



ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ICAO document

**CORSIA Sustainability Criteria for
CORSIA Eligible Fuels**



November 2022

CORSIA

Carbon Offsetting and Reduction Scheme for International Aviation

This ICAO document is referenced in Annex 16 — *Environmental Protection*, Volume IV — *Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)*. This ICAO document is material approved by the ICAO Council for publication by ICAO to support Annex 16, Volume IV and is essential for the implementation of the CORSIA. This ICAO document is available on the ICAO CORSIA website and may only be amended by the Council.

Table A shows the origin of amendments to this ICAO document over time, together with a list of the principal subjects involved and the dates on which the amendments were approved by the Council.

Table A. Amendments to the ICAO document “CORSIA Sustainability Criteria For CORSIA Eligible Fuels”

<i>Amendment</i>	<i>Source(s)</i>	<i>Subject(s)</i>	<i>Approved</i>
1st Edition	Eleventh Meeting of the Committee on Aviation Environmental Protection	First edition of the document, which applies until December 31st, 2023 (end of the CORSIA pilot phase).	7 Jun 2019
2nd Edition	2019 Steering Group meeting of the Committee on Aviation Environmental Protection	Inclusion of Sustainability Criteria applicable for batches of CORSIA Sustainable Aviation Fuel (SAF) produced by a certified fuel producer on or after 1 January 2024	10 November 2021
3 rd Edition	Twelfth Meeting of the Committee on Aviation Environmental Protection	<ul style="list-style-type: none"> • Inclusion of Sustainability Criteria applicable for batches of CORSIA Lower Carbon Aviation Fuel (LCAF) produced by a certified fuel producer on or after 1 January 2024 • Inclusion of new Sustainability Theme on “Greenhouse Gas Emissions Reduction Permanence” applicable for batches of CORSIA Sustainable Aviation Fuel (SAF) produced by a certified fuel producer on or after 1 January 2024 • Inclusion of editorial amendments 	28 November 2022

CORSIA SUSTAINABILITY CRITERIA FOR CORSIA ELIGIBLE FUELS

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Chapter 1: CORSIA SUSTAINABILITY CRITERIA APPLICABLE FOR BATCHES OF CORSIA ELIGIBLE FUEL PRODUCED BY A CERTIFIED FUEL PRODUCER BEFORE 1 JANUARY 2024

Theme	Principle	Criteria
1. Greenhouse Gases (GHG)	Principle: CORSIA eligible fuel should generate lower carbon emissions on a life cycle basis.	Criterion 1.1: CORSIA eligible fuel will 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.	<p>Criterion 2.1: CORSIA eligible fuel will not be made from biomass that is either obtained from land converted after 1 January 2008 that was primary forest, wetlands, or peat lands or contributes to degradation of the carbon stock in primary forests, wetlands, or peat lands as these lands all have high carbon stocks.</p> <p>Criterion 2.2: In the event of land use conversion after 1 January 2008, as defined based on the Intergovernmental Panel on Climate Change (IPCC) land categories, direct land use change (DLUC) emissions will be calculated. If DLUC greenhouse gas emissions exceed the default induced land use change (ILUC) value, the DLUC value will replace the default ILUC value.</p>

Guidance on the application of sustainability criteria

- a) Compliance with Themes 1 and 2 is granted on the basis of independent attestation by Sustainability Certification Schemes included in the ICAO document “CORSIA Approved Sustainability Certification Schemes” which is available on the ICAO CORSIA website.
- b) A fuel producer can produce batches of CORSIA eligible fuels for 365 calendar days after it has been certified by an SCS for compliance with the CORSIA Sustainability Criteria, after which the fuel producer shall be re-certified for compliance with the sustainability criteria applicable at the time of re-certification.
- c) CORSIA Sustainability Criteria for CORSIA Eligible Fuels does not set a precedent for, or prejudge the outcome of negotiations in other fora.

Guidance on the application of sustainability criteria for CORSIA Lower Carbon Aviation Fuel (LCAF)

Compliance with Criterion 1.1 will be based on the life cycle greenhouse gas emissions after LCAF technologies and methane management practices are introduced, as certified by an SCS, following the methods to calculate L_{LCAF} , the life cycle emissions value for LCAF for purpose of assessing eligibility, as provided in Section 7 of the ICAO document “CORSIA Methodology for Calculating Actual Life Cycle Emissions Values”.

Chapter 2: CORSIA SUSTAINABILITY CRITERIA APPLICABLE FOR BATCHES OF CORSIA SUSTAINABLE AVIATION FUEL PRODUCED BY A CERTIFIED FUEL PRODUCER ON OR AFTER 1 JANUARY 2024

Theme	Principle	Criteria
1. Greenhouse Gases (GHG)	Principle: CORSIA SAF should generate lower carbon emissions on a life cycle basis.	Criterion 1.1: CORSIA SAF will 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 SAF should not be made from biomass obtained from land/aquatic systems with high biogenic carbon stock.	<p>Criterion 2.1: CORSIA SAF will not be made from biomass that is either obtained/extracted from land or aquatic ecosystems converted after 1 January 2008 that was primary forest, wetlands, peat lands, coral reefs, kelp forests, seagrass meadows, estuaries, tidal salt marshes or mangrove forests or contributes to degradation of the carbon stock in primary forests, wetlands, peat lands, coral reefs, kelp forests, seagrass meadows, estuaries, tidal salt marshes or mangrove forests as these systems all have high carbon stocks.</p> <p>Criterion 2.2: In the event of land use conversion after 1 January 2008, as defined based on the Intergovernmental Panel on Climate Change (IPCC) land categories, direct land use change (DLUC) emissions will be calculated. If DLUC greenhouse gas emissions exceed the default induced land use change (ILUC) value, the DLUC value will replace the default ILUC value.</p>
3. Greenhouse gas Emissions Reduction Permanence	Principle: Emissions reductions attributed to CORSIA SAF should be permanent.	Criterion 3.1: Operational practices will be implemented to monitor, mitigate and compensate any material incidence of non-permanence resulting from carbon capture and sequestration (CCS) activities.
4. Water	Principle: Production of CORSIA SAF should maintain or enhance water quality and availability.	<p>Criterion 4.1: Operational practices will be implemented to maintain or enhance water quality.</p> <p>Criterion 4.2: Operational practices will be implemented to use water efficiently and to avoid the depletion of surface or groundwater resources beyond replenishment capacities.</p>

5. Soil	Principle: Production of CORSIA SAF should maintain or enhance soil health.	Criterion 5.1: Agricultural and forestry best management practices for feedstock production or residue collection will be implemented to maintain or enhance soil health, such as physical, chemical and biological conditions.
6. Air	Principle: Production of CORSIA SAF should minimize negative effects on air quality.	Criterion 6.1: Air pollution emissions will be limited.
7. Conservation	Principle: Production of CORSIA SAF should maintain biodiversity, conservation value, and ecosystem services.	Criterion 7.1: CORSIA SAF will not be made from biomass obtained from areas that, due to their biodiversity, conservation value, or ecosystem services, are protected by the State having jurisdiction over that area, unless evidence is provided that shows the activity does not interfere with the protection purposes.
		Criterion 7.2: Low invasive-risk feedstock will be selected for cultivation and appropriate controls will be adopted with the intention of preventing the uncontrolled spread of cultivated alien species and modified microorganisms
		Criterion 7.3: Operational practices will be implemented to avoid adverse effects on areas that, due their biodiversity, conservation value, or ecosystem services, are protected by the State having jurisdiction over that area.
8. Waste and Chemicals	Principle: Production of CORSIA SAF should promote responsible management of waste and use of chemicals.	Criterion 8.1: Operational practices will be implemented to ensure that waste arising from production processes as well as chemicals used are stored, handled, and disposed of responsibly.
		Criterion 8.2: Responsible and science-based operational practices will be implemented to limit or reduce pesticide use.
		Criterion 8.3: Operational practices will be implemented to prevent, minimize, and mitigate any damage from unintentional release of fossil resources, fuel products, and/or other chemicals.
9. Seismic and Vibrational Impacts	Not applicable	Not applicable
10. Human and labour rights	Principle: Production of CORSIA SAF should respect human and labour rights.	Criterion 10.1: CORSIA SAF production will respect human and labour rights.

11. Land use rights and land use	Principle: Production of CORSIA SAF should respect land rights and land use rights including indigenous and/or customary rights.	Criterion 11.1: CORSIA SAF production will respect existing land rights and land use rights including indigenous peoples’ rights, both formal and informal.
12. Water use rights	Principle: Production of CORSIA SAF should respect prior formal or customary water use rights.	Criterion 12.1: CORSIA SAF production will respect the existing water use rights of local and indigenous communities.
13. Local and social development	Principle: Production of CORSIA SAF should contribute to social and economic development in regions of poverty.	Criterion 13.1: CORSIA SAF production will strive to, in regions of poverty, improve the socioeconomic conditions of the communities affected by the operation.
14. Food security	Principle: Production of CORSIA SAF should promote food security in food insecure regions.	Criterion 14.1: CORSIA SAF production will, in food insecure regions, strive to enhance the local food security of directly affected stakeholders.

Guidance on the application of sustainability criteria for CORSIA Sustainable Aviation Fuels (SAF)

- a) compliance with the sustainability criteria will be certified by an approved Sustainability Certification Scheme (SCS) included in the ICAO document “CORSIA Approved Sustainability Certification Schemes” which is available on the ICAO CORSIA website. An aeroplane operator seeking to claim emissions reductions from the use of CORSIA Sustainable Aviation Fuel (SAF) will provide evidence of the SCS’ certification in its emissions reporting in accordance with Annex 16, Volume IV;
- b) in assessing compliance with the sustainability criteria, an SCS will apply only ICAO-approved sustainability criteria for the certification of CORSIA SAF, on the following basis:
 - i. compliance with Themes 1 to 3 will be assessed by the SCS;
 - ii. compliance with Themes 4 to 8 will be assessed by SCS taking into account the guidance approved by the Council¹ and in accordance with the following procedure:
 - a) prior to an SCS conducting an assessment in a State in which it never operated before, the SCS will consult with the competent authority of the State concerned, if required, in order to discuss the detailed process of assessment and for the SCS to be fully aware of the national and local requirements applying to the production of SAF. In the case of States that establish such requirement, the assessment by SCS will only take place after such consultations and common understanding between the competent authority and SCS on the detailed process of assessment by the SCS. With a view to implementing this consultation process, Member

¹ Guidance on the application of Sustainability Criteria, Themes 4 to 8, is available on the “CORSIA eligible fuels” website.

States which require consultation will notify ICAO which competent authority should be contacted by the SCS; and

- b) in the case of diverging approaches between the competent authority and the SCS, the Member State concerned may refer the matter to the ICAO Council to review the disagreement relating to the interpretation and application of the guidance for Themes 4 to 8. The review may include the support of relevant UN domain experts, as appropriate, on the request of the Member State. The Member State concerned will participate in this review process;
 - iii. compliance with Themes 10, 11 and 12 can be demonstrated to the SCS by a national attestation from the State in whose territory the SAF is produced, without further assessment by the SCS;
 - iv. compliance with Themes 13 and 14 will be demonstrated to the SCS by the economic operator reporting to the SCS the actions being taken to meet the related criteria, without further judgement of those actions by the SCS.
- c) CORSIA sustainability criteria for CORSIA SAF does not set a precedent for, or prejudge the outcome of negotiations in other fora.

Chapter 3: CORSIA SUSTAINABILITY CRITERIA APPLICABLE FOR BATCHES OF CORSIA LOWER CARBON AVIATION FUEL PRODUCED BY A CERTIFIED FUEL PRODUCER ON OR AFTER 1 JANUARY 2024

Note 1: LCAF that meet CORSIA sustainability criteria are not considered sustainable fuels.

Theme	Principle	Criteria
1. Greenhouse Gases (GHG)	Principle: CORSIA LCAF should generate lower carbon emissions on a life cycle basis.	Criterion 1.1: CORSIA LCAF will 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 LCAF should not be made from feedstock obtained from land/aquatic systems with high biogenic carbon stock.	<p>Criterion 2.1: CORSIA LCAF will not be made from feedstock that is either obtained/extracted from land or aquatic ecosystems converted after 1 January 2008 that was primary forest, wetlands, peat lands, coral reefs, kelp forests, seagrass meadows, estuaries, tidal salt marshes or mangrove forests or contributes to degradation of the carbon stock in primary forests, wetlands, peatlands, coral reefs, kelp forests, seagrass meadows, estuaries, tidal salt marshes or mangrove forests as these systems all have high carbon stocks.</p> <p>Criterion 2.2: In the event of land use conversion after 1 January 2008, as defined based on the Intergovernmental Panel on Climate Change (IPCC) land categories, direct land use change (DLUC) emissions will be calculated. If DLUC greenhouse gas emissions exceed the default induced land use change (ILUC) value, the DLUC value will replace the default ILUC value. Where there is no default ILUC value, DLUC will be calculated and used in place of a default ILUC value.</p>
3. Greenhouse gas Emissions Reduction Permanence	Principle: Emissions reductions attributed to CORSIA LCAF should be permanent.	<p>Criterion 3.1: Operational practices will be implemented to monitor, mitigate and compensate any material incidence of non-permanence resulting from carbon capture and sequestration (CCS) activities.</p> <p>Criterion 3.2 Operational practices and financial measures will be implemented to monitor, mitigate and compensate any material incidence of greenhouse gas release resulting from closure and post-closure period of oil and gas wells.</p>
4. Water	Principle: Production of CORSIA LCAF should	Criterion 4.1: Operational practices will be implemented to maintain or enhance water quality.

	maintain or enhance water quality and availability.	Criterion 4.2: Operational practices will be implemented to use water efficiently and to avoid the depletion of surface or groundwater resources beyond replenishment capacities.
5. Soil	Principle: Production of CORSIA LCAF should maintain or enhance soil health.	Criterion 5.1: Operational practices will be implemented to maintain or enhance soil health, such as physical, chemical and biological conditions.
6. Air	Principle: Production of CORSIA LCAF should minimize negative effects on air quality.	Criterion 6.1: Air pollution emissions will be limited.
7. Conservation	Principle: Production of CORSIA LCAF should maintain biodiversity, conservation value, and ecosystem services.	Criterion 7.1: CORSIA LCAF will not be made from feedstock from areas that, due to their biodiversity, conservation value, or ecosystem services, are protected by the State having jurisdiction over that area, unless evidence is provided that shows the activity does not interfere with the protection purposes.
		Criterion 7.2: Low invasive-risk feedstock will be selected for cultivation and appropriate controls will be adopted with the intention of preventing the uncontrolled spread of cultivated alien species and modified microorganisms
		Criterion 7.3: Operational practices will be implemented to avoid adverse effects on areas that, due their biodiversity, conservation value, or ecosystem services, are protected by the State having jurisdiction over that area.
8. Waste and Chemicals	Principle: Production of CORSIA LCAF should promote responsible management of waste and use of chemicals.	Criterion 8.1: Operational practices will be implemented to ensure that waste arising from production processes as well as chemicals used are stored, handled and disposed of responsibly.
		Criterion 8.2: Responsible and science-based operational practices will be implemented to limit or reduce flammable, corrosive and toxic chemical use.
		Criterion 8.3: Operational practices will be implemented to prevent, minimize, and mitigate any damage from unintentional release of fossil resources, fuel products, and/or other chemicals.
9. Seismic and Vibrational Impacts	Principle: Production of CORSIA LCAF should minimize seismic,	Criterion 9.1: Operational practices will be implemented to minimize seismic impacts related to surface, subsurface, and underwater activities.

	acoustic, and vibrational impacts.	Criterion 9.2: Operational practices will be implemented to minimize acoustic energy and vibrational impacts related to surface, subsurface, and underwater activities.
10. Human and labour rights	Principle: Production of CORSIA LCAF should respect human and labour rights.	Criterion 10.1: CORSIA LCAF production will respect human and labour rights.
11. Land use rights and land use	Principle: Production of CORSIA LCAF should respect land rights and land use rights including indigenous and/or customary rights.	Criterion 11.1: CORSIA LCAF production will respect existing land rights and land use rights including indigenous peoples' rights, both formal and informal.
12. Water use rights	Principle: Production of CORSIA LCAF should respect prior formal or customary water use rights.	Criterion 12.1: CORSIA LCAF production will respect the existing water use rights of local and indigenous communities.
13. Local and social development	Principle: Production of CORSIA LCAF should contribute to social and economic development in regions of poverty.	Criterion 13.1: CORSIA LCAF production will strive to, in regions of poverty, improve the socioeconomic conditions of the communities affected by the operation.
14. Food security	Principle: Production of CORSIA LCAF should promote food security in food insecure regions.	Criterion 14.1: CORSIA LCAF production will, in food insecure regions, strive to enhance the local food security of directly affected stakeholders.

Guidance on the application of sustainability criteria for CORSIA Lower Carbon Aviation Fuels (LCAF)

- a. compliance with the sustainability criteria will be certified by an approved Sustainability Certification Scheme (SCS) included in the ICAO document “CORSIA Approved Sustainability Certification Schemes” which is available on the ICAO CORSIA website. An aeroplane operator seeking to claim emissions reductions from the use of CORSIA Lower Carbon Aviation Fuel (LCAF) will provide evidence of the SCS’ certification in its emissions reporting in accordance with Annex 16, Volume IV;
- b. in assessing compliance with the sustainability criteria, an SCS will apply only ICAO-approved sustainability criteria for the certification of CORSIA LCAF, on the following basis:
 - i. compliance with Themes 1 through 9 will be assessed by the SCS;

- ii. compliance with Themes 10, 11, and 12 can be demonstrated to the SCS by a national attestation from the State in whose territory the LCAF is produced, without further assessment by the SCS;
- iii. compliance with Themes 13 and 14 will be demonstrated to the SCS by the economic operator reporting to the SCS the actions being taken to meet the related criteria, without further judgement of those actions by the SCS.
- c. CORSIA sustainability criteria for CORSIA LCAF does not set a precedent for, or prejudge the outcome of negotiations in other fora
- d. compliance with Criterion 1.1 will be based on the life cycle greenhouse gas emissions after LCAF technologies and methane management practices are introduced, as certified by an SCS, following the methods to calculate L_{LCAF} , the life cycle emissions value for LCAF for purpose of assessing eligibility, as provided in Section 7 of the ICAO document “CORSIA Methodology for Calculating Actual Life Cycle Emissions Values”.

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