



WORKING PAPER

**THIRD CONFERENCE ON AVIATION AND ALTERNATIVE FUELS
(CAAF/3)**

Dubai, United Arab Emirates, 20 to 24 November 2023

**Agenda Item 2: Supporting policies to promote the development and deployment of cleaner energy
for aviation**

FUEL SUSTAINABILITY CERTIFICATION

(Presented by the ICAO Secretariat)

SUMMARY

This paper presents information on ICAO's work on the sustainability criteria, sustainability certification, and the assessment of life cycle emissions reductions, for Sustainable Aviation Fuels (SAF) and Lower Carbon Aviation Fuels (LCAF), under the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

Action by the Conference is in paragraph 4.

1. INTRODUCTION

1.1 The ICAO Assembly, at its 39th Session in 2016, agreed on the implementation of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) and subsequent Assembly Sessions adopted updated Assembly Resolutions, including a request to the ICAO Council to develop a methodology to ensure that annual offsetting requirements accrued by aeroplane operators under the scheme could be reduced through the use of CORSIA Eligible Fuels (i.e. CORSIA Sustainable Aviation Fuels and CORSIA Lower Carbon Aviation Fuels), so that all elements of the basket of measures were properly reflected (Resolution A41-22, paragraph 6 refers).

1.2 The Assembly also recognized that “sustainability criteria, sustainability certification, and the assessment of life cycle emissions of such fuels are developed and updated as part of work for the implementation of CORSIA” (A41-21, 34th preamble refers), and requested States to “recognize existing approaches to assess the sustainability of all fuels in general, including those for use in aviation which should achieve net GHG emissions reduction on a life cycle basis, contribute to local social and economic development; competition with food and water should be avoided” (A41-21, paragraph 27 d) refers).

1.3 This paper provides an update on the work of ICAO on sustainability criteria and certification, and life cycle assessment of fuels, in support of the consideration of CAAF/3 outcomes.

2. SUSTAINABILITY OF AVIATION FUELS IN THE CONTEXT OF CORSIA IMPLEMENTATION

2.1 Following the CORSIA agreement in 2016, the first edition of Annex 16, Volume IV to the Convention on International Civil Aviation, containing the Standards and Recommended Practices for the implementation of CORSIA, was adopted in June 2018 and it became applicable on 1 January 2019. Annex 16, Volume IV includes the definition of CORSIA Eligible Fuels (CEF), which include CORSIA Sustainable Aviation Fuels (SAF, renewable or waste-derived) and CORSIA Lower Carbon Aviation Fuels (LCAF, fossil-based)¹.

2.2 Under CORSIA, aeroplane operators can claim emissions reductions from CEF (SAF and LCAF) provided that such fuels meet the applicable CORSIA Sustainability Criteria (refer to paragraph 2.4 below), and are produced by fuel producers that are certified by an approved CORSIA Sustainability Certification Scheme (refer to paragraph 2.5 below).

2.3 With those conditions fulfilled, emissions reductions from the use of CEF are calculated on the basis of approved life cycle emissions values for the fuel, obtained as part of the sustainability certification process (refer to paragraph 2.6 below). These life cycle emission values are obtained with the use of methodologies defined by ICAO, and include the emissions associated with the full supply chain of CEF, as well as emissions associated with land use changes associated with the production of CEF².

2.4 More information on CORSIA implementation rules is provided in CAAF/3-WP/6, *Fuel accounting and reporting methodologies*.

2.5 CORSIA Sustainability Criteria

2.5.1 In June 2019, the ICAO Council approved the CORSIA Sustainability Criteria applicable during the pilot phase of CORSIA (i.e. from 1 January 2021 to 31 December 2023), covering two Themes related to carbon reduction: Theme 1 (Greenhouse Gases (GHG)) and Theme 2 (Carbon stock).

2.5.2 Further work led to the approval of the CORSIA Sustainability Criteria applicable for batches of CORSIA Eligible Fuels produced on or after 1 January 2024, following decisions by the ICAO Council in November 2021 (applicable to SAF) and November 2022 (applicable to LCAF). These decisions, which are reflected in the third edition of the ICAO document *CORSIA Sustainability Criteria for CORSIA Eligible Fuels*³, expanded the scope of the sustainability certification to 14 Themes that encompass not only carbon reduction, but also aspects related to environmental and socio-economic sustainability.

¹ Annex 16, Volume IV is accessible from ICAO CORSIA website: www.icao.int/corsia

² Life-cycle emissions of CORSIA eligible fuels: https://www.icao.int/environmental-protection/pages/SAF_LifeCycle.aspx

³ CORSIA sustainability criteria:

https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2005%20-%20Sustainability%20Criteria%20-%20November%202022.pdf

2.6 CORSIA-approved Sustainability Certification Schemes

2.6.1 Sustainability Certification Schemes (SCSs) are eligible to perform the certification of CORSIA Eligible Fuels provided that they meet the requirements included in the ICAO document *CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes*⁴, publicly available in the ICAO CORSIA website.

2.6.2 The evaluation of the eligibility of SCSs under CORSIA is undertaken by the Sustainability Certification Schemes Evaluation Group (SCSEG), a subgroup of the ICAO Council's Committee on Aviation Environmental Protection (CAEP). The SCSEG reviews applications by SCSs on a rolling basis, and develops technical recommendations to the ICAO Council on the eligibility of SCSs under CORSIA. As of August 2023, two SCSs are eligible for certifying CORSIA eligible fuel producers: the International Sustainability and Carbon Certification (ISCC); and the Roundtable of Sustainable Materials (RSB).

2.6.3 The second edition of the ICAO document *CORSIA Approved Sustainability Certification Schemes*⁵, publicly available in the ICAO CORSIA website, contains the updated information on the approved SCSs and their scope of approval, based on the applicable CORSIA Sustainability Criteria for the pilot phase and the first phase. ICAO continues implementing outreach activities aimed at SCSs, with the objective of increasing the number of SCSs eligible to support the certification of CORSIA Eligible Fuels, including LCAF.

2.7 Approved life cycle emissions values for CORSIA Eligible Fuels

2.7.1 When calculating emissions reductions from the use of CORSIA Eligible Fuels, aeroplane operators are requested to use approved life cycle emissions values for the said fuels. In this regard, two options are made available to the operators:

- a) use of a Default Life Cycle Emissions value, which the operator can obtain from the ICAO document *CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels*⁶, publicly available in the ICAO CORSIA website; or
- b) use of an Actual Life Cycle Emissions value, in which case an approved SCS must ensure that the operator has applied the corresponding methodology correctly, as defined in the ICAO document *CORSIA Methodology for Calculating Actual Life Cycle Emissions Values*⁷, publicly available in the ICAO CORSIA website.

2.7.2 Both ICAO documents referenced above are updated regularly.

⁴ https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2003%20-%20Eligibility%20Framework%20and%20Requirements%20for%20SCSs%20-%20June%202022.pdf

⁵ https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2004%20-%20Approved%20SCSs%20-%20June%202023.pdf

⁶ https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2006%20-%20Default%20Life%20Cycle%20Emissions%20-%20June%202022.pdf

⁷ https://www.icao.int/environmental-protection/CORSIA/Documents/CORSIA_Eligible_Fuels/ICAO%20document%2007%20-%20Methodology%20for%20Actual%20Life%20Cycle%20Emissions%20-%20June%202022.pdf

3. GLOBAL REGULATORY FRAMEWORK FOR THE SUSTAINABILITY OF AVIATION FUELS

3.1 As described above, CORSIA recognizes CO₂ emissions reductions from a wide range of aviation cleaner fuels (i.e. SAF and LCAF) by allowing an aeroplane operator to claim such CO₂ emissions benefits through the reduction of its offsetting requirements, with the application of an internationally harmonized regulatory framework under ICAO for the sustainability criteria, sustainability certification, and the assessment of life cycle emissions of such fuels, in accordance with Annex 16, Volume IV and associated ICAO CORSIA documents.

3.2 As a result, batches of SAF are already being certified under CORSIA. For example, in 2022, nine batches of certified SAF were produced in China, the Netherlands, and the United States, by EcoCeres, Neste, and WorldEnergy, respectively⁸.

3.3 With CORSIA being the first global market-based measure applicable to a sector, such a regulatory framework could accordingly be labelled as “global” in scope, providing relevant stakeholders (fuel producers, SCSs, aeroplane operators) with an internationally harmonized approach resulting in regulatory certainty.

3.4 Although the current applicability of the CORSIA fuel sustainability standards does not necessarily extend beyond the implementation of CORSIA itself, an indicator of the robustness of these standards is the fact that they are now being referenced in domestic policies and voluntary schemes, including the United States’ Inflation Reduction Act (IRA)⁹, and the Sustainable Aviation Buyers Alliance (SABA)¹⁰.

4. ACTION BY THE CAAF/3

4.1 The CAAF/3 is invited to:

- a) consider the extended use of the CORSIA sustainability criteria, sustainability certification, and the methodology for the assessment of life cycle emissions used for CORSIA eligible fuels, as the accepted basis for determining the sustainability of aviation fuels used in international aviation; and
- b) use information in this paper, for consideration of CAAF/3 outcomes.

— END —

⁸ <https://www.icao.int/environmental-protection/CORSIA/Pages/CORSIA-Certified-Fuels.aspx>

⁹ <https://www.congress.gov/bill/117th-congress/house-bill/5376/text>

¹⁰ <https://www.neotericeac.com/saba-rfp> (accessed 31/August/2023)