



ICAO

ENVIRONMENT

ICAO Seminar on CORSIA

Emissions Units and Registries

ICAO Secretariat





5.1. Emissions Units

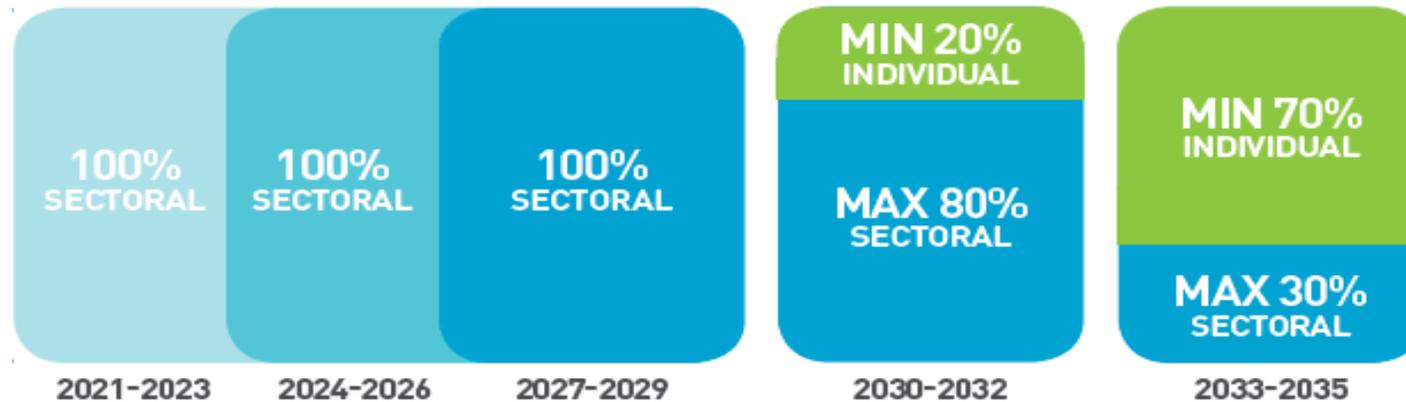
- a) Offsetting requirements in CORSIA
- b) What are emissions units, and how are they generated?
- c) Carbon markets and how to access them
- d) Eligibility of emissions units under CORSIA

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HOW TO CALCULATE CO₂ OFFSET REQUIREMENTS?

Operators' annual emissions **X** Growth Factor = **CO₂ offset requirements**

The Growth Factor changes every year taking into account both the sectoral and the individual operators' emissions growth.



How does an operator meet its offsetting requirements under CORSIA?

1

An operator is made aware of the quantity of emissions it is required to offset (n tonnes of CO₂)

2

The operator purchases a number of emissions units equivalent to this offsetting requirement; each emissions unit is equivalent to one tonne of CO₂ that was mitigated and verified by an eligible programme

3

The operator provides evidence to the State of the surrendered emissions units

4

The State validates and records that the operator surrendered emissions units, and reports this information to ICAO



a) Offsetting requirements in CORSIA

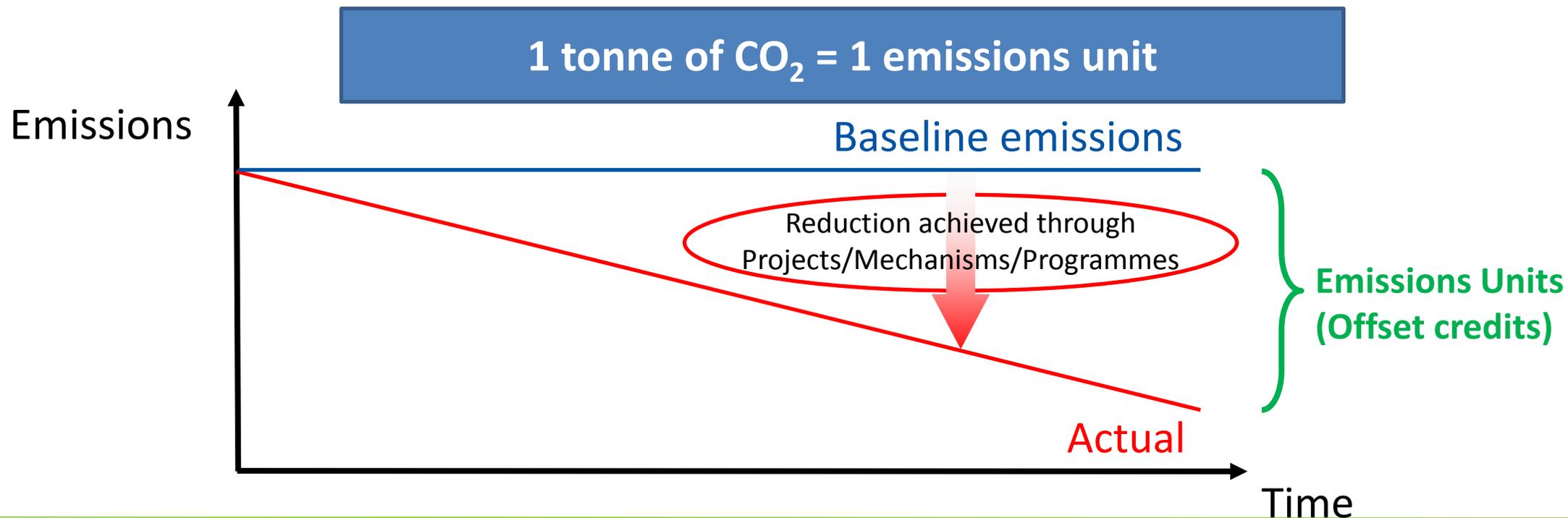
b) What are emissions units, and how are they generated?

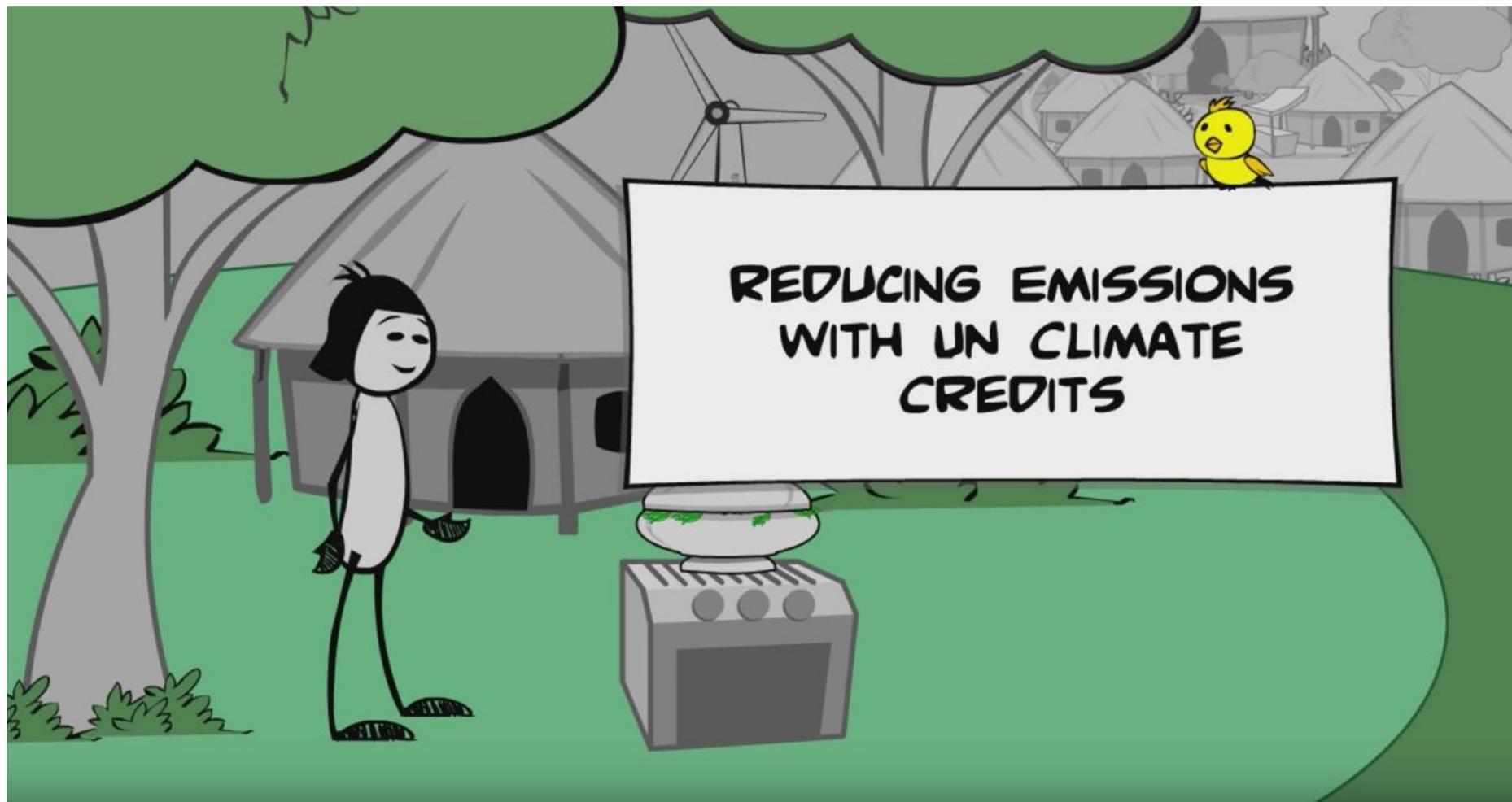
c) Carbon markets and how to access them

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What are emissions units?

- Arising from emissions reduction achieved by the implementation of projects elsewhere (various sectors – including domestic aviation)
- Issued by crediting schemes through mechanisms, programmes, projects
- A common basis for generating emissions units is by calculating the difference between baseline emissions (in the absence of the project activity) and actual emissions (after the project is implemented)





https://www.youtube.com/watch?v=B2zbaExs_B0

- UNFCCC Clean Development Mechanism (CDM)



- The Mechanism allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO₂
- These credits can be purchased, for example, by aircraft operators

- Project: Biogas Plants for 3,000 Households in Rural Settings
 - Uttarakhand, India
 - Annual CO₂ reduction: 16,071 t CO₂e
 - Gold Standard VER (Voluntary Emissions Reductions)



Source: <http://www.myclimate.org/carbon-offset-projects/projekt/indiabiogas-7204/>

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What are Carbon Markets?

- Emissions reduction projects generate emissions units that are sold in carbon markets on a per-tonne basis
- Purchasers can surrender the emission units to offset emissions
- There are carbon markets run by governments (compliance markets) and run by non-governments (voluntary markets)
- Buying and selling of units affect prices of emissions units



- Historically, carbon markets have shown their ability to react and produce sufficient supply to meet demand
- Recent prices (approximate, February 2017, example):
 - Offset credits (CER): USD 0.30 – 0.51
- Prices can be higher in some voluntary markets:
 - Some buyers are attracted to projects with verified social benefits in addition to environmental benefits
 - Offset credit (Gold Standard): USD 8.40 – 9.10

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- Aircraft Operators shall meet their offsetting requirements under CORSIA by purchasing and surrendering eligible emissions units
- CAEP is undertaking preparatory work to develop recommendations to the Council regarding the evaluation of programmes (and potentially project types) that generate eligible emissions units
 - CAEP/10 recommendations in February 2016 (Doc. 10069) are the basis for ongoing CAEP work
 - This work could inform but does not preempt decisions by the Council on eligibility of emissions units
- According to Assembly Resolution A39-3, a Technical Advisory Body will be established to make recommendations to the Council on the eligible emissions units for use by the CORSIA

CAEP/10 Recommendations: Eligibility Criteria for Offsetting Programmes

- Programmes that generate offset credits, for purchase by aircraft operators, should meet a range of elements covering the need for:
 - (i) Clear Methodologies and Protocols, and their Development Process
 - (ii) Scope Considerations
 - (iii) Offset Credit Issuance and Retirement Procedures
 - (iv) Identification and Tracking
 - (v) Legal Nature and Transfer of Units
 - (vi) Validation and Verification Procedures
 - (vii) Program Governance
 - (viii) Transparency and Public Participation Provisions
 - (ix) Safeguarding Systems to address environmental and social risks
 - (x) Sustainable Development Criteria
 - (xi) Avoidance of Double Counting, Issuance and Claiming

CAEP/10 Recommendations: Eligibility Criteria for Offsetting Units

- Offsetting programmes should deliver such credits that:
 - (i) Are Additional
 - (ii) Are based on a Realistic and Credible Baseline
 - (iii) Are Quantified, Monitored, Reported, and Verified
 - (iv) Have a Clear and Transparent Chain of Custody
 - (v) Represent Permanent Emissions Reductions
 - (vi) Assess and Mitigate Against Potential Increase in Emissions Elsewhere
 - (vii) Are only Counted Once towards a Mitigation Obligation
 - (viii) Do No Net Harm

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ICAO Seminar on the Carbon Offsetting and Reduction Scheme for International Aviation (CORSI A)

5.2. Registries

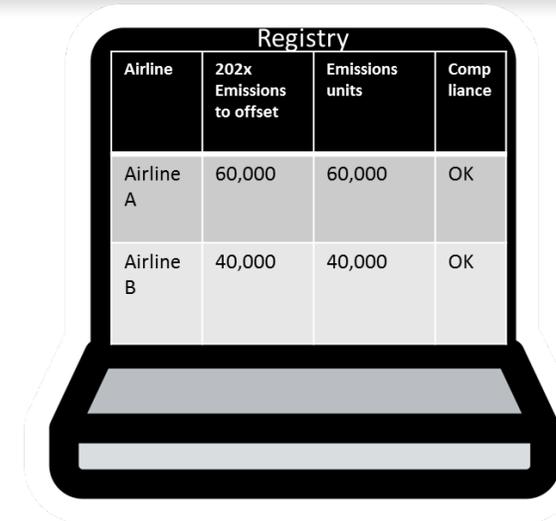


Registries under CORSIA

- Registries are generally electronic databases to record and track verified emissions data and/or emissions units, in order to assess compliance with a relevant scheme
- According to Assembly Resolution A39-3, paragraph 20, following registries will be established under CORSIA:
 - A consolidated central registry under the auspices of ICAO
 - Member States establish their own registries or group registries established by groups of States, or arrange for participation in other registries
- Work on the implementation of registries under CORSIA is ongoing:
 - CAEP is preparing options for registries under CORSIA, for Council consideration
 - Assessment of State's readiness in the implementation of registries
 - Additional ICAO Secretariat staff for MBM-related registries and carbon markets
 - Close cooperation and support by UNFCCC

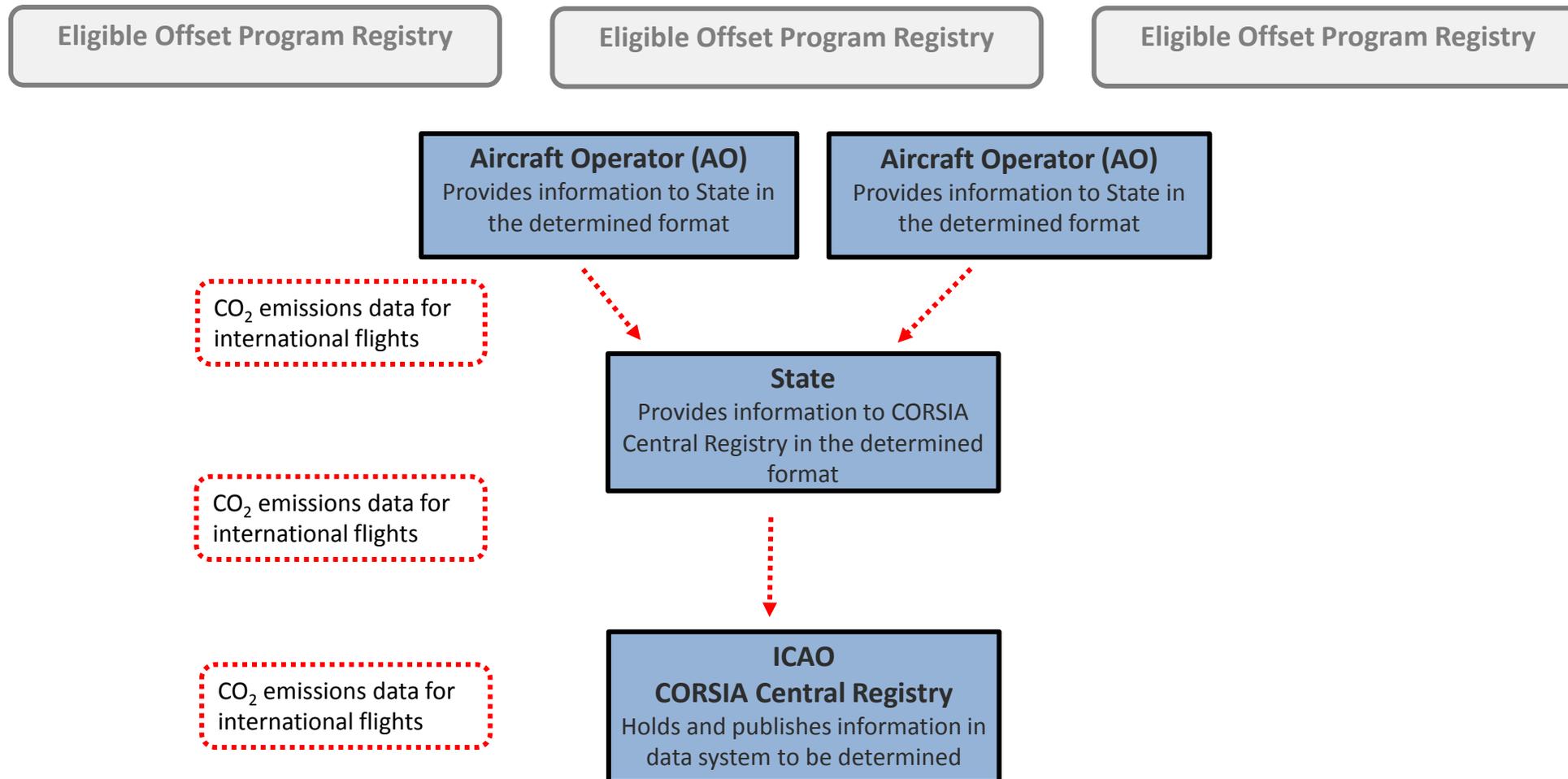
Scope of Registries under CORSIA

- Provide records of international aviation CO₂ emissions
- Provide records of operators' offsetting requirements
- Provide records of emissions units, including:
 - Purchase of emissions unit
 - Ownership and transfer of emissions units from one account to another
 - Surrender of emissions units towards offsetting requirements (ensure that emissions units are only used once)
- Track operator's compliance with the offsetting requirements
- State (group) registries communicate with consolidated central registry under the auspices of ICAO



Registry			
Airline	202x Emissions to offset	Emissions units	Compliance
Airline A	60,000	60,000	OK
Airline B	40,000	40,000	OK

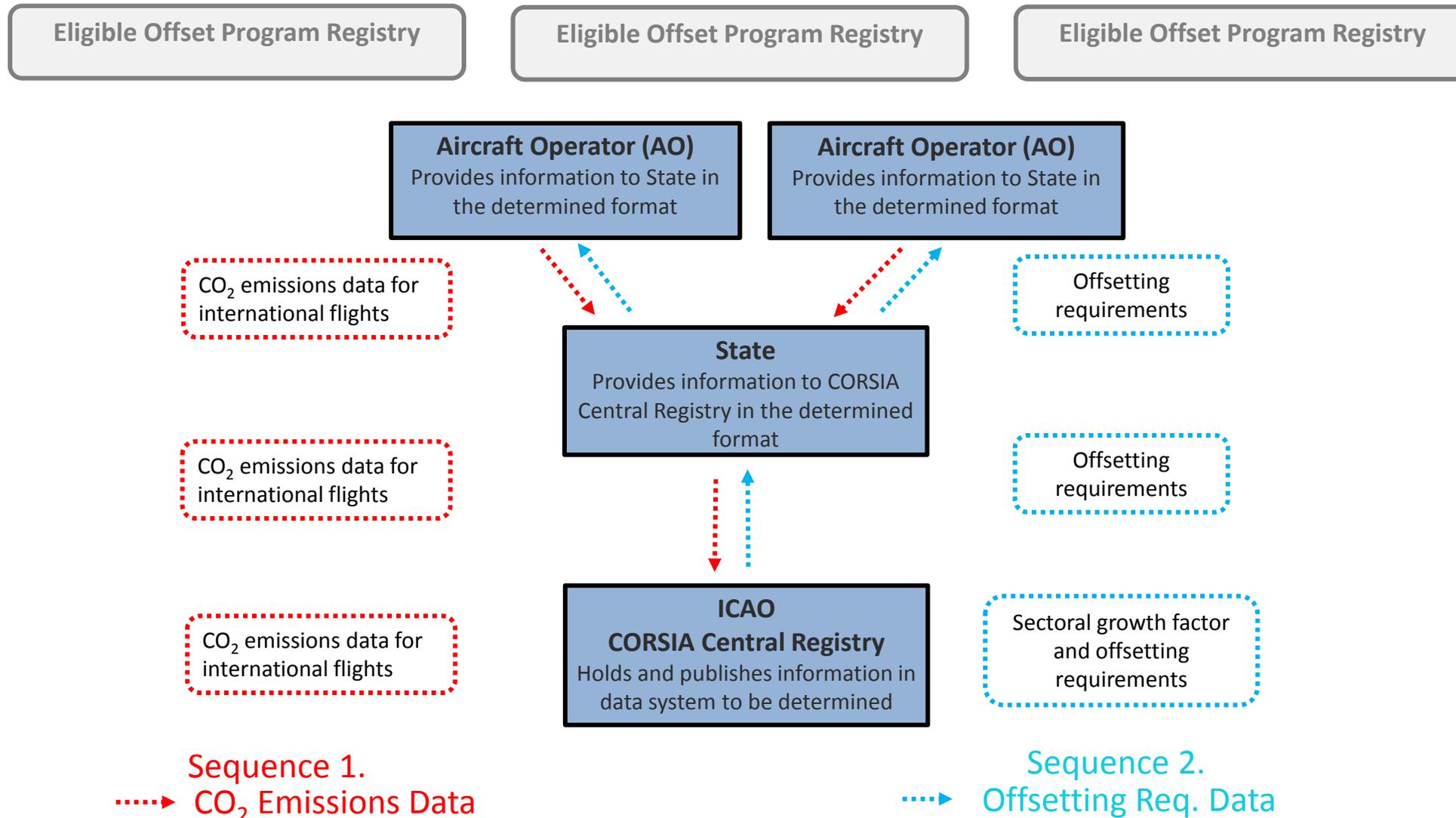
CORSIA Registry System Data Flow



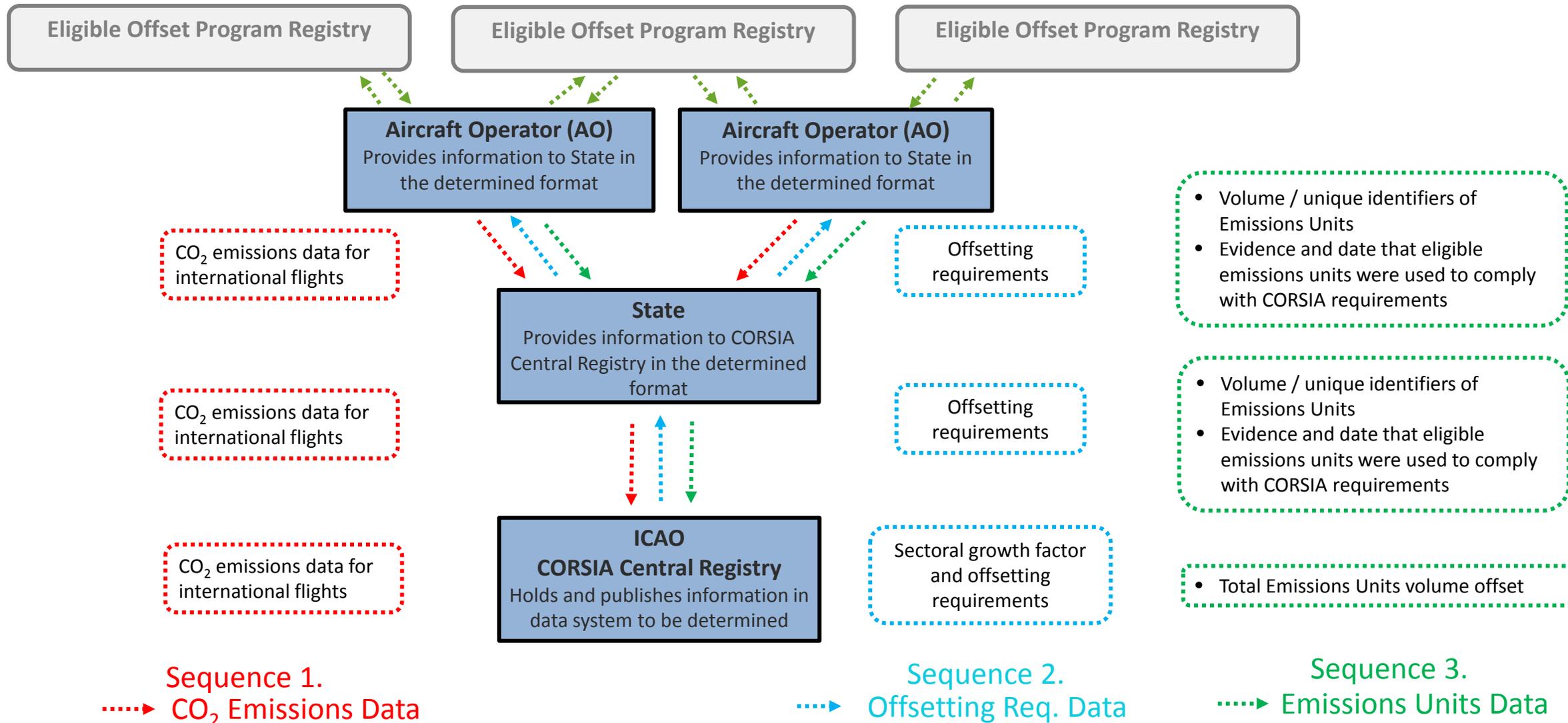
Sequence 1.

-----> CO₂ Emissions Data

CORSIA Registry System Data Flow



CORSIA Registry System Data Flow



THANK YOU

More information on the CORSIA:

- ICAO web site <http://www.icao.int/env>
 - CORSIA Video
 - CORSIA FAQs
 - CORSIA Participating participation
 - Environment Report 2016

