



**WORKING PAPER**

**ASSEMBLY — 38TH SESSION**

**EXECUTIVE COMMITTEE**

**Agenda Item 17: Environmental protection**

**CONSOLIDATED STATEMENT OF CONTINUING ICAO POLICIES AND PRACTICES  
RELATED TO ENVIRONMENTAL PROTECTION – CLIMATE CHANGE**

(Presented by the Council of ICAO)

**EXECUTIVE SUMMARY**

Submitted for adoption is a proposal for the revisions to Assembly Resolution A37-19, *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change*, in light of the progress made since the 37th Session of the Assembly in key areas of work on international aviation and climate change, including global aspirational goals (see A38-WP/26); technological and operational measures (A38-WP/25); sustainable alternative fuels for aviation (A38-WP/28); market-based measures (MBMs) (A38-WP/29); States' action plans (A38-WP/30); and assistance to States (A38-WP/31).

While the Council decided to submit the proposal presented in the Appendix, there were still different views of some Council members on issues related to MBMs, in particular in paragraph 17.

A proposal for the revision of Assembly Resolution A37-18 is presented in a separate working paper (A38-WP/27, *Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality*).

**Action:** The Assembly is invited to adopt the revised Assembly Resolution on the consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change, presented in the Appendix.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective C, <i>Environmental Protection and Sustainable Development of Air Transport</i> .
<i>Financial implications:</i>	The activities referred to in this working paper will be undertaken within the resources available in the 2014 – 2016 Regular Programme Budget and from extra budgetary contributions.
<i>References:</i>	A38-WP/25, <i>Developments in Civil Aviation and the Environment</i> A38-WP/26, <i>Present and Future Trends in Aircraft Noise and Emissions</i> A38-WP/28, <i>Sustainable Alternative Fuels for Aviation</i> A38-WP/29, <i>Market-based Measures (MBMs)</i> A38-WP/30, <i>States' Action Plans for CO<sub>2</sub> Emissions Reduction Activities</i> A38-WP/31, <i>Assistance to States – Aviation and Climate Change</i> A38-WP/32, <i>Developments in other UN bodies and international organizations</i> A38-WP/33, <i>United Nations Climate Neutral Initiative</i> Doc 9958, <i>Assembly Resolutions in Force (as of 8 October 2010)</i> C-MIN 199/13 <sup>1</sup>

<sup>1</sup> C-MIN 199/13 under preparation.



## APPENDIX

### **Resolution 17-xx: Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change**

*Whereas* ICAO and its member 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;

*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;

*Whereas* the ultimate objective of the United Nations Framework Convention on Climate Change (UNFCCC) is to achieve stabilization of greenhouse gas (GHG) concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system;

*Whereas* the Kyoto Protocol, which was adopted by the Conference of the Parties to the UNFCCC in December 1997 and entered into force on 16 February 2005, calls for developed countries (Annex I Parties) to pursue limitation or reduction of greenhouse gases from “aviation bunker fuels” (international aviation) working through ICAO (Article 2.2);

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

*Whereas* a comprehensive assessment of aviation’s impact on the atmosphere is contained in the special report on *Aviation and the Global Atmosphere*, published in 1999, which was prepared at ICAO’s request by the Intergovernmental Panel on Climate Change (IPCC) in collaboration with the Scientific Assessment Panel to the Montreal Protocol on Substances that Deplete the Ozone Layer;

*Whereas* the IPCC special report recognized that the effects of some types of aircraft emissions are well understood, it revealed that the effects of others are not, and identified a number of key areas of scientific uncertainty that limit the ability to project aviation’s full impacts on climate and ozone;

*Whereas* ICAO requested that the IPCC include an update of the main findings of the special report in its Fourth Assessment Report, published in 2007 and its Fifth Assessment Report to be published in 2014;

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

*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;

*Recognizing* that this Resolution does not set a precedent for or prejudice the outcome of negotiations under the UNFCCC and its Kyoto Protocol nor represent the position of the Parties to the UNFCCC and its Kyoto Protocol;

~~Noting that, consistent with Assembly Resolution A36-22, the High level Meeting on International Aviation and Climate Change in October 2009 (HLM ENV/09) endorsed the Programme of Action on International Aviation and Climate Change which included global aspirational goals in the form of fuel efficiency, a basket of measures and the means to measure progress;~~

~~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;~~

~~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;~~

~~Acknowledging the significant technological progress made in the aviation sector, with aircraft produced today being about 80 per cent more fuel efficient per passenger kilometre than in the 1960's;~~

~~Welcoming the agreement by the Committee on Aviation Environmental Protection (CAEP) of certification requirements for a global CO<sub>2</sub> Standard for aircraft;~~

~~Recognizing that air traffic management (ATM) measures under the ICAO's Global Air Navigation Plan contribute to enhanced operational efficiency and the reduction of aircraft CO<sub>2</sub> emissions;~~

~~Welcoming the adoption of the Aviation System Block Upgrades (ASBUs) strategy at the ICAO Twelfth Air Navigation Conference in November 2012;~~

~~Noting that the HLM ENV/09 declared that ICAO would establish a process to develop a framework for market based measures in international aviation, taking into account the conclusions of the HLM ENV/9 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; { MBMs }~~

~~Recalling that Assembly Resolution A37-19 requested the Council, with the support of member States, to undertake work to develop a framework for market-based measures (MBMs) in international aviation, including further elaboration of the guiding principles listed in the Annex to A37-19, for consideration by the 38th Session of the ICAO Assembly; { MBMs }~~

~~Recognizing the importance of avoiding a multiplicity of approaches for the design and implementation of MBM framework and MBM schemes; { MBMs }~~

~~Recalling that Assembly Resolution A37-19 requested the Council to explore the feasibility of a global MBM scheme to address emissions from international aviation; { MBMs }~~

~~Noting the decision of the Council on 9 November 2012, which recognized that the results of the qualitative and quantitative analysis of the three options for a global MBM scheme evaluated by the Secretariat with the support of the Experts on MBMs demonstrated that all three options were technically feasible and had the capacity to contribute to achieving ICAO's environmental goals, and that the Council agreed that further quantitative analysis of the three options needed to be undertaken to develop more robust and concrete conclusions; { MBMs }~~

Recognizing the potential desirability of a global MBM scheme in terms of providing an additional means of promoting achievement of the aspirational global goal referred to in paragraph 7: { MBMs }

Noting the support of the aviation industry for a single global carbon offsetting scheme, as opposed to a patchwork of State and regional MBMs, as a cost effective measure to complement a broader package of measures including technology, operations and infrastructure measures: { MBMs }

~~Noting that the Conference on Aviation and Alternative Fuels in November 2009 (CAAF/09) endorsed the use of sustainable alternative fuels for aviation, particularly the use of drop-in fuels in the short to mid-term, as an important means of reducing aviation emissions;~~

~~Also noting that the CAAF/09 established an ICAO Global Framework for Aviation Alternative Fuels (GFAAF);~~

Noting the progress achieved in proving the technological feasibility of drop-in sustainable alternative fuels for aviation and that such fuels will require the introduction of appropriate policies and incentives to create a long-term market perspective and address the initial price gap with conventional jet fuel;

Acknowledging the need for such fuels to be developed and deployed in an economically feasible, socially and environmentally acceptable manner and the need for increased harmonization of the approaches to sustainability;

Noting that, consistent with Assembly Resolution A37-19, a substantial strategy for capacity building was undertaken by the Organization to assist the preparation and submission of States' action plans, including the holding of hands-on training workshops and the development of guidance material, an interactive web-interface and the ICAO Fuel Savings Estimation Tool (IFSET);

Welcoming that, as of 30 June 2013, 61 member States that represent 78.89 per cent of global international air traffic voluntarily prepared and submitted their action plans to ICAO;

Noting that the ICAO "Assistance for Action – Aviation and Climate Change" Seminar in October 2012 highlighted the active involvement of member States and international organizations in the activities related to States' action plans, explored possible sources of financial support for environmental action and provided an opportunity to share information and build partnerships in order to facilitate assistance identified by States for the preparation and implementation of their action plans;

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;

Affirming that specific measures to assist developing States as well as to facilitate access to financial support, technology transfer and capacity building should be initiated as soon as possible;

Whereas the Kyoto Protocol provides for different flexible instruments (such as the Clean Development Mechanism — CDM) which would benefit projects involving developing States;

Affirming that addressing GHG emissions from international aviation requires the active engagement and cooperation of States and the industry, and noting the collective commitments announced

by Airports Council International (ACI), Civil Air Navigation Services Organisation (CANSO), International Air Transport Association (IATA), and International Coordinating Council of Aerospace Industries Associations (ICCAIA) on behalf of the international air transport industry to continuously improve CO<sub>2</sub> efficiency by an average of 1.5 per cent per annum from 2009 until 2020, to achieve carbon neutral growth from 2020 and to reduce reducing its carbon emissions by 50 per cent by 2050 compared to 2005 levels;

*Recognizing* the need to monitor and report the potential impacts of climate change on international aviation operations and related infrastructure; and

*Recognizing* the progress made by ICAO in its implementation of the Climate Neutral UN initiative and the significant support provided by ICAO to the initiative, in particular through the development of a common methodology for calculating GHG emissions from air travel;

*The Assembly:*

1. *Resolves* that this Resolution, together with Resolution ~~A38-yy~~A37-18: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality, supersede Resolutions ~~A37-18 and A37-19~~A36-22 and constitute the consolidated statement of continuing ICAO policies and practices related to environmental protection;

2. *Requests* the Council to:

- a) ensure that ICAO exercise continuous leadership on environmental issues relating to international civil aviation, including GHG emissions;
- b) continue to study policy options to limit or reduce the environmental impact of aircraft engine emissions and to develop concrete proposals and provide advice as soon as possible to the Conference of the Parties of the UNFCCC, encompassing technical solutions and market-based measures, and taking into account potential implications of such measures for developing as well as developed countries; and
- c) continue to cooperate with organizations involved in policy-making in this field, notably with the Conference of the Parties to the UNFCCC;

3. *Reiterates* that:

- a) ICAO should continue to take initiatives to promote information on scientific understanding of aviation's impact and action undertaken to address aviation emissions and continue to provide the forum to facilitate discussions on solutions to address aviation emissions; and
- b) 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;

4. *Reaffirms* that this Resolution does not set a precedent for or prejudge the outcome of negotiations under the UNFCCC and its Kyoto Protocol nor represent the position of the Parties to the UNFCCC and its Kyoto Protocol;

Global Aspirational Goals – paragraphs 5 to 10

~~5.4.~~ *Resolves* that States and relevant organizations will work through ICAO to achieve a global annual average fuel efficiency improvement of 2 per cent until 2020 and an aspirational global fuel efficiency improvement rate of 2 per cent per annum from 2021 to 2050, calculated on the basis of volume of fuel used per revenue tonne kilometre performed;

~~6.5.~~ *Agrees* that the goals mentioned in paragraph ~~5-4~~ above would not attribute specific obligations to individual States, and 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 voluntarily contribute to achieving the global aspirational goals;

~~7.6.~~ *Also resolves* that, without any attribution of specific obligations to individual States, ICAO and its member States with relevant organizations will work together to strive to achieve a collective medium term global aspirational goal of keeping the global net carbon emissions from international aviation from 2020 at the same level, taking into account: the special circumstances and respective capabilities of States, in particular developing countries; the maturity of aviation markets; the sustainable growth of the international aviation industry; and that emissions may increase due to the expected growth in international air traffic until lower emitting technologies and fuels and other mitigating measures are developed and deployed;

- ~~a) the special circumstances and respective capabilities of developing countries;~~
- ~~b) that the different circumstances, respective capabilities and contribution of States to the concentration of aviation GHG emissions in the atmosphere will determine how each State may contribute to achieving the global aspirational goals;~~
- ~~c) that some States may take more ambitious actions prior to 2020, which may offset an increase in emissions from the growth of air transport in developing States;~~
- ~~d) the maturity of aviation markets;~~
- ~~e) the sustainable growth of the international aviation industry; and~~
- ~~f) that emissions may increase due to the expected growth in international air traffic until lower emitting technologies and fuels and other mitigating measures are developed and deployed;~~

8. Recognizes the many actions that ICAO member States have taken and intend to take in support of the achievement of the collective aspirational goals, including air traffic management modernization, acceleration of the use of fuel-efficient aircraft technologies, and the development and deployment of sustainable alternative fuels, and *encourages* further such efforts;

~~9.7.~~ *Agrees* to review, at its ~~39th~~<sup>38th</sup> Session, the goal mentioned in paragraph ~~7.6~~ above in light of progress towards the goal, ~~new~~ studies regarding the feasibility of achieving the goal, and relevant information from States;

108. *Requests* the Council to continue to explore the feasibility of a long term global aspirational goal for international aviation, through conducting detailed studies assessing the attainability and impacts of any goals proposed, including the impact on growth as well as costs in all countries, especially developing countries, for the progress of the work to be presented to the ~~39th~~<sup>38th</sup> Session of the ICAO Assembly. Assessment of long term goals should include information from member States on their experiences working towards the medium term goal.

**States' Action Plans / Assistance to States – paragraphs 11 to 15**

119. *Further encourages* States to submit their voluntary action plans outlining their respective policies and actions, and annual reporting on international aviation CO<sub>2</sub> emissions to ICAO;

1240. *Invites* those States that choose to prepare or update their action plans to submit them to ICAO as soon as possible preferably by the end of June ~~2015~~ <sup>2012</sup> and once every three years thereafter, in order that ICAO can continue to compile the information in relation to achieving the global aspirational goals, and the action plans should include information on the basket of measures considered by States, reflecting their respective national capacities and circumstances, information on the expected environmental benefits from the implementation of the measures chosen from the basket, and information on any specific assistance needs;

13. Encourage States that already submitted their action plans to share information contained in their action plans and build partnerships with other member States in order to support those States that have not prepared their action plans;

14. Encourage States to make their action plans available to the public, taking into account the commercial sensitivity of information contained in States' action plans;

1544. *Requests* the Council to facilitate the dissemination of economic and technical studies and best practices related to aspirational goals and to continue to provide guidance and other technical assistance for the preparation and update of States' action plans prior to the end of June ~~2015~~ <sup>2012</sup>, in order for States to conduct their necessary studies and to voluntarily submit their action plans to ICAO;

~~12.~~ ~~*Resolves* that a *de minimis* threshold of international aviation activity of 1 per cent of total revenue ton kilometres should apply to the submission of States' action plans as follows:~~

- ~~a) States below the threshold are not expected to submit action plans towards achieving the global goals; and~~
- ~~b) States below the threshold but that otherwise have agreed to voluntarily contribute to achieving the global goals are expected to submit action plans;~~



Market-Based Measures – paragraphs 16 to 28

~~13. — Requests the Council, with the support of member States, to undertake work to develop a framework for market based measures (MBMs) in international aviation, including further elaboration of the guiding principles listed in the Annex, for consideration by the 38th Session of the ICAO Assembly;~~

~~1614. Urges States to respect the guiding principles listed in the Annex, when designing new and implementing existing MBMs for international aviation, and to engage in constructive bilateral and/or multilateral consultations and negotiations with other States to reach an agreement;~~

17. Recognizes that States or groups of States may choose, prior to the full implementation of a global MBM scheme, to implement MBMs that apply to flights to or from third countries which depart or arrive at airports in that State or group of States for the portion of those flights within the airspace of that State or group of States, and would fully cover all emissions from flights which both depart and arrive at airports in that State or group of States;

18. Resolves that States or groups of States that wish to implement new MBMs as described in paragraph 17 above should grant exemptions for application of MBMs on routes to and from developing States whose share of international civil aviation activities is below the threshold of 1% of total revenue ton kilometers of international civil aviation activities, until the global scheme is decided;

19. Urges States or groups of States that wish to implement new MBMs which cover emissions beyond the scope described in paragraph 17 above or expand existing MBMs beyond this scope, to engage in constructive bilateral and/or multilateral consultations and negotiations with other States to reach an agreement;

~~15. — Resolves on a *de minimis* threshold of international aviation activity, consistent with the guiding principles in the Annex, of 1 per cent of total revenue ton kilometres to MBMs as follows:~~

- ~~a) commercial aircraft operators of States below the threshold should qualify for exemption for application of MBMs that are established on national, regional and global levels; and~~
- ~~b) States and regions implementing MBMs may wish to also consider an exemption for other small aircraft operators;~~

~~16. — Requests the Council to review the *de minimis* threshold to MBMs in paragraph 15, taking into account specific circumstances of States and potential impacts on the aviation industry and markets, and with regard to the guiding principles listed in the Annex, by the end of 2011;~~

~~17. — Urges States to review existing and planned MBMs for international aviation to ensure their consistency with the guiding principles listed in the Annex and the provisions in paragraphs 15 and 16 above;~~

20. Decides to develop a global MBM scheme for international aviation;

21. Requests the Council to:

- a) finalize the work on the technical aspects, environmental benefits, economic impacts on international aviation and modalities of the three options for a global MBM scheme, building on the progress made by the Council, as well as taking into account

the proposal of the aviation industry and other international developments, as appropriate, and without prejudice to the negotiations under the UNFCCC;

- b) make a recommendation on a global MBM scheme that addresses key design elements, including a means to take into account special circumstances and respective capabilities as provided for in paragraphs 22 to 26 below, and the mechanisms for the implementation of the scheme from 2020 as part of a basket of measures which also include technologies, operational improvements and sustainable alternative fuels to achieve ICAO's global aspirational goals; and
- c) report the results of the work in sub-paragraphs a) and b) above, for decision by the 39th Session of the Assembly;

22. Resolves that an MBM should take into account the special circumstances and respective capabilities of States, in particular developing States, while minimizing market distortion;

23. Also resolves that special circumstances and respective capabilities of developing States could be accommodated through *de minimis* exemptions from, or phased implementation for, the application of an MBM to particular routes or markets with low levels of international aviation activity, particularly those serving developing States;

24. Also resolves that, the administrative burden associated with the implementation of an MBM to States or aircraft operators with very low levels of international aviation activity should not exceed the benefits from their participation in the MBM, and that exemptions from the application of the MBM to such States or aircraft operators should be considered, while maintaining the environmental integrity of the MBM;

25. Also resolves that adjustments to MBM requirements for aircraft operators could be on the basis of fast growth, early action to improve fuel efficiency, and provisions for new entrants;

26. Further resolves that, to the extent that the implementation of an MBM generates revenues, it should be used in consistency with guiding principle n) in the Annex;

2749. Recognizes that in the short term voluntary carbon offsetting schemes constitute a practical way to offset CO<sub>2</sub> emissions, and invites States to encourage their operators wishing to take early actions to use carbon offsetting, particularly through the use of credits generated from internationally recognized schemes such as the CDM;

2820. Requests the Council to collect information on the volume of carbon offsets purchased in relation to air transport, including through States' action plans submitted to ICAO, and to continue to develop and disseminate best practices and tools, such as the ICAO Carbon Emissions Calculator, that will help harmonize the implementation of carbon offset programmes;

29. Requests the Council to maintain and enhance 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, fuel consumption and CO<sub>2</sub> emissions;

30. Requests the Council to request States to continue to support the efforts of ICAO on enhancing the reliability of measuring/estimating global GHG emissions from international aviation;

3124. *Requests* the Council to regularly report CO<sub>2</sub> 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;

32. *Requests* that ICAO and its member States express a clear concern, through the UNFCCC process, on the use of international aviation as a potential source for the mobilization of revenue for climate finance to the other sectors, in order to ensure that international aviation would not be targeted as a source of such revenue in a disproportionate manner;

**Assistance to States – paragraph 33**

3322. *Requests* the Council to:

- a) continue to play a pivotal role in providing assistance to its member States through the dissemination of the latest information on best practices and the provision of guidance and other technical assistance to enhance capacity building and technology transfer, including through the ICAO Technical Cooperation Programme;
- b) consolidate and build on the partnership with other international organizations to meet the assistance needs of ICAO's member States, including through their action plans, which will bring about reductions in international aviation emissions;
- a) c) continue to study, identify and develop processes and mechanisms to facilitate the provision of technical and financial assistance, as well as facilitate access to existing and new financial resources, technology transfer and capacity building, to developing countries and report on its progress, including processes and mechanisms developed, results achieved as well as further recommendations, preliminarily by the end of 2015 2012 and at the 39th 38th Session of the Assembly; and
- b) d) continue to initiate specific measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building;

3423. *Requests* States to:

- a) promote scientific research aimed at continuing to address the uncertainties identified in the IPCC special report on Aviation and the Global Atmosphere and in the Fourth Assessment report;
- b) ensure that future international assessments of climate change undertaken by IPCC and other relevant United Nations bodies include updated information, if any, on aircraft-induced effects on the atmosphere;

**Technological and Operational Measures – paragraphs 34. c) to g)**

- c) consider policies to encourage the introduction of more fuel efficient aircraft in the market;
- e) d) accelerate investments on research and development to bring to market even more efficient technology by 2020;

- ⓓ) e) accelerate the development and implementation of fuel efficient routings and procedures to reduce aviation emissions;
- e) f) 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, taking into account the Aviation System Block Upgrades (ASBUs) strategy;
- ⓕ) g) reduce legal, security, economic and other institutional barriers to enable implementation of the new ATM operating concepts for the environmentally efficient use of airspace;

**Sustainable Alternative Fuels – paragraphs 34. h) to l)**

- ~~g) develop policy actions to accelerate the appropriate development, deployment and use of sustainable alternative fuels for aviation;~~
- ~~h) work together through ICAO and other relevant international bodies, to exchange information and best practices; and~~
- ~~i) consider measures to support sustainable aviation alternative fuels research and development, investments in new feedstock cultivations and production facilities, as well as incentives to stimulate commercialisation and use of sustainable alternative fuels for aviation to accelerate the reduction of aviation CO<sub>2</sub> emissions;~~
- h) set a coordinated approach in their national administrations in order to develop policy actions to accelerate the appropriate development, deployment and use of sustainable alternative fuels for aviation, in accordance with their national circumstances;
- i) consider measures to support research and development as well as processing technology and feedstock production in order to decrease costs and support scale-up of sustainable production pathways up to commercial scale;
- j) recognize existing approaches to assess the sustainability of all alternative fuels in general, including those for use in aviation which should:
  - 1) achieve net GHG emissions reduction on a life cycle basis, compared to conventional jet fuel;
  - 2) respect the areas of high importance for biodiversity, conservation and benefits for people from ecosystems, in accordance with international and national regulations;
  - 3) contribute to local social and economic development, and competition with food and water should be avoided;
- k) adopt measures to ensure the sustainability of alternative fuels for aviation, building on existing approaches or combination of approaches, and monitor, at a national level, the sustainability of the production of alternative fuels for aviation;

- l) work together through ICAO and other relevant international bodies, to exchange information and best practices, including on the sustainability of alternative fuels for aviation;

3524. Requests the Council to:

- a) continue to develop and keep up-to-date the guidance for member States on the application of policies and measures aimed at reducing or limiting the environmental impact of emissions from international aviation, and conduct further studies with respect to mitigating the impact of international aviation on climate change;
- b) encourage States to cooperate in the development of predictive analytical models for the assessment of aviation impacts;
- c) 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, taking into account the interests of all parties concerned, including potential impacts on developing world;
- d) provide the necessary guidance and direction to ICAO's Regional Offices to assist member 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;

**Technological and Operational Measures – paragraphs 35. e) to i)**

- e) develop a global CO<sub>2</sub> Standard for aircraft aiming to finalize analyses by late 2015 and adoption by the Council in 2016 aiming for 2013;
- f) further elaborate on relevant fuel efficiency metrics, including for international business aviation, and develop and update medium and long term technological and operational goals for aircraft fuel burn;
- ~~g) encourage member States and invite industry to actively participate in further work on sustainable alternative fuels for aviation;~~
- ~~h) work with financial institutions to facilitate access to financing infrastructure development projects dedicated to sustainable aviation alternative fuels and incentives to overcome initial market hurdles; { moved to paragraph 35. m) }~~
- i) ~~g) continue to develop the necessary tools to assess the benefits associated with ATM improvements, and maintain and update intensify its efforts on the development of new guidance on ATM improvements and other operational measures to reduce international aviation emissions;~~
- j) h) implement an emphasis on increasing fuel efficiency in all aspects of the ICAO's Global Air Navigation Plan, and encourage States and stakeholders to develop air

traffic management that optimize environmental benefits and to promote and share best practices applied at airports in reducing the adverse effects of GHG emissions of civil aviation;

- i) continue to develop and update the necessary tools and guidance to assess the benefits associated with ATM improvements, and assess the environmental benefits associated with the implementation of the Aviation System Block Upgrades (ASBUs) strategy;

**Sustainable Alternative Fuels – paragraphs 35. j) to m)**

- j) encourage member States and invite industry, financial institutions and other international organizations to actively participate in exchange of information and best practices and in further work under ICAO on sustainable alternative fuels for aviation;
- k) continue to maintain the ICAO Global Framework for Aviation Alternative Fuels (GFAAF);
- l) collect information on progress of alternative fuels in aviation, including through States' action plans, to give a global view of the future use of alternative jet fuels and to account for changes in life cycle GHG emissions in order to assess progress toward achieving global aspirational goals;
- m) work with financial institutions to facilitate access to financing infrastructure development projects dedicated to sustainable aviation alternative fuels and incentives to overcome initial market hurdles;
- ~~k) 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; { moved to paragraph 29. }~~
- ~~l) request States to continue to support the efforts of ICAO on enhancing the reliability of measuring/estimating global GHG emissions from international aviation; { moved to paragraph 30. }~~
- ~~m) undertake a study on the possible application of CDM of the Kyoto Protocol to international aviation;~~
- n) monitor and disseminate relevant information on the potential impacts of climate change on international aviation operations and related infrastructure, in cooperation with other relevant international organizations and the industry; and
- o) continue to cooperate with the Climate Neutral UN initiative, remain at the forefront of developing methods and tools for quantifying aviation's GHG emissions with respect to the initiative, and further develop and implement the strategy for reducing GHG emissions and enhancing in-house sustainability management practices of the Organization.

**Annex**

The guiding principles for the design and implementation of market-based measures (MBMs) for international aviation:

- a) MBMs should support sustainable development of the international aviation sector;
- b) MBMs should support the mitigation of GHG emissions from international aviation;
- c) MBMs should contribute towards achieving global aspirational goals;
- d) MBMs should be transparent and administratively simple;
- e) MBMs should be cost-effective;
- f) MBMs should not be duplicative and international aviation CO<sub>2</sub> emissions should be accounted for only once;
- g) MBMs should minimize carbon leakage and market distortions;
- h) MBMs should ensure the fair treatment of the international aviation sector in relation to other sectors;
- i) MBMs should recognize past and future achievements and investments in aviation fuel efficiency and in other measures to reduce aviation emissions;
- j) MBMs should not impose inappropriate economic burden on international aviation;
- k) MBMs should facilitate appropriate access to all carbon markets;
- l) MBMs should be assessed in relation to various measures on the basis of performance measured in terms of CO<sub>2</sub> emissions reductions or avoidance, where appropriate;
- m) MBMs should include *de minimis* provisions;
- n) where revenues are generated from MBMs, it is strongly recommended that they should be applied in the first instance to mitigating the environmental impact of aircraft engine emissions, including mitigation and adaptation, as well as assistance to and support for developing States; and
- o) where emissions reductions are achieved through MBMs, they should be identified in States' emissions reporting.