61ST CONFERENCE OF DIRECTORS GENERAL OF CIVIL AVIATION ASIA AND PACIFIC REGION

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AGENDA ITEM 7: AVIATION AND ENVIRONMENT

ICAO PROGRESS IN AVIATION AND CLIMATE CHANGE

(Presented by ICAO Secretariat)

SUMMARY

This paper outlines the progress of work made by the International Civil Aviation Organization (ICAO) relating to international aviation and climate change and key outcomes arising from the 42nd Session of the ICAO Assembly, held in October 2025.

It also highlights the recent developments across the four building blocks of the ICAO Roadmap for the implementation of the ICAO Global Framework and the Long Term Global Aspirational Goal (LTAG): policy and planning, regulatory framework, implementation support and financing, including information specific to the APAC region.

This paper also provides an update on progress made in CORSIA implementation, the components of the CORSIA implementation framework, as well as recent developments concerning climate financing and aviation taxation. Action required by the Meeting is at paragraph 3 of this Paper.

ICAO PROGRESS IN AVIATION AND CLIMATE CHANGE

1. INTRODUCTION

1.1 The 42nd Session of the ICAO Assembly held in October 2025 adopted the following Assembly Resolutions related to environmental protection: A42-20 on general provisions, noise and local air quality, A42-21 on international aviation and climate change and A42-22 on the Carbon Offsetting and Reduction Scheme for International (CORSIA)[1].

1.2 Subsequently, the ICAO Council in March 2026 approved the updated **ICAO Roadmap for the implementation of the ICAO Global Framework for Sustainable Aviation Fuels (SAF), Lower Carbon Aviation Fuels (LCAF) and other aviation cleaner energies, as well as the Long Term Global Aspirational Goal (LTAG)**. Progress continues to advance implementation across the four interdependent Building Blocks of the ICAO Roadmap: 1) policy and planning, 2) regulatory framework, 3) implementation support, and 4) financing.

1.3 The implementation of CORSIA also continues to advance, with ongoing efforts to expand the supply of CORSIA Eligible Fuels and Emissions Units as the second phase, starting in 2027, approaches.

2. DISCUSSION

Progress on the ICAO Roadmap for Implementation

Building Block 1 (Policy and Planning)

2.1 The **ICAO Cleaner Energy Tracker Tools** now count over 90 SAF policies worldwide, including new and updated policies implemented in India, Japan, Singapore and Thailand. The Tracker Tools also registered increasing number of: airports distributing SAF, approved SAF conversion processes, feedstocks recognized and batches of SAF certified under CORSIA, SAF volumes under offtake agreements, and announced production facilities. An updated ***ICAO Guidance on Policy Measures for Sustainable Aviation Fuels (SAF) Development and Deployment*** was approved by the ICAO Council in March 2026.

2.2 ICAO's Committee on Aviation Environmental Protection (CAEP) has been implementing the LTAG Monitoring and Reporting (LMR) methodology to assess quantitative progress and provide updated projections of CO_2 emissions reductions in international aviation, as well as cost impacts toward achieving the ICAO Global Framework and the LTAG. The LMR is also supported by information from ICAO's annual LTAG Stocktaking events, Tracker Tools, and State Action Plans for aviation CO_2 emissions reductions.

2.3 ICAO's annual LTAG Stocktaking event was part of the ICAO Aviation Climate Week 2026 which was held from 2 to 4 June 2026 in Montréal, Canada, as an in-person event. With over 500 participants from governments, industry, financial institutions, and international organizations, the event demonstrated strong engagement in ICAO's work. With the theme of "*One Global Path: Advancing Net-Zero Aviation*", the event highlighted the latest developments across all aviation environmental topics. Further information is available on ICAO's website, and the recordings are available on ICAO TV.

2.4 ICAO continues its collaborative efforts with States to facilitate the development, update and submission of **State Action Plans (SAPs)** to reduce aviation CO_2 emissions**.** 155 States have submitted their SAPs, covering more than 99 per cent of global air traffic. SAPs that include expected CO_2 emissions reductions in a quantified manner will support the forward-looking assessment of the LTAG progress and facilitate access to targeted support and financing for aviation decarbonization. APAC States have demonstrated strong support for the SAP initiative, with 25 submissions or updates as

[1] A summary listing of reservations to provisions in Resolutions A42-21 and A42-22 is available at: https://www.icao.int/events/assembly-42nd-session/Resolutions

of June 2026[2]. States who have not submitted or updated their SAPs are encouraged to do so to enable ICAO to assess the global progress towards the LTAG.

Building Block 2 (Regulatory Framework)

2.5 The ICAO Assembly confirmed that the sustainability criteria, sustainability certification, and the methodology for the assessment of life cycle emissions used for CORSIA Eligible Fuels (CEF) should be the accepted basis for the eligibility of SAF, LCAF and other aviation cleaner energies used in international aviation, as requested by the ICAO Global Framework. The Assembly also requested the acceleration of the analysis and approval of life cycle values for new fuel sources and pathways, and their sustainability certification, in line with CORSIA requirements.

2.6 Work is ongoing in CAEP to evaluate additional SAF production pathways and related feedstocks, and its recommendations will be considered by the ICAO Council. CAEP is also accelerating the evaluation of new Sustainability Certification Schemes (SCS) for CEFs, with a view to facilitating broader participation by States, without excluding any particular fuel source, pathway, feedstock or technology. The fourth SCS was recently approved by the Council in June 2026, while an additional SCS is currently under consideration and evaluation by CAEP, and the expansion of another SCS's eligibility scope is being considered to include certification for Lower Carbon Aviation Fuels (LCAF).

2.7 CAEP is also undertaking a study of fuel accounting systems for international aviation currently used in the open market, with a view to identifying any possible ICAO role. This study could inform the need for updates to ICAO regulatory frameworks and Information Technology (IT) platforms, as appropriate.

Building Block 3 (Implementation Support)

2.8 The achievement of the LTAG requires a robust, targeted and tailored capacity-building and implementation support programme. ICAO and its Member States, industry, academia and other relevant stakeholders continue to collaborate to enhance capacity-building, taking into account the different circumstances of States and regions, in line with the *No Country Left Behind* Strategic Goal.

2.9 Launched in 2022, the **ICAO Assistance, Capacity-building and Training for SAF (ACT-SAF) programme** provides tailored support for States in various stages of SAF development and deployment, facilitates partnerships and cooperation on SAF initiatives under ICAO's coordination, and enables knowledge sharing, and recognition of initiatives worldwide. ICAO continues to provide strong support to Asia-Pacific States through the ACT-SAF, with participation from over 20 States[3] in the region.

2.10 Significant progress is made in the **ACT-SAF feasibility and business implementation studies** with 18 studies delivered, and 17 studies in the pipeline. These studies are supported by contributions from France, Italy, Netherlands, Republic of Korea, Spain, Switzerland, United Kingdom, the European Union, Airbus and Volaris. In Asia-Pacific, the SAF feasibility study for India, funded by the European Union, was published in September 2025. ICAO aims to support 50 studies by the end 2028.

2.11 The **ACT-SAF series of training sessions** deliver comprehensive training to partners on an array of important SAF-related topics; 24 training sessions have been concluded, which are available on ICAO TV. This includes two new sessions recently delivered on the new soil carbon accumulation (SCA) and carbon capture & sequestration (CCS) methodologies under CORSIA, and updates from leading technology providers on Alcohol-to-Jet (AtJ) SAF.

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[2] SAP Submissions from Asia-Pacific region: Australia, Brunei Darussalam, Cambodia, China, Fiji, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Vanuatu, and Viet Nam.

[3] ACT-SAF partners from the Asia-Pacific region: Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Fiji, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic, Malaysia, Mongolia, Papua New Guinea, Philippines, Republic of Korea, Singapore, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu, and Viet Nam.

2.12 The operationalization of the **ICAO Assistance, Capacity-building and Training for LTAG (ACT-LTAG) programme** was presented at the ICAO Aviation Climate Week 2026. The ACT-LTAG will extend implementation support to other aviation decarbonization measures, with a focus on the development and update of State Action Plans, while recognizing the importance of collaborating with regional initiatives and platforms.

Building Block 4 (Financing)

2.13 Access to financial resources is particularly crucial for the deployment of SAF, LCAF and other aviation cleaner energies, as their global scaling-up in support of the LTAG, would require cumulative investments of around USD 3.2 trillion by 2050, according to the ICAO LTAG Report.

2.14 ICAO is enhancing engagement and establishing networks and structured dialogues between Member States, the international finance community and relevant stakeholders, including public and private financial institutions, investors and insurers, as well as the UN and other internationally-recognized funds and investment vehicles, aiming to identify and promote financing and funding opportunities and prioritization for aviation decarbonization projects, in particular for developing countries and States having particular needs.

2.15 The **ICAO Finvest Hub** continues to evolve from a concept toward an operational programme. The project repository has expanded to 31 projects across 22 States, seeking approximately USD 12.5 billion in capital investment which, if realized, could deliver an estimated 2.5 million tonnes of annual SAF production capacity. Projects submitted to date originate from ICAO ACT-SAF feasibility and business implementation studies, as well as from independently developed initiatives seeking engagement with the Finvest Hub to strengthen project development and financing readiness.

2.16 Engagement with clean energy financing institutions has also progressed, with discussions underway to broaden financing partnerships beyond the existing ICAO collaboration with IRENA. The ICAO Global Sustainable Aviation Marketplace (GSAM) event will take place in March 2027, providing opportunities for project proponents to present to investment panels, facilitate matchmaking, and receive structured feedback.

Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

2.17 The 39th Session of the ICAO Assembly in 2016 agreed on CORSIA as the "*only global market-based measure (MBM) applying to CO_2 emissions from international aviation so as to avoid a possible patchwork of duplicative State or regional MBMs, thus ensuring that international aviation CO_2 emissions should be accounted for only once*". CORSIA complements other aviation in-sector emissions reductions efforts such as technological innovations, operational improvements and aviation cleaner energies to meet the medium-term ICAO global aspirational goal of carbon neutral growth from 2020.

2.18 The 42nd Session of the ICAO Assembly in 2025 reaffirmed the role of CORSIA as the only global scheme for international aviation. It also acknowledged the substantial progress achieved on the robust implementation of CORSIA. With 1 January 2027 marking the start of CORSIA's second phase (2027–2035), the Assembly encouraged the continued and expanded participation by States, along with sustained cooperation and dialogue, to enhance the scheme's effectiveness and environmental integrity. The Assembly also expressed an overwhelming concern with initiatives seeking to collect taxes from international aviation to mobilize climate finance, recognizing its impact on CORSIA implementation. An ICAO State letter (Reference: ENV 1/1 – 26/43), dated 5 May 2026, was issued to provide further information related to CORSIA Implementation.

2.19 The CORSIA implementation framework consists of three components: the ICAO Standards and Recommended Practices (SARPs) in Annex 16, Volume IV to the Chicago Convention; guidance in ICAO Document 9501 — *Environmental Technical Manual* (ETM), Volume IV; and five CORSIA Implementation Elements: 1) voluntary participation in CORSIA; 2) ICAO CORSIA CO_2 Estimation and Reporting Tool (CERT); 3) CORSIA Eligible Fuels; 4) CORSIA Eligible Emissions Units; and 5) CORSIA Central Registry (CCR). The key updates are as follows:

- **Annex 16, Volume IV:** in March 2026, the ICAO Council adopted Amendment 2 to Annex 16, Volume IV, reflecting CAEP's recommendations, including the clarifications on existing Standards related to the CO_2 emissions monitoring, reporting and verification of aeroplane operators. ICAO has distributed the adopted Amendment 2 to Annex 16, Volume IV through a State letter (Reference: AN 1/17.14 – 26/38), dated 29 April 2026. The updated Annex 16, Volume IV is expected to become applicable on 1 January 2027.

- **Doc 9501, Volume IV:** in November 2025, ICAO published the fourth edition of Doc 9501, Volume IV containing technical guidance on CORSIA implementation to support stakeholders, including matters related to claims of emissions reductions from CORSIA Eligible Fuels with updated reporting templates.

- ***States' participation in CORSIA*:** the ICAO Assembly strongly encouraged more States to voluntarily participate in CORSIA, to enhance the environmental integrity of the scheme. The ICAO document CORSIA States for Chapter 3 State Pairs is updated annually to reflect the list of States that define State pairs subject to offsetting requirements in CORSIA each year from 2021. The number of volunteer States has steadily increased from an initial 88 States (2021) to 130 States (2026). In Asia-Pacific, 26 States[4] have already volunteered to participate in CORSIA. With the second phase of CORSIA to start from 2027, the number of CORSIA participating States is expected to be 134 States (2027).

- ***Monitoring, Reporting and Verification (MRV) of CO_2 emissions*:** in accordance with the provisions in Annex 16, Volume IV, many operators are eligible to apply simplified procedures for the monitoring and reporting of CO_2 emissions through the use of the ICAO CORSIA CO_2 Estimation and Reporting Tool (CERT), for which annual updates are developed by CAEP and approved by the ICAO Council. Based on the data reported by operators, States are required to submit annual CO_2 emissions data to ICAO through the CORSIA Central Registry (CCR), together with information such as list of operators; verification bodies accredited in States; emissions reductions from CORSIA Eligible Fuels; and cancellation of CORSIA Eligible Emissions Units. This information serves as the basis for the CCR-related ICAO documents published on the ICAO website.

- 128 States had reported 2024 CO_2 emissions data, covering 99% of total CO_2 emissions from international aviation, ICAO filled the emissions gap of 10 States in accordance with the provisions of Annex 16, Volume IV. The CORSIA sector's growth factor (SGF_{2024}) has a positive value for the 2024 CO_2 emissions, leading to the generation of offsetting requirements for aeroplane operators for the first time.

- ***CORSIA Eligible Fuels (CEFs)*:** an aeroplane operator can reduce its CORSIA offsetting requirements in a given year by claiming emissions reductions from CEFs. The five ICAO documents on CEFs are regularly updated and approved by the ICAO Council. As requested by the ICAO Assembly, ICAO is accelerating the analysis and approval of life cycle values for new fuel sources and pathways and their sustainability certification for CEFs. The updates to two ICAO documents on CEFs: CORSIA default life cycle emissions values for CORSIA eligible fuels, and CORSIA methodology for calculating actual life cycle emissions values, were published in November 2025.

- ***CORSIA Eligible Emissions Units (CEEUs)*:** CEEUs used by an aeroplane operator to meet its CORSIA offsetting requirements is determined in the ICAO document on CEEUs, which is regularly updated and approved by the ICAO Council, considering technical recommendations by the Technical Advisory Body (TAB). In April 2026, two

[4] CORSIA voluntary States from the Asia-Pacific region: Afghanistan, Australia, Cambodia, Cook Islands, Indonesia, Japan, Kiribati, Malaysia, Maldives, Marshall Islands, Federated States of Micronesia, Nauru, New Zealand, Palau, Papua New Guinea, Philippines, Republic of Korea, Samoa, Singapore, Solomon Islands, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu and Viet Nam.

additional programmes were approved to supply CEEUs to CORSIA's first phase (2024 – 2026 compliance period), bringing the total to 10. Eligibility parameters for an already approved programme were updated, and the use of programme registry in a manner consistent with the registry-related requirements of the Programme Registry Attestation, as approved by the ICAO Council, was reinforced. ICAO received 25 applications for eligibility to supply CEEUs for the 2027-2029 compliance period of CORSIA's second phase; the largest number of applications received to date. The assessment by Technical Advisory Body (TAB) is ongoing, including for the Paris Agreement Crediting Mechanism (PACM), taking into consideration the information received from the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat.

- ***Host country authorization for CEEUs*** is a key requirement to avoid double-counting of emissions reductions and thus ensure the availability of such units for aeroplane operators to meet their CO_2 offsetting requirements in CORSIA. ICAO actively encourages governments hosting activities that generate CEEUs to issue the Letters of Authorization which may facilitate the access and availability of CEEUs to aeroplane operators. A dedicated CEEU dashboard is now available on the CORSIA website providing up-to-date information on CEEUs issued and labelled by programmes approved by the ICAO Council; as well as on certified CEFs. At the UNFCCC meeting in June 2026, ICAO, IATA and IETA held a joint side event which focused on the implementation of CORSIA. Further details are available in the CORSIA Newsletter.

- ***ICAO Assistance, Capacity-building and Training for CORSIA (ACT-CORSIA) programme:*** ACT-CORSIA continues to deliver training and assistance on CORSIA implementation with participation by more than 130 States, including over 30 States in Asia-Pacific[5]. In March 2026, ICAO organized its annual Training of Trainers (ToTs) with experts from the supporting States, focusing on the 2026 CORSIA MRV tasks and deadlines, as well as key updates on CEFs and CEEUs. ICAO's CORSIA Verification Course was updated in March 2026 with a new module on the verification of claims of emissions reductions from CEFs made under CORSIA, in line with the updated Doc 9501, Volume IV. ICAO has finalized the development of three additional CORSIA training courses, covering: 1) an overview on basic aspects of CORSIA implementation; 2) matters related to CEFs; and 3) matters related to CEEUs.

Climate Finance and Aviation Taxation

2.20 ICAO has been closely following international discussions and negotiations pertaining to climate finance. This includes proposals under consideration by other UN bodies and organizations, such as the UN Committee of Experts on International Cooperation on Tax Matters and the Global Solidarity Levies Task Force (GSLTF), which identified the aviation sectors as a potential source for levies and taxes to mobilize climate finance in other sectors.

2.21 The 42nd Session of the ICAO Assembly has expressed an **overwhelming concern with the increasing number of initiatives to collect taxes from international aviation** for the mobilization of revenue for climate change and other purposes, emphasizing the need for significant financial resources to achieve aviation's clean energy transition. The Assembly recognized that such initiatives would represent duplicative MBMs, leading to double charging for aviation CO_2 emissions, and negatively impacting the implementation of CORSIA and ultimately the achievement of the LTAG.

2.22 Assembly Resolution A42-21, paragraph 19 reinforced that "*while recognizing that no effort should be spared to obtain means to support the reduction and stabilization of CO_2 emissions from*

[5] ACT-CORSIA participating States from the Asia-Pacific region: Australia (supporting), Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Cook Islands, Fiji, Indonesia (supporting), Japan (supporting), Kiribati, Lao People's Democratic Republic, Malaysia, Marshall Islands, Mongolia, Myanmar, Nauru, Nepal, Pakistan, Palau, Papua New Guinea, Philippines, Republic of Korea (supporting), Samoa, Singapore (supporting), Solomon Islands, Sri Lanka, Thailand, Timor-Leste, Tonga, Tuvalu, Vanuatu, and Viet Nam.

all sources and emphasizing the need for significant financial resources to achieve aviation's clean energy transition and the LTAG, ***urges that ICAO and its Member States express a clear concern, through the UNFCCC and other relevant processes, 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*."

2.23 Introducing overlapping aviation levies and taxes will increase air travel costs, which could have a particularly negative impact on Small Island Developing States (SIDS) and developing countries with a heavy reliance on tourism and trade by air transport. Such a shift could undermine the economic viability of airlines and tourism-related businesses, hinder socio-economic development, and delay progress towards achieving multiple UN Sustainable Development Goals (SDGs). Discussions at the ICAO Aviation Climate Week 2026 also reiterated the critical importance of air connectivity, particularly for developing counties and Small Island Developing States, and warned that additional taxes risk undermining economic and social resilience in vulnerable regions.

2.24 A detailed account of ICAO's extensive deliberations on market-based measures for international aviation and the journey leading to the CORSIA agreement is available on the ICAO CORSIA website and Uniting Aviation, providing context for the concerns outlined above.

3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) encourage States to support and contribute to the implementation of LTAG and the ICAO Global Framework for SAF, LCAF and other Aviation Cleaner Energies, including through contributions and participation in the ACT-SAF programme;

b) encourage States to submit and update quantified State Action Plans to ICAO, encompassing innovations in aviation technologies and cleaner energies, outlining respective policies, actions and roadmaps, including long-term projections, and ensuring the use of the best available data supported by ICAO guidance and tools;

c) encourage States to continue to support the effective implementation of CORSIA as a globally harmonized approach under ICAO's leadership, including through active participation in the ICAO ACT-CORSIA programme;

d) encourage additional States to notify the ICAO Secretariat of their decision to participate, or continue to participate, in CORSIA's second phase, thereby enhancing the effectiveness and integrity of the scheme;

e) encourage States to continue to engage with relevant national authorities to expedite the issuance of Letters of Authorization for CORSIA eligible emissions units to allow for their use by aeroplane operators for CORSIA compliance purposes; and

f) request States to express a clear concern regarding proposals to use international aviation as a potential source for levies and taxes to mobilize resources to other sectors, including through national coordinated efforts, to other relevant UN bodies, international organizations and other forums.

— END —