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ASSEMBLY — 41ST SESSION

EXECUTIVE COMMITTEE

DRAFT TEXT FOR THE REPORT ON AGENDA ITEM 17

The attached material on Agenda Item 17 is submitted for consideration by the Executive Committee.

(33 pages)

Agenda Item 17: Environmental Protection – International Aviation and Climate Change

17.1 At its second and third 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 (WP/368) and considered the Council's proposals to update Resolution A40-18, *Consolidated Statement of continuing ICAO policies and practices related to environmental protection – Climate change* (WP/369). In addition, there were 46 papers submitted by States and Observers: WPs 167 Revision No. 1, 169, 172, 173, 206, 210, 280, 351, 362, 413, 415, 428, 431, 432, 434, 435, 436, 438, 439, 440, 466 Revision No. 1, 469, 470, 471, 472, 473, 474, 475, 476, 477, 486, 489, 490, 495 Revision No. 1, 502, 503, 504, 509, 510, 514, 515, 516, 545, 568, 581, and 594.

17.2 In WP/368, the Council reported progress made by ICAO since the 40th Session of the Assembly relating to international aviation and climate change, including on the feasibility of a long-term global aspirational goal (LTAG) for international aviation, and on the ICAO State Action Plans initiative for aviation CO_2 emissions reduction along with related assistance and capacity-building projects. The paper also reported on ICAO's cooperation with other United Nations (UN) bodies and international organizations in the field of aviation and climate change. The Secretariat also provided a summary presentation regarding the ICAO's work on the feasibility of LTAG since the 40th Session of the Assembly.

17.3 The Committee acknowledged the substantial progress of work since the last Assembly on the feasibility of a LTAG, and also recognized the progress achieved under the ICAO State Action Plans initiative for aviation CO_2 emissions reduction, and encouraged States to further engage in the ICAO initiative. The Committee also supported ICAO's continued role to coordinate, facilitate and monitor actions to reduce international aviation CO_2 emissions, and further encouraged ICAO to cooperate with, and provide relevant input to, other UN bodies and international organizations, ensuring ICAO's leadership in all matters related to international civil aviation.

17.4 In WP/369, the Council proposed revisions of Resolution A40-18, in light of the developments since the last Assembly, in particular the conclusions of the ICAO High-level Meeting on the feasibility of a Long-term Aspirational Goal for international aviation CO_2 emissions reductions (HLM-LTAG, and refer to ICAO Doc 10178). The Committee acknowledged the clarifications on proposed revisions to Resolution A40-18, in particular, the preambular paragraphs reflecting the latest information from the United Nations Convention on Climate Change (UNFCCC) processes in relation to the Glasgow Climate Pact, as well as recognizing the need for ICAO to update and develop environment related Standards and Recommended Practices (SARPs) and guidance, as appropriate, on a timely basis.

17.5 In WP/469, China presented views that the principles of equity, common but differentiated responsibilities (CBDR) and respective capabilities should be acknowledged and followed in the building of a fair and rational international aviation and climate change governance system. The paper also expressed concerns that carbon neutral growth from 2020 (CNG2020) and the LTAG of net-zero carbon emissions by 2050 would lead to discriminatory market distortions to the disadvantage of developing countries, which should be addressed immediately though the establishment of an assistance mechanism for developing countries. In response to the proposal that international aviation and climate change should be responded to through nationally determined contributions (NDCs), it was clarified that such a proposal could not be considered, since emissions from international aviation were addressed by ICAO and not part of NDCs of the Paris Agreement, and that ICAO could not take a decision on behalf of Parties to the UNFCCC.

17.6 In WP/470, China presented views that developed countries had the international obligation to provide financial, technical and capacity-building assistance to developing countries, which would determine the success or failure in international aviation and climate change. The State also proposed

the establishment of an assistance mechanism, with a clear, specific and evaluable agenda arrangements based on the needs of developing countries.

17.7 In WP/473, Dominican Republic expressed views for creating an integrated mechanism that could help industry, financial institutions and international organizations share information and best practices, and for encouraging partnerships and policies to help bring about a transition to sustainable aviation fuels (SAF), as well as for promoting concrete actions to give ICAO Member States access to financing and technology transfer.

17.8 In WP/434, India presented views that ICAO's LTAG had to be consistent with the global principles of carbon neutrality in working towards building commitment to a 'Global Net Zero as per individual States' national timeframe'. The State also highlighted that as part of LTAG, assistance mechanisms should be a priority, in providing developing countries with adequate technical, funding and capacity-building, so as to strengthen the efforts of developing countries to address international aviation and climate change. The State also expressed views that LTAG should not lead to non-tariff barriers on the growth of international routes.

17.9 In WP/431, Japan highlighted the importance of promoting energy conservation and renewable energy initiatives to decarbonize the airport sector, and expressed the view that future sessions of the ICAO Assembly could provide opportunities for the sharing of information on such airport decarbonization initiatives in each State.

17.10 In WP/489, Japan highlighted the need for decarbonization of international aviation to meet the temperature limit of the Paris Agreement and prevent irreversible climate change, and encouraged sharing of each State's best practices, including Japan's efforts, through ICAO's initiative such as the Assistance, Capacity-building and Training for SAF (ACT-SAF) programme with active participation of States in the programme.

17.11 In WP/568, New Zealand highlighted that decisions on climate action could not be delayed, and that States should strive for an LTAG that was ambitious, and underpinned by an equitable transition in line with ICAO's *No Country Left Behind* initiative.

17.12 In WP/173, Qatar expressed views for the ICAO Council and the third Conference on Aviation and Alternative Fuels (CAAF/3) to agree on a global roadmap for the use of CORSIA eligible fuels (sustainable aviation fuels (SAF) and lower carbon aviation fuel (LCAF)). The State also called on ICAO Member States to adopt various principles to support the use of CORSIA eligible fuels.

17.13 In WP/169, Russian Federation expressed views that the integrated LTAG scenarios did not seem realistic, and proposed to continue studying the feasibility of an LTAG, so as to develop more objective scenarios for a real reduction in volumes of CO_2 emissions in the international aviation sector, and to identify potential sources of funding for projected activities on a global level. The State also proposed to establish an international distributed aviation service to combat naturally occurring fires and other natural disasters under the auspices of the United Nations.

17.14 In WP/172, Russian Federation proposed to conduct a quantitative assessment of the possible contribution of an international distributed aerial firefighting service to a reduction of greenhouse gas emissions as one of the elements of an LTAG, as well as to continue the work under the ICAO Flying Forest Fire Fighting (I4F) Dialogue, and to prepare a report to the 42nd Session of the ICAO Assembly. It was clarified that the I4F Dialogue held in November 2021 served as a platform for the exchange of best practices, initiatives, and strengthened possible international cooperation for aerial firefighting action.

ICAO would engage through an informal multi-stakeholder group with other relevant organizations for facilitating possible international cooperation, while also identifying focal points across ICAO Member States.

17.15 In WP/471, Singapore co-sponsored by Dominican Republic, Fiji, Kenya, New Zealand, Palau, Papua New Guinea, Samoa, South Africa and Thailand expressed views for an inclusive approach accommodating diverse circumstances, capabilities and needs of States in implementing emissions reduction measures as necessary to facilitate the collective global efforts towards an LTAG. The State also proposed for ICAO to develop a comprehensive, integrated and flexible Assistance, Capacity-building and Training for LTAG (ACT-LTAG) as a consolidated, global initiative, with a robust ACT-SAF programme, as well as a structured approach to State Action Plan development and needs assessment and provision, as well as facilitation of access to financing.

17.16 In WP/428, the United States co-sponsored by Dominican Republic expressed support for a collective LTAG of net-zero carbon emissions by 2050, in support of the Paris Agreement's temperature goal, recognizing that each States' special circumstances and respective capabilities will inform the ability of each State to contribute to the LTAG within its own national timeframe. The State also proposed to encourage Member States to increase collaboration to decarbonize international aviation, and requested the development of a finance initiative to support States in contributing to the achievement of an LTAG.

17.17 In WP/432, the United States expressed views on the importance of affirming the commitment and credibility of ICAO climate initiatives, in particular CORSIA, and called on the Assembly to recognize the role of CORSIA in enabling the deployment of SAF around the world, outlining the potential link between the CORSIA CO_2 Monitoring, Reporting and Verification (MRV) system and the need for the tracking/monitoring of the use of SAF.

17.18 In WP/438, 54 Member States of the African Civil Aviation Commission (AFCAC)[1] expressed views on exploring the availability of financial support and technology transfer, as well as the setup of a fund mechanism to support developing States, especially African States towards any agreed LTAG. The States also expressed views concerning the implementation of any agreed LTAG to not inhibit the growth of developing States, in particular the African aviation sector, as well as the need for harmonization of terminologies and definition of terms, consideration of special circumstances and respective capabilities of developing States, and the nature of an agreed LTAG to be fully respected under any national, regional or international legislation, or any other similar instruments.

17.19 In WP/486, Argentina and supported by two Latin American Civil Aviation Commission (LACAC) Member States: Costa Rica and Peru, presented the progress made by the Argentine Republic in environmental protection, in particular the analysis of measurements of CO_2 generated by airport ground access vehicles (GAV). The paper also proposed to continue building State capacities, especially in developing States, so that they can carry out their own airport CO_2 emissions measurements.

17.20 In WP/495 Revision No. 1, Canada, Japan, Kenya, Mexico, Norway, Republic of Korea, Rwanda, Switzerland, Türkiye, the United Kingdom, the United States and the European Union[2] (EU) and

[1] Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cabo Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Equatorial Guinea, Eritrea, Eswatini, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, South Sudan, Sudan, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia and Zimbabwe.

[2] Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

its Member States, and co-sponsored by Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, North Macedonia, San Marino, Serbia and Ukraine, expressed support for ICAO States to work together to strive to achieve a collective LTAG for international aviation of net-zero carbon emissions by 2050, in support of the Paris Agreement's temperature goal, as well as for the importance of capacity-building and facilitating access to financing efforts to help all ICAO States achieve an ambitious LTAG for international aviation, including exploring possible mechanisms to support matching investors with investment needs.

17.21 In WP/474, Chile and supported by Costa Rica, Dominican Republic, Ecuador and Peru discussed the need for ICAO to support States in building skills and tools to implement operational measures to support an LTAG. The paper proposed to develop technological elements with relevant training requirements for analysing data collected on emissions reductions from operational measures, prioritise measures with the greatest environmental benefit, and support developing States in implementing them.

17.22 In WP/206, States of the Central American Corporation for Air Navigation Services (COCESNA) and the International Air Transport Association (IATA), supported by Argentina, Bolivia (Plurinational State of), Chile, Cuba, Dominican Republic, Panama, Paraguay and Uruguay, presented views for a comprehensive global framework of policies and recommended practices on SAF, with an intent for Member States to be able to develop a regulatory framework and implementation plan as a priority action in pursuit of LTAG environmental goals. The paper also proposed to source technical and economic resources to finance State plans and programmes, for effective technology transfer that will enable the transition to SAF.

17.23 In WP/435, Czechia on behalf of the EU and its Member States, the other Member States of the European Civil Aviation Conference[3] (ECAC), and EUROCONTROL expressed views on the importance of means of implementation and capacity building efforts in helping all ICAO States achieve an ambitious LTAG, including voluntary contributions to ICAO and support to the *No Country Left Behind* initiative. The paper also proposed a comprehensive climate finance initiative to support all States, in particular least developed countries, landlocked developing countries and small island developing States, to access private and public sector financing to support their effort to reduce CO_2 emissions and decarbonize aviation by 2050.

17.24 In WP/436, Czechia on behalf of the EU and its Member States, the other Member States of the ECAC, and EUROCONTROL expressed support for an ambitious LTAG of net-zero international aviation emissions by 2050, in line with the temperature goals of the Paris Agreement, with waypoints for 2030 and 2040, and to launch a process towards establishing the means to monitor, report and verify the progress for the achievement of the LTAG, while noting its collective nature which does not attribute specific obligations or commitments to individual States. The paper also highlighted the major role of SAF in reducing CO_2 emissions, and for CAAF/3 to set a global framework for its deployment in a sustainable manner.

17.25 In WP/413, the International Coalition for Sustainable Aviation (ICSA) expressed support for a net-zero emissions goal, together with considerations of an interim milestone, new technologies, and out-of-sector measures. Regarding how an LTAG should not prevent States from taking national or regional action to deliver further ambition, it was clarified that the role of ICAO is for global harmonization. That

[3] Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Iceland, Republic of Moldova, Monaco, Montenegro, North Macedonia, Norway, San Marino, Serbia, Switzerland, Türkiye, Ukraine and the United Kingdom.

role has allowed for discussions on an LTAG to be framed in order to take a global view, whilst taking into account different national and regional circumstances – not the other way round.

17.26 In WP/167, Revision No. 1, the International Coordinating Council of Aerospace Industries Associations (ICCAIA) proposed a comprehensive regulatory framework leveraging the LTAG technology roadmap, a review of existing SARPs, a consideration of interdependencies, and gap analysis to understand the adaptations necessary to enable new technologies and operational practices.

17.27 In WP/472, the International Partners for Aviation Development, Innovation and Sustainability (iPADIS) expressed views to accord greater priority to SAF development and deployment, harmonisation of SAF policies, and collaborations in sensitising governments and societies on the benefits of SAF. The paper also proposed for ICAO to strengthen collaborations to facilitate capacity building, access to financing and technology transfer to enable States to develop their SAF industry.

17.28 In WP/415, International Transport Workers' Federation expressed views on strengthening the global aviation industry's long-term sustainability and decarbonisation efforts, by making a 'just transition', 'fair transformation' and 'social sustainability' its integral concepts. Regarding the proposal on the recently-launched Just Transition Maritime Task Force and for ICAO to consider the establishment of a similar body for the global aviation industry, it was clarified that it may be duplicative to existing ICAO processes and platforms, such as the State Action Plans inititiave and CAEP process, which already supports the sustainable development of aviation with the close involvement of relevant stakeholders.

17.29 In WP/210, the Airports Council International (ACI) co-sponsored by Singapore highlighted airports' efforts and challenges in decarbonization, and expressed views for supporting airports' work to develop and implement their net-zero roadmaps, and increased collaboration among relevant stakeholders and actions to facilitate the availability of renewable energy, finance and capacity building.

17.30 In WP/466, Revision No. 1, ACI, Civil Air Navigation Services Organisation (CANSO), IATA, International Business Aviation Council (IBAC) and ICCAIA, coordinated by Air Transport Action Group (ATAG), highlighted the sector's progress on climate action, and the industry long-term goal to reach net-zero carbon emissions from global civil aviation by 2050. It expressed support for the adoption of a sector-wide ICAO LTAG in line with the Paris Agreement stretch goal of 1.5 ºC with States taking action within their own capabilities, and with assistance from ICAO and other States in capacity building, technology transfer and financing. The paper also expressed views for the ICAO Council to develop a work programme to determine the means of implementation for an LTAG.

17.31 The Committee noted the following information papers: WP/280 by Brazil; WP/503 by China; WP/594 by New Zealand; WPs/509 and 510 by Saudi Arabia; WP/581 by Seychelles; WPs/515 and 616 by Czechia on behalf of the EU and its Member States, the other Member States of the ECAC, and EUROCONTROL; WP/514 by France and the Netherlands; WP/502 by ACI; WP/351 by CANSO; WP/475 by IATA; WP/440 by IBAC; WP/362 by ICSA; WP/439 by ICCAIA; WP/490 by the World Food Programme; WPs/476, 477 and 545 by ACI, CANSO, IATA, IBAC and ICCAIA, coordinated by ATAG; and WP/504 by the International Transport Forum Secretariat and Norway.

17.32 China presented orally certain amendments to the draft Resolution, requesting also to attach them to the report. These amendments, which were not supported by the Committee, are contained in the Attachment to this report.

17.33 The Committee recognized that a number of working papers supported and requested actions for the global development and deployment of SAF and other cleaner sources of energy and

technologies for aviation. In this regard, it requested States, industry, and organizations to engage in the ICAO Assistance, Capacity-building and Training for Sustainable Aviation Fuel (ACT-SAF) programme.

17.34 Regarding the level of LTAG ambition, the Committee noted that requests for different levels of LTAG ambition were expressed in various working papers, ranging from support for an LTAG of net-zero international aviation emissions by 2050 with intermediate points, to views generally aligned with HLM-LTAG conclusions. An emphasis was placed on the need to respect Member States' circumstances and respective capabilities, which would inform each State's contributions to the achievement of LTAG within its own national timeframe, and a concern was also raised on the need for further feasibility studies on LTAG.

17.35 Regarding the means of implementation, including the need for financing and investments, some States requested the development of a finance initiative to support States in contributing to the achievement of an LTAG, with ICAO identifying and facilitating access to various funding options to match implementation needs of States. Other States expressed views that it was the obligation of developed States to provide financial assistance towards developing States, including through a funding mechanism to be managed by ICAO.

17.36 The Committee noted the draft Assembly Resolution text proposed by the ICAO Council in WP/369, specifically operative paragraphs 7 and 8, of an LTAG of net-zero carbon emissions by 2050, taking into account each States' special circumstances and respective capabilities, together with further elaboration and the recognition of how each State will contribute to the LTAG within its own national timeframe, but without attributing any specific obligation or commitments to individual States. The Committee also noted that operative paragraphs 17 and onward, on the means of implementation commensurate to the level of ambition, including financing, was a reflection of the HLM-LTAG conclusions, which represented a delicately-balanced compromise package with future actions to be taken by the ICAO Council.

17.37 In considering the revised Assembly Resolution A40-18, States expressed an overwhelming support to the draft Assembly Resolution text proposed in the Appendix to WP/369 without any further change, while the Committee noted concerns expressed by a few States.

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

Resolution 17/1: 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 14 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 continue to account for less than 2 per cent of total global CO_2 emissions, and they are projected to increase as a result of the continued growth of air transport, unless action for emissions reduction is taken;

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;

Whereas the Glasgow Climate Pact, which was adopted by the Conference of the Parties to the UNFCCC in November 2021, reaffirms the long-term global goal to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue 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, and the Glasgow Climate Pact also recognizes that the impacts of climate change will be much lower at the temperature increase of 1.5 °C compared with 2 °C and resolves to pursue efforts to limit the temperature increase to 1.5 °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, 39th and 40th Sessions in 2013, 2016 and 2019, respectively;

Acknowledging the substantial ICAO work undertaken to explore the feasibility of a long-term global aspirational goal (LTAG) for international aviation in light of the 2 °C and 1.5 °C temperature goals of the Paris Agreement;

Recognizing the information-sharing and consultative process on the feasibility of a LTAG for international aviation, including the ICAO stocktaking on aviation in-sector CO_2 emissions reduction, and the convening of ICAO Global Aviation Dialogues (GLADs) and High-level Meeting, since the 40th Session of the ICAO Assembly;

Recognizing that the ICAO *Report on the Feasibility of a Long-Term Aspirational Goal for International Civil Aviation CO_2 Emission Reductions*, which assessed the technical feasibility of various aviation in-sector CO_2 emissions reduction scenarios, serves as the basis for the consideration of the LTAG;

Recognizing that 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 do not deliver the level of reduction necessary to 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_2 efficiency by an average of 1.5 per cent per annum from 2009 until 2020, to achieve carbon neutral growth from 2020 and to achieve a long-term goal of net-zero carbon emissions by 2050;

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, sustainable aviation fuels, operational improvements and market-based measures to reduce emissions and possible evolution of Standards and Recommended Practices (SARPs), 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, *while observing* an unprecedented level of emerging new technologies and innovations towards green aviation transition;

Acknowledging the adoption of the CO_2 emissions certification Standard for aeroplanes by the Council in March 2017, and the need to keep this Standard up to date based on the latest aircraft efficiency technology improvements;

Acknowledging the need for the timely update and development of relevant ICAO environmental SARPs and guidance for new advanced aircraft technologies, as appropriate;

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_2 emissions;

Welcoming the assessment of the environmental benefits of the Aviation System Block Upgrades (ASBUs) completed for Block 0 and Block 1, and the results of the global horizontal and vertical flight efficiency analysis;

Welcoming the convening of the ICAO Seminars on Green Airports in November 2017, May 2019 and November 2021, and *recognizing* the important role of airports in the distribution of new innovative sources of energy to air transport;

Noting that the first Conference on Aviation and Alternative Fuels in November 2009 (CAAF/1) endorsed the use of sustainable aviation fuels, 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/1 established an ICAO Global Framework for Aviation Alternative Fuels (GFAAF) through which progress has been registered, including the increasing number of fuel conversions processes, and airports distributing such fuels for more commercial flights;

Further noting that the second Conference on Aviation and Alternative Fuels in October 2017 (CAAF/2) adopted recommendations and approved a declaration, including the 2050 ICAO Vision for Sustainable Aviation Fuels, as a living inspirational path for a significant proportion of aviation fuels to be substituted with sustainable aviation fuels by 2050, and the need to update the 2050 ICAO Vision to include a quantified proportion of such fuels to be used by 2050;

Recognizing that the technological feasibility of drop-in sustainable aviation fuels is proven and such fuels are expected to have the largest impact on aviation CO_2 emissions reduction by 2050 and continue to have a large impact beyond 2050, and that the introduction of appropriate policies and incentives to create a long-term market perspective is required;

Recognizing the continuing developments in drop-in fuels such as Sustainable Aviation Fuel (SAF) and Lower Carbon Aviation Fuel (LCAF) to reduce aviation CO_2 emissions, and *welcoming* the development of new fuels and cleaner energy sources for aviation, including the use of hydrogen and renewable electricity;

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;

Recognizing that sustainability criteria, sustainability certification, and the assessment of life cycle emissions of such fuels are developed and updated as part of work for the implementation of Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA);

Acknowledging the need to explore and facilitate the 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 Resolutions A38-18, A39-2 and A40-18, which are reproduced in the Annex to this Resolution;

Noting that 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_2 Emissions Reduction Activities*, an interactive web-interface, the ICAO Fuel Savings Estimation Tool (IFSET), the ICAO Environmental Benefits Tool (EBT) and a Marginal Abatement Cost (MAC) curve tool;

Welcoming that, as of July 2022, 133 member States that represent more than 98 per cent of global international air traffic voluntarily prepared and submitted action plans to ICAO;

Recognizing the need to further develop and update State Action Plans, including the quantification of CO_2 emissions reduction benefits with practical tools, for sustainable aviation and infrastructure with the focus on environment-driven innovations;

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;

Welcoming the launch of the ICAO Assistance, Capacity-building and Training for Sustainable Aviation Fuel (ACT-SAF) Programme to support the development and deployment of SAF, including the establishment of partnerships among States and relevant stakeholders, in line with the *No Country Left Behind* (NCLB) initiative;

Recognizing that, according to the latest reports from the IPCC, progress in climate change adaptation planning and implementation has been observed across all sectors and regions, but it is still being unevenly distributed with several adaptation gaps observed, including potential vulnerabilities of key transport infrastructures such as international aviation systems and infrastructures, meaning that their design standards should give due consideration to account for projected climate impacts and risks;

Recognizing the need for enabling conditions for the implementation of long-term climate change adaptation measures, especially for vulnerable parts of the aviation system and infrastructure, which would enhance the preparedness level of the international aviation sector for projected extreme and disruptive climate-related events;

Recognizing the importance of work being undertaken to identify the potential impacts of climate change on international aviation operations and related infrastructure, together with identified options of adaptation measures; 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 A41-xx: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality* and Resolution A41-xx: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA),* supersede Resolutions A40-17, A40-18 and A40-19 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 as needed, 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, while also recognizing the long-term global aspirational goal in paragraph 7 below;

7. *Further resolves* that, in addition to the medium-term global aspirational goal in paragraph 6 above, ICAO and its Member States are encouraged to work together to strive to achieve a collective long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions by 2050, in support of the Paris Agreement's temperature goal, recognizing that each State's special circumstances and respective capabilities (e.g., the level of development, maturity of aviation markets, sustainable growth of its international aviation, just transition, and national priorities of air transport development) will inform the ability of each State to contribute to the LTAG within its own national timeframe;

8. *While recognizing* that the LTAG is a collective global aspirational goal, and it does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States, *urges* each State to contribute to achieving the goal in a socially, economically and environmentally sustainable manner and in accordance with national circumstances;

9. *Requests* the Council to regularly monitor progress on the implementation of all elements of the basket of measures towards the achievement of the LTAG, including through: the ICAO environment stocktaking process; the review of the ICAO Vision for SAF; further assessment of the CO_2 emissions reduction and cost impacts of a changing climate on international aviation, regions and countries, in particular developing countries, and the impact on the development of the sector, as well as the cost impacts of the efforts to achieve the LTAG; monitoring of information from State Action Plans for international aviation CO_2 emissions reduction; and means of implementation. To this purpose, the Council will consider necessary methodologies for the monitoring of progress, and report to a future Session of the ICAO Assembly;

10. *Further encourages* all States to submit and update voluntary action plans to ICAO to reduce CO_2 emissions from international aviation, outlining respective policies, actions and roadmaps, including long-term projections;

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 2024 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 for the implementation of the measures;

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 2024, including through cooperation and assistance on identifying possible sources of financing for decarbonization of aviation in cooperation with financial and other relevant organizations, 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_2 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_2 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_2 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. *Recognizes* that means of implementation commensurate to the level of ambition, including financing, will promote the achievement of the LTAG. It requires substantial investments for States, according to their national circumstances, and that various possible modalities and/or funding mechanisms could be used by ICAO to facilitate financing and investment support for implementation of specific aviation CO_2 emissions reduction measures;

17 bis. *Requests* the Council to:

a) initiate specific measures or mechanisms so as to facilitate, in particular for developing countries and States having particular needs, better access to private investment capacities, as well as funding from financial institutions, such as development banks, for projects contributing to the decarbonisation of international aviation, as well as encourage new and additional funding to this purpose;

b) further consider the establishment of a climate finance initiative or funding mechanism under ICAO, while addressing the possible financial, institutional and legal challenges, and report to the 42nd Session of the ICAO Assembly;

c) sub-paragraphs a) and b) above will be complementary to a robust assistance and cooperation programme dedicated to LTAG in order to share information on best practices and provide guidance, capacity building, and other technical assistance. Welcoming the establishment of the ICAO Assistance, Capacity-building and Training for SAF (ACT-SAF) programme, it should be extended to add support to the implementation of other emissions reduction measures in an ICAO ACT-LTAG programme (e.g., aircraft technologies, operational improvements, infrastructural changes, LCAF and other cleaner energy sources for aviation)

d) promote the voluntary transfer of technology, in particular for developing countries and States having particular needs, to enable them to adapt to cutting-edge technology and to enhance their contribution to achieve the LTAG; and

e) in line with the *No Country Left Behind* initiative, urge ICAO Member States to make regular

and substantial contributions to the ICAO Environment Fund, to address specific ICAO activities on the LTAG, including the ACT-SAF programme, aiming at assisting developing States and States having particular needs. States are also encouraged to develop specific projects under the ICAO Technical Cooperation Programme.

18. *Requests* States to 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;

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 and to adapting international aviation systems and infrastructure to climate change impacts and risks;

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 the developing world; and

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;

19 bis. *Invites* the Council and Member States to work together with relevant organizations to strive to achieve the maximum possible level of progress on the implementation of aviation in-sector CO_2 emissions reduction measures (e.g. technology, operations and fuels), recognizing that the largest potential impact on aviation CO_2 emissions reduction will come from fuel-related measures;

19 ter. *Encourages* the Council and Member States to keep abreast of innovative aircraft technologies, new types of operations conducive to emissions reductions, and Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF) and other cleaner energy sources in line with the *No Country Left Behind* initiative, in order to enable timely certification, as well as timely update and development of relevant ICAO SARPs and guidance, as appropriate. ICAO and its Member States are urged to continue work on the elements of the basket of measures for the achievement of the LTAG, including paragraphs 20 to 25 below;

20. *Requests* States to:

a) consider policies to encourage the introduction of increasingly fuel efficient aircraft into the market and facilitate cost-effective fleet renewal by manufacturers and aircraft operators, and work together through ICAO to exchange information and develop guidance for best practices on aircraft end-of-life such as through aircraft recycling; and

b) incentivise and accelerate investments on research and development of new aircraft with zero CO_2 emissions;

21. *Requests* the Council to:

a) update the CO_2 emissions certification Standard for aeroplanes, as appropriate, based on the latest aircraft efficiency technology improvements;

b) timely update and develop relevant ICAO environmental Standards and Recommended Practices (SARPs) and guidance for new advanced aircraft technologies, as appropriate; and

c) update medium- and long-term technological goals for aircraft fuel burn;

22. *Requests* States to:

a) work together with manufacturers, Air Navigation Service Providers (ANSPs), aircraft operators and airport operators to accelerate the development and implementation of fuel efficient routings and air navigation procedures and ground operations 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);

b) 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;

c) work together through ICAO to exchange information and best practices on Green Airports, including practices related to airport planning, development, operations and maintenance; and

d) consider undertaking climate risk assessment to foster the inclusion of climate change adaptation measures into national climate policies and planning processes, with respect to international aviation systems and infrastructures, as appropriate;

23. *Requests* the Council to:

a) 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;

b) 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);

c) continue to provide the forum to exchange information on best practices for Green Airports, covering such subjects as smart buildings, renewable energy, green mobility, climate change adaptation and resilient development, community engagement and sustainability reporting, aiming at sharing lessons learned and best practices amongst airports;

d) publish and maintain guidance material on the implementation of environmentally sustainable practices at airports, including the Eco-Airport Toolkit e-collection; and

e) encourage States to pursue a climate resilient development of their aviation systems and infrastructures, with a focus on the development of policies that integrate climate mitigation and adaptation actions to advance the sustainable aviation development;

24. *Requests* States to:

a) set a coordinated approach in national administrations for policy actions and investment to accelerate the appropriate research, development, deployment and use of cleaner and renewable energy sources for aviation, including the use of Sustainable Aviation Fuel (SAF) and Lower Carbon Aviation Fuel (LCAF), in accordance with their national circumstances;

b) consider the use of incentives to encourage the deployment of cleaner and renewable energies sources for aviation, including SAF and LCAF;

c) work with relevant stakeholders to accelerate the fuel research, certification and development as well as processing technology and feedstock production, and the certification of new aircraft and engines to allow the use of 100% SAF, in order to decrease costs and support scale-up of sustainable fuel production pathways up to commercial scale, especially through encouraging and promoting SAF and/or LCAF purchase agreements as well as supporting timely delivery of any necessary changes to airport and energy supply infrastructure, taking into account the sustainable development of States;

d) recognize existing approaches to assess the sustainability of all 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

e) adopt measures to ensure the sustainability of aviation fuels, building on existing approaches or combination of approaches, and monitor their production at a national level;

25. *Requests* the Council to:

a) 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 cleaner, renewable sources of energy for aviation, including SAF and LCAF, through regional seminars;

b) continue to maintain the ICAO Global Framework for Aviation Alternative Fuels (GFAAF);

c) continue to give a global view of the future use of SAF and LCAF and to account for changes in life cycle GHG emissions in order to assess progress toward achieving global aspirational goals;

d) work with financial institutions to facilitate access to financing infrastructure development projects dedicated to SAF and LCAF and incentives to overcome initial market hurdles;

e) cooperate with other relevant international initiatives, including the Sustainable Energy for All (SE4ALL) initiative, to facilitate the aviation’s access to renewable energy; and

f) continue to assess progress on the development and deployment of SAF, LCAF and other cleaner energy sources for aviation as part of the ICAO stocktaking process, and convene the CAAF/3 in 2023 for reviewing the 2050 ICAO Vision for SAF, including LCAF and other cleaner energy sources for aviation, in order to define a global framework in line with the *No Country Left Behind* (NCLB) initiative and taking into account national circumstances and capabilities;

26. *Requests* the Council to identify the potential impacts of climate change on international aviation operations and related infrastructure, identify adaptation measures to address the potential climate change impacts, and maintain and enhance guidance on climate change risk assessment and adaptation measures for international aviation, in cooperation with other relevant international organizations and the industry; and

27. *Requests* the Council to 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_2 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_2 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.

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ATTACHMENT

Amendment to the Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change presented by the ICAO Council

(Presented by China)

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 14 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, continue to account for less than 2 per cent of total global CO_2 emissions, and they are projected to increase as a result of the continued growth of air transport mainly in developing countries to meet their social and development needs, unless collaborative actions among States as well as other stakeholders to address international aviation and climate change are taken;

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;

Whereas the Glasgow Climate Pact, which was adopted by the Conference of the Parties to the UNFCCC in November 2021, reaffirms the long-term global goal to hold the increase in the global average temperature to well below 2 ℃ above pre-industrial levels and to pursue 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, and the Glasgow Climate Pact also recognizes that the impacts of climate change will be much lower at the temperature increase of 1.5 °C compared with 2 °C and resolves to pursue efforts to limit the temperature increase to 1.5 °C;

Recognizing the extent to which developing countries will effectively implement their mitigation efforts will depend on the effective implementation by developed countries of their commitments under UNFCCC with its Tokyo Protocol and Paris Agreement related to financial resources and transfer of technology and will take full into account that economic and social development and poverty eradication are the first and overriding priorities of the developing countries.

Recognizing the want of feasibility studies on 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 ~~Se~~ssion in 2010 and reaffirmed at its 38th, and 39th and 40th Sessions in 2013, 2016 and 2019, respectively;

Acknowledging ICAO work undertaken to explore the feasibility of a long-term global aspiration goal (LTAG) for international aviation in light of the 2ºC and 1.5ºC temperature goals of the Paris Agreement;

~~*Recognizing*~~*Welcoming* the information-sharing and consultative process on the feasibility of a LTAG for international aviation, including the ICAO stocktaking on aviation in-sector CO_2 emissions reduction, and the convening of ICAO Global Aviation Dialogues (GLADs) and High-level Meeting, since the 40th Session of the ICAO Assembly;

Recognizing that the ICAO *Report on the Feasibility of a Long-Term Aspirational Goal for International Civil Aviation CO_2 Emission Reductions*, which assessed the feasibility of possible aviation in-sector CO_2 emissions reduction scenarios, serves as a preliminary basis for the consideration of an LTAG;

Also recognizing that the ICAO *Report on the Feasibility of a Long-Term Aspirational Goal for International Civil Aviation CO_2 Emission Reductions*, which could have completed the mandate of the CAEP LTAG-TG, has acknowledged its absence of conducting detailed studies on the impact on growth as well as costs in developing countries, which is requested by the last session of the Assembly;

~~*Recognizing*~~*Observing* that 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 do not 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;

Recognizing that any global aspirational goals for international aviation cannot be achieved unless developed countries shall comply with their international obligations through undertaking a significantly "net-minus" emissions for their aviation much earlier than 2050 to vacate carbon space for developing countries to grow and providing new and additional financial resources, including for the transfer of technology, needed by the developing countries to enhance their contributions to the goals;

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_2 efficiency by an average of 1.5 per cent per annum from 2009 until 2020, to achieve carbon neutral growth from 2020 and to emissions by 50 per cent by 2050 compared to 2005 levels achieve a long-term goal of net-zero carbon emission by 2050;

Recalling the UNFCCC and the Paris Agreement and *acknowledging* its principle of equity, 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, sustainable aviation fuels, operational improvements and market-based measures to reduce emissions and possible evolution of recommended standards and guidance, 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, *while observing* an unprecedented level of emerging new technologies and innovations towards green aviation transition;

Welcoming the adoption of the CO2 emissions certification Standard for aeroplanes by the Council in March 2017, and the need to keep this Standard up to date based on the latest aircraft efficiency technology improvements;

Acknowledging the need for the timely update and development of relevant ICAO environmental SARPs and guidance for new advanced aircraft technologies, as appropriate;

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_2 emissions;

Welcoming the assessment of the environmental benefits of the Aviation System Block Upgrades (ASBUs) completed for Block 0 and Block 1, and the results of the ~~first~~ global horizontal and vertical flight efficiency analysis;

Welcoming the convening of the ICAO Seminars on Green Airports in November 2017, May 2019 and November 2021, and recognizing the important role of airports in the distribution of innovative sources of energy to air transport;

Noting that the first Conference on Aviation and Alternative Fuels in November 2009 (CAAF/1) endorsed the use of sustainable aviation fuels, 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/1 established an ICAO Global Framework for Aviation Alternative Fuels (GFAAF) through which progress has been registered, fuel conversions processes, including the increasing number of fuel conventions process, and airports distributing such fuels for more commercial flights

Further noting that the second Conference on Aviation and Alternative Fuels in October 2017 (CAAF/2) adopted recommendations and approved a declaration, including the 2050 ICAO Vision for Sustainable Aviation Fuels, as a living inspirational path for a significant proportion of aviation fuels to be substituted with sustainable aviation fuels by 2050, ~~and the need to update the 2050 ICAO Vision to include a quantified proportion of such fuels to be used by 2050~~;

Recognizing that the technological feasibility of drop-in sustainable aviation fuels is proven and such fuels are expected to have the largest impact on aviation CO_2 emissions reduction ~~by 2050 and continue to have a large impact beyond 2050~~, and that the introduction of appropriate policies and incentives to create a long-term market perspective is required

Recognizing the continuing developments in drop-in fuels such as Sustainable Aviation Fuel (SAF) and Lower Carbon Aviation Fuel (LCAF) to reduce aviation CO_2 emissions, and *welcoming* the development of new fuels and cleaner energy sources for aviation, including the use of hydrogen and renewable electricity;

Also recognizing the significant imbalance between developed and developing countries in the R&D and deployment of new fuels and cleaner energy sources for aviation such as SAF and LCAF and that enhanced financial and technological support for developing countries will allow for a globally concerted decarbonization of aviation energy;

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;

Recognizing that sustainability criteria, sustainability certification, and the assessment of life cycle emissions of such fuels are developed and updated as part of work for the implementation of Carbon Offsetting and Reduction for International Aviation (CORSIA);

Acknowledging the need to explore and facilitate the 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 Resolutions A38-18, and A39-2 and A40-18, which are reproduced in the Annex to this Resolution;

Noting that 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_2 Emissions Reduction Activities*, an interactive web- interface, the ICAO Fuel Savings Estimation Tool (IFSET), the ICAO Environmental Benefits Tool (EBT) and a Marginal Abatement Cost (MAC) curve tool;

Welcoming that, as of June 2019 July 2022, 133 member States that represent more than 98 per cent of global international air traffic voluntarily prepared and submitted action plans to ICAO;

Recognizing the need to further develop and update State Action Plans, including the quantification of CO_2 emissions reduction benefits with practical tools, for sustainable aviation and infrastructure with the focus on environment-driven innovations;

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, *and recognizing* the urgent need to establish a working group under the ICAO Council to develop concrete plans and programs to assist developing countries in terms of finance, technology and capacity-building;

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;

Welcoming the launch of the ICAO Assistance, Capacity-building and Training for Sustainable Aviation Fuel (ACT-SAF) Programme to support the development and deployment of SAF, including the establishment of partnerships among States and relevant stakeholders, in line with the No Country Left Behind (NCLB) initiative;

Recognizing that, according to the latest reports from the IPCC, progress in climate change adaptation planning and implementation has been observed across all sectors and regions, but it is still being unevenly distributed with several adaptation gaps observed, including potential vulnerabilities of key transport infrastructures such as international aviation systems and infrastructures, meaning that their design standards should give due consideration to account for projected climate impacts and risks;

Recognizing the need for enabling conditions for the implementation of long-term climate change adaptation measures, especially for vulnerable parts of the aviation system and infrastructure, which would enhance the preparedness level of the international aviation sector for projected extreme and disruptive climate-related events;

Recognizing the importance of work being undertaken to identify the potential impacts of climate change on international aviation operations and related infrastructure, together with identified options of adaptation measures;

Also recognizing that current global financial flows for adaptation are insufficient for and constrain implementation of adaptation options especially in developing countries; 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 A40-17A41-xx: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality* and Resolution A40-19A41-xx: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*, supersede Resolutions A39-1, A39-2 and A39-3A40-17, A40-18 and A40-19 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~~ coordination 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 as needed, 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; the financial and technological support which developing countries have access to; 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, while also recognizing that developed countries should undertake more ambitious absolute emission reduction targets for their aviation to offset an increase in emissions from the growth of air transport in developing States and shall provide new and additional financial support to developing countries for their further contributions to the goal;

7. *Agrees* to review, at its 42st 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;

8. *Requests* the Council, with the support of ICAO member States, to continue to explore a holistic feasibility of a long-term global aspirational goal for international aviation (LTAG) of net-zero carbon emissions，starting from the *ICAO REPORT ON THE FEASIBILITY OF A LONG-TERM ASPIRATIONAL GOAL*，through conducting further detailed studies assessing its social, economical and environmental attainability and impacts on growth as well as costs across regions, especially developing countries, to allow for higher confidence, certainty and climate justice. Such assessment should include information from Member States on their experiences working towards green aviation;

9. *Further resolves* that ICAO Member States are encouraged to make nationally determined contributions to an agreed LTAG of net-zero carbon emissions based on the detailed feasibility exploration in paragraph 8 above, in support of the implementation of the Paris Agreement, while recognizing the special circumstances and respective capabilities of States, in particular developing countries (e.g., the level of development, maturity of aviation markets, sustainable growth of its international aviation, just transition, and national priorities of air transport development); the need to support developing countries for the effective contribution to agreed LTAG; that peaking and neutralizing carbon emissions for aviation will take longer in developing countries, and that developed countries, complying with their obligations under the international laws on climate, should do a Net-Minus by the target year to vacate carbon space for developing countries to grow and shall provide support to developing countries;

10. *While recognizing* that the LTAG is a collective global aspirational goal, and it does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States, *urges* each State to contribute to achieving the goal in a socially, economically and environmentally sustainable manner and in accordance with their common but differentiated responsibilities;

11. *Recognizes* that the level of ambition in the global aspirational goals for international aviation is commensurate to the efficacy and additionality of financial resources and transfer of technology which

developed countries, complying with their international obligations, shall provide to developing countries;

12. *Requests* the Council to establish a specialized committee to develop concrete plans to initiate specific measures or mechanisms so as to facilitate developing countries and States having particular needs better access to public as well as private financial resources, development and enhancement of endogenous capacities and technologies to address international aviation and climate change, and report to the 42nd Session of the ICAO Assembly, including but not limited through:

a) Establishing a module on "assistance mechanism based on the needs of developing countries" under the climate change section of the ICAO website, and providing adequate technical safeguards for developing countries to submit their assistance needs through the website at any time;

b) Promoting collaborated transfer of technology, in particular for developing countries and States having particular needs, to enable them to adapt to cutting-edge and appropriate technologies and to enhance their contribution to the global aspirational goals;

c) further considering the establishment of a climate fund under ICAO, while addressing the possible financial, institutional and legal challenges, proposing the amount of annual grants which the developed countries shall contribute to the fund to ensure a just transition for the developing countries, and enhancing the ICAO's collaboration with other international financial institutions to allow for more financial resources to meet the costs incurred by developing countries and States with particular needs to contribute to the global aspirational goals;

d) Welcoming the establishment of the ICAO Assistance, Capacity-building and Training for SAF (ACT-SAF) programme, in line with the cooperation spirit of No Country Left Behind initiative, it should be extended to add support to the implementation of other emissions reduction measures in an ICAO ACT-LTAG programme (e.g., aircraft technologies, operational improvements, infrastructural changes, LCAF and other cleaner energy sources for aviation).

13. *Requests* the Council to regularly monitor progress on the implementation of all elements of the basket of measures towards the achievement of the LTAG, including but not limited through: periodical stocktaking of the new and additional financial resources, including for the transfer of technology, developed countries provide to developing countries; the ICAO environment stocktaking process; the review of the ICAO Vision for SAF; further assessment of the CO_2 emissions reduction and cost impacts of a changing climate on international aviation, regions and countries, in particular developing countries, and the impact on the growth and cost impacts of the efforts to achieve the LTAG in all countries, especially developing countries; monitoring of information from State Action Plans for international aviation CO_2 emissions reduction; and means of implementation. To this purpose, the Council will consider necessary methodologies for the monitoring of progress, and report to a future Session of the ICAO Assembly;

14. *Further encourages* all States to submit and update voluntary action plans to ICAO to reduce CO_2 emissions from international aviation, outlining respective policies, actions and roadmaps, including long- term projections and actions, and annual reporting on international aviation CO_2;

15. *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 2024 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~~ are preferably encouraged to 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, information on any specific assistance needs for the implementation of the measures, and the financial support the developing countries have attained;

16. *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;

17. *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 2024, including through cooperation and assistance on identifying possible sources of financing for decarbonization of aviation in cooperation with financial and other relevant organization, in order for States to conduct necessary studies and to voluntarily submit action plans to ICAO;

18. *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 *further encourages* States to support the work of ICAO on measuring progress through the reporting of annual data on traffic, fuel consumption and CO_2 emissions, respectful for national sovereignty and avoiding placing undue burden on States, especially developing countries;

19. *Requests* the Council to ~~request~~invite 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_2 emissions from States' international aviation to the UNFCCC, as part of its contribution to assessing progress made by States in the implementation actions to address international aviation and climate change ~~in the sector~~ based on information approved by its Member States;

20. While recognizing that no effort should be spared to obtain means to support the reduction and stabilization of CO_2 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;

21. *Requests* States to 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;

22. *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 and to adapting international aviation systems and infrastructure to climate change impacts and risks;

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 the developing world; and

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;

23. *Invites* the Council and Member States to work together with relevant organizations to strive to achieve the maximum possible level of progress on the implementation of aviation in-sector CO_2 emissions reduction measures (e.g. technology, operations and fuels) in an coordinated and harmonized manner with a view to avoiding adverse impacts on the social and economical development of the developing countries, recognizing that the largest potential impact on aviation CO_2 emissions reduction will come from fuel-related measures;

24. *Encourages* the Council and Member States to keep abreast of innovative aircraft technologies, new types of operations conducive to emissions reductions, and Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF) and other cleaner energy sources in line with the cooperation spirit of *No Country Left Behind* initiative, in order to enable timely certification, as well as timely update and development of relevant ICAO SARPs and guidance, as appropriate. ICAO and its Member States are urged to continue work on the elements of the basket of measures for the achievement of the sustainable aviation ~~the LTAG~~, including paragraphs 25 to 30 below;

25. *Requests* States to:

a) consider policies to encourage the introduction of increasingly fuel efficient aircraft into the market and facilitate cost-effective fleet renewal by manufactures and aircraft operators, and work together through ICAO to exchange information and develop guidance for best practices on aircraft end-of-life such as through aircraft recycling; and

b) incentivise and accelerate investments on research and development of new and climate-friendly aircraft;
18.

26. *Requests* the Council to:

a) update the CO_2 emissions certification Standard for aeroplanes, as appropriate, based on the latest aircraft efficiency technology improvement;

b) timely update and develop relevant ICAO environmental Standards and Recommended
Practices (SARPs) and guidance for new advanced aircraft technologies, as appropriate; and

c) update medium-and long-term technological goals for aircraft fuel burn;

27. Requests States to:

a) work together with manufacturers, Air Navigation Service Providers (ANSPs), aircraft operators and airport operators to accelerate the development and implementation of fuel efficient routings and air navigation procedures and ground operations 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);

b) 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;

c) work together through UN agencies, i.e. ICAO, to exchange information and best practices on Green Airports, including practices related to airport planning, development, operations and maintenance; and

d) consider undertaking climate risk assessment to foster the inclusion of climate change adaptation measures into national climate policies and planning processes, with respect to international aviation systems and infrastructures, as appropriate;

28. *Requests* the Council to:

a) 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;

b) 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);

c) continue to provide the forum to exchange information on best practices for Green Airports, covering such subjects as smart buildings, renewable energy, green mobility, climate change adaptation and resilient development, community engagement and sustainability reporting, aiming at sharing lessons learned and best practices amongst airports;

d) publish and maintain guidance material on the implementation of environmentally sustainable practices at airports, including the Eco- Airport Toolkit e-collection; and

e) encourage States to pursue a climate resilient development of their aviation systems and infrastructure, with a focus on the development of policies that integrate climate mitigation and adaptation actions to advance the sustainable aviation development;

29. Requests States to:

a) set a coordinated approach in national administrations for policy actions and investment to accelerate the appropriate research, development, deployment and use of cleaner and renewable energy sources for aviation, including the use of sustainable aviation fuels

(SAFs) and low carbon aviation fuels (LCAFs), in accordance with their respective national circumstances;

b) consider the use of incentives to encourage the deployment of cleaner and renewable energies sources for aviation, including SAFs and LCAFs;

c) work with relevant stakeholders to accelerate the fuel consider measures to support research, certification and development as well as processing technology and feedstock production, and the certification of new aircraft and engines to allow the use of 100% SAF, in order to decrease costs and support scale-up of sustainable fuel production pathways up to commercial scale, especially through ~~encouraging and promoting SAF and/or LCAF purchase agreements as well as~~ supporting timely delivery of any necessary changes to airport and energy supply infrastructure, taking into account national circumstances and the sustainable development of States

d) recognize existing approaches to assess the sustainability of all 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

e) adopt measures to ensure the sustainability of aviation fuels, building on existing approaches or combination of approaches, and monitor their production at a national level;

30. *Requests* the Council to:

a) 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 cleaner, renewable sources of energy for aviation, including sustainable aviation fuels SAFs and LCAFs, through regional seminars;

b) continue to maintain the ICAO Global Framework for Aviation Alternative Fuels (GFAAF);

c) continue to give a global view of the future use of SAFs and LCAFs and to account for changes in life cycle GHG emissions in order to assess progress toward achieving global aspirational goals;

d) work with financial institutions to facilitate access to financing infrastructure development projects ~~dedicated to SAFs and~~ LCAFs and incentives to overcome initial market hurdles;

e) cooperate with other relevant international initiatives, including the Sustainable Energy for All (SE4ALL) initiative, to facilitate the aviation's access to renewable energy; and

f) continue to assess progress on the development and deployment of SAFs, LCAFs and other cleaner energy sources for aviation as part of the ICAO stocktaking process, and convene the CAAF/3 in 2023 for reviewing the 2050 ICAO Vision for SAF, including LCAF and other cleaner energy sources for aviation, in order to define a global framework in line with the cooperation spirit of *No Country Left Behind* (NCLB) initiative and taking into account national circumstances and capabilities;

31. *Requests* the Council to identify the potential impacts of climate change on international aviation operations and related infrastructure, identify adaptation measures to address the potential climate change

impacts, and maintain and enhance and develop guidance on climate change risk assessment and adaptation measures for international aviation, in cooperation with other relevant international organizations and the industry; and

32. *Requests* the Council to 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_2 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_2 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 —