

CORSIA

CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION

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Overview

The aviation sector is one of the fastest-growing contributors to global greenhouse gas (GHG) emissions. As international air travel expands, airlines face increasing pressure to mitigate their environmental impact.

Aviation emissions from international flights have not been included in the international climate regime administered by the United Nations Framework Convention on Climate Change (UNFCCC), as these fall outside of the scope of nationally-determined climate action. Instead, these emissions are dealt with by the International Civil Aviation Organization (ICAO).

In October 2016, the member states of ICAO made the historic decision to adopt a global market-based measure for aviation emissions. This scheme, the Carbon Offsetting and Reduction Scheme for International Aviation – more commonly known as CORSIA – is the culmination of many years of work at ICAO, with the support of the industry.



I. ABOUT CORSIA

Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), developed by the **International Civil Aviation Organization (ICAO)**, is a global offsetting scheme designed to limit emissions growth in international aviation.

- **Purpose:** To address GHG emissions from international aviation beyond reductions to be achieved from advancements in fuel efficiency, technology, operations and infrastructure.
- **Target:** CORSIA aims to stabilize net GHG emissions from international civil aviation at 2020 levels and reduce net GHG emissions to half of what they were in 2005 by 2050.
- **Scope of application:** CORSIA only applies to international flights. Domestic emissions fall under the scope of the UNFCCC and are covered by the Paris Agreement.



Tín chỉ CORSIA cho phép các hãng hàng không bù đắp lượng khí thải của họ bằng cách tài trợ cho các dự án giảm hoặc loại bỏ CO₂.

Bằng cách mua tín chỉ carbon được gọi là tín chỉ CORSIA, các hãng hàng không có thể cân bằng lượng khí thải vượt quá mức năm 2020 và đầu tư vào sự bền vững. Các dự án đủ điều kiện giảm hoặc loại bỏ CO₂ bao gồm các sáng kiến năng lượng tái tạo, trồng rừng và công nghệ thu giữ carbon. Được xác minh theo các tiêu chuẩn quốc tế được công nhận như Tiêu chuẩn Carbon Được Xác minh (VCS) và Tiêu chuẩn Vàng (GS), các tín chỉ này đảm bảo rằng việc giảm phát thải là thực tế, bổ sung và vĩnh viễn.

II. HOW DOES CORSIA WORK?

2.1. Implementation phases

The implementation of CORSIA has been divided into three phases – two initial, voluntary phases (2021-2023 and 2024 – 2026) and a mandatory phase from 2027.

Voluntary phases <i>(Pilot phase: 2021-2023 and Phase 1: 2024-2026)</i>	Mandatory phase <i>(Phase 2: from 2027)</i>
<p>Only flights between countries that volunteer to participate in the pilot and/or first phase will be subject to offsetting requirements.</p>	<p>CORSIA will cover all international flights (including those travelling to or from states that had not volunteered for the early phases).</p>
<p>International flights to and from states that have not volunteered will be exempt.</p>	<p>Exemption:</p> <ul style="list-style-type: none"> • Least Developed Countries (LDCs), Small Island Developing States (SIDS), Landlocked Developing Countries (LLDCs). • States that have a very small share of international traffic.

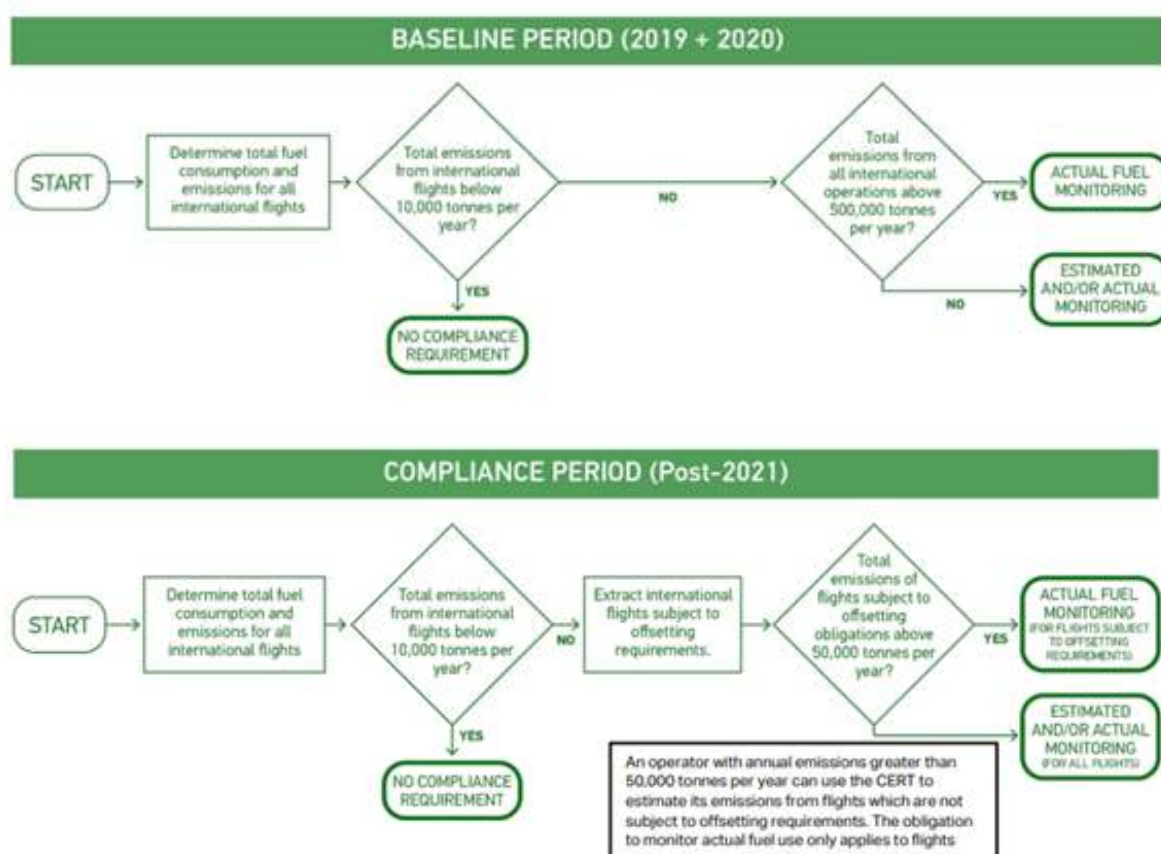
Implementation phases of CORSIA



II. HOW DOES CORSIA WORK?

2.2. CORSIA baseline

- **Baseline for the pilot phase (2021 - 2023):** offsetting obligations only kicked in if the aviation industry exceeded its 2019 baseline. However, due to the COVID-19 pandemic suppressing demand for flying, this baseline was not exceeded, meaning airlines were not required to offset any of their 2021-2023 emissions.
- **Baseline for the first and second phases of the scheme:** 85% of the international aviation sector's CO2 emissions in 2019.



2.3. Objects for offsetting

Airlines and other aircraft operators are subject to offsetting requirements. This includes all aircraft operators, from large passenger airlines, cargo airlines, business aviation and even private aviation.

II. HOW DOES CORSIA WORK?

2.4. Monitoring, reporting and verification

ICAO adopted detailed requirements for the monitoring, reporting and verification of emissions as part of the Chicago Convention in 2018. These rules are essential to ensuring aircraft operators and states comply with the terms of CORSIA.

All aircraft operators with emissions **greater than 10,000 tonnes of CO₂** need to report their emissions to their national authority annually. The requirement to monitor CO₂ emissions has been applicable since 1 January 2019. To guarantee data accuracy, annual emissions reports need to be verified by an independent third-party verification body prior to submission. Governments then work with ICAO to inform airlines of the number of offset credits they need.

Monitoring

In order to prepare for the **monitoring, reporting, and verification (MRV)** of CO₂ emissions, each operator needs to develop an emissions monitoring plan, including:

- Information on the operator, its fleet, and operations.
- The emissions monitoring plan also details the methods the operator uses to monitor fuel use, calculate emissions, and all associated data management.

The emissions monitoring plan must be approved by the administering authority, who should be satisfied that the processes described by the operator are appropriate and sufficient to comply with the prescribed MRV requirements.

Reporting

- After each reporting year's end, operators must compile the fuel and emissions data collected in an **annual emissions report**.
- The emissions reports need to be verified by a verification body prior to their submission to the administering authority.
- The deadline for the following emissions reports will be 30 April (for example, 30 April 2022 for the 2021 emissions report).

Verification

An external and independent body must verify annual emissions reports before being submitted to the administering authority. This also applies to emissions reports of operators who are eligible to use the CERT for simplified monitoring.

III. CORSIA ELIGIBLE EMISSION UNITS (EEUS)

Under CORSIA, airlines must purchase and cancel “emissions units” to offset the increase in CO2 emissions covered by the scheme. To maximize CO2 emission reductions under CORSIA, states must offer sufficient quantities of EEUs, the carbon offset credits that meet the strict eligibility criteria defined by ICAO.

CORSIA Eligible Emissions Units
Informal Summary Table

Programme	2021 -2023 Compliance Period (Pilot Phase)	2024 -2026 Compliance Period (First Phase)	2027 – 2029 Compliance Period (in Second Phase)
American Carbon Registry	2016 – 2023 units ^{1,2}	2021 – 2026 units ^{1,2}	Starting in 2025, TAB will make recommendations to Council on eligibility beyond the CORSIA First Phase.
Architecture for REDD+ Transactions	2016 – 2023 units ^{1,2}	2021 – 2026 units ^{1,2}	
BioCarbon Fund Initiative for Sust. Forest Landscapes	2016 – 2020 units ¹	Conditionally eligible ³	
Cercarbono		Conditionally eligible ³	
China Certified Emission Reduction	2016 – 2020 units ¹		
Clean Development Mechanism	2016 – 2020 units ¹		
Climate Action Reserve	2016 – 2023 units ^{1,2}	2021 – 2026 units ^{1,2}	
Forest Carbon Partnership Facility	2016 – 2020 units ¹	Conditionally eligible ³	
Global Carbon Council	2016 – 2020 units ¹	2021 – 2026 units ^{1,2}	
Gold Standard	2016 – 2023 units ^{1,2}	2021 – 2026 units ^{1,2}	
Isometric		Conditionally eligible ³	
Joint Crediting Mechanism between Japan and Mongolia	Conditionally eligible ³		
SOCIALCARBON	2016 – 2020 units ¹		
Thailand Voluntary Emission Reduction Programme		Conditionally eligible ³	
Verra Verified Carbon Standard / Jurisdictional Nested REDD Programme	2016 – 2023 units ^{1,2}	2021 – 2026 units ^{1,2}	

Note: All Eligible Emissions Units must be generated from an activity that that started its first crediting periods in 2016 or later.
¹ Subject to various exclusions as set out in the relevant section of the ICAO document titled “CORSIA Eligible Emissions Units”.
² Units with vintages from 2021 onward have specific requirements relating to host-Party attestations.
³ Pending further actions by the Programme.

Eligible Carbon Standards in Pilot phase (2021 - 2023)	Eligible units for Phase 1
<ul style="list-style-type: none"> American Carbon Registry Architecture for REDD+ Transactions China GHG Voluntary Emission Reduction Clean Development Mechanism Climate Action Reserve Forest Carbon Partnership Facility Program Global Carbon Council Tiêu chuẩn Carbon đủ điều kiện trong giai đoạn thí điểm (2021-2023) The Gold Standard Verified Carbon Standard 	<p>Tính đến tháng 11 năm 2024, ICAO đã phê duyệt 6 tiêu chuẩn để cấp phát EEU:</p> <ul style="list-style-type: none"> American Carbon Registry (ACR) Architecture for REDD+ Transactions (ART) Gold Standard Verified Carbon Standard (Verra) Climate Action Reserve (CAR) Global Carbon Council

IV. EXPERIENCE FROM NORTH AMERICAN AND EUROPEAN COUNTRIES ON APPLYING CORSIA

Nation	Experience
<p>North America, Canada</p>	<ul style="list-style-type: none"> • These North American countries were among the early adopters of CORSIA, implementing strategies to support their aviation sectors in reducing CO2 emissions. • The United States has closely collaborated with airlines, invested in sustainable aviation fuels (SAF), and utilized domestic offsetting programs. The Federal Aviation Administration (FAA) oversees the implementation process and ensures transparent emissions reporting. • Canada has promoted the use of SAF, established rigorous monitoring systems, and engaged in international cooperation to accelerate emissions reductions.
<p>Europe: United Kingdom, France, and Germany</p>	<ul style="list-style-type: none"> • These European countries have integrated CORSIA into the EU's Emissions Trading System (ETS), enhancing the efficiency of offsetting and reducing CO2 emissions. • European nations have also invested significantly in research and production of sustainable aviation fuels (SAF), while implementing stringent monitoring mechanisms. Major airlines such as British Airways have committed to using SAF and improving flight technologies. • The European Union has closely aligned national policies with CORSIA and encouraged international cooperation to ensure effective implementation

Both North American and European countries have focused on developing sustainable technologies, improving emissions monitoring processes, and flexibly utilizing carbon credits to achieve CORSIA's objectives, making significant contributions to global climate change mitigation efforts.

V. IMPACT OF CORSIA ON VIETNAM AND BUSINESS OPPORTUNITY

5.1. Current legal framework before joining CORSIA

Legal Aspects

- Vietnam has enacted several regulations related to environmental management and greenhouse gas emissions reduction in the aviation sector, but there is no specific mechanism for CORSIA. Participation requires additional policies to comply with international requirements for measuring, reporting, and verifying CO₂ emissions.
- There are no clear regulations regarding the purchase of carbon credits or support for sustainable aviation fuel (SAF).
- Although there are policies and plans such as the Action Plan to Reduce CO₂ Emissions in Aviation (2016-2020) and Decree 06/2022/ND-CP, these regulations primarily focus on domestic emissions reductions.
- There is no clear mechanism for managing international emissions, leading to a risk of not meeting the requirements of international organizations, especially the ICAO and the European Union (EU).

Economic Aspects

- Vietnamese airlines have not had to bear the costs of purchasing carbon credits, resulting in lower operating costs compared to airlines in countries that have adopted CORSIA.
- The economy has not exploited or developed business opportunities related to the carbon credit market or SAF.
- There is a lack of mechanisms to encourage investment in domestic emissions reduction projects.

Technical Aspects

- The monitoring, reporting, and verification (MRV) system for emissions has not been integrated to measure and report CO₂ emissions from international flights.

Environmental Aspects

- Vietnamese airlines primarily use traditional fossil fuels, leading to high CO₂ emissions.
- The use of SAF is not widespread, and there is no supporting infrastructure or policies.
- According to the Green Energy Transition Action Program, the Vietnamese aviation sector aims to use 10% sustainable fuel (SAF) from 2035. However, without participating in CORSIA, there will be a lack of motivation and international support for developing this green energy.

Social and International Aspects

- Many countries and regions, especially the European Union (EU), are implementing strict CO₂ emissions policies for the aviation sector. Failure to participate in CORSIA could make it difficult for Vietnamese airlines to access or expand operations in these markets. (Official Dispatch No. 7529/VPCP-CN has clearly stated the EU's stringent regulations on sustainable aviation development, including the application of mandatory emission reduction standards.)
- Countries or regions that apply CORSIA may impose penalties or additional fees on airlines from non-participating countries, increasing operating costs for Vietnamese airlines.

5.2. Urgency and necessity of participating in CORSIA

Legal Aspects

- Participating in CORSIA is essential for Vietnam to fulfill its international commitments to reducing greenhouse gas emissions. CORSIA is also a mandatory requirement for international flights, helping Vietnam maintain its position in the global aviation industry.
- Vietnam needs to enact a comprehensive legal framework, including:
 - Regulations on the monitoring, reporting, and verification (MRV) system for CO₂ emissions.
 - Policies for managing carbon credit trading.
 - Regulations to encourage the use of sustainable aviation fuel (SAF).

Economic Aspects

- The cost of purchasing carbon credits in the voluntary phase (2024-2026): from USD 13 million (with a credit price of USD 6) to USD 92 million (with a credit price of USD 40).
- If participating in the voluntary phase from January 1, 2025: the cost is from USD 4.6 million to USD 31 million.
- If participating in 2026: the cost is from USD 5.6 million to USD 37.5 million.
- Participating earlier will result in higher costs for Vietnamese airlines. This is one of the reasons why ICAO has divided the process into voluntary and mandatory phases, to give airlines time to adapt.

Technical Aspects

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Environmental Aspects

- Promote the development of sustainable fuels and emissions reduction technologies.

Social and International Aspects

- Participating in CORSIA is equivalent to Vietnam participating in an international agreement. Therefore, this is not only the responsibility of Vietnamese airlines but also requires the concerted efforts and support of ministries, agencies, and organizations both inside and outside the Vietnamese Civil Aviation to ensure that Vietnam will participate in accordance with the commitments and responsibilities of a reputable country with international friends, contributing to ensuring Vietnam's sovereignty, aviation safety, and the legitimate interests of Vietnamese airlines.

5.3. Business Opportunities

Legal Aspects

- The development of the carbon credit market creates opportunities for domestic enterprises to invest in emissions reduction projects.
- The increasing demand for sustainable aviation fuel (SAF) opens up the possibility of developing the production and supply of this fuel. Consulting services and technological solutions related to emissions monitoring and reporting will also have great potential.

Economic Aspects

- Developing and supplying SAF domestically.
- Participating in the carbon credit market.
- Consulting services for emissions management and technological solutions to support MRV.

Technical Aspects

- Environmental technology companies can provide software and services to support emissions data monitoring and verification.

Environmental Aspects

- Building SAF production plants.
- Implementing afforestation projects to generate carbon credits.

Social and International Aspects

- Businesses can participate in communicating the environmental benefits of emissions reductions.

➔ Vietnam currently has domestic carbon credit projects registered under VCS, GS, GCC standards, etc. Carbon credits from these projects can help domestic airlines offset their emissions obligations under CORSIA if they receive approval from the Vietnamese management authority.

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*Together, we can make a difference that transcends boundaries
and leaves a positive legacy for generations to come.*

Giant Barb is a pioneer in the field of **Carbon Finance in Vietnam**, offering comprehensive services such as **Greenhouse Gas Inventory**, **ESG Reporting**, and **Carbon Credit Market** solutions to both domestic and international enterprises.

With the motto "***Towards a low carbon society***", Giant Barb connects individuals, investors, businesses, and governments together to build green projects aimed at carbon neutrality, contributing to global efforts in combating climate change.



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