



WORKING PAPER

ASSEMBLY — 37TH SESSION

EXECUTIVE COMMITTEE

Agenda Item 17: Environmental protection

**INTERNATIONAL AVIATION AND CLIMATE CHANGE –
PROPOSAL FOR ASSEMBLY RESOLUTION**

(Presented by the Secretary General)

EXECUTIVE SUMMARY

This paper presents a proposal by the Secretary General for an Assembly Resolution that replaces Appendices I through L of Assembly Resolution A36-22, *Consolidated statement of continuing ICAO policies and practices related to environmental protection*, with a view to facilitating the deliberations during the Assembly.

Action: The Assembly is invited to consider the elements of an Assembly Resolution on international aviation and climate change, as presented in the Appendix, for the update of Appendices I through L of A36-22.

<i>Strategic Objectives:</i>	This working paper relates to Strategic Objective C, <i>Environmental Protection - Minimize the adverse effect of global civil aviation on the environment.</i>
<i>Financial implications:</i>	The activities referred to in this paper will be undertaken subject to the resources available in the 2011-2013 Programme Budget and/or from extra-budgetary contributions.
<i>References:</i>	A37-WP/21, <i>Civil Aviation and the Environment</i> A37-WP/22, <i>United Nations Climate Neutral Initiative</i> A37-WP/23, <i>Aviation and Alternative Fuels</i> A37-WP/24, <i>Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality</i> A37-WP/25, <i>Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change</i> A37-WP/26, <i>Present and Future Aircraft Noise and Emissions Trends</i> A37-WP/27, <i>Developments in other United Nations Bodies</i> Doc 9902, <i>Assembly Resolutions in Force</i> (as of 28 September 2007)

1. INTRODUCTION

1.1 At its 36th Session, the ICAO Assembly adopted Resolution A36-22, *Consolidated statement of continuing ICAO policies and practices related to environmental protection*. Since then, ICAO and its member States, working together with the aviation industry, have made significant progress on various aspects related to international aviation and climate change. This work led, *inter alia*, to the international aviation sector being the first and only sector that developed a globally-harmonized agreement on a goal to address its CO₂ emissions.

1.2 The actions taken by the Organization in response to the requests by A36-22 on this subject are described in A37-WP/25 submitted by the Council. Substantial discussion took place in the Council for the preparation of a draft Resolution on international aviation and climate change, however, it was not able to agree on the draft Resolution to be forwarded to the Assembly for its consideration.

1.3 This paper has been prepared for, and submitted to, the Assembly under the sole responsibility and authority of the Secretary General of ICAO. It contains elements for a Resolution that replaces Appendix I through L of A36-22, in light of the progress made by ICAO on international aviation and climate change since the 36th Session of the Assembly as well as the recent discussions by the Organization on this subject.

2. DEVELOPMENTS SINCE HLM-ENV

2.1 Since the High-level Meeting on International Aviation and Climate Change (HLM-ENV) in October 2009, further actions were undertaken by the Organization and progress has been achieved in the field of international aviation and climate change as follows:

- a) The Conference on Aviation and Alternative Fuels (CAAF) held in November 2009, endorsed the use of sustainable alternative fuels for aviation, particularly the use of drop-in fuels in the short to medium term, as an important means to reduce aviation emissions, and it adopted a global framework on the development and deployment of such fuels for aviation. Many flight tests and fuel certification proved that drop-in alternative fuels are a technically sound solution that will not require changes to the aircraft or fuel delivery infrastructure. The future challenge is related to regulatory and financial frameworks that are needed to ensure that they are available in a timely manner and in sufficient quantities for the use of aviation (see A37-WP/23);
- b) The eight meeting of Committee on Aviation Environmental Protection (CAEP/8) held in February 2010, reviewed its work to quantify the environmental impacts of a global aviation system, and updated Standards and guidance for technological, operational and market-based measures to address the impacts. In line with the recommendation by the HLM-ENV, the CAEP/8 agreed on a plan for the development of an aviation CO₂ emissions Standard for consideration at CAEP/9 in 2013 (see A37-WP/21); and
- c) ICAO Colloquium on Aviation and Climate Change held in May 2010, provided an opportunity to share information and exchange views on technological, operational and economic solutions, vital to the global efforts to address aviation and climate change, and it helped to pave the way towards successful discussions and decision-making at the Assembly. Some States' representatives identified common themes that

could be used as the basis for the elements to be included in States' action plans to be submitted to ICAO. Participants presented potential impacts on the performance of aviation operations and airport-related infrastructure from climate change, including rising sea-levels, precipitation change and storms, and emphasized the necessity of further studies to assess the potential impacts. Some representatives from the banking community presented the financing initiatives and opportunities for aviation.

2.2 As described in A37-WP/25, an informal group was created by the President of the Council to assist him in the preparation of a draft Assembly Resolution on international aviation and climate change. The group met in March and June 2010, and focused on three key issues, where further progress requested by the HLM-ENV could be achieved, namely:

- a) exploration of the feasibility of more ambitious medium and long-term goals, including carbon-neutral growth and emissions reductions, moving beyond the global goal of 2 per cent annual improvement in fuel efficiency until the year 2050;
- b) development of a framework for market-based measures in international aviation; and
- c) elaboration on measures to assist developing States and to facilitate access to financial resources, technology transfer and capacity building.

2.3 In addition, the group discussed the way to incorporate new elements into the draft Resolution, including how to reflect the substantial progress on the development and deployment of sustainable alternative fuels; how to address the potential needs for adaptation to the impacts of climate change on international aviation operations and related infrastructure; and how to reflect ICAO's work related to the United Nations Carbon Neutral initiative (see A37-WP/22).

2.4 In concluding the discussions of the informal group, the President emphasized and all members of the group agreed, that the work on international aviation and climate change under ICAO should be based on the following four key premises:

- a) no attribution of obligations to individual States. ICAO will address emissions from the international aviation sector as a whole and will not address any specific obligations for individual States or their domestic aviation;
- b) any decision taken by ICAO should not affect the principles or negotiations under the UNFCCC. There are very clear differences between what ICAO and the UNFCCC are tasked to do. ICAO is dealing solely with international aviation, which is of a global nature, while the UNFCCC has been addressing emissions from all other domestic sectors;
- c) no decision will be taken to limit or affect the sustainable development of international aviation pursuant to the provisions of the Chicago Convention; and
- d) defining global solutions that will be applicable to all based on the principles and provisions of the Chicago Convention.

2.5 The Council met during the 12th, 13th and 14th meetings of its 190th Session to consider the draft text of the Resolution to the Assembly, focusing mainly on the areas where work has further progressed since the HLM-ENV, in particular on the provisions dealing with a medium term goal and

market-based measures. The four key premises in paragraph 2.4 above were reemphasized by the President and acknowledged by the Council members.

2.6 In relation to a medium-term goal, on a day preceding the Council, the Secretariat, representatives from some member States and the aviation industry provided the Council with their studies on the feasibility of more ambitious goals for the international aviation sector. In the Council, a large number of members expressed their support for the text proposed in operative paragraphs 5, 6 and 7 of the Appendix, while some members indicated that they were not able to agree on it in its current form.

2.7 Regarding the market-based measures, the Council worked on the principles for market-based measures and on the provision relating to the development of a global scheme. Unfortunately, the Council was not able to come up with a compromise text on the majority of the principles, and the text it worked on was mostly in square brackets. The text proposed in operative paragraphs 14, 15 and 16 of the Appendix is intended to serve as the basis for facilitating progress on developing agreeable text during the Assembly.

2.8 In relation to the proposed text in operative paragraphs 10, 11 and 12 of the Appendix on the preparation and submission of action plans by States to ICAO, the Secretariat is considering the regional workshops in early 2011 to provide assistance to States for their preparation of action plans, by exchanging information on States' actions already undertaken and discussing the development of ICAO's guidance material on this subject.

3. APPROACH

3.1 In preparing the text of the draft Resolution contained in the Appendix, every effort was made to identify the reference information on the past agreements and the recent discussions, which each proposed paragraph was quoted from or based upon. The reference information includes:

- a) Declaration and Recommendations of the HLM-ENV: referenced respectively as "*HLM-DEC*" and "*HLM-REC*" in the Appendix;
- b) Declaration and Recommendations of the CAAF: referenced respectively as "*CAAF-DEC*" and "*CAAF-REC*" in the Appendix; and
- c) Assembly Resolution A36-22: referenced as "*A36-22*" in the Appendix.

3.2 Thus, the draft Resolution is intended to assist deliberations during the Assembly.

4. FINANCIAL IMPACT OF THE PROPOSED ACTION

4.1 Some of the proposed text in the Appendix will lead to new work for the Council and the Secretariat. The work involved for the Secretariat is expected to be undertaken within the resources available in the draft Programme Budget 2011-2013. However, since the extent to which the Secretariat would be called upon to undertake additional tasks is difficult to determine at present, extra-budgetary contributions might be required.

APPENDIX

DRAFT RESOLUTION BY THE 37TH SESSION OF THE ASSEMBLY

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; *{quoted from A36-22 Appendix K 1st preambular}*

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; *{quoted from HLM-DEC 6th preambular}*

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; *{quoted from A36-22 Appendix J 1st preambular}*

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); *{quoted from A36-22 Appendix J 3rd preambular}*

Acknowledging that international aviation emissions, currently accounting for less than 2 per cent of total global CO₂ emissions, are projected to grow as a result of the continued development of the sector; *{quoted from HLM-DEC 7th preambular }*

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; *{quoted from A36-22 Appendix I 1st preambular}*

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; *{quoted from A36-22 Appendix I 2nd preambular}*

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; *{quoted from A36-22 Appendix I 3rd preambular, with update on Fifth Assessment Report}*

Noting the scientific view that the increase in global average temperature above pre-industrial levels ought not to exceed 2°C; *{quoted from HLM-DEC 9th preambular}*

~~*Also a*~~*Acknowledging* the principles of non-discrimination and equal and fair opportunities to develop international aviation set forth in the Chicago Convention; *{quoted from HLM-DEC 5th preambular, with inversion with the paragraph below}*

~~*Also a*~~*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; *{quoted from HLM-DEC 4th preambular, with inversion with the paragraph above}*

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; **{based on HLM-DEC para 3.}**

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; **{1st part: quoted from HLM-DEC para 1. / 2nd part: quoted from HLM-DEC 2nd preambular}**

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; **{quoted from HLM-DEC 13th preambular}**

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; **{quoted from A36-22 Appendix K 5th preambular}**

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; **{quoted from HLM-DEC para 5.}**

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; **{quoted from CAAF-DEC para 1.}**

Also noting that the CAAF/09 established an ICAO Global Framework for Aviation Alternative Fuels (GFAAF); **{quoted from CAAF-DEC para 2.}**

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; **{quoted from HLM-DEC 12th preambular}**

Affirming that measures to assist developing States as well as to facilitate access to financial support, technology transfer and capacity building should be elaborated; **{based on HLM-REC para 7.}**

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 CO₂ efficiency by an average of 1.5 per cent per annum from 2009 until 2020, to achieve carbon neutral growth from 2020 and reducing its carbon emissions by 50 per cent by 2050 compared to 2005 levels; **{quoted from HLM-DEC 11th preambular}**

Recognizing the need to monitor and report the potential impacts of climate change on international aviation operations and related infrastructure; **{based on C-DEC 190/4 (CAEP/8 Report)}**

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; **{based on C-DEC 190/5 (A37-WP/22)}**

The Assembly:

1. *Resolves* that this Resolution, together with Resolution 37/xx: Consolidated statement of continuing ICAO policies and practices related to environmental protection - General provisions, noise and local air quality, supersede Resolution A36-22 and constitute the consolidated statement of continuing ICAO policies and practices related to environmental protection; *{based on A36-22 para. 1, 2 and 3, and C-DECs 190/9 and 190/10 (A37-WP/24)}*
2. *Requests* the Council to:
 - a) ensure that ICAO exercise continuous leadership on environmental issues relating to international civil aviation, including GHG emissions; *{quoted from A36-22 Appendix J para 1. a)}*
 - 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 *{quoted from A36-22 Appendix J para 1. b)}*
 - c) continue to cooperate with organizations involved in policy-making in this field, notably with the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC); *{quoted from A36-22 Appendix J para 1. c), with the deletion of SBSTA}*
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 *{quoted from A36-22 Appendix I para 1. a)}*
 - 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; *{quoted from A36 -22 Appendix K 6th preambular}*
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; *{quoted from HLM-DEC para 2.}*
5. *Also resolves* that 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 developing countries, the maturity of aviation markets and the sustainable growth of the international aviation industry; *{based on HLM-DEC para 3. and Council discussion}*
6. *Recognizes* that while all member States will strive collectively to meet the goal mentioned in paragraph 5 above, emissions may increase due to expected growth in international air traffic until lower emitting technologies and fuels and other mitigating measures are developed and deployed; *{based on Council discussion}*

7. *Agrees* to review, at its 38th Session, the progress towards the goal mentioned in paragraph 5 above in light of new studies regarding the feasibility of achieving the goal, and relevant information from States; *{based on Council discussion}*

8. *Requests* the Council to undertake further work on a long term global aspirational goal for international aviation, including exploring the feasibility of a more ambitious goal beyond a global annual average fuel efficiency improvement of 2 per cent from 2021 to 2050, for consideration by the 38th Session of the ICAO Assembly; *{based on HLM-DEC para 3.}*

9. *Agrees* that the goals mentioned in paragraphs 4 and 5 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 contribute to achieving the global aspirational goals; *{quoted from HLM-DEC para 4.}*

10. *Encourages* State to submit their action plans outlining their respective policies and actions, and annual reporting on international aviation CO₂ emissions to ICAO; *{quoted from HLM-DEC para 7.}*

11. *Urges* those States that choose to prepare their action plans to submit them to ICAO by the end of June 2012 in order that ICAO can compute the collective approach 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, and information on any specific assistance needs; *{based on HLM-DEC para 7.}*

12. *Requests* the Council to facilitate the dissemination of economic and technical studies and best practices related to carbon neutral growth and to provide guidance and other technical assistance for the preparation of States' action plans, in order for States to conduct their necessary studies and to voluntarily submit their action plans to ICAO; *{based on HLM-DEC para 7. and HLM-REC para 14.}*

13. *Requests* the Council to consider a de-minimis exception for States which do not have substantial international aviation activity levels, in the submission of action plans and regular reports on aviation CO₂ emissions to ICAO; *{quoted from HLM-REC para 11.}*

14. *Requests* the Council, with the support of member States, to undertake work to develop a global 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; *{based on HLM-DEC para 5. and Council discussion}*

15. *Urges* States to respect the guiding principles listed in the Annex, when designing new and implementing existing MBMs for international aviation, to engage in constructive negotiations with other States with a view to reaching an agreeable way forward, and to implement MBMs for international aviation following bilateral and/or multilateral consultations and agreements among States concerned; *{based on HLM-DEC para 5. and Council discussion}*

16. *Requests* the Council, with the support of member States and international organizations, to explore the feasibility of a global MBM scheme by undertaking further studies on the technical aspects, environmental benefits, economic impacts and the modalities of such a scheme, for consideration by the 38th Session of the ICAO Assembly; *{based on Council discussion}*

17. *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 Clean Development Mechanism (CDM); *{based on A36-22 Appendix L para 1. c) and d)}*

18. *Requests* the Council to collect information on the volume of carbon offsets purchased in relation to air transport, 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; *{based on A36-22 Appendix L para 1. c)}*

19. *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; *{quoted from HLM-DEC para 6.}*

20. *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 recently released Fourth Assessment report; *{quoted from A36-22 Appendix I para 2. a)}*
- b) ensure that future international assessments of climate change undertaken by IPCC and other relevant United Nations bodies include updated information on aircraft-induced effects on the atmosphere; *{quoted from A36-22 Appendix I para 2. b)}*
- c) accelerate investments on research and development to bring to market even more efficient technology by 2020; *{quoted from A36-22 Appendix K para 7.}*
- d) accelerate the development and implementation of fuel efficient routings and procedures to reduce aviation emissions; *{quoted from A36-22 Appendix K para 14. b)}*
- e) 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; *{quoted from A36-22 Appendix K para 14. c)}*
- f) reduce legal, security, economic and other institutional barriers to enable implementation of the new ATM operating concepts for the environmentally efficient use of airspace; *{quoted from A36-22 Appendix K para 14. e)}*
- g) develop policy actions to accelerate the appropriate development, deployment and use of sustainable alternative fuels for aviation; *{quoted from CAAF-REC para 6.}*
- h) work together through ICAO and other relevant international bodies, to exchange information and best practices, and in particular to reach a common definition of sustainability requirements for alternative fuels; and *{quoted from CAAF-DEC para 3. and CAAF-REC para 7.}*
- 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 CO₂ emissions; *{quoted from CAAF-REC para 20. }*

21. *Requests* the Council to:

- a) continue to develop and keep up-to-date the guidance for Contracting States on the application of policies and measures aimed at reducing or limiting the environmental impact of emissions from aviation, and conduct further studies with respect to mitigating the impact of aviation on climate change; *{quoted from A36-22 Appendix K para 3.}*
- b) encourage States to cooperate in the development of predictive analytical models for the assessment of aviation impacts; *{quoted from A36-22 Appendix I para 4.}*
- 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; *{quoted from A36-22 Appendix K para 4.}*
- d) 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; *{quoted from A36-22 Appendix K para 5.}*
- e) develop a global CO₂ Standard for aircraft aiming for 2013; *{quoted from HLM-REC para 2., with update from C-DEC 190/4 (CAEP/8 Report)}*
- f) further elaborate on relevant fuel efficiency metrics, including for international business aviation, and develop medium and long term technological and operational goals for aircraft fuel burn; *{based on HLM-REC para 13., A36-22 Appendix K para 11. a) and C-DEC 190/4 (CAEP/8 Report)}*
- g) encourage member States and invite industry to actively participate in further work on sustainable alternative fuels for aviation facilitated by ICAO; *{quoted from CAAF-REC para 10.}*
- h) take the necessary steps with the aim of considering a framework for financing infrastructure development projects dedicated to sustainable aviation alternative fuels and incentives to overcome initial market hurdles; *{quoted from CAAF-DEC para 9. and CAAF-REC para 19.}*
- i) continue to develop the necessary tools to assess the benefits associated with ATM improvements, and intensify its efforts on the development of new guidance on operational measures to reduce international aviation emissions; *{1st part: quoted from A36-22 Appendix K para 11. b), 2nd part: quoted from HLM-REC para 5.}*
- j) 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; {1st part: **quoted** from **A36-22 Appendix K para 11. c)**, 2nd part: **quoted** from **A36-22 Appendix K para 13.**, 3rd part: **quoted** from **A36-22 Appendix K para 12.**}

- 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; **{quoted from HLM-REC para 9.}**
- l) request States to continue to support the efforts of ICAO on enhancing the reliability of measuring/estimating global GHG emissions from international aviation; **{quoted from HLM-REC para 10.}**
- m) explore approaches for providing technical and financial assistance in the reporting process to developing countries; **{quoted from HLM-REC para 14.}**
- n) elaborate on measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building including possible application of market mechanisms; **{quoted from HLM-REC para 7.}**
- o) 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 **{based on C-DEC 190/4 (CAEP/8 Report)}**
- p) 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. **{based on C-DEC 190/5 (A37-WP/22)}**

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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 ensure the compatibility with global aspirational goals;
- d) MBMs should be transparent and 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 avoid carbon leakage and market distortions and respect non-discrimination among participating operators;
- h) MBM should ensure the fair and equal treatment of the international aviation sector
- i) MBMs should recognize early achievements and investments in aviation fuel efficiency;
- j) MBMs should not impose undue economic burden on international aviation;
- k) MBMs should include appropriate access to carbon markets;
- l) where necessary, the equivalence of MBMs should be assessed on the basis of performance measured in terms of CO₂ emissions reductions;
- m) MBMs should include special provisions, including de-minimis provisions to account for very small contributors to international aviation CO₂ emissions;
- n) where revenues are generated from MBMs, they could be used for aviation related activities, including mitigation and adaptation, as well as assistance to and support for developing States;
- o) MBMs should be established under a global framework; and
- p) where emissions reductions are achieved through MBMs, they should be identified in States' emissions reporting.