Resolution A41-21: 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 an 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 the High-level Meeting on the Feasibility of a Long-Term Aspirational Goal for International Aviation CO_2 Emission Reductions, 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 1960s, *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 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 with 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' actions to reduce aviation emissions, as well as to continuously 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 A41-20: *Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality* and Resolution A41-22: *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 standards, methodologies and a mechanism to measure/estimate, monitor and verify global GHG emissions from international aviation, and that 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;

18. *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 decarbonization 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) subparagraphs 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.

19. *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;

20. *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;

21. *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;

22. *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 23 to 28 below;

23. *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) incentivize and accelerate investments on research and development of new aircraft with zero CO_2 emissions;

24. *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;

25. *Requests* States to:

a) work together with manufacturers, air navigation services 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;

26. *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 among 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;

27. *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 energy 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 per cent SAF, in order to decrease costs and support scale-up of sustainable fuel production pathways up to a 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;

28. *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 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;

29. *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

30. *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 —