Carbon Offsetting and Reduction Scheme for International Aviation - CORSIA

Stelios Pesmajoglou, Environment Officer, ICAO
To achieve ICAO’s global aspirational goal of carbon neutral growth from 2020 (CNG 2020), CORSIA is one complementary element in the basket of measures to:
- aircraft technology
- operational improvements
- sustainable aviation fuels

Adopted through Assembly Resolution 39-3 and is the first global MBM scheme for any industry sector.

CORSIA addresses the remaining “emissions gap” to achieve CNG2020.
Carbon markets

- Compliance markets and voluntary markets
- Emissions units are traded in carbon markets
- Cancel emissions units to offset emissions
- Supply and demand affect prices

ICAO Seminar on Carbon Markets in February 2018 for further information:
https://www.icao.int/Meetings/carbonmarkets/Pages/default.aspx
Emissions units

- Emissions reductions achieved by the implementation of projects
- Issued by crediting schemes through mechanisms, programmes, projects
- Difference between baseline emissions and actual emissions

1 emissions unit = 1 tonne of CO₂eq
CORSIA and carbon markets

Projects & Programs

(A) Generate Emissions Units

Emission Units

CORSIA Eligible Emissions Units

* The ICAO Council will determine the CORSIA eligible emissions units. This work is ongoing and the determination can change at the time of this publication.

CARBON MARKETS

(B) Purchase Emissions Units

(C) Cancel Emissions Units

Note: “Cancel” means the permanent removal and single use of an emissions unit such that the same emissions unit may not be used more than once.

Aeroplane Operators

(D) Publish list of cancelled CORSIA eligible Emissions Units
THE BASICS OF CORSIA
Participation of ICAO States in the CORSIA

All Member States are encouraged to participate in the pilot and first phase of CORSIA

Based on 2018 RTK

Participation criteria:
- 90% of global RTK
- 0.5% of RTK

Exemptions:
- LDCs, LLDCs, SIDS
Route-based approach

Participating in CORSIA
Not participating in CORSIA
Offsetting requirements

Operator’s annual emissions \times \text{Growth Factor} = \text{CO}_2 \text{ offset requirements}

The Growth Factor changes every year taking into account both the sectoral and the individual operator’s emissions growth. The Growth Factor is the percent increase in the amount of emissions from the baseline to a given future year, and is calculated by ICAO.
Technical exemptions:

– Emissions from aeroplane operators emitting less than 10 000 metric tonnes of CO₂ emissions from international aviation per year
– Emissions from aircraft with less than 5 700 kg of Maximum Take Off Mass (MTOM)
– Emissions from humanitarian, medical and firefighting operations

New entrants:

– Exempted for the first 3 years or until their annual emissions exceed 0.1% of total 2020 CO₂ emissions from international flights, whichever comes first.
Review mechanism

Council to make informed recommendations to the Assembly on whether it is necessary to make adjustments to the next phases of the scheme

- Periodic review of the CORSIA every three years starting in 2022
- Special review by the end of 2032 on termination of the scheme, its extension or any other improvements of the scheme beyond 2035

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Monitoring, Reporting and Verification (MRV) is the backbone for the successful implementation of CORSIA, which requires:

- Reliable information on CO₂ emissions and on offsetting requirements

ALL ICAO MEMBER STATES with aeroplane operators conducting international flights are required to monitor, report and verify CO₂ emissions from these flights every year from 2019, independent of their participation in CORSIA.

ICAO MEMBER STATES PARTICIPATING IN CORSIA need to ensure that their aeroplane operators comply with the CORSIA offsetting requirements every three years (starting in 2021), in addition to annual CO₂ MRV.
STANDARDS AND RECOMMENDED PRACTICES
Mandate for the Development of CORSIA SARPs

• The 39th ICAO Assembly requested the Council:
  – “to develop, with the technical contribution of CAEP, the SARPs and related guidance material for the implementation of the MRV system under the CORSIA, including simplified MRV procedures, for adoption by the Council by 2018”

• It also requested Member States:
  – “whose aircraft operator undertakes international flights to develop the necessary arrangements, in accordance with the MRV SARPs, for implementation from 1 January 2019”

Reference: Assembly Resolution A39-3, paragraph 20 a) and b)
Chicago Convention
ICAO Assembly Resolutions A39-1, A39-2 and A39-3: Consolidated statement of continuing ICAO policies and practices related to environmental protection

Annex 16 - Environmental Protection:
Volume I, Aircraft Noise
Volume II, Aircraft Engine Emissions
Volume III, Aeroplane CO₂ Emissions
Volume IV, CORSIA - Under Development

Various guidance on noise, LAQ and climate change, e.g.:
Environmental Assessment of Proposed ATM Operational Changes (Doc 10031)
Environmental Technical Manual Volume IV - Under Development
Components

1. Standards and Recommended Practices (SARPs) – draft Annex 16, Volume IV
   - Mandatory actions by States and operators (the “what” and “when”) to implement CORSIA

2. Environmental Technical Manual (ETM) Volume IV
   - Guidance on the process (the “how”) to implement CORSIA

3. Implementation Elements
   - Directly referenced in draft Annex 16, Volume IV, and essential information for the implementation of CORSIA
Part I. DEFINITIONS, ABBREVIATIONS AND UNITS

Part II. CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION

CHAPTER 1. Administration
CHAPTER 2. Monitoring, Reporting and Verification
CHAPTER 3. CO₂ Offsetting Requirements and Emissions Reductions from SAFs
CHAPTER 4. Emission Units

APPENDICES

APPENDIX 1. Administrative Processes
APPENDIX 2. Fuel Use Monitoring Methods
APPENDIX 3. CO₂ Emissions Estimation and Reporting Methods and Tools
APPENDIX 4. Emissions Monitoring Plans
APPENDIX 5. Reporting
APPENDIX 6. Verification

ATTACHMENTS

Attachment A. Attribution Processes
Attachment B. Applicability of MRV Requirements to International Operations
Attachment C. Processes for Fuel Use Monitoring
CHAPTER 1. INTRODUCTION

CHAPTER 2. GENERAL GUIDELINES

2.1 Applicability of MRV of Annual CO₂ Emissions from an Aeroplane Operator
2.2 Applicability of CO₂ Offsetting Requirements

CHAPTER 3. GUIDELINES ON MONITORING, REPORTING AND VERIFICATION

3.1 Monitoring
3.2 Reporting
3.3 Verification

CHAPTER 4. GUIDELINES ON CALCULATION OF OFFSETTING REQUIREMENTS

4.1 Calculation of Offsetting Requirements During the 2021-2030 Compliance Period
4.2 Calculation of Offsetting Requirements During the 2031-2035 Compliance Period
4.3 Baseline Emissions from 2019-2020 for Calculation of Offsetting Requirement
4.4 Sector Growth Factor

CHAPTER 5. ADMINISTRATIVE PARTNERSHIPS UNDER CORSIA

5.1 Example of a Bilateral Agreement

APPENDIX 1. STANDARDIZED EMISSIONS MONITORING PLAN AND REPORTING TEMPLATES

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CORSIA Implementation Elements

- The CORSIA Implementation Elements will be made available in separate documents, due to the following characteristics:
  - Nature of the information
  - Availability of the information at the time of adoption
  - Periodicity of the information updates
  - Users of the information
- Different implementation elements will become available at different points in time
- Once completed, they will be considered for approval by the Council and made available on the ICAO CORSIA webpage
CORSIA MRV system

• Implementation of the MRV system from 1 January 2019 for all international flights is essential to establish CORSIA’s baseline (2019-2020)

• Purpose of MRV is to collect information on international aviation CO₂ emissions on an annual basis and compare emissions against the baseline emissions

• Components of the MRV system:
  – Monitoring of fuel use on each flight and calculation of CO₂ emissions
  – Reporting of CO₂ emissions information between aeroplane operators, States and ICAO
  – Verification of reported emissions data to ensure completeness and to avoid misstatements
MRV cycle

Operator
- Operator prepare Emissions Monitoring Plan
- Monitoring in accordance with the Emissions Monitoring Plan

State
- State approves Emissions Monitoring Plan
- Review of the Emissions Report
- State Report to ICAO

ICAO

Monitoring of CO₂ emissions throughout the year

Annual Emissions Report

Draft Emissions Report

Verification of the Emissions Report

State Report to ICAO
Summary

• CORSIA will help ICAO achieve its aspirational goal of carbon neutral growth from 2020 onwards
• CORSIA relies on the carbon markets for emissions units
• Implementation of CORSIA starts on 1 January 2019
• All States should start monitoring CO$_2$ emissions from international flights
• CORSIA SARPs are expected to be adopted in June 2018