



Carbon offsetting for international aviation

Three goals

Air transport is a vital feature of our modern, globalized world, connecting people and businesses across oceans and continents. The global aviation industry supports over 63 million jobs and accounts for 3.5% of global GDP (\$2.7 trillion – based on 2014 data).

The benefits of air travel are clear, but this connectivity creates an environmental challenge. In 2016, civil aviation, as a whole, emitted around 814 million tonnes of CO₂, which is roughly 2% of man-made carbon emissions. Our industry recognizes that our operations contribute to climate change and we are taking the responsibility to lessen this impact extremely seriously. Indeed, in 2009, the aviation industry set three global goals to address its climate impact:

- An annual average fuel efficiency improvement of 1.5% from 2009 to 2020. The industry is on track to meet this short-term target.
- Stabilize net CO₂ emissions at 2020 levels with carbon-neutral growth. The Global Market-Based Measure is one of the elements that will enable the industry to meet the mid-term goal of carbon-neutral growth 2020, by complementing technology, sustainable aviation fuels, operational and infrastructure measures.
- Reduce aviation's net CO₂ emissions to half of what they were in 2005, by 2050. Achieving this ambitious goal will require continued investment in new technologies and strong support mechanisms for the deployment of sustainable aviation fuels.

Four Pillars

Aviation is approaching the challenge of achieving its climate goals through a four-pillar strategy:

- The development of new, more efficient aircraft and engines can substantially decrease CO₂ emissions. New technology aircraft are, on average, around 15-20% more fuel-efficient than the models they replace. Sustainable aviation fuels, which are already being used on certain commercial flights, will have the potential to cut emissions by up to 80%.
- Operational measures include identifying weight savings in the current fleet, allowing the aircraft to burn less fuel. Airlines have been investing in lightweight seats and cabin equipment and even replacing heavy pilot manuals with tablet computers. Other operational measures include single-engine taxiing, idle reverse thrust, and ATC procedures such as continuous descents into airports and traffic flow management that prevent unnecessary airborne holding.
- The 'infrastructure' pillar of the strategy relates mainly to navigational improvements, making better use of airspace and streamlining the routes taken by aircraft to cut down on flight time, and optimizing airport layout to improve throughput and prevent unnecessary holding.
- The industry remains confident that technology, operational measures and better infrastructure will provide long term solutions to ensure the sustainable growth of the aviation industry through partnership between industry and government. However, we also acknowledge that a global market-based measure is needed to fill any remaining emissions gap until those other measures have taken full effect.



CORSIA

On 6 October 2016, the 39th ICAO Assembly concluded with the adoption of a global market-based measure scheme to address CO₂ emissions from international aviation. The agreement at ICAO demonstrates that aviation is determined to live up to its commitments and play its part in meeting international goals for emissions reduction.

The scheme established by ICAO is a global offsetting mechanism, called CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation). CORSIA aims to help address any annual increase in total CO₂ emissions from international civil aviation above 2020 levels.

The aviation sector is committed to advances in technology, operations and infrastructure to continue to reduce the sector's carbon emissions. Offsetting is not intended to replace these efforts. Nor would the CORSIA make fuel efficiency any less of a day-to-day priority. Rather, CORSIA can help the sector achieve its climate targets in the short and medium term by complementing emissions reduction initiatives within the sector.

Avoiding the patchwork

In recent years, there has been a marked increase in the number of carbon pricing instruments, such as carbon taxes or emissions trading schemes, applied around the world. A similar proliferation of carbon pricing instruments on aviation would result in an unsustainable and costly patchwork of measures for operators and for governments. The implementation of CORSIA will avoid the need for existing and new carbon pricing measures to be applied to international aviation emissions on a regional or national basis.

While the costs associated with CORSIA are not insignificant, they are manageable for operators, especially when compared with the costs that would result from multiple national or regional schemes, which would generate divergent compliance requirements for individual operators and therefore also increase the risk of market distortions. This observation is reflected in Assembly Resolution A39-3, which determines that CORSIA is to be the market-based measure applying to CO₂ emissions from international aviation.

Carbon offsetting

Offsetting is an action by a company or individual to compensate for their emissions by financing a reduction in emissions elsewhere. While carbon offsetting does not require companies to reduce their emissions "in-house", it provides an environmentally effective option for sectors where the potential for further emissions reductions is limited or the abatement costs are unduly high.

Offsetting and carbon markets are a fundamental component of global, regional and national emissions reduction policies. They have operated for decades for compliance purposes and voluntary emissions reductions and continue to be an effective mechanism to underpin action against climate change.

While both offsetting schemes and cap-and-trade mechanisms allow companies to purchase emissions reductions – offsets or allowances – from other companies and sectors to compensate for their emissions, offsetting offers the advantage that an offset certified under robust criteria will always represent a tonne of CO₂ which has been avoided or reduced.

Offsetting is also more effective than a tax, as a carbon tax merely requires companies to pay for their emissions, without any guarantees that the payment will lead to any emissions reductions.

Special circumstances and respective capabilities of states

In order to take into account the special circumstances and respective capabilities of States, CORSIA will be implemented in phases.

- From 2021 until 2026, only flights between States that volunteer to participate in the pilot and/or first phase will be subject to offsetting requirements.
- From 2027, all international flights will be subject to offsetting requirements, except flights to and from Least Developed Countries (LDCs), Small Island Developing States (SIDs), Landlocked Developing Countries (LLDCs) and States which represent less than 0.5% of international RTK, unless they volunteer to participate.

Nevertheless, all operators will have to report emissions for all international flights since 1 January 2019, including flights to/from exempted States.



Environmental integrity

There are many ways to achieve CO₂ reductions that can be used as offsets, many of which bring other social, environmental or economic benefits relevant to sustainable development. Offsets can be sourced from various types of project activities, including, for example, wind energy, clean cook stoves, methane capture forestry and other emissions-reducing or avoidance projects.

To ensure the environmental integrity of CORSIA, the ICAO Council will adopt a list of emissions units that can be used for compliance.

The Council's decision will be informed by a recommendation from the Technical Advisory Body and guided by eligibility criteria to guarantee that emissions units deliver the desired CO₂ reductions.

The criteria are based on principles commonly applied under existing trading mechanisms and well-accepted carbon offset certification standards.

- A key requirement is that the CO₂ reduction or removal used as an offset be 'additional' to business-as-usual activity. Offsets must also represent a permanent reduction of emissions that cannot be reversed. Similarly, an activity that generates offsets should not result in unintended increases in emissions elsewhere.
- To quantify the greenhouse gas reduction benefits from an offsetting project, a baseline must be determined to represent what would have happened if the project had not been implemented. Emissions reductions will need to be quantified using accurate measurements, valid protocols, and be audited.
- Emissions Units Programs will need to demonstrate that they have procedures in place to track units and to avoid that an emissions reduction is counted more than once towards attaining climate change mitigation.
- Emissions units programs will also need to have safeguards in place to address environmental and social risks.

Ensuring sufficient supply

As CORSIA relies on emissions units for compliance, it is necessary that there is sufficient supply of eligible emissions units.

ICAO has estimated that aviation will have to offset about 2.5 billion tonnes of CO₂ between 2021 and 2035. By way of context, this is more than the total volume of offsets ever issued under the Clean Development Mechanism or traded in the voluntary carbon market.

To ensure there is a sufficient volume of eligible emissions units, it is critical that operators have access to a broad range of units from existing offset programs and projects that meet ICAO's eligibility criteria.

Voluntary offset standards and REDD+

The Resolution adopted by the ICAO Assembly stipulates that emissions units generated from mechanisms established under the UNFCCC and the Paris Agreement shall be eligible for use in CORSIA, provided they align with decisions by the ICAO Council.

In addition to UNFCCC and Paris Agreement units, there are several offset standards which could offer high-quality offsets for international aviation and could be considered for CORSIA, including voluntary offset standards and REDD+.

Several standards were developed to provide companies and individuals wishing to compensate their emissions on a voluntary basis the certainty that the offsets they purchase are environmentally effective. Provided these standards meet ICAO's criteria, they could make high quality offsets available to aviation, often with co-benefits for biodiversity, employment, health and more.

Examples of offset certified under voluntary standards include those from wind energy, landfill methane, and smaller community-focused energy efficiency and clean cook stove projects. They also include offsets from REDD+, a voluntary mechanism developed by the Parties to the UNFCCC to reduce emissions from deforestation and forest degradation.

The possibility to generate offsets under REDD+ creates a financial incentive for countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. Beyond emissions reductions, the conservation and sustainable management of forests delivers a wide range of social, environmental and economic benefits, such as the preservation of biodiversity, support to local communities and the protection of the forests' vital ecosystem functions.

Over the last decade, the REDD+ sector has established robust methods to quantify emissions reductions and establish realistic baselines supported by empirical evidence. "Buffer" carbon offsets typically are also set aside to address concerns related to permanence and cover potential losses in REDD+ projects, for example due to forest fires.



International Standards and Recommended Practices

On 27 June 2018, the ICAO Council adopted the First Edition of Annex 16, Volume IV, which includes the international Standards and Recommended Practices (SARPs) for CORSIA.

Emissions monitoring, reporting and verification

In accordance with the new standards, all operators with annual emissions greater than 10,000 tonnes of CO₂ will have to report their emissions on an annual basis, with monitoring starting from 1 January 2019 (international flights only). Already in 2018, operators will need to develop an emissions monitoring plan, which details the procedures that will be used to monitor fuel use, calculate emissions and manage data.

The SARPs require that operators monitor their CO₂ emissions on the basis of the actual fuel use of each individual international flight, in accordance with one of the five approved fuel use monitoring methods. In certain circumstances, operators may be eligible to use simplified monitoring and estimate their emissions using the CERT, an estimation tool developed in ICAO.

In order to guarantee the accuracy of the data reported by operators to their administrating authority, annual emissions reports will need to be verified by an independent third party verification body, prior to their submission to the State.

Offsetting requirements

At the end of each 3-year compliance period, operators will have to demonstrate that they have met their offsetting requirements using eligible emissions units. In line with ICAO Resolution A39-3, the ICAO Council will decide which emissions units are eligible. All operators should have access to all but only those units approved by the Council. This is critical to avoid market distortions.

The emissions unit eligibility criteria were adopted by the ICAO Council in March 2019 and provide a robust framework for the evaluation of offset programs and project types. IATA supports this important work and believes that the application of the criteria will strike an appropriate balance between access to carbon markets and ensuring that eligible emissions units bring about genuine emissions reductions.

Sustainable aviation fuels

Operators will be entitled to claim emissions reductions from the use of alternative fuels, provided the fuels in question meet defined sustainability criteria and are certified by an approved certification scheme.

In order to be eligible for CORSIA, an alternative fuel must deliver at least 10% in greenhouse gas savings and must not be made from biomass obtained from land with high carbon stock. IATA supports the development of a broader set of sustainability criteria for fuels claimed under CORSIA and the continuing work in ICAO to complement these core requirements. A globally harmonised approach to sustainability will provide clarity that will help to remove barriers to the take up of alternative fuels and supporting investment in this vital new sector.

Implementation of the SARPS

IATA considers it fundamental that the SARPs were adopted as the new Volume IV of Annex 16 to the Chicago Convention. This will ensure the necessary level of uniformity in regulations which our industry needs and which is recognized by both Article 37 of the Chicago Convention and ICAO Assembly Resolution A39-22.

Uniformity is not only key to prevent market distortions, but also to preserve the environmental integrity of CORSIA.

To the extent any State may apply different requirements from those established by the SARPs, it is our strong position that this could upset the careful structure of Annex 16, Volume IV, and set a negative precedent against the integrity of the scheme.

The SARPs are the fruit of several years of work undertaken by the technical experts in ICAO's Committee on Aviation Environmental Protection (CAEP). They establish a robust and pragmatic set of requirements, based on balanced compromises.

We, therefore, urge all ICAO Member States to comply in all respects with Annex 16, Volume IV, and to ensure that their own domestic regulations are fully aligned with the SARPs.