



UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Subsidiary Body for Scientific and Technological Advice
Sixty-fourth session (SBSTA64)
(Bonn, Germany, 8 to 18 June 2026)

Agenda item 11 (b): Emissions from fuel used for international aviation and maritime transport

Submission by the International Civil Aviation Organization (ICAO)

1. INTRODUCTION

1.1 ICAO and its 193 Member States exercise continuous leadership on environmental issues relating to international civil aviation. Ensuring that **aviation is environmentally sustainable** is one of the six Strategic Goals under the [ICAO Strategic Plan 2026-2050](#).

1.2 Since 2010, the ICAO Assembly sessions adopted an ambitious suite of collective global aspirational goals and vision for the international aviation sector, namely:

- **Carbon Neutral Growth from 2020 (CNG2020)**;
- **Long-Term Global Aspirational Goal (LTAG)** of net zero CO₂ emissions by 2050; and
- **Global aspirational Vision to reduce CO₂ emissions by 5 per cent by 2030** through the use of aviation cleaner energies, as part of the [ICAO Global Framework for Sustainable Aviation Fuels \(SAF\), Lower Carbon Aviation Fuels \(LCAF\) and other Aviation Cleaner Energies](#).

1.3 These aspirational goals and vision will be achieved through a basket of CO₂ emissions reduction measures, such as aircraft technology, operational improvements and aviation cleaner energies, and complemented by the ICAO Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) for the achievement of CNG2020.

1.4 The recent 42nd Session of the ICAO Assembly held in October 2025 adopted the following Assembly Resolutions related to climate change: [A42-21 on international aviation and climate change](#) and [A42-22 on CORSIA](#)¹, delivering a clear and reinforced mandate for ICAO to advance its environmental agenda.

1.5 The ICAO Council in March 2026 approved the updated **ICAO Roadmap for the implementation of the ICAO Global Framework and the 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, as outlined below.

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>

1.6 The recent challenges faced by the international aviation sector arising from volatility in energy markets, including recent increases in jet fuel prices and emerging supply constraints in certain regions, highlight the importance of regulatory stability, international cooperation and cost-effective measures in supporting both the operational resilience of international aviation and its long-term environmental sustainability.

1.7 In this regard, the theme of the [ICAO Aviation Climate Week 2026](#) (2 to 4 June 2026), “*One Global Path: Advancing Net-Zero Aviation*”, was particularly timely, providing a valuable platform to bring stakeholders together to discuss the latest developments across aviation environmental issues and to build global momentum toward advancing aviation sustainability.

2. PROGRESS ON THE ICAO ROADMAP FOR IMPLEMENTATION

2.1 ICAO continues to make progress on the ICAO Roadmap for the implementation of the ICAO Global Framework and the LTAG, whilst recognizing the importance of making a balanced progress between the four interdependent Building Blocks.

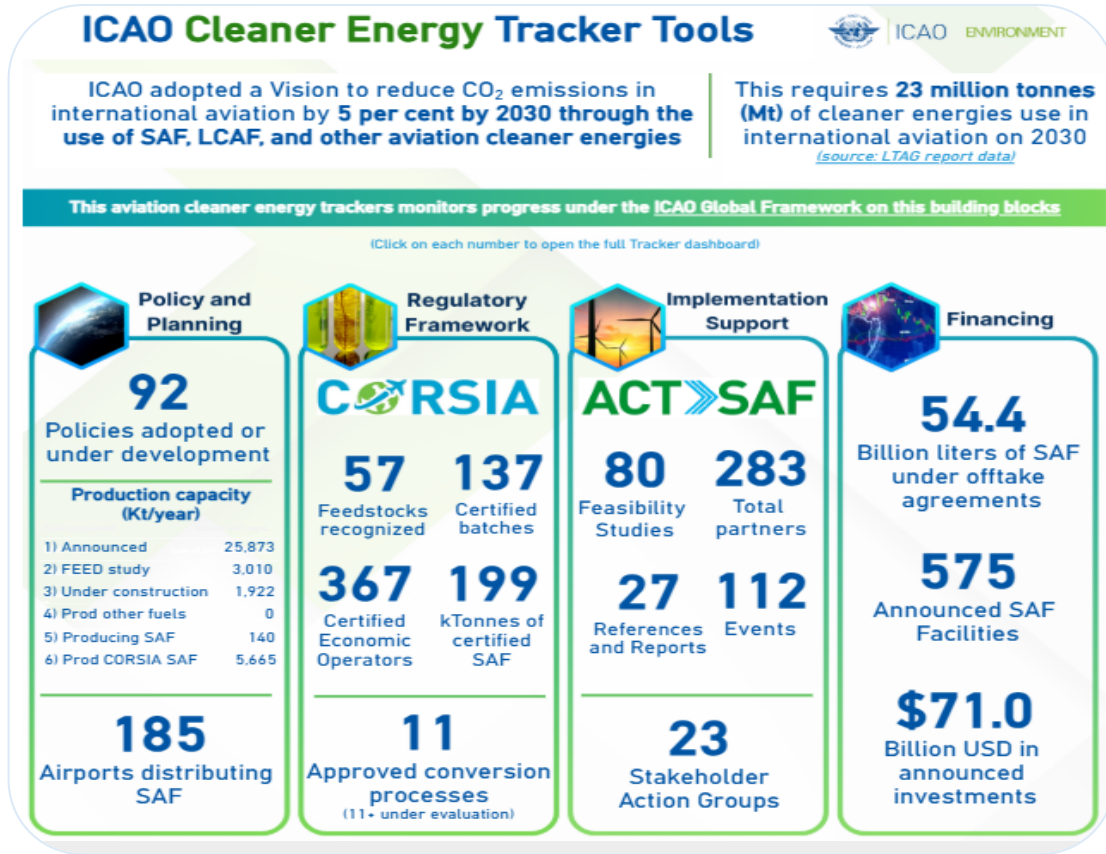
Building Block 1 (Policy and Planning)

2.2 ICAO’s Committee on Aviation and Environmental Protection (CAEP) has been implementing the **LTAG Monitoring and Reporting (LMR) methodology** to assess the quantitative progress and provide updated future projections of CO₂ emissions reductions of the international aviation sector and cost impacts toward the achievement of the ICAO Global Framework and the LTAG. The LMR is also supported by information from annual ICAO LTAG Stocktaking events, Tracker Tools, and State Action Plans for aviation CO₂ emissions reductions. ICAO’s annual LTAG Stocktaking event is now part of the **ICAO Aviation Climate Week**, which addresses all aviation CO₂ emissions reduction measures.

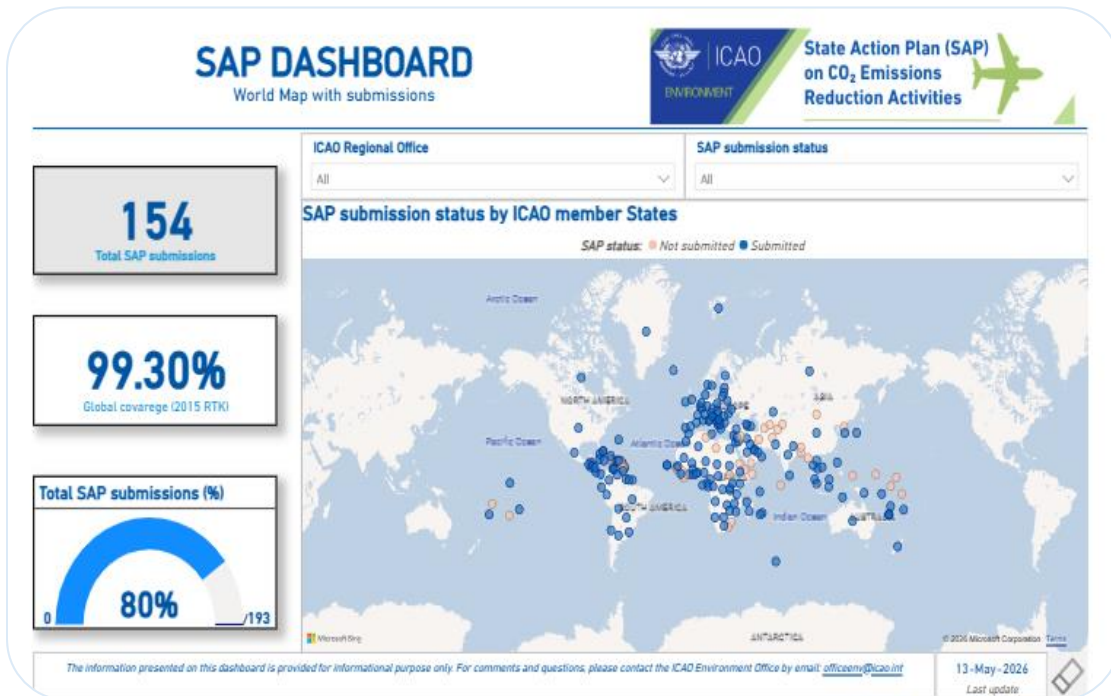
2.3 Policy developments on aviation cleaner energies are advancing. In March 2026, the ICAO Council approved the updated [ICAO Guidance on Policy Measures for Sustainable Aviation Fuels \(SAF\) Development and Deployment](#).

2.4 The [ICAO Cleaner Energy Tracker Tools](#) now count over 90 policies worldwide, including new and updated policies implemented in 2026 in India, Japan, Singapore, Thailand, and also subnational policies in the United States. The Tracker Tools have 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.

2.5 ICAO continues its collaborative efforts with States to facilitate the development, update and submission of [State Action Plans \(SAP\)](#) to reduce aviation CO₂ emissions. 154 States have submitted their SAPs, covering more than 99 per cent of global air traffic. SAPs that include expected CO₂ 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 measures.



ICAO Cleaner Energy Tracker Tools (as of May 2026)



ICAO State Action Plans (SAP) Dashboard (as of May 2026)

Building Block 2 (Regulatory Framework)

2.6 The ICAO Assembly confirmed that the sustainability criteria, sustainability certification, and the methodology for the assessment of life cycle emissions used for [CORSA 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 the CORSIA requirements.

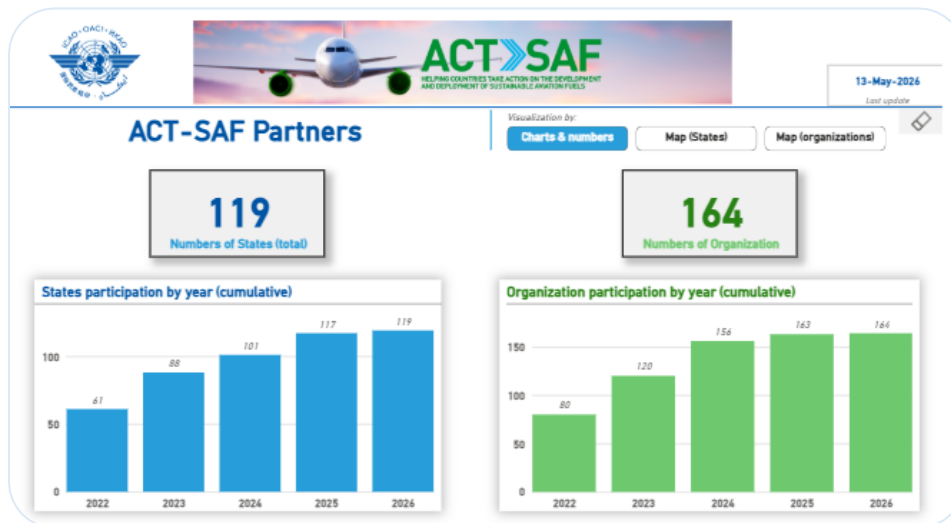
2.7 In this regard, work is ongoing in CAEP to evaluate additional SAF production pathways and related feedstocks, and its recommendations will be considered by the ICAO Council. CAEP is also accelerating the evaluation of new Sustainability Certification Schemes (SCS) for CEFs, with a view to facilitating broader participation by States, without excluding any particular fuel source, pathway, feedstock or technology. Two additional SCS are currently under consideration and evaluation, while the expansion of another SCS's eligibility scope is being considered to include certification for LCAF. The evolution of various indicators related to aviation cleaner energies, including regulatory framework, is reflected in the ICAO Cleaner Energy Tracker Tools, as detailed above.

2.8 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 IT platforms, as appropriate.

Building Block 3 (Implementation Support)

2.9 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.

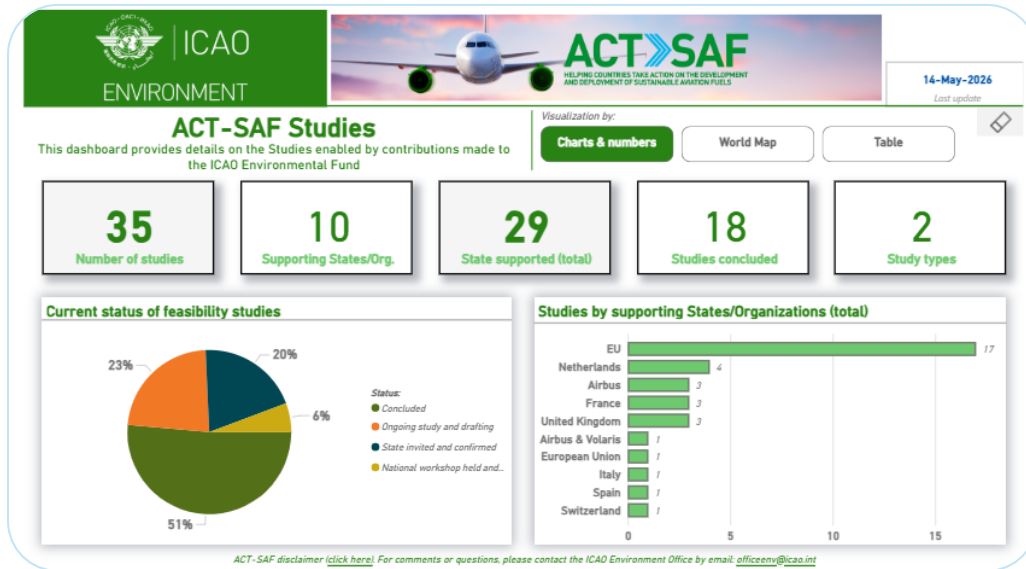
2.10 Launched in 2022, the [ICAO Assistance, Capacity-building and Training for SAF \(ACT-SAF\) programme](#) provides tailored support for States in various stages of SAF development and deployment, facilitates partnerships and cooperation on SAF initiatives under ICAO's coordination, and enables knowledge sharing, and recognition of initiatives worldwide.



Over 280 ICAO ACT-SAF Partners (as of May 2026)

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.

2.12 Significant progress is made in the [ACT-SAF feasibility and business implementation studies](#) with 18 studies delivered, and 17 more 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. ICAO aims to support 50 studies by the end of 2028.



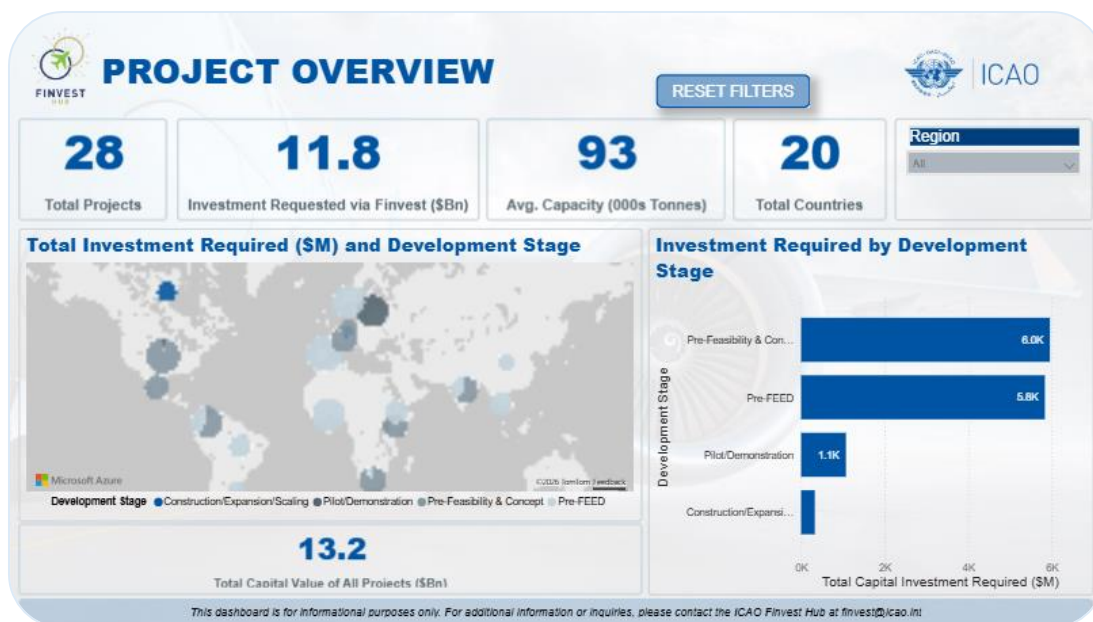
Dashboard on ICAO ACT-SAF studies (as of May 2026)

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 concept toward an operational programme. The project repository has expanded to 28 projects across 20 States, seeking approximately USD 11.8 billion in capital investment which, if realized, could deliver an estimated 2.42 million tonnes of annual sustainable aviation fuel (SAF) production capacity. Projects submitted to date originate both 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.



Dashboard on ICAO Finvest Hub (as of May 2026)

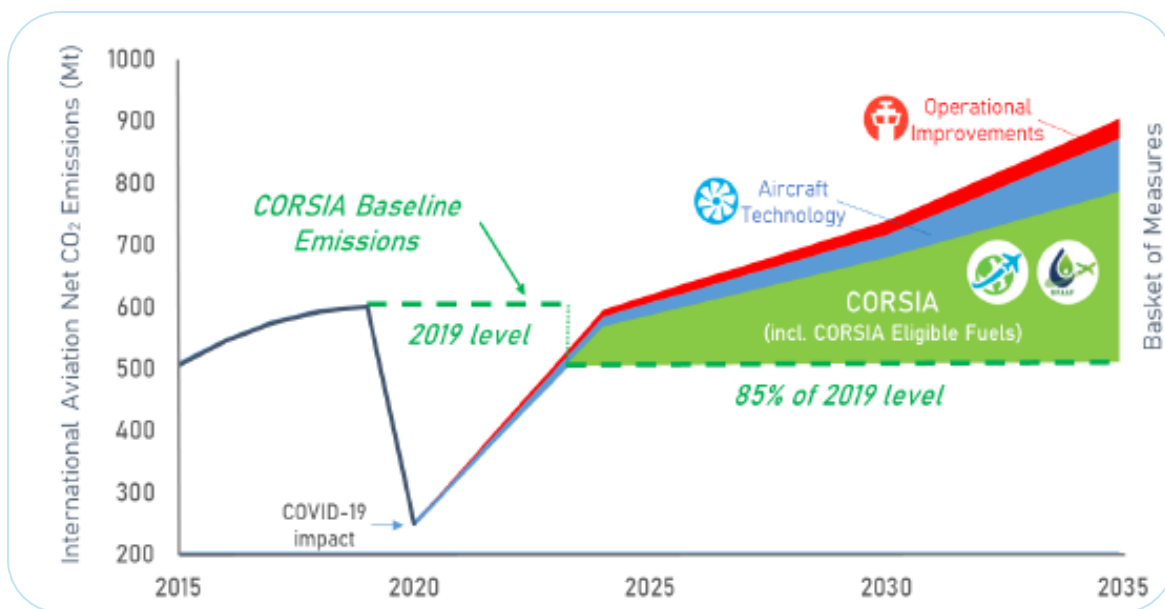
2.16 Engagement with clean energy financing institutions has also progressed, with discussions underway to broaden financing partnerships beyond the [existing ICAO collaboration with IRENA](#). The ICAO Global Sustainable Aviation Marketplace (GSAM) event will take place in March 2027, providing opportunities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

3. CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION (CORSA)

3.1 The 39th Session of the ICAO Assembly in 2016 agreed on ICAO’s [Carbon Offsetting and Reduction Scheme for International Aviation \(CORSA\)](#) as the “*only global market-based measure (MBM) applying to CO₂ emissions from international aviation so as to avoid a possible patchwork of duplicative State or regional MBMs, thus ensuring that international aviation CO₂ emissions should be accounted for only once*”. CORSA 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.

3.2 The 41st Session of the ICAO Assembly in 2022 adopted Resolution A41-22 on CORSA, containing the adjustments to the CORSA design features recommended by the ICAO Council following the 2022 CORSA periodic review, namely:

- CORSA baseline: using 2019 emissions for the pilot phase (2021 – 2023), and using 85 per cent of 2019 emissions after the pilot phase (2024 – 2035);
- Calculation of CORSA offsetting requirements: changing the percentage use of the sectoral and individual operator’s growth factors as 100 per cent sectoral and 0 per cent individual (for the 2021 – 2032 period), and 85 per cent sectoral and 15 per cent individual (for the 2033 – 2035 period); and
- New entrant threshold: change of reference emissions from 2020 to 2019.



Contribution of CORSIA towards reducing international aviation net CO₂ emissions (with the adjusted CORSIA baseline emissions)

3.3 The [42nd Session of the ICAO Assembly](#) in 2025 reaffirmed the role of CORSIA as “the only global market-based measure (MBM) applying to CO₂ emissions from 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. Furthermore, the Assembly expressed an overwhelming concern with initiatives seeking to collect taxes from international aviation to mobilize climate finance, recognizing its impact on CORSIA implementation.

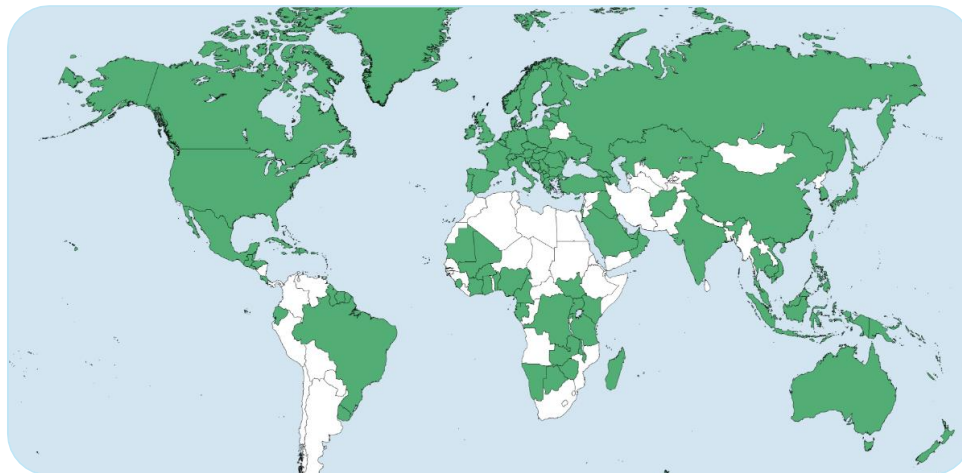
CORSIA Implementation Framework

3.4 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 CO₂ Estimation and Reporting Tool (CERT); 3) CORSIA Eligible Fuels; 4) CORSIA Eligible Emissions Units; and 5) CORSIA Central Registry (CCR).

- [Annex 16, Volume IV](#): In March 2026, the ICAO Council adopted Amendment 2 to Annex 16, Volume IV, reflecting CAEP’s recommendations agreed at its thirteenth meeting (CAEP/13), including the clarifications on existing Standards related to the CO₂ emissions monitoring, reporting and verification (MRV) of aeroplane operators. 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.

Voluntary participation in CORSIA

3.5 The ICAO Assembly strongly encouraged more States to voluntarily participate in CORSIA, as more participating States will contribute to the higher 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). With the second phase of CORSIA to start from 2027, the number of CORSIA participating States is forecasted to be 134 States (2027).



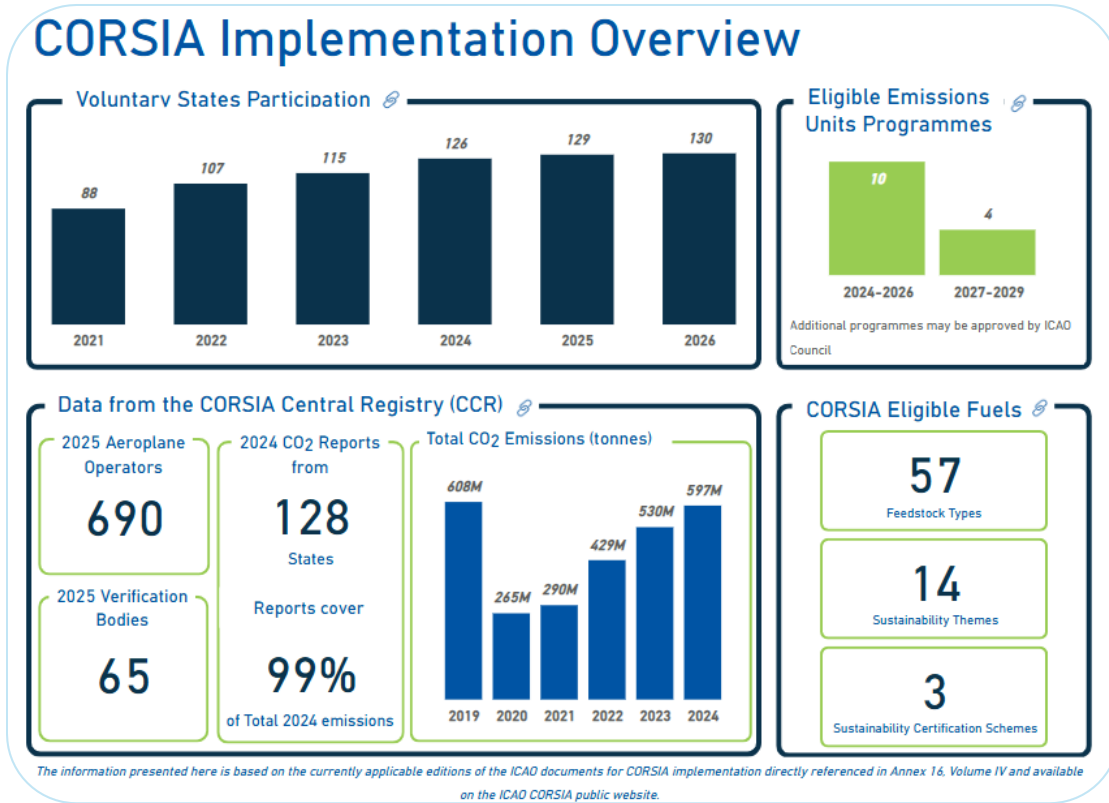
Forecasted CORSIA participating States for 2027

Monitoring, Reporting and Verification (MRV) of CO₂ emissions

3.6 The robust implementation of CORSIA relies on the consistent MRV of annual CO₂ emissions by all aeroplane operators performing international flights. In accordance with the provisions in Annex 16, Volume IV, many operators are eligible to apply simplified procedures for the monitoring and reporting of CO₂ emissions through the use of the [ICAO CORSIA CO₂ Estimation and Reporting Tool \(CERT\)](#), for which annual updates are developed by ICAO CAEP and approved by the Council.

3.7 Based on the data reported by operators, States are required to submit annual CO₂ 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](#).

3.8 128 States had reported **2024 CO₂ emissions data, covering 99% of total CO₂ emissions from international aviation**, ICAO filled the emissions gap of 10 States in accordance with the provisions of Annex 16, Volume IV. On the basis of the information reported by States, complemented by the necessary data gap filling procedure, ICAO updated editions of the CCR-related documents, which were published on the ICAO website. The CORSIA sector's growth factor (SGF₂₀₂₄) has a positive value for the 2024 CO₂ emissions, leading in turn to the generation of offsetting requirements for aeroplane operators for the first time since the start of CORSIA implementation. Ensuring the timely, continuous, and robust implementation of the CORSIA MRV system remains essential, as ICAO's calculation of annual SGF values depends on consistent reporting of CO₂ emissions data.



Overview of CORSlA Implementation Elements (as of May 2026)

CORSlA Eligible Fuels

3.9 An aeroplane operator can reduce its CORSlA offsetting requirements in a given year by claiming emissions reductions from CORSlA Eligible Fuels (CEFs). The [five ICAO documents on CEFs](#) have been regularly updated and approved by the ICAO Council.

3.10 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 recent updates to two ICAO documents on CEFs, namely: CORSlA default life cycle emissions values for CORSlA eligible fuels; and CORSlA methodology for calculating actual life cycle emissions values were published on the ICAO website in November 2025.

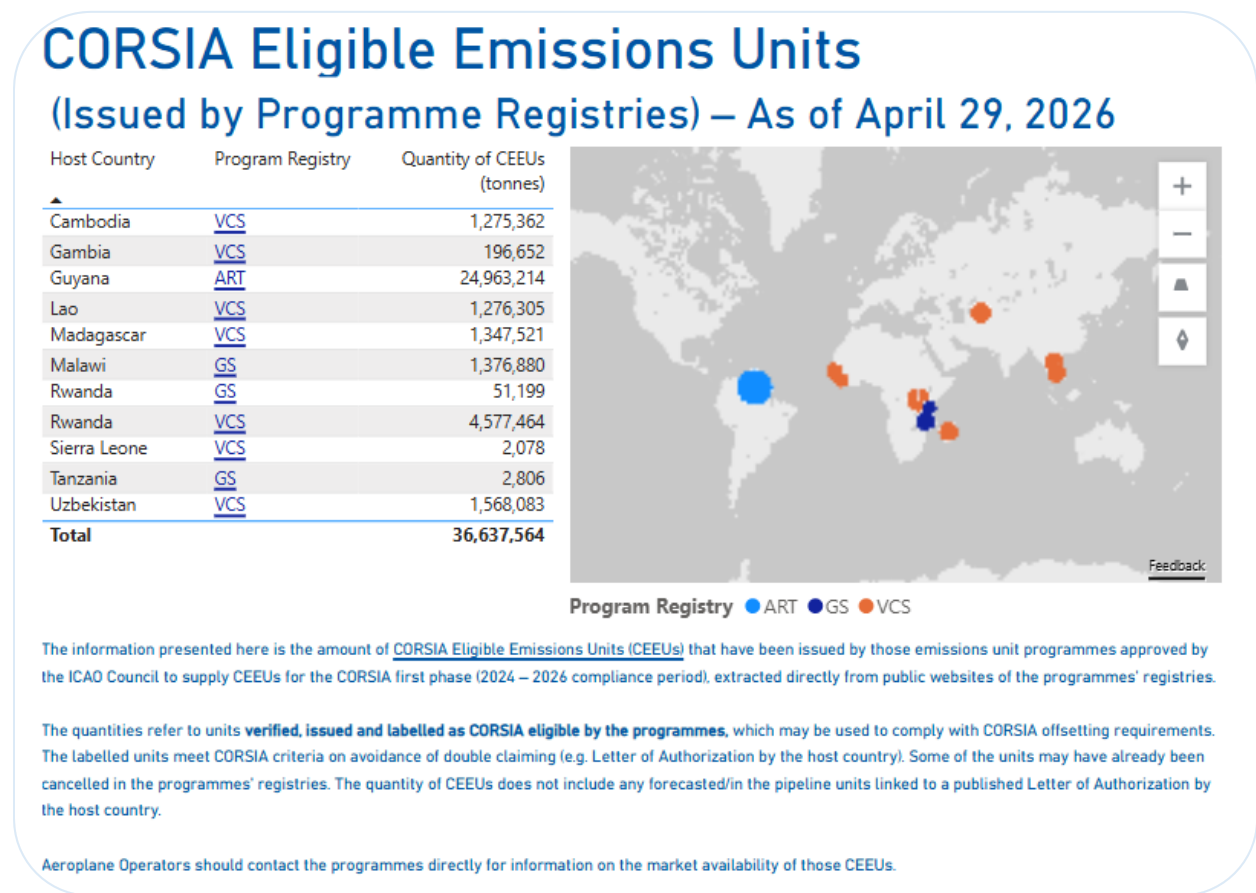
CORSlA Eligible Emissions Units

3.11 The CORSlA Eligible Emissions Units (CEEU) used by an aeroplane operator to meet its CORSlA 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 \(TAB\)](#).

3.12 In April 2026, the ICAO Council accepted TAB's recommendations: inclusion of two additional programmes to supply CEEUs to CORSlA's first phase (2024 – 2026 compliance period), bringing the number of such programmes to a total of 10; updated eligibility parameters for an already approved programme; and the clarification to reinforce the use of the programme registry in a manner that remains consistent with the registry-related requirements of the Programme Registry Attestation, as approved by the ICAO Council.

3.13 In response to the call for applications for the 2026 TAB assessment cycle, ICAO received 25 applications for eligibility to supply CEEUs for the 2027 – 2029 compliance period of CORSIA’s second phase, representing the largest number of applications received to date. In 2026, TAB will also undertake the assessment of the Paris Agreement Crediting Mechanism (PACM), taking into consideration the information received from the UNFCCC Secretariat.

3.14 The UNFCCC COP29 in November 2024 finalized the rules under Article 6 of the Paris Agreement, which is important for CORSIA as the governments hosting activities that generate CEEUs as approved by the ICAO Council, now have the necessary guidelines for authorizing those units to be used under CORSIA. **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 CO₂ offsetting requirements in CORSIA. As such, 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.



ICAO Tracker reflecting CEEUs

**These units are issued by eligible emissions unit programmes approved by the ICAO Council to supply CEEUs for the CORSIA first phase (2024–2026), extracted directly from public websites of the programmes’ registries.*

ICAO ACT-CORSIA programme

3.15 ICAO's capacity-building activities to support States with CORSIA implementation are undertaken under the **ICAO Assistance, Capacity-building and Training for CORSIA (ACT-CORSIA)** programme, launched in July 2018. ACT-CORSIA aims to assist all States in CORSIA implementation in a "coordinated approach" under the umbrella of ICAO.

3.16 The cornerstone of the ACT-CORSIA programme is the [Buddy Partnerships](#), whereby experts from 16 supporting States engage with CORSIA Focal Points from 125 States to support CORSIA implementation in those States. 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.

3.17 [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 guidance on this topic included in the updated Doc 9501, Volume IV. ICAO continues to work on 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.

3.18 Other important elements of the ACT-CORSIA programme includes the development and updates of outreach materials on CORSIA, namely: [CORSIA Frequently Asked Questions \(FAQs\)](#), monthly issues of the [CORSIA Newsletter](#); and the CORSIA guide videos – [Navigating CORSIA](#).

4. UNFCCC – CLIMATE FINANCE

4.1 The UNFCCC COP29 meeting adopted the new Collective Quantified Goal on Climate Finance (NCQG), an agreement that aims to triple finance to developing countries, with developed countries taking the lead, from the previous goal of USD 100 billion per year, to at least USD 300 billion per year by 2035, and also to secure the efforts of all actors to work together to scale up finance to developing countries, from public and private sources, to the amount of USD 1.3 trillion per year by 2035.

4.2 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.

4.3 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 market-based measures (MBMs), leading to double-charging for aviation CO₂ emissions, and negatively impacting the implementation of CORSIA and ultimately the achievement of the LTAG.

4.4 Notably, 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 CO₂ emissions from 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.”

4.5 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).

4.6 A detailed account of ICAO’s extensive deliberations over 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.

5. ICAO Aviation Climate Week 2026

5.1 The ICAO Aviation Climate Week was held from 2 to 4 June 2026 in Montréal, Canada. With the theme of “*One Global Path: Advancing Net-Zero Aviation*”, the event highlighted the latest developments in all aviation environmental topics, as ICAO leads the international aviation sector towards achieving net-zero carbon emissions by 2050.

5.2 Serving as ICAO’s annual global platform to advance aviation’s environmental and climate agenda, the ICAO Aviation Climate Week also incorporates the annual ICAO LTAG stocktaking in response to the request of the ICAO Assembly to monitor progress towards the achievement of the LTAG, implementation of the ICAO Global Framework for SAF, LCAF and other aviation cleaner energies, and discuss the implementation of CORSIA among other topics. Further information is available on [ICAO’s website](#). Recordings of the event are available on [ICAO TV](#).



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