



WORKING PAPER

ASSEMBLY — 39TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 22: Environmental Protection – International Aviation and Climate Change – Policy, Standardization and Implementation Support

**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 A38-18, *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change*, which has been revised in light of developments since the 38th Session of the Assembly on international aviation and climate change.

Amendments to aspects of Resolution A38-18 relating to a global market-based measure (MBM) scheme are provided in a separate working paper (A39-WP/52, *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme*).

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 E, <i>Environmental Protection</i> .
<i>Financial implications:</i>	The activities referred to in this Assembly working paper will be undertaken subject to the resources available in the 2017 – 2019 Regular Programme Budget and/or from extra budgetary contributions.
<i>References:</i>	A39-WP/28, <i>Report on the ICAO Technical Assistance Programme in the Safety, Security and Facilitation, and Environment Fields</i> A39-WP/51, <i>Civil Aviation and the Environment</i> A39-WP/52, <i>Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme</i> A39-WP/54, <i>States' Action Plans on CO₂ Emissions Reduction Activities</i> A39-WP/55, <i>Present and Future Trends in Aircraft Noise and Emissions</i> A39-WP/56, <i>Sustainable Alternative Fuels for Aviation</i> Doc 10022, <i>Assembly Resolutions in Force</i> (as of 4 October 2013)

1. AMENDMENTS TO THE EXISTING CONSOLIDATED STATEMENT

1.1 The Appendix to this working paper presents proposed revisions to Assembly Resolution A38-18 on international aviation and climate change, in light of the developments since the 38th Session of the Assembly, with the exception of those aspects relating to a global market-based measure (MBM) scheme.

1.2 The main revisions to A38-18 include:

- Preamble paragraphs: the order of the preamble paragraphs has been changed to group paragraphs of a similar nature. Preamble paragraphs to be addressed in A39-WP/52 related to a global MBM scheme have been deleted. Progress related to the work of the ICAO Committee on Aviation Environmental Protection (CAEP) such as the CO₂ Standard, Aviation System Block Upgrades (ASBUs) and CAEP future work are reflected. Progress on alternative fuels and the States' voluntary action plan initiative have been reflected. Provisions such as United Nations Sustainable Development Goals (SDGs), the 21st Session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement, and partnerships with other organizations have been added;
- Paragraph 10: reference has been added on CAEP future work (i.e. to consider the fair share of international aviation emissions in the "carbon budget"¹ in the context of exploring the feasibility of a possible long-term global aspirational goal for international aviation);
- Paragraph 12: reflects the need for quantified information to be included in States' voluntary action plans;
- Paragraphs 16 to 26 and Annex: these provisions, addressed in A39-WP/xx related to a global MBM scheme, have been deleted;
- Paragraph 31: updated to reflect the continuous provision of assistance to States;
- Paragraph 32 c), k), paragraph 33 e), n), o): updated to reflect CAEP future work; and
- Operative paragraphs of a similar nature are combined together (e.g. paragraphs 13 and 14, paragraphs 28 and 29, sub-paragraphs 19 a) and b), 19 e) and f), 19 k) and l), 20 g) and h)).

¹ According to the Intergovernmental Panel on Climate Change (IPCC), approximately 1 000 Gt of CO₂ can remain to be emitted before 2100 in order to limit global temperature increase to 2°C above pre-industrial levels.

APPENDIX

Resolution **A39-XX38-18**: 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;

Acknowledging that the work of the Organization on the environment contributes to 10 of the 17 United Nations Sustainable Development Goals (SDGs), including SDG 13 “*Take urgent action to combat climate change and its impacts*”;

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; the Organization will update the information contained in the IPCC special report ~~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~~;

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

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);

Whereas the Paris Agreement, which was adopted by the Conference of the Parties to the UNFCCC in December 2015, enhances the implementation of the UNFCCC including its objective, and aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change ~~Noting the scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C~~;

Recognizing the global aspirational goals for the international aviation sector of improving fuel efficiency by 2 per cent per annum and keeping the net carbon emissions from 2020 at the same level, as adopted by the ICAO Assembly at its 37th Session in 2010 and reaffirmed at its 38th Session in 2013, as well as the work being undertaken to explore a long term global aspirational goal for international aviation in light of the 2 °C and 1.5 °C temperature goals of the Paris Agreement;

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~~ are needed to deliver a sustainable path for aviation;

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), International Business Aviation Council (IBAC) and International Coordinating Council of Aerospace Industries Associations (ICCAIA) on behalf of the international air transport industry, to 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 to reduce its carbon emissions by 50 per cent by 2050 compared to 2005 levels;

Recalling the UNFCCC and the Paris Agreement and *acknowledging* its principle of the principles and provisions on common but differentiated responsibilities and respective capabilities, in light of different national circumstances 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, to promote sustainable growth of international aviation and to achieve its global aspirational goals, a comprehensive approach, consisting of a basket of measures including work on technology and standards, sustainable alternative fuels, and on operational improvements 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) on the CO₂ emissions certification Standard for aeroplanes requirements for a global CO₂ Standard for aircraft;

Recognizing the work being undertaken to consider the environmental aspects of aircraft end-of-life such as through aircraft recycling;

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 CO₂ emissions;

~~Welcoming the adoption~~ the assessment of the environmental benefits of the Aviation System Block Upgrades (ASBUs) completed for Block 0 and being undertaken for Block 1 strategy at the ICAO Twelfth Air Navigation Conference in November 2012;

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) through which progress has been registered, including five pathways for the certification of aviation alternative fuels to date, and the first airport-hub for such fuels;

~~Noting the progress achieved in proving~~ *Recognizing* that the technological feasibility of drop-in sustainable alternative fuels for aviation is proven and that ~~such fuels will require~~ the introduction of appropriate policies and incentives to create a long-term market perspective is required;

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

Acknowledging the need to explore and facilitate civil aviation sector's access to renewable energy including through its cooperation with the Sustainable Energy for All (SE4ALL) initiative, as part of the Organization's contribution to SDG 7 "*Ensure access to affordable, reliable, sustainable and modern energy for all*";

~~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;~~

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

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

~~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;~~

~~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;~~

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;

Noting that, consistent with Assembly Resolution A38-18A37-19, a substantial strategy for capacity building and other technical and financial assistance was undertaken by the Organization, in line with the No Country Left Behind (NCLB) initiative, to assist the preparation and submission of States' action plans, including the holding of regional seminars, ~~hands-on training workshops and~~ the development and update of ICAO Doc 9988, *Guidance on the development of States' Action Plans on CO₂ Emissions Reduction Activities* ~~of guidance material~~, an interactive web-interface, ~~and~~ the ICAO Fuel Savings Estimation Tool (IFSET) and the ICAO Environmental Benefits Tool (EBT);

Welcoming that, as of 8 June 2016~~30 June 2013~~, 94 ~~61~~ member States that represent more than 88 ~~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;

Recognizing the assistance provided by ICAO in partnership with other organizations to facilitate Member States' action to reduce aviation emissions, as well as continuous search for potential assistance partnerships with other organizations;

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

Recognizing the ~~need~~ importance of work being undertaken to identify ~~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 the ICAO Carbon Emissions Calculator, to support the assessment of ~~a common methodology for calculating GHG emissions from passengers travelling by air travel~~ and welcoming its expansion to add air cargo emissions;

The Assembly:

1. *Resolves* that this Resolution, together with Resolution A39-YY38-17: *Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality* and Resolution A39-ZZ: *Consolidated statement of continuing ICAO policies and practices related to environmental protection - Global Market-based Measure (MBM) Scheme*, supersede Resolutions A38-1737-18 and A38-1837-19 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 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;~~

45. *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;

56. *Agrees* that the goals mentioned in paragraph 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;

67. *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;

78. *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;

89. *Agrees* to review, at its 40³⁹th Session, the goal ~~outlined mentioned~~ in paragraph 6 above in light of progress towards the goal, studies regarding the feasibility of achieving the goal, and relevant information from States;

940. *Requests* the Council to continue to explore the feasibility of a long term global aspirational goal for international aviation, in particular by assessing the share of international aviation in the global carbon budget in light of the 2 °C and 1.5 °C temperature goals, 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 40³⁹th 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;

1044. *Further encourages* States to submit ~~their~~ voluntary action plans outlining ~~their~~ respective policies and actions, and annual reporting on international aviation CO₂ emissions to ICAO;

1142. *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 2018~~2015~~ and once every three years thereafter, in order that ICAO can continue to compile the ~~quantified~~ 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, ~~quantified~~ information on the expected environmental benefits from the implementation of the measures chosen from the basket, and information on any specific assistance needs;

1243. *Encourages* States that have 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, and to make the submitted action plans available to the public, taking into account the commercial sensitivity of information contained in States' action plans;

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

1345. *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 2018~~2015~~, in order for States to conduct ~~their~~ necessary studies and to voluntarily submit ~~their~~ action plans to ICAO;

~~16. *Resolves* that States, when designing new and implementing existing MBMs for international aviation should:~~

- ~~a) engage in constructive bilateral and/or multilateral consultations and negotiations with other States to reach an agreement, and~~
- ~~b) 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 kilometres of international civil aviation activities, until the global scheme is implemented;~~

~~17. — Requests the Council to review the *de minimis*, including the *de minimis* threshold of MBMs mentioned in paragraph 16 b) above, taking into account the specific circumstances of States and potential impacts on the international aviation industry and markets, and with regard to the guiding principles listed in the Annex, to be presented for consideration by the 39th Session of the Assembly in 2016;~~

~~18. — Decides to develop a global MBM scheme for international aviation, taking into account the work called for in paragraph 19;~~

~~19. — Requests the Council, with the support of member States, to:~~

- ~~a) — finalize the work on the technical aspects, environmental and economic impacts and modalities of the possible options for a global MBM scheme, including on its feasibility and practicability, taking into account the need for development of international aviation, the proposal of the aviation industry and other international developments, as appropriate, and without prejudice to the negotiations under the UNECCC;~~
- ~~b) — organize seminars, workshops on a global scheme for international aviation participated by officials and experts of member States as well as relevant organizations;~~
- ~~c) — identify the major issues and problems, including for member States, and make a recommendation on a global MBM scheme that appropriately addresses them and key design elements, including a means to take into account special circumstances and respective capabilities as provided for in paragraphs 20 to 24 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~~
- ~~d) — report the results of the work in sub paragraphs a), b) and c) above, for decision by the 39th Session of the Assembly;~~

~~20. — Resolves that an MBM should take into account the special circumstances and respective capabilities of States, in particular developing States, while minimizing market distortion;~~

~~21. — 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;~~

~~22. — 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;~~

~~23. — 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;

~~24. — 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;~~

~~25. — Recognizes that in the short term voluntary carbon offsetting schemes constitute a practical way to offset CO₂ 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;~~

~~26. — 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;~~

1427. 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 CO₂ emissions;

1528. 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, and to 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;

~~29. — Requests the Council to 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;~~

1630. While recognizing that no effort should be spared to obtain means to support the reduction and stabilization of CO₂ emissions from all sources, urges 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;

1731. 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) build further partnerships consolidate and build on the partnership with other international organizations to meet the assistance needs of ICAO's member States, including through the ICAO Action Plan Buddy Programme their action plans, which will bring about reductions in international aviation emissions, and facilitate access to existing and new financial resources, technology transfer and capacity building, to developing countries and report on results achieved as well as further recommendations, preliminarily by the end of 2018 and at the 40th Session of the

Assembly; and

~~e) initiate work immediately and as a priority in order to develop a process 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 results achieved as well as further recommendations, preliminarily by the end of 2015 and at the 39th Session of the Assembly; and~~

c)d) continue to initiate specific measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building;

1832. *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 reports, and ensure that future assessments undertaken by IPCC and other relevant United Nations bodies include updated information, if any, on aircraft-induced effects on the atmosphere;

~~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;~~

b)e) consider policies to encourage the introduction of more fuel efficient aircraft in the market, and work together through ICAO to exchange information and develop guidance for best practices on aircraft end-of-life such as through aircraft recycling;

c)d) accelerate investments on research and development to bring to market ~~even~~ more efficient technology by 2020;

d)e) accelerate the development and implementation of fuel efficient routings and air navigation procedures to reduce aviation emissions, and work with ICAO to bring the environmental benefits to all regions and States, taking into account the Aviation System Block Upgrades (ASBUs) strategy;

~~f) accelerate efforts to achieve environmental benefits through the application of 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;~~

e)g) reduce legal, security, economic and other institutional barriers to enable implementation of the new air traffic management ~~ATM~~-operating concepts for the environmentally efficient use of airspace;

f)h) set a coordinated approach in ~~their~~ national administrations in order to develop for policy actions and investment to accelerate the appropriate development, deployment and use of clean and renewable energy sources for aviation, including the use of sustainable alternative fuels for aviation, in accordance with their national circumstances;

- g) consider the use of incentives to encourage the deployment of clean and renewable energies sources for aviation, including sustainable alternative fuels;
- h) 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, taking into account the sustainable development of States;
- i) recognize existing approaches to assess the sustainability of all alternative fuels in general, including those for use in aviation which should achieve net GHG emissions reduction on a life cycle basis, contribute to local social and economic development; competition with food and water should be avoided;:-
- 1) ~~achieve net GHG emissions reduction on a life cycle basis;~~
 - 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;~~
- j) 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, and work together through ICAO and other relevant international bodies, to exchange information and best practices, including for the harmonization on the sustainability criteria of aviation alternative fuels;
- ~~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;~~

1933. 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;~~
- e) adopt the CO₂ emissions certification Standard for aeroplanes as soon as possible ~~develop a global CO₂ Standard for aircraft aiming to finalize analyses by late 2015 and adoption by the Council in 2016;~~
- 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) maintain and update guidance on ATM improvements and other operational measures to reduce international aviation emissions, and place emphasis on increasing fuel efficiency in all aspects of the ICAO's Global Air Navigation Plan (GANP); encourage States and stakeholders to develop air traffic management that optimizes environmental benefits, and promote and share best practices applied at airports;
- 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;~~
- h)i) continue to develop and update the necessary tools and guidance to assess the benefits associated with air traffic management ATM improvements, and assess the environmental benefits associated with the implementation of the Aviation System Block Upgrades (ASBUs) strategy;
- i)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, and facilitate the establishment of partnerships and the definition of policies that will further promote the transition to clean, renewable sources of energy for aviation, including sustainable alternative fuels, through regional seminars;
- j)k) continue to maintain the ICAO Global Framework for Aviation Alternative Fuels (GFAAF);
- k)l) ~~continue 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;~~
- l)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;
- m) cooperate with other relevant international initiatives, including the Sustainable Energy for All (SE4ALL) initiative, to facilitate the aviation's access to renewable

energy;

- n) ~~identify monitor and disseminate relevant information on~~ the potential impacts of climate change on international aviation operations and related infrastructure and identify adaptation measures to address the potential climate change impacts, 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, including the ICAO Carbon Emissions Calculator that also incorporates cargo emissions, 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;~~
- e) ~~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 CO₂ 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 CO₂ 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;~~
- o) ~~where emissions reductions are achieved through MBMs, they should be identified in States' emissions reporting; and~~
- p) ~~MBMs should take into account the principle of common but differentiated responsibilities and respective capabilities, the special circumstances and respective capabilities, and the principle of non-discrimination and equal and fair opportunities.~~