Aviation and the Global Atmosphere* in 1999. The IPCC AR4 includes an update of the main finding of the Special Report as well as new findings related to aviation emissions. Findings related to aviation emissions *inter alia* that total aviation (domestic and international) CO₂ emissions is approximately 2 percent of all global CO₂ emissions.

Within this 2 percent of the global CO₂ emissions attributed to the aviation sector, a substantive part represents domestic aviation emissions, which follow the same treatment agreed under the UNFCCC and Kyoto Protocol as other emissions of a domestic nature. Slightly more than half of aviation emissions are attributed to international aviation operations. However, this amount is projected to grow around 3 to 4 percent per year, and ICAO has been actively developing a global framework to address emissions from international aviation as described in paragraph 2.

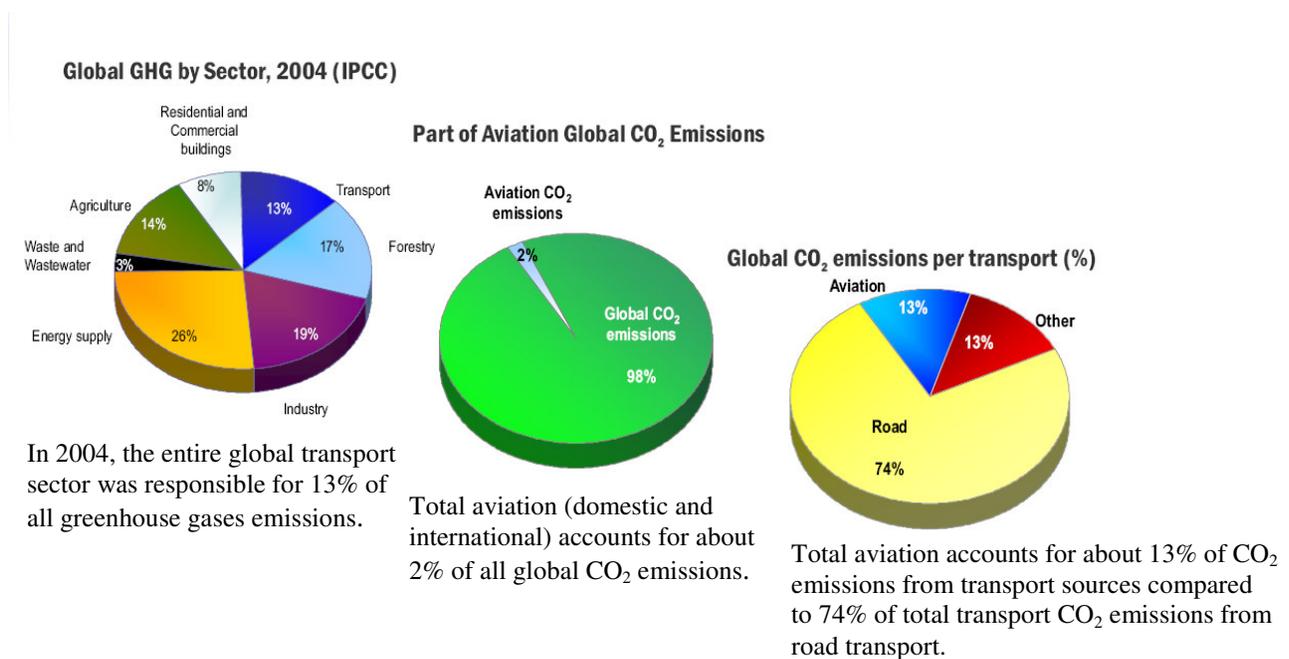


Figure 1 - Global CO₂ emissions and global Green House Gases (GHG) per sector Source – IPCC

The Kyoto Protocol includes binding emissions reduction targets for developed countries for the period 2008-2012. Emissions from domestic aviation are included in the total emissions reported and subject to these targets. Emissions from international aviation are addressed under Article 2.2 of the Kyoto

Protocol, which reads: *“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”*.

Several key characteristics of international aviation led to its inclusion in Article 2.2 of the Kyoto Protocol. One of them is the complexity of monitoring and collecting information and assigning emissions of a mobile nature. An international aircraft route might include over-flying different sovereign States and the high seas, and there is currently an unresolved debate over the allocation of these emissions.

Air transport is a fast and reliable mode of transport with no comparative alternative for long distance travel. Actions on international air transport taken by a State might have direct impact on the operations in another State. In order to collect the required data and put in place effective measures to address international aviation emissions, a globally harmonized framework is indispensable.

2. ICAO’S VISION ON AVIATION EMISSIONS

2.1 Group on International Aviation and Climate Change (GIACC)

All 190 Contracting States of the ICAO agreed to the formation of an ad-hoc high-level group called GIACC (Group on International Aviation and Climate Change) in the 36th Session of the ICAO Assembly in September 2007. The GIACC has been tasked to develop a global framework through an aggressive *ICAO Programme of Action on International Aviation and Climate Change* with technical support provided by CAEP (Committee of Aviation Environmental Protection), a technical committee of the ICAO Council. The GIACC was formed in January 2008, comprising of 15 senior government officials representative of all ICAO regions with the equitable participation of developing and developed States.

Three key elements of the ICAO Programme of Action to be developed are 1) global aspirational goals for international aviation, 2) comprehensive measures to reduce emissions, and 3) monitoring and implementation framework consistent with the Assembly Resolution A36-22 Appendix K (attached). GIACC held its first and second meetings in February 2008 and July 2008, respectively, in which the three working groups were formed to expedite work on each of the three key elements of the ICAO Programme of Action, as follows:

WG/1 Global Aspirational Goals Working Group *“Establish the feasibility of possible aspirational goals which emerged from discussion at GIACC/2 and to provide a set of options for global aspirational goals in the form of fuel efficiency, to GIACC/3 for consideration.”*

WG/2 Measures to Achieve Emissions Reductions *“Provide information on measures and good practice examples of which States could take to address the climate change impact of international aviation.”*

WG/3 Monitoring and Implementation Working Group *“Recommend to the GIACC how best to monitor and report on progress towards aspirational goals, in accordance with international obligations.”*

These working groups have been tasked with bringing specific proposals forward for consideration at the 3rd GIACC meeting, to be held from 16 to 18 February 2009. In parallel with the GIACC activities,

CAEP has been progressing its technical work that will support and continue to inform the GIACC process, mainly on goal setting and mitigation activities.

Goal Setting Activities

Prior to the formation of GIACC, the 7th meeting of CAEP in February 2007 decided to establish medium and long-term fuel burn goals relating to technological development of airframe and engines, as well as those goals relating to operational measures such as the improvement of air traffic management. Utilizing the Independent Experts (IE) processes under CAEP, both activities are steadily underway and the projections on technological and operational improvements will be incorporated into the environmental goals assessment for year 2016, 2026, 2036 and 2050 timeframes using prediction models. The “Commercial Aircraft System Fuel Efficiency Metric” (CASPER) is the product of payload and distance and was agreed as the fuel-efficiency metric for the analyses of the environmental goals assessment.

Mitigation - Comprehensive Measures to reduce emissions from international aviation

Much work of the Organization has been focused on measures to reduce emissions. Measures explored and under development by ICAO are being made available to the GIACC process and a summary of this work is provided below.

ICAO published in 2004 the guidance to achieve fuel efficiency through operational measures - *Operational Opportunities to Minimize Fuel Use and Reduce Emissions* (Circular 303). This guidance identifies and reviews various operational opportunities and techniques for minimizing fuel consumption and hence GHG emissions in civil aviation operations. Operations covered in the guidance are: ground-level and in-flight aircraft operations, ground service equipment (GSE) and auxiliary power units (APUs), with potential actions to facilitate their broader application. A new guidance document replacing the current Circular 303, is being prepared with an update on current initiatives relating to fuel-burn reductions as well as extended provisions including reporting and monitoring of aviation emissions and aviation emissions assessment methodologies.

ICAO has also developed guidance - *Global Air Navigation Plan* (Doc 9750) which provides a planning strategy aimed at achieving benefits of Air Traffic Management (ATM) to assist Contracting States and regional planning groups in identifying the most appropriate operational improvements and to support their implementation such as, flexible use of airspace, reduced vertical separation minimum, performance based navigation, air traffic flow management, and terminal area design and management. Each ICAO region has identified specific performance objectives, supported by the Global Air Navigation Plan Initiatives, and has developed work programmes to bring near and medium term benefits, while integrating those programmes with the extensive work already accomplished.

With regard to market-based measures, ICAO has developed policies and guidance material and has been collecting information on three market-based measures: 1) voluntary measures; 2) emission-related charges; and 3) emissions trading.

ICAO developed a template in 2004 for voluntary agreements between aviation industries and public organizations, and has collected information on voluntary actions to reduce aviation GHG emissions by Contracting States and various stakeholders in 2007. Sharing the information would help other entities to initiate similar measures or improve their current measures. In 2007 ICAO has published guidance on local emission-related charges in 2007 (*Guidance on Aircraft Emissions Charges Related to Local Air Quality*, Doc 9884) and developed the guidance for use by States for incorporating international aviation

emissions into their trading schemes (*The Guidance on the Use of Emissions Trading for Aviation*, Doc 9885).

CAEP is now studying the main issues related to linking emissions trading schemes including aviation. It is also exploring the potential for emissions offset measures to mitigate effects of aviation on climate change. In June 2008, ICAO hosted a workshop on Aviation and Carbon Markets that provided further information on this issue to the consideration of GIACC.

Alternative fuels are also part of the possible solutions and GIACC has requested ICAO to provide updated information on this subject by its next meeting. A workshop with information on the main current activities in this field is being organized from 10 to 12 February 2009.

2.2 Timeline to complete the ICAO Programme of Action

The outcomes of on-going three working groups will be considered at GIACC's third meeting in February 2009, followed by its final meeting in June 2009. Finally, the recommendations from GIACC on the ICAO Programme of Action will be reviewed at a high-level meeting at a time which would take into account COP 15 in December 2009.

3. INTERNATIONAL AVIATION IN THE BALI ROAD MAP

The 36th Session of the ICAO Assembly, held in September 2007, agreed on the development of a Programme on International Aviation and Climate Change. In December 2007, a comprehensive programme was also launched at the UNFCCC COP13 to enable the development of future climate change agreement - the so called "Bali Road Map". Interestingly, ICAO and UNFCCC have set up two separate but parallel streams of activity, which will culminate at the end of 2009.

Although international aviation does not figure amongst the major focus areas in the new climate agreement architecture, substantial discussions have already taken place in the various subsidiary bodies of the convention on the best way to address these emissions in the future. ICAO has cooperated with consistent and timely information to respond to the UNFCCC requests with a view to facilitate the process leading to COP/15 and has firmly reiterated its commitment for full cooperation in the pursuit of the best results in addressing international aviation emissions. The paragraphs below describe ICAO's contributions to the process.

3.1 Bangkok Climate Talks (March 2008)

The need to include aviation and maritime bunker emissions with specific targets in the commitments of Annex I countries under the post-2012 framework was a main subject of discussion at the first part of the fifth session of Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP). ICAO provided presentations to two sessions of the workshop, namely "Possible approaches targeting sectoral emissions" and "The greenhouse gases (GHG), sectors and source categories to be covered". Information was provided on emissions from international aviation and ICAO policies on quantification, mitigation, adaptation and technology transfer; and on the challenges regarding emissions data, methodological and legal issues. This information can be found at <http://www.icao.int/icao/en/env/statements.htm>. On the ensuing discussions there was a difference of opinion where some parties expressed the need to maintain discussions related to international aviation in ICAO while others called for action under UNFCCC. After deliberations, it was agreed that discussions on this item should continue during the next meetings.

ICAO provided a Statement to the First session of the Ad hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA1), highlighting the ongoing work in ICAO to develop a Programme of Action on Aviation and Climate Change, the results of the first meeting of the GIACC and the need to further strengthen the cooperation between the two organizations, building upon and making the best use of their expertise. ICAO also called for a more effective collaboration within member States, emphasizing how essential it is to align and coordinate the positions and views of the States representatives taking part in meetings in UNFCCC and ICAO when discussing environmental future international agreements in order to have successful policies for civil aviation and the environment.

3.2 Bonn Climate Talks (June 2008)

In the AWG KP, the main issue for aviation remained the possible inclusion of international aviation in the Annex I countries targets. Under the item “sectors and source categories”, Parties discussed possible actions under the UNFCCC, IMO, and ICAO. Some Parties supported controlling maritime and aviation emissions under the UNFCCC, while others preferred addressing them through IMO and ICAO.

The meeting was provided with the summary of the Chair containing all ideas raised by Parties. This summary included the following options: 1) ICAO and IMO should take the lead, 2) UNFCCC should agree on mitigation objectives, and ICAO and IMO should implement these objectives, and 3) UNFCCC should take the lead by allocating emissions from bunker fuels to national totals, and ICAO and IMO to provide technical expertise. Strong insistence by some parties led to the bracketing of the section dealing with bunker fuels in the final document. The AWG KP agreed to continue discussions at their following meeting in Accra.

Discussions on bunker fuels were historically conducted under the Subsidiary Body for Scientific and Technological Advice (SBSTA), where no progress had been achieved since the 22nd sessions of SBSTA three years ago. The 28th session of SBSTA in June 2008 agreed that: “for the next three sessions, the UNFCCC expects to receive information from both ICAO and IMO on bunker fuels, and Parties under the UNFCCC will have an exchange of views on this information”. The issue of bunker fuels will again be considered by SBSTA to decide on any follow-up activities starting in May-June 2010.

3.3 Accra Climate Talks (August 2008)

Aviation was not the main focus of this meeting, nevertheless there were a few side events related to aviation. ICAO Secretariat, in cooperation with aviation manufacturers (ICCAIA), airlines (IATA) and air navigation providers (CANSO) held a side event entitled “Aviation Actions and Initiatives on Climate Change”. Information was presented on the main achievements and current work to address emissions from international aviation at both technological and operational levels.

The main focus of the meetings was on how to involve developing countries on a new post 2012 agreement. Most of the attention in the AWG-LCA discussions was on reducing emissions through deforestation, and on cooperative sectoral approach and sector specific actions, the so called “Sectoral approach”. The Accra meeting made clear that sectoral approaches were not about establishing mandatory targets. ICAO provided the meeting with the developments on ICAO’s Carbon Calculator, the results of the second GIACC meeting, and the results of the ICAO’s Aviation and Carbon Markets Workshop.

The AWG KP 6 in Accra when discussing agenda item (Agenda item 3 (c)) "Greenhouse gases and source categories to be covered, and possible approaches targeting sectoral emissions" concluded that the group did not have time to consider the sub-item "Emissions from aviation and marine bunker fuels" and agreed that it would be considered at the resumed sixth session.

Discussions also focussed on the need for finance and technology transfer for mitigation and adaptation. Of note is that aviation was mentioned by some parties as an example of source of revenue for these measures.

4. NEXT STEPS

There remains very short time available for preparing and drafting the Copenhagen agreement. ICAO will continue to follow up and provide information and advice to the UNFCCC process leading to the 15th Session of the Conference of the Parties (COP15) in Copenhagen and is attaching high priority to the activities supporting this process. Currently there is synchronisation of activities is as follows:

ICAO/GIACC PROCESS	DATES	UNFCCC PROCESS	DATES
Third GIACC meeting	16-18 Feb. 2009	AWG-KP7 and AWG-LCA5	29 March-8 April 2009
Aviation and alternative fuels workshop	10-12 Feb. 2009	Thirtieth sessions of the UNFCCC Convention subsidiary bodies - SBSTA and SBI, AWG-LCA6 and AWG-KP8	1-12 June 2009
Fourth GIACC meeting	1-3 June 2009		
High Level Meeting in connection with COP/15	(date tbd)		
CAEP Steering Group	22-26 June 2009	AWG-KP9 and the AWG-LCA7	August 2009
Alternative fuels Conference	November 2009	COP 15	30 Nov.-11 Dec. 2009
Eight Session of Committee on Aviation Environmental Protection (CAEP/8)	1-12 Feb. 2010		

5. CONCLUDING REMARKS

Emissions from international aviation are global in nature and cannot be allocated to national or recognized geographic boundaries. Assigning international emissions is an extremely complex task at best and difficult to implement or enforce as made clear in the past discussions of SBSTA.

As a specialized agency responsible for the highest possible degree of uniformity and harmonization among its Contracting States and stakeholders on international aviation matters, ICAO is working actively and aggressively for a global framework to address emissions from international aviation sector through the development of ICAO Programme of Action.

It should be noted that ICAO and its Contracting States recognize the critical importance of providing continuous leadership to international civil aviation in limiting and reducing its emissions that contribute to global climate change in the last ICAO Assembly (Resolution A36-22 Appendix K).

It should also be noted, as a result of intensive discussions during the last ICAO Assembly, that all Contracting States acknowledged 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 (Resolution A36-22 Appendix K).

Good progress is being achieved in the developments of the ICAO's Programme of Action under three key elements: global aspirational goals, comprehensive measures, and monitoring and implementation framework, with the support of technical expertise in the fields of aviation and environment. The ICAO Programme of Action will ultimately reflect the vision and strong will of all Contracting States of ICAO to achieve the best results on addressing aviation emissions.

ATTACHMENT

Resolution A36-22: Consolidated statement of continuing ICAO policies and practices related to environmental protection

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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.

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— END —