AVIATION CO_2 REDUCTIONS

STOCKTAKING SEMINAR

TECHNOLOGY · OPERATIONS · SUSTAINABLE AVIATION FUELS

Sustainable Aviation Fuels (SAF) – Introduction and Frequently Asked Questions

ICAO STOCKTAKING 2020

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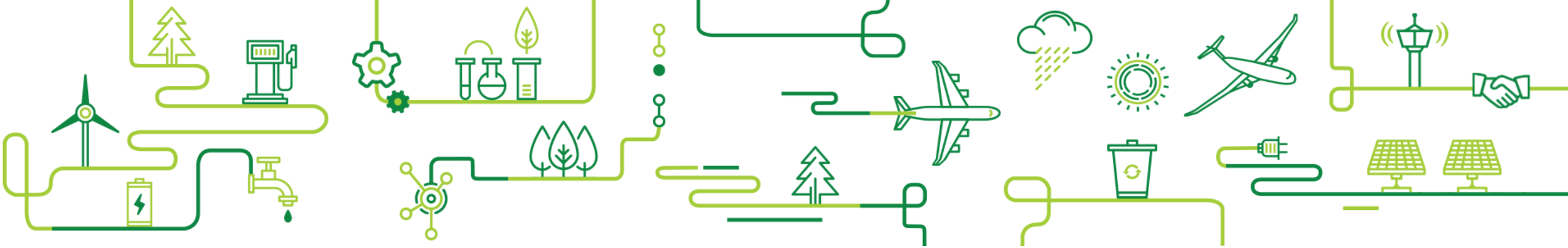


CORSIA Eligible Fuels

ICAO “Carbon Offsetting & Reduction Scheme for International Aviation” (CORSIA)

- CORSIA is a Global Carbon Offsetting Scheme
  - Offsetting to help international aviation meet Carbon Neutral Growth goal (relative to 2020 baseline)
  - Applies to Aircraft Operators, International Operations Only
  - Offsets required from 2021-2035 with an initial pilot phase from 2021-2023
- CORSIA Eligible Fuels (CEF) can be used by an airline to reduce their offsetting requirements
  - The ICAO Committee on Aviation Environmental Protection (CAEP) Fuels Task Group (FTG) is developing the rules for inclusion
  - FTG co-rapporteurs: Cesar Velarde (Spain) and Jim Hileman (US)

For additional information on CORSIA:
https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx/

Offsetting, Fuels, and CORSIA

Two means for an aeroplane operator to comply with CORSIA

1. Offsetting with Emissions Units
2. Claiming Emissions Reductions from CORSIA Eligible Fuels

Two types of CORSIA Eligible Fuels (CEF)

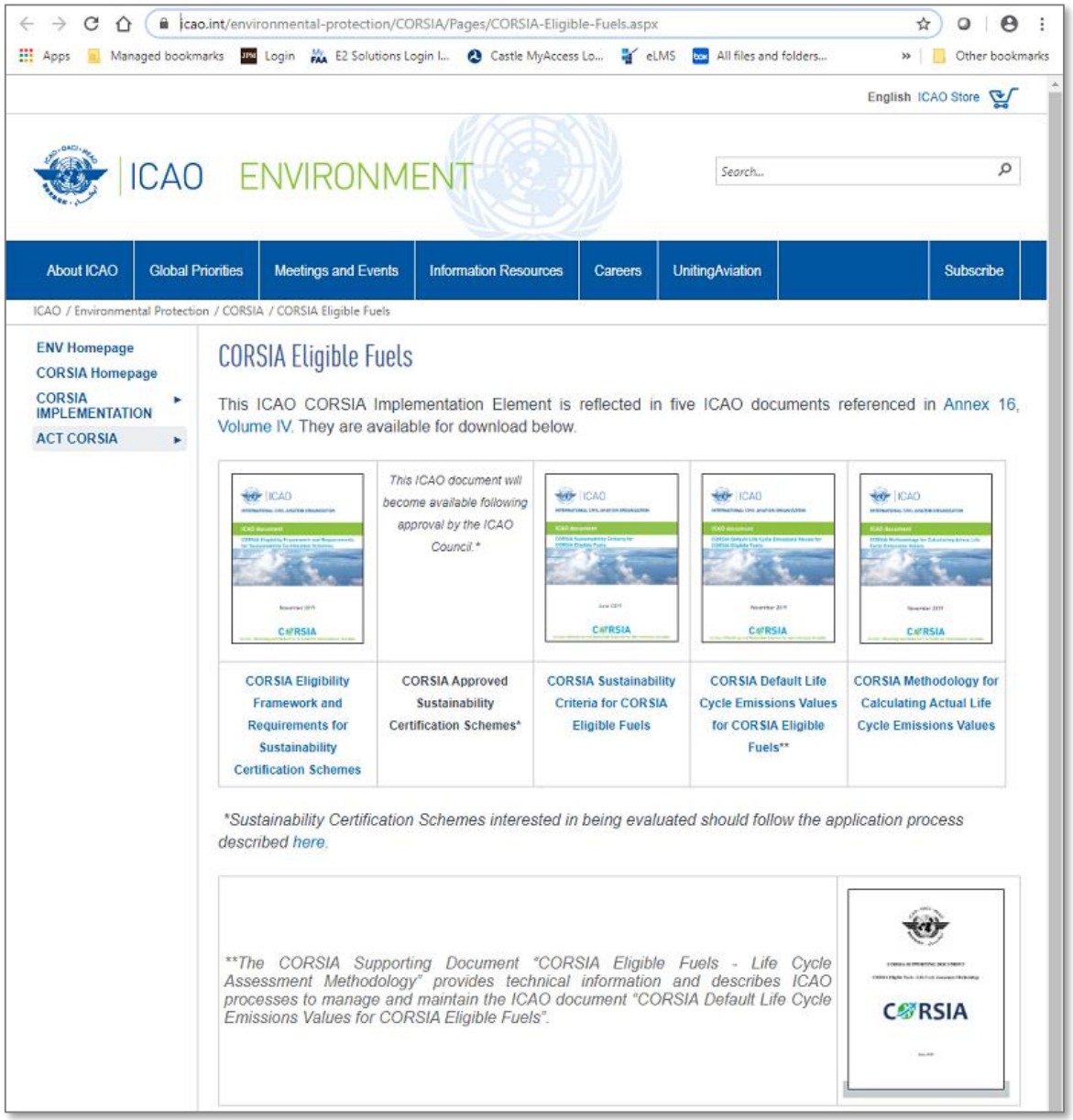
- "CORSIA Sustainable Aviation Fuel": renewable or waste-derived fuel
- "CORSIA Lower Carbon Aviation Fuel": fossil-based fuel

$$Emissions\ Reduction = 3.16 * \left[\sum Neat\ Fuel\ Mass * \left(1 - \frac{Life\ Cycle\ Emissions}{89\ g\ CO2/MJ}\right)\right]$$

To be eligible for CORSIA, a fuel needs to meet the CORSIA Sustainability Criteria as certified by ICAO Council Approved Sustainability Certification Scheme (SCS)

CORSIA Eligible Fuels - Key Documents

- There are a number of ICAO documents that contain information related to CORSIA Implementation
- Annex 16 Volume IV
- See: https://www.icao.int/environmental-protection/CORSIA/Pages/SARPs-Annex-16-Volume-IV.aspx
- CORSIA Implementation Elements
- See: https://www.icao.int/environmental-protection/CORSIA/Pages/implementation-elements.aspx
- Five ICAO documents relate to CORSIA Eligible Fuels
- See: https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Eligible-Fuels.aspx



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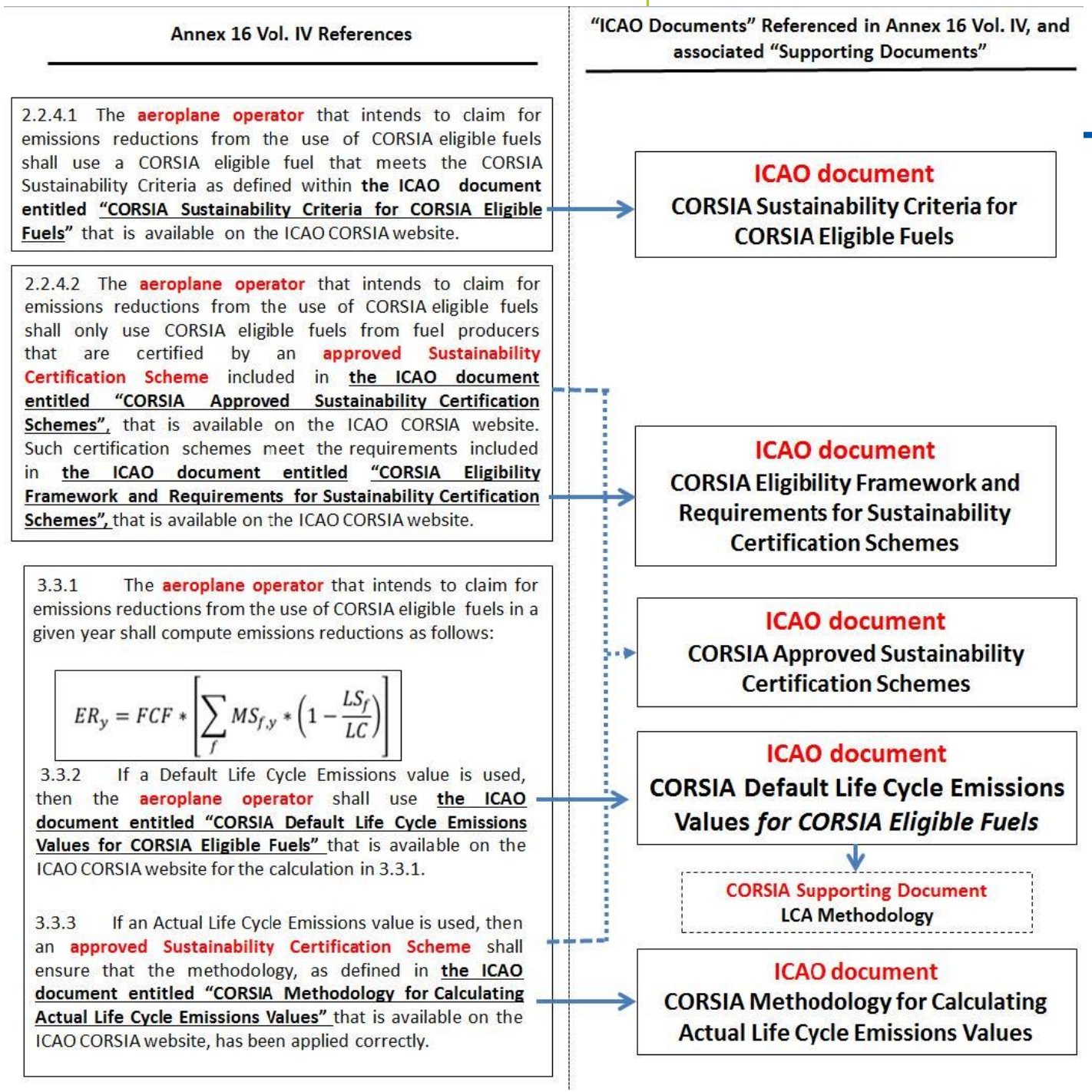
CORSIA Eligible Fuels

Relationship among the CORSIA Eligible Fuel Documents and Annex 16 Volume IV



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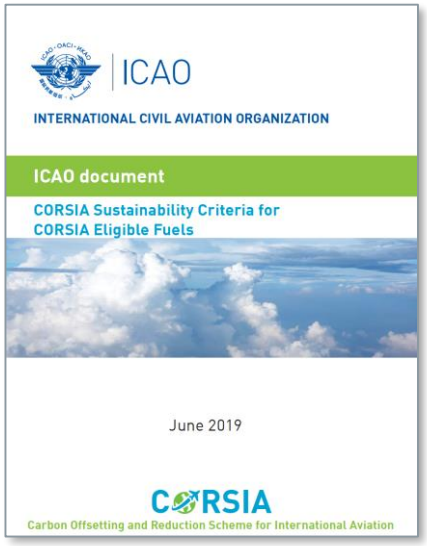
Sustainability Criteria for CORSIA Pilot Phase (until 12/31/23) – applies to SAF and LCAF

Compiled within the ICAO Document "CORSIA Sustainability Criteria for CORSIA Eligible Fuels"



To download CORSIA Sustainability Criteria for CORSIA Eligible Fuels document: https://www.icao.int/environmental-protection/CORSIA/Documents/ICAO%20document%2005%20-%20Sustainability%20Criteria.pdf

Theme	Principle	Criteria
1. Greenhouse Gases (GHG)	Principle: CORSIA eligible fuel should generate lower carbon emissions on a life cycle basis.	Criterion 1: CORSIA eligible fuel shall achieve net greenhouse gas emissions reductions of at least 10% compared to the baseline life cycle emissions values for aviation fuel on a life cycle basis.
2. Carbon stock	Principle: CORSIA eligible fuel should not be made from biomass obtained from land with high carbon stock.	Criterion 1: CORSIA eligible fuel shall not be made from biomass obtained from land converted after 1 January 2008 that was primary forest, wetlands, or peat lands and/or contributes to degradation of the carbon stock in primary forests, wetlands, or peat lands as these lands all have high carbon stocks.
		Criterion 2: In the event of land use conversion after 1 January 2008, as defined based on IPCC land categories, direct land use change (DLUC) emissions shall be calculated. If DLUC greenhouse gas emissions exceed the default induced land use change (ILUC) value, the DLUC value shall replace the default ILUC value.

Potential Additional CORSIA Sustainability Criteria (post Pilot Phase)

Ongoing work within ICAO

Sustainable = environmental +
social +
economic

greenhouse gas (1) +
carbon in the land (2) +
water quality (?) +
soil quality (?) +
air quality (?) +
conservation (?) +
wastes and chemicals (?) +
human and labor rights (?) +
land use rights (?) +
water use rights (?) +
local and social development (?) +
food security (?)

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Thank You

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