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## **ASSEMBLY — 39TH SESSION**

### **REPORT OF THE EXECUTIVE COMMITTEE ON AGENDA ITEM 22**

(Presented by the Chairman of the Executive Committee)

The attached report on Agenda Item 22 (Section on Climate Change without the subject of a Global Market-based Measure Scheme) has been approved by the Executive Committee. Resolution 22/1 is recommended for adoption by the Plenary.

*Note.— After removal of this covering sheet, this paper should be inserted in the appropriate place in the report folder.*

(16 pages)

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

22.1 At its second, third, fourth and tenth meetings, the Executive Committee considered the subject of environmental protection on the basis of progress reports by the Council on the Organization's work on international aviation and climate change (WPs 28, 51, 54, 55 and Corrigendum No. 1 and 56). Based on these progress reports, the Executive Committee considered the Council's proposals that update Resolution A38-18, *Consolidated Statement of continuing ICAO policies and practices related to environmental protection – Climate change* (WP/49). Amendments to aspects of Resolution A38-18 relating to a global market-based measure (MBM) scheme are provided in a separate working paper (WP/52 and Corrigendum No. 1), *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme*. In addition, there were 44 papers submitted by States and Observers: WPs 91, 138, 152, 153 (Revision No. 1), 154 (Revision No. 1), 155 (Revision No. 1), 163, 170, 181, 182, 206, 207, 208, 209, 211 (Revision No. 1), 212 (Revision No. 1), 222, 227, 232, 233, 234, 248, 262, 321, 343, 363, 364, 377, 387, 411, 412, 413, 414, 415, 426, 427, 428, 429, 431, 443, 448, 449, 455 and 465.

**22.2 CLIMATE CHANGE WITHOUT GLOBAL MARKET-BASED MEASURE SCHEME**

22.2.1 The Council submitted a report (WP/56) on ICAO's activities to promote and facilitate the emergence of sustainable alternative fuels in aviation, including: information sharing and promotion of dialogue between States and stakeholders; maintenance of the Global Framework for Aviation Alternative Fuels (GFAAF); and work of the Alternative Fuels Task Force within the Committee on Aviation Environmental Protection (CAEP). The report highlighted that, while the technological feasibility for alternative jet fuels was proven, the next priorities would be to address initial economic barriers and ensure sustainable commercial-scale deployment, and that dedicated policies from States would be required, including the support of measures and provisions to ensure sustainability. The Committee acknowledged the progress, and supported the continued work of the Organization.

22.2.2 The Council submitted a report (WP/54) on the developments since the last Assembly related to States' voluntary action plans for CO<sub>2</sub> emissions reduction activities, as well as the next steps by which ICAO could further support States in preparing, updating and implementing the action plans. To date, 100 States representing 89.90 per cent of international air transport submitted action plans. While this was a significant improvement, more than half of the action plans submitted still did not include quantified baselines and expected results. As next steps, the Secretariat would continue to provide support to States in the preparation and update of voluntary action plans with quantified data, and to build partnerships to support States that have not yet prepared action plans. The Committee acknowledged the progress, and supported the continued work of the Organization.

22.2.3 The Committee also encouraged Member States to share information and include more complete and robust data in the action plans, which would facilitate the compilation of global emissions data by ICAO. It further encouraged partnerships between States to support each other in the preparation and refinement of action plans.

22.2.4 The Committee also considered WP/28, which reported on activities related to the ICAO Technical Assistance Programme, covering all Strategic Objectives of ICAO including environmental protection. Information on environment-related assistance and capacity-building initiatives, such as the ICAO's partnerships with European Union (EU) as well as with United Nations Development Programme (UNDP) and Global Environment Facility (GEF), was included in the paper. The Committee was informed of the new assistance partnerships related to environment, such as additional support from the EU; Germany's support of a pilot project for the implementation of the global MBM's Monitoring, Reporting and Verification (MRV) system; the confirmed intentions of ACI to partner with ICAO on initiatives for greener airports; and the new partnership with the World Bank to support the implementation of the global MBM scheme.

22.2.5 In WP/49, the Council submitted a proposal for the revision of Assembly Resolution A38-18, Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change, in light of developments since the 38th Session of the Assembly on international aviation and climate change.

22.2.6 In WP/91, presented by Switzerland, Slovakia on behalf of the EU and its Member States and the other Member States of the European Civil Aviation Conference (ECAC), expressed the need for States to develop measures to support the uptake of sustainable alternative fuels, Europe's commitment to building capacity for environmental protection in developing countries and its invitation for others to engage in activities with the same objective was highlighted, as was support for the establishment of a long term CO<sub>2</sub> emissions reduction goal, and future work to improve the scientific understanding of the aviation's environmental impacts, including on non-CO<sub>2</sub> effect.

22.2.7 In WP/262, Dominican Republic on behalf of the 22 Member States of the Latin American Civil Aviation Commission (LACAC) described the challenges faced by a number of LACAC States in developing and implementing their action plans on emissions reduction, while highlighting the success experienced by the Dominican Republic from the project funded by the EU and the overall benefits being achieved through the project funded by UNDP/GEF. They requested the allocation of specific funds that would allow the expansion and enhancement of assistance projects for States to develop and implement their action plans and to develop MRV systems, such as the Aviation Environmental System (AES) for creating emissions inventories and monitoring CO<sub>2</sub> emissions from international aviation.

22.2.8 In WP/321, nine Central African States, as beneficiaries of the ICAO-EU Project, presented progress made by the Central African States in drawing up action plans to reduce CO<sub>2</sub> emissions and implementing the Aviation Environmental System (AES) within the framework of the ICAO and EU assistance project. It further described cooperation by them in drawing up a regional action plan. They requested ICAO, other States and international organizations to explore additional sources of funding to enhance technical assistance for the development of action plans and implementation of the measures set out therein.

22.2.9 In WP/170 Canada highlighted the compromise that may exist on the analysis of the environmental benefits accrued by the implementation of Performance Based Navigation (PBN) procedures, since they can enable more efficient operations that result in fuel burn and emission reductions, but may also result in a perceived concentration of noise due to more aircraft following similar routes. Canada proposed that States contribute data concerning noise impacts in the vicinity of

aerodromes, and that the Council develop a pragmatic approach to balancing GHG and noise impacts in the vicinity of aerodromes when implementing PBN procedures.

22.2.10 In WP/181, Kenya shared its experience and progress in the collection, monitoring and reporting of CO<sub>2</sub> emissions data from international aviation, as part of its initiative to update and strengthen its voluntary action plan. It suggested that, in order to promote the development of robust action plans and increase States' readiness for the possible Monitoring, Reporting and Verification (MRV) requirements, ICAO enhance its capacity building programme on CO<sub>2</sub> emissions reduction, building upon the successful experience of the ICAO's partnership with the EU and the roll out of the Aviation Environmental System (AES) in selected States, and further facilitate States' access to financial resources, technical expertise and technology transfer. It further encouraged States to build partnerships, including through the "ICAO Buddy Programme" or additional dedicated regional capacity building projects, in order to continue to foster regional cooperation and knowledge exchange.

22.2.11 In WP/212, Revision No. 1, Indonesia highlighted the development of sustainable alternative fuels for aviation being included as part of its State action plan, and as a result, aviation was included in its national bio-energy policy and targets for the transport sector. It highlighted that sustainable alternative fuels for aviation would require appropriate policies and incentives to create long-term market perspectives, and requested the development of ICAO guidance for States to establish globally aligned appropriate policy actions. It also encouraged States to include aviation in their national bio-energy policies and/or targets for transport.

22.2.12 In WP/232, the United States supported ICAO's "basket of measures" to address climate change from international civil aviation, and highlighted several initiatives that the United States were currently funding on the implementation and research of the various elements in the basket of measures.

22.2.13 In WP/363, Burkina Faso described its progress to reduce CO<sub>2</sub> emissions in the civil aviation sector, highlighting the steps toward the development of its action plan and the implementation of an Aviation Environmental System (AES) by the National Civil Aviation Authority. The challenges foreseen in the implementation of the plan were also discussed, as well as the expectations of Burkina Faso as regards assistance and cooperation. It encouraged Member States and international organizations to earmark funds for capacity building and new regional assistance projects in the environment field, similar to the ICAO-EU project.

22.2.14 In WP/364, Egypt presented a report on its activities in the field of environmental protection arising from international aviation, and the progress achieved in relation to presentation of its action plan for CO<sub>2</sub> emissions reduction. It requested ICAO to include a specialized training team in TRAINAIR PLUS Programme concerning the State action plans, to strengthen environmental capabilities in ICAO Regional Offices, and to provide experts for assisting States in developing action plans and creating partnerships among them.

22.2.15 In WP/455, Mexico summarized the current status for the development and deployment of sustainable alternative fuels for aviation, as a key element of the basket of measures to reduce aviation emissions. It invited the Assembly to encourage all States, the aviation industry and other stakeholder, to participate in the ICAO preparatory seminar in Montréal in February 2017, and the ICAO Conference on Aviation Alternative Fuels, to be held in Mexico City, Mexico in October 2017 that would develop an

*ICAO Vision on International Aviation Alternative Fuels*, as a means to encourage States to take action to further develop and deploy sustainable alternative fuels for aviation.

22.2.16 In WP/152, the International Air Transport Association (IATA) welcomed the adoption by CAEP of recommendations, including the first aeroplane CO<sub>2</sub> emissions certification standard. IATA emphasized that States should refrain from imposing any operating restrictions or emissions levies based on the CO<sub>2</sub> emissions standard.

22.2.17 The Committee acknowledged ten working papers submitted for information purposes. They were not presented to the meeting but are summarized below:

22.2.18 In WP/138, India provided an overview of the initiatives taken by India's government and other stakeholders to reduce aviation emissions towards a sustainable growth.

22.2.19 In WP/222, Indonesia provided an update on the implementation of the Indonesia's State action plan, highlighting recent achievements and future plans and seeking cooperation opportunities with other member States.

22.2.20 In WP/227, Caribbean Aviation Safety and Security Oversight System (CASSOS) described the challenges faced by a number of CASSOS States in developing and implementing their action plans on CO<sub>2</sub> emissions reduction, while highlighting the success of a number of ICAO initiatives, including the project funded by the EU, the project funded by UNDP/GEF and the ICAO Secretariat-led "Buddy Programme."

22.2.21 In WP/415, Slovakia on behalf of the EC and its Member States and the other Member States of the ECAC presented their activities in support of the objectives of the ICAO *No Country Left Behind* (NCLB) initiative, including the ICAO-EU project to assist the development and implementation of State Action Plans to reduce aviation CO<sub>2</sub> emissions for 14 Caribbean and African States.

22.2.22 In WP/426, Guatemala on behalf of the 22 Member States of the Latin American Civil Aviation Commission (LACAC) presented the work by LACAC Member States related to collaboration and submission of State action plans to reduce aviation CO<sub>2</sub> emissions. It described the measures taken by the States of the region in accordance with their respective capabilities, and encouraged States that have not yet submitted their voluntary action plans to join in the efforts.

22.2.23 In WP/207, the International Coalition for Sustainable Aviation (ICSA) suggested that six years of intense effort have not produced a CO<sub>2</sub> Standard for new types or in production aeroplanes that will reduce emissions beyond what they might otherwise have been without the Standard. Given the expected growth in aviation CO<sub>2</sub> and the urgency of adopting all feasible mitigation measures as the Paris Agreement so starkly underlines, this result is, in the opinion of ICSA, deeply disappointing.

22.2.24 In WP/208, ICSA emphasized the importance of public scrutiny and openness regarding the work of ICAO to address greenhouse gas emissions from international aviation. It highlighted that ICAO transparency and process lags significantly behind longstanding practices in other UN bodies, and emphasized the commitment of ICAO Members States regarding enhanced transparency in other international processes.

22.2.25 In WP/209, ICSA proposed that ICAO should take the lead in developing a credible long-term emissions goal for the international aviation sector, consistently with the objectives of the Paris Agreement (using 200 Gt carbon budget), and that the outcome of this process should be presented to the UNFCCC in the form of an ICAO Determined Contribution. It suggested that the scope of the “basket of measures” be reviewed and that the “basket” should include other measures relating to taxation, which would also be an opportunity to reconsider revenue raising for climate finance. It also suggested that measures adopted by ICAO be amended to reflect a conservative non-CO<sub>2</sub> effect factor, such as through the introduction of discounting to a global market-based measure (MBM) scheme.

22.2.26 In WP/427, ICSA presented its views on the interactions between the Sustainable Development Goals (SDGs) and ICAO’s “basket of measures” to address climate change, particularly market-based measures (MBMs) and alternative fuels. It highlighted the need for additional market or non-market measures in the long-term beyond 2035 to ensure the delivery of both sustainable development and climate change objectives.

22.2.27 In WP/429, the Airports Council International (ACI) provided information on its active collaboration with other entities in the aviation industry and with ICAO related to environmental protection, as contained in the Resolutions agreed by the ACI World Annual General Assembly (WAGA) in September 2016. In addition, it showcased ACI projects to assist member airports to effectively address the environmental impacts of their activities, including, Airport Carbon Accreditation, the Airport Carbon and Emissions Reporting Tool (ACERT), and the use of sustainable renewable energy at airports.

22.2.28 The Committee recognized that more efforts should be dedicated to the development and deployment of sustainable alternative fuels for aviation. It welcomed the convening of the ICAO Conference on Aviation Alternative Fuels in October 2017 in Mexico, with a view to developing the ICAO Vision on International Aviation Alternative Fuels as a means to encourage States to take actions for that objective.

22.2.29 In addition, the Committee concluded that the ICAO Secretariat should enhance ICAO’s capacity building and assistance activities for the preparation and implementation of States’ voluntary action plans to reduce aviation CO<sub>2</sub> emissions. More partnerships among States should be encouraged to assist States that have not yet prepared their action plans or need to improve their action plans, including through the ICAO’s Buddy Programme. States that had benefited from assistance acknowledged the value of capacity-building.

22.2.30 The Committee fully recognized the significant achievements made over the last triennium and overwhelming support to further work for all elements of the basket of measures as well as capacity building and assistance on the development and implementation of States’ action plans, while it noted the concern of some States on the ICAO’s global aspirational goals and their relation to a global MBM scheme.

22.2.31 Therefore, the Committee agreed to suspend the consideration of the draft Assembly Resolution text proposed in the Appendix to WP/49. The Committee also decided that, following the next discussion on a global MBM scheme, it would reconsider this subject.

22.2.32 Following the discussion on a global MBM scheme and subsequent informal consultations with some States by the Chairperson, together with the President of the Council, the

Committee considered the suggestions as a result of the consultations, and agreed on the following amendments to the draft Assembly Resolution text proposed in the Appendix to WP/49:

- inclusion of a new preamble paragraph “*Recognizing* that this Resolution does not set a precedent for or prejudge the outcome of negotiations under the UNFCCC or the Paris Agreement, nor represent the position of the Parties to those agreements;”
- deletion of text “, 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” from paragraph 9 of the draft Resolution text; and
- guiding principles listed in the Annex to Resolution A38-18 are reproduced in the Annex to the draft Assembly Resolution text. In addition, the related preamble paragraph in Resolution A38-18 is also reproduced and updated as follows: “*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, and that the guiding principles were elaborated as listed in the Annex to Assembly Resolution A38-18, which are reproduced in the Annex to this Resolution;”.

22.2.33 A majority of States reiterated their support to the draft Assembly Resolution text proposed in the Appendix to WP/49 together with the suggested amendments above as a result of the informal consultations.

22.2.34 A few States reiterated their concern regarding the ICAO’s global aspirational goal of carbon neutral growth from 2020, as in their views it was not a realistic goal.

22.2.35 The Committee agreed to recommend that the Assembly adopt the following Resolution:

**Resolution 22/1: 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);

*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;

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

*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;

*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 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 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 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 common but differentiated responsibilities and respective capabilities, in light of different national circumstances;

*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 prejudge the outcome of negotiations under the UNFCCC or the Paris Agreement, nor represent the position of the Parties to those agreements;

*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 technology and standards, sustainable alternative fuels, 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 CO<sub>2</sub> emissions certification Standard for aeroplanes;

*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 CO<sub>2</sub> emissions;

*Welcoming* the assessment of the environmental benefits of the Aviation System Block Upgrades (ASBUs) completed for Block 0 and being undertaken for Block 1;

*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;

*Recognizing* that the technological feasibility of drop-in sustainable alternative fuels for aviation is proven and that 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 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, and that the guiding principles were elaborated as listed in the Annex to Assembly Resolution A38-18, which are reproduced in the Annex to this Resolution;

*Noting* that, consistent with Assembly Resolution A38-18, 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, the development and update of ICAO Doc 9988, *Guidance on the development of States' Action Plans on CO<sub>2</sub> Emissions Reduction Activities*, an interactive web-interface, the ICAO Fuel Savings Estimation Tool (IFSET) and the ICAO Environmental Benefits Tool (EBT);

*Welcoming* that, as of 8 June 2016, 94 member States that represent more than 88 per cent of global international air traffic voluntarily prepared and submitted action plans to ICAO;

*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;

*Recognizing* the importance of work being undertaken to identify 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 emissions from passengers travelling by air and welcoming its expansion to add air cargo emissions;

*The Assembly:*

1. *Resolves* that this Resolution, together with Resolution A39-YY: *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 A38-17 and A38-18 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, 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. *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;

5. *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;

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;

7. *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

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modernization, acceleration of the use of fuel-efficient aircraft technologies, and the development and deployment of sustainable alternative fuels, and *encourages* further such efforts;

8. *Agrees* to review, at its 40th Session, the goal outlined in paragraph 6 above in light of progress towards the goal, studies regarding the feasibility of achieving the goal, and relevant information from States;

9. *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 40th 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;

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

11. *Invites* those States that choose to prepare or update action plans to submit them to ICAO as soon as possible preferably by the end of June 2018 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 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;

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

13. *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, in order for States to conduct necessary studies and to voluntarily submit action plans to ICAO;

14. *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;

15. *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 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;

16. While recognizing that no effort should be spared to obtain means to support the reduction and stabilization of CO<sub>2</sub> 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;

17. *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 with other international organizations to meet the assistance needs of ICAO's member States, including through the ICAO Action Plan Buddy Programme, 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
- c) continue to initiate specific measures to assist developing States as well as to facilitate access to financial resources, technology transfer and capacity building;

18. *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 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) 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) accelerate investments on research and development to bring to market more efficient technology by 2020;
- d) 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;
- e) reduce legal, security, economic and other institutional barriers to enable implementation of the new air traffic management operating concepts for the environmentally efficient use of airspace;
- f) set a coordinated approach in national administrations for policy actions and investment to accelerate the appropriate development, deployment and use of clean

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and renewable energy sources for aviation, including the use of sustainable alternative fuels, 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; and
- j) adopt measures to ensure the sustainability of alternative fuels for aviation, building on existing approaches or combination of approaches, 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;

19. *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) 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 various programmes;
- e) adopt the CO<sub>2</sub> emissions certification Standard for aeroplanes as soon as possible;
- f) update medium and long term technological goals for aircraft fuel burn;

- g) maintain and update guidance on 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) continue to develop and update the necessary tools and guidance to assess the benefits associated with air traffic management improvements, and assess the environmental benefits associated with the implementation of the Aviation System Block Upgrades (ASBUs) strategy;
- i) encourage member States and invite industry, financial institutions and other international organizations to actively participate in exchange of information and best practices, 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) continue to maintain the ICAO Global Framework for Aviation Alternative Fuels (GFAAF);
- k) continue 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) 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 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;
- 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;
- 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.

— END —