EASA
European Union Aviation Safety Agency

EU-CORSIA
Africa & Caribbean

CAPACITY BUILDING ON SAF & CORSIA ELIGIBLE FUELS NAMIBIA

CORSIA Eligible Fuels and ICAO documentation

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Windhoek, Namibia
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Working for quieter and cleaner aviation.

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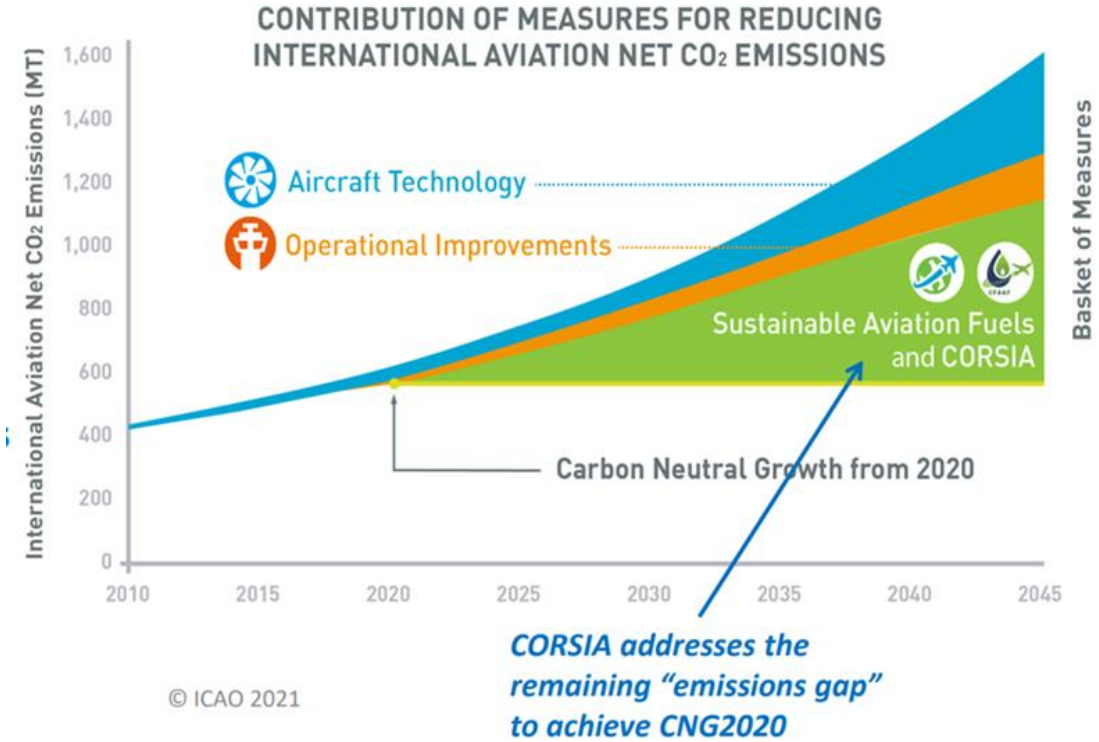
Contents

The importance of SAF and CORSIA Eligible Fuels



Aeroplane operators will be required to offset some of their emissions from international flights once the sector growth factor is…

….positive

How can an aeroplane operator reduce the number of offsets they need to buy?

.. with CORSIA Eligible Fuels (CEF)

SAF and CORSIA Eligible Fuels (CEF)

- SAF is a generic word for non-conventional aviation fuel

- What is a CORSIA Eligible Fuel or CEF?
  - CORSIA Eligible Fuel (CEF) is a term used in the CORSIA context
  - It includes CORSIA Sustainable Aviation Fuels (SAF) and CORSIA Lower Carbon Aviation Fuels (LCAF) that meet the required sustainability requirements
  - An aeroplane operator may use these fuels to reduce its offsetting requirements

CORSIA Sustainable Aviation Fuels (SAF)

- A renewable or waste-derived aviation fuel that meets the CORSIA Sustainability Criteria requirements
- Types of feedstock:
  - Primary products (e.g., Camelina Oil, sugarcane)
  - Co-products (e.g., Molasses)
  - By-products (e.g., Tallow)
  - Wastes (e.g., Used Cooking Oil)
  - Residues (e.g., Bagasse)
- Contribute to emissions reduction obligations under CORSIA
- It must demonstrate lifecycle emissions reduction of 10% compared to conventional aviation fuel

CORSIA Lower Carbon Aviation Fuels (LCAF)

- A fossil-based aviation fuel that meets the CORSIA Sustainability Criteria requirements
- Contribute to emissions reduction obligations under CORSIA
- It must demonstrate lifecycle emissions reduction of 10% compared to conventional aviation fuel.
- This is not considered SAF

CORSIA Eligible Fuels (CEF) – Requirements

→ The fuel must meet the CORSIA Sustainability Criteria identified in the ICAO ***'Sustainability Criteria for CORSIA Eligible Fuels'*** document

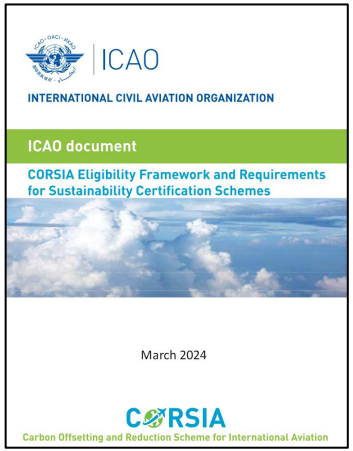
→ The fuel must come from a fuel producer that is certified by an approved Sustainability Certification Scheme. Approved Sustainability Certification Schemes are identified in the ICAO document entitled ***'CORSIA Approved Sustainability Certification Schemes'*** document

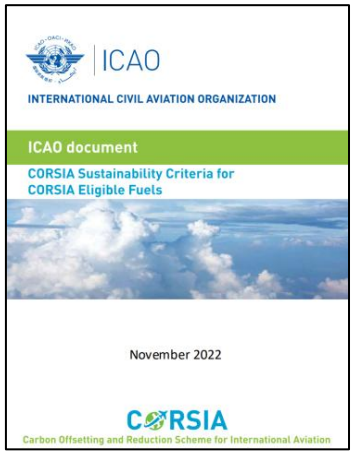
→ The certification scheme meets the requirements included in the ICAO document entitled ***'CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes'***

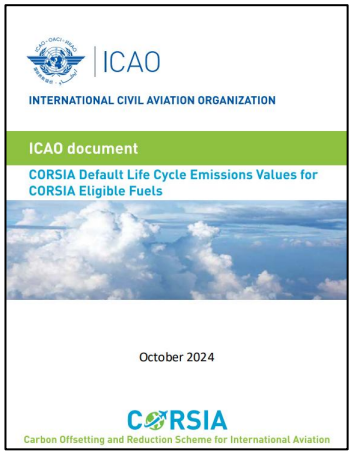
→ That the Life Cycle Emissions of the Fuel is defined either by using the default values established in the ICAO document ***'Default Life Cycle Emissions Values for CORSIA Eligible Fuels'*** or making an actual calculation using the document ***'CORSIA Methodology for Calculating Actual Life Cycle Emissions Values'***

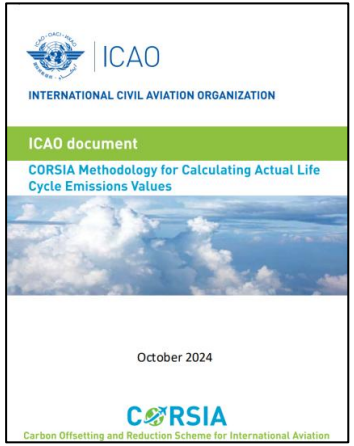
CORSIA Eligible Fuels Sustainability Documentation

- → Five ICAO documents relative to CORSIA Eligible Fuels (CEF)
  - → Identify the relevant certification and process requirements from the CORSIA regulatory requirements





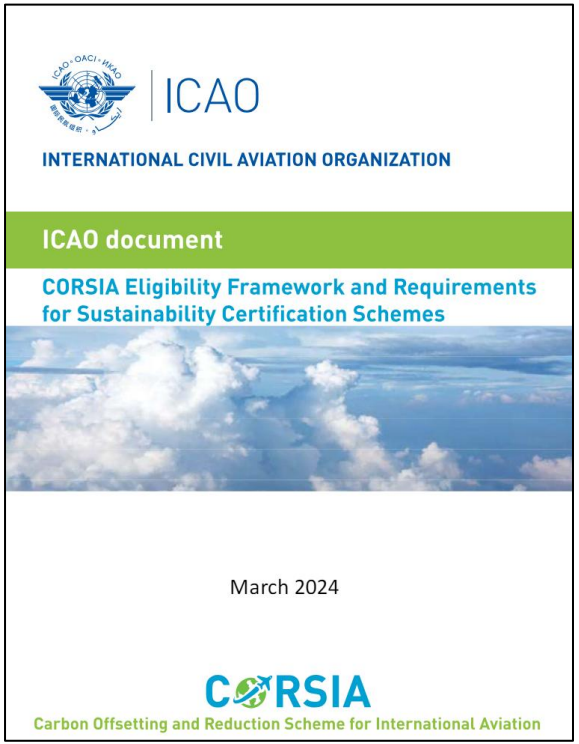




Additional slides to be added after this looking at each document

CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes

- Current version: March 2024 (3rd edition)
- DEFINITIONS
- ELIGIBILITY REQUIREMENTS
  - Requirements for SCS
  - General requirements set by SCS on Economic Operators
  - Traceability requirements set by SCS on Economic Operators
  - Information Transmission requirements set by SCS on Economic Operators
  - Requirements set by SCS on Certification Bodies
- ELIGIBILITY FRAMEWORK



1. DEFINITIONS

Accreditation. A third-party attestation related to a certification body conveying formal demonstration of its competence to carry out specific conformity assessment tasks (adapted from ISO 17011).

Accreditation bodies. Authoritative bodies that perform accreditation (ISO 17011).

Assurance system. A system of accreditation, certification, auditing processes and procedures maintained by a Sustainability Certification Scheme.

Auditors. Auditors plan, conduct and complete audits on behalf of the certification body. Responsibilities include designing risk-based audit and evidence-gathering plans, designing sampling procedures, evaluating the adequacy and sufficiency of evidence of compliance, identifying nonconformities, issuing a recommendation for or against certification and preparing an audit report.

Audits. Systematic, independent and documented processes for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled (adapted from ISO 19011:2011).

Certification bodies. Third-party conformity assessment bodies (ISO 17065:2012) making certification decisions and issuing certificates.

Economic operator. Economic operators include feedstock producers, processing facilities, and traders.

Stakeholder. Individual or group that has an interest in any decision or activity of an organization (adapted from ISO 26000).

Sustainability Certification Schemes (SCS). Organizations that certify economic operators against the sustainability criteria, and ensure that economic operators calculate actual life cycle emissions values (if default values are not applied) using the agreed methodology. SCS define sustainability certification requirements, set requirements for certification bodies, auditors and accreditation bodies, and monitor effectiveness of the assurance system.

CORSIA Approved Sustainability Certification Schemes

→Current version: October 2024

(3rd edition)

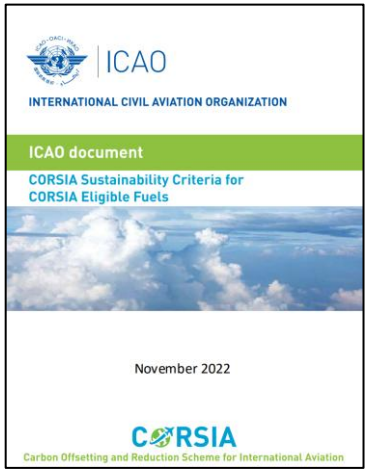
CORSIA APPROVED SUSTAINABILITY CERTIFICATION SCHEMES

The following Sustainability Certification Schemes are approved by the ICAO Council as meeting the requirements included in the ICAO document "CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes", and they are eligible to certify CORSIA eligible fuel economic operators for compliance with the ICAO document "CORSIA Sustainability Criteria for CORSIA eligible fuels", and to ensure that the methodology defined in the ICAO document "CORSIA Methodology for Calculating Actual Life Cycle Emissions Values" has been applied correctly.

Name of the Sustainability Certification Scheme	Date of approval	Website	Scope of approval
International Sustainability and Carbon Certification (ISCC)	16 Jun. 2023	https://www.iscc-system.org/about/sustainable-aviation-fuels/corsia/	Certification of CORSIA Sustainable Aviation Fuels economic operators covered by Chapters 1 and 2 of the ICAO document "CORSIA Sustainability Criteria for CORSIA eligible fuels"
Roundtable on Sustainable Biomaterials (RSB)	16 Jun. 2023	https://rsb.org/rsb-corsia-certification/	Certification of CORSIA Sustainable Aviation Fuels economic operators covered by Chapters 1 and 2 of the ICAO document "CORSIA Sustainability Criteria for CORSIA eligible fuels"
ClassNK SCS	28 Oct. 2024	https://www.classnk.or.jp/hp/en/authentication/scs/index.html	Certification of CORSIA Sustainable Aviation Fuels economic operators covered by Chapter 2 of the ICAO document "CORSIA Sustainability Criteria for CORSIA eligible fuels"

CORSIA Sustainability Criteria for CORSIA Eligible Fuels

→ Current version: November 2022 (3rd edition)



CORSIA SUSTAINABILITY CRITERIA FOR CORSIA ELIGIBLE FUELS

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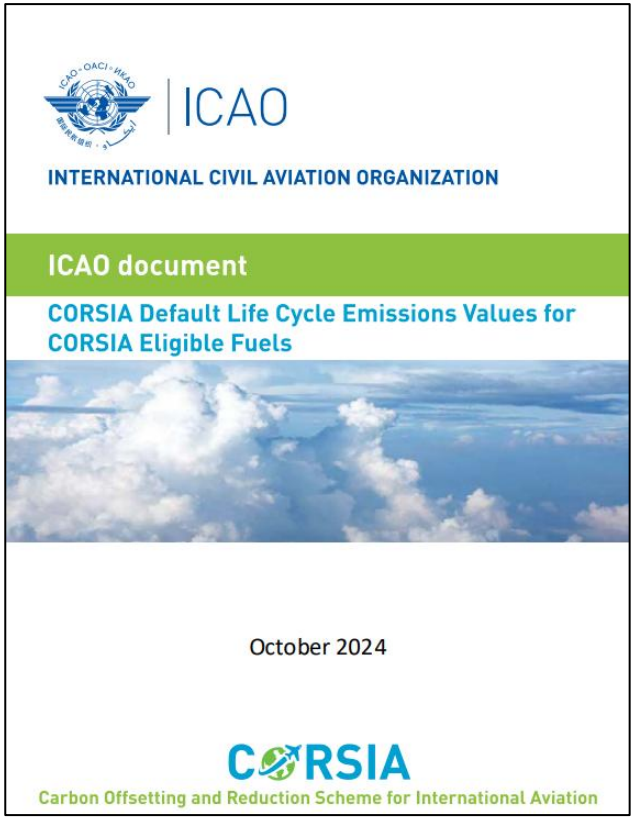
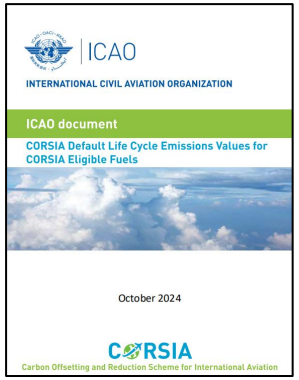
CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels

- Current version: October 2024 (6th edition)
- ACRONYMS
- DEFINITIONS
- GENERAL PROVISIONS
  - Use of default values for L_{CEF} calculation
  - Specific provisions for co-processed fuels
  - Applicability provisions



CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels



- DEFAULT CORE LIFE CYCLE ASSESSMENT (LCA) VALUES FOR CORSIA ELIGIBLE FUELS
  - CORSIA Eligible Fuels produced with the Gasification FT Fuel Conversion Process
  - CORSIA Eligible Fuels produced with the HEFA Conversion Process
  - CORSIA Eligible Fuels produced with the ATJ-SPK from Isobutanol Conversion Process
  - CORSIA Eligible Fuels produced with the ATJ-SPK from Ethanol Conversion Process
  - CORSIA Eligible Fuels produced with the SIP Conversion Process
  - CORSIA Eligible Fuels produced with the Coprocessing HEFA Conversion process

CORSIA Default Life Cycle Emissions Values for CORSIA Eligible Fuels

- DEFAULT ILUC VALUES FOR CORSIA ELIGIBLE FUELS
  - General provisions
  - Default ILUC values for feedstocks classified as wastes, residues, or by-products
  - Default ILUC values for feedstocks classified as main products
  - CORSIA Eligible Fuels produced with the Gasification FT Conversion Process
  - CORSIA Eligible Fuels produced with the Hydroprocessed Esters and Fatty Acids (HEFA) Conversion Process
  - CORSIA Eligible Fuels produced with the Alcohol to Jet – Isobutanol (ATJ-Isobutanol) Conversion Process
  - CORSIA Eligible Fuels produced with the Alcohol to Jet – Ethanol (ATJ-Ethanol) Conversion Process
  - CORSIA Eligible Fuels produced with the Synthesized iso-paraffins (SIP) Conversion Process
  - CORSIA Eligible Fuels produced with the Hydroprocessed Esters and Fatty Acids (HEFA) Conversion Process co-processed at petroleum refineries
  - Specific provisions for cellulosic feedstocks associated with negative ILUC values
  - Guidance to verify compliance with the cellulosic pathway specification

Default Core LCA Values for CORSIA Eligible Fuels produced with the HEFA Conversion Process

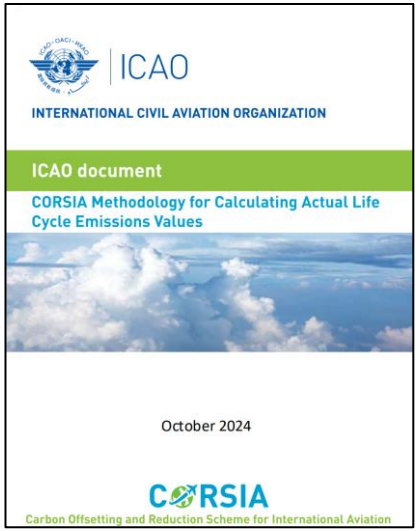
Fuel Feedstock	Pathway Specifications	Default Core LCA Value	Applicability Provisions
Tallow		22.5	This value can be applied to CEF batches produced until 31 December 2029.
Beef Tallow	relevant lifecycle starts with transportation from slaughterhouse to rendering facility	29.7	
Poultry fat	relevant lifecycle starts with transportation from slaughterhouse to rendering facility	33.7	
Lard fat	relevant lifecycle starts with transportation from slaughterhouse to rendering facility	27.8	
Mixed Animal Fats	relevant lifecycle starts with transportation from slaughterhouse to rendering facility	28.6	
Used cooking oil		13.9	
Palm fatty acid distillate		20.7	
Corn oil	Oil from dry mill ethanol plant	17.2	
Soybean oilseed		40.4	
Rapeseed/Canola oilseed		47.4	
Palm fresh fruit bunches	At the oil extraction step, at least 85% of the biogas released from the Palm Oil Mill Effluent (POME) treated in anaerobic ponds is captured and oxidized.	37.4	
Palm fresh fruit bunches	At the oil extraction step, less than 85% of the biogas released from the Palm Oil Mill Effluent (POME) treated in anaerobic ponds is captured and oxidized.	60.0	
Brassica carinata oilseed		34.4	

Default ILUC Values for CORSIA Eligible Fuels produced with the HEFA Conversion Process

Region	Fuel Feedstock	Pathway Specifications	Default ILUC value
USA	Soybean oilseed		24.5
Brazil	Soybean oilseed		27.0
Global	Soybean oilseed		25.8
EU	Rapeseed/Canola oilseed		24.1
Global	Rapeseed/Canola oilseed		26.0
Malaysia & Indonesia	Palm fresh fruit bunches	At the oil extraction step, at least 85% of the biogas released from the Palm Oil Mill Effluent (POME) treated in anaerobic ponds is captured and oxidized.	39.1
Malaysia & Indonesia	Palm fresh fruit bunches	At the oil extraction step, less than 85% of the biogas released from the Palm Oil Mill Effluent (POME) treated in anaerobic ponds is captured and oxidized.	39.1
Brazil	Brassica carinata oilseed	Feedstock is grown as a secondary crop that avoids other crops displacement	-20.4
USA	Brassica carinata oilseed	Feedstock is grown as a secondary crop that avoids other crops displacement	-21.4
Global	Brassica carinata oilseed	Feedstock is grown as a secondary crop that avoids other crops displacement	-12.7
Global	Camelina oilseed	Feedstock is grown as a secondary crop that avoids other crops displacement	-13.4

CORSIA Methodology for Calculating Actual Life Cycle Emissions Values

→ Current version: October 2024 (5th edition)



CORSIA METHODOLOGY FOR CALCULATING ACTUAL LIFE CYCLE EMISSIONS VALUES

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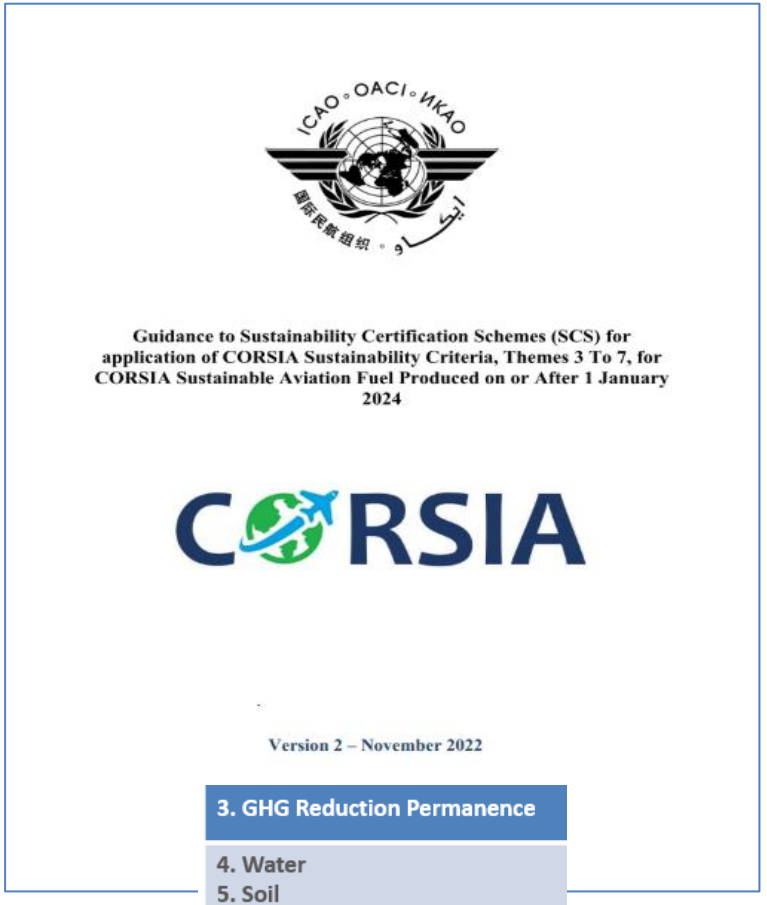
EASA

ICAO CORSIA Methodology for Calculating Actual Life Cycle Emissions Values Document – what's included?

- Acronyms
- CORSIA Methodology for Calculating Actual Life Cycle Emissions Values
- Technical Report Requirements
- Feedstock Categories
- Low Land Use Change (LUC) Risk Practices
- Emissions Credits
- Lower Carbon Aviation Fuels
- CORSIA Methodology for Calculating Direct Land Use Change Emissions Values
- Process to determine L_{CEF}

Additional ICAO Guidance



CHAPTER 1. **CRITERIA AND PROCESS FOR THE ADDITION OF NEW DEFAULT LIFE CYCLE EMISSION VALUES**

While the vast majority of ground transportation biofuels are currently being produced from a few world regions, in the future, pathways and regions not represented in the results of this technical document will likely also produce SAF.

In order for an additional pathway to be evaluated for inclusion in the ICAO document 'CORSIA Default Life Cycle Emissions Values (core LCA and ILUC) for CORSIA Eligible fuels' the following criteria need to be met:

1. The pathway uses an ASTM certified conversion process or, a conversion process for which the Phase 2 ASTM Research Report has been reviewed and approved by the OEMs
2. The conversion process has been validated at sufficient scale to establish a basis for facility design and operating parameters at commercial scale
3. There are sufficient data on the conversion process of interest to perform LCA modelling.
4. There are sufficient data on the feedstock of interest to perform LCA modelling.
5. There are sufficient data on the region of interest to perform ILUC modelling, where applicable to the pathway.

CAEP designees will determine if the criteria have been met for adding a new pathway, carry out the calculation of default life cycle emission values for the pathway, and communicate the results in this document.

Requests for CAEP to consider a conversion process, feedstock, emission credit, and/or region can be made by ICAO Member States, Observer Organizations, or an approved SCS to the CAEP Secretary in ICAO (caep@icao.int). Further details on the process and data requirements are provided on this Part of this Supporting Document, as follows:

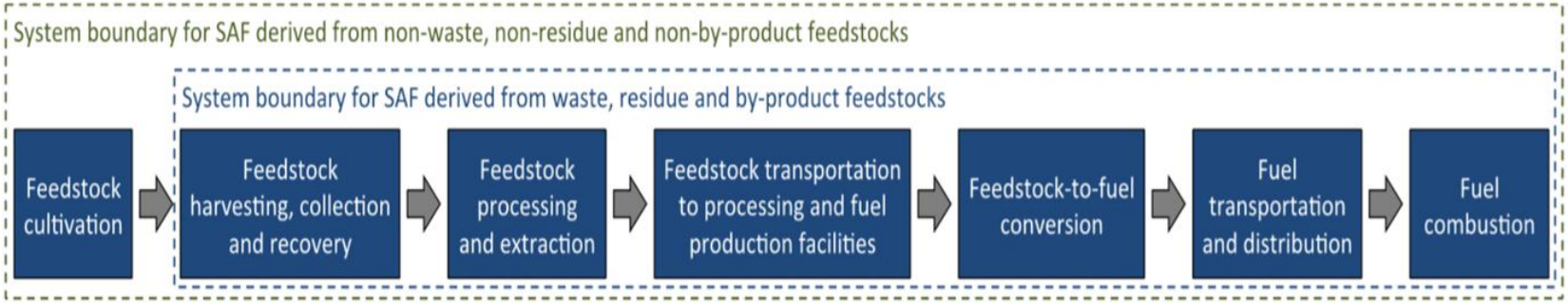
Chapter 2 of this Part provides guidance for submission of lifecycle assessment data, including data required for the calculation of default core LCA values and default ILUC values.

Chapter 3 of this Part defines the process and required data for adding a new emission credit pathway in the CORSIA Framework.

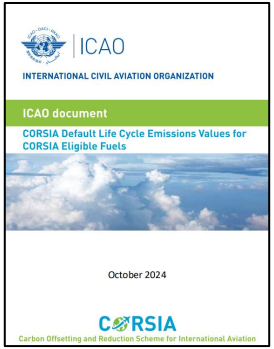
Chapter 4 of this Part defines the process and required data for adding a new feedstock as a waste, residue, or by-product in the CORSIA framework.

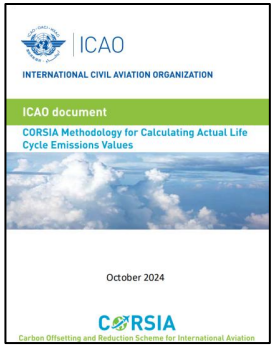
How are emissions reductions from CEF calculated?

- Emissions reductions are calculated based on life cycle emissions values (L_{CEF})
- This value considers the CO_2 emissions from all parts of the production process



- The L_{CEF} value is calculated using the following values:
  - a *Core Life Cycle Assessment* (LCA) Value (Default or Actual)
  - an *Induced Land Use Change* (ILUC) Value (Default)





How are emissions reductions calculated?

ERy = CEF Emissions Reduction

L_{CEF} Life cycle emissions value for CORSIA Eligible Fuel

Fuel conversion factor (fixed)
3.16 for Jet-A/Jet A-1

$$ERy = 3.16\ X \left(3{,}500\ \text{x} \left(1 - \frac{13.9}{89}\right)\right) = 9{,}332\ tonnes\ of\ CO_2$$

Baseline life cycle emissions (fixed)
89 for Jet-A/Jet-A1 [gCO_{2e}/MJ]

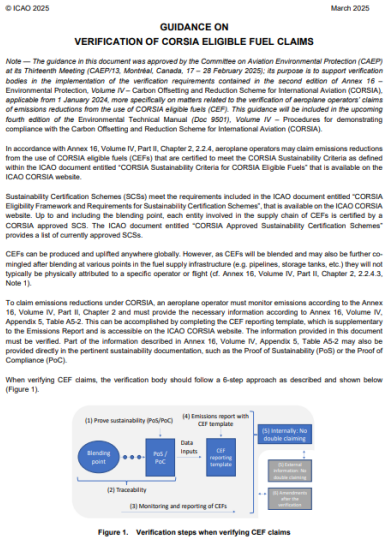
Total mass of neat CEF claimed
(tonnes)

How does the Aeroplane Operator account for CORSIA Eligible Fuels?

1. Emissions Report

2. Supplementary CORSIA Eligible Fuels Template

Both to be Verified by the Verification Body, new verification guidance:



March 2025

GUIDANCE ON

VERIFICATION OF CORSIA ELIGIBLE FUEL CLAIMS

Note — The guidance in this document was approved by the Committee on Aviation Environmental Protection (CAEP) at its Thirteenth Meeting (CAEP/13, Montréal, Canada, 17 – 28 February 2025); its purpose is to support verification bodies in the implementation of the verification requirements contained in the second edition of Annex 16 – Environmental Protection, Volume IV – Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), applicable from 1 January 2024, more specifically on matters related to the verification of aeroplane operators' claims of emissions reductions from the use of CORSIA eligible fuels (CEF). This guidance will be included in the upcoming fourth edition of the Environmental Technical Manual *(Doc 9501), Volume IV* – Procedures for demonstrating compliance with the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA).

In accordance with Annex 16, Volume IV, Part II, Chapter 2, 2.2.4, aeroplane operators may claim emissions reductions from the use of CORSIA eligible fuels (CEFs) that are certified to meet the CORSIA Sustainability Criteria as defined within the ICAO document entitled "CORSIA Sustainability Criteria for CORSIA Eligible Fuels" that is available on the ICAO CORSIA website.

Sustainability Certification Schemes (SCSs) meet the requirements included in the ICAO document entitled "CORSIA Eligibility Framework and Requirements for Sustainability Certification Schemes", that is available on the ICAO CORSIA website. Up to and including the blending point, each entity involved in the supply chain of CEFs is certified by a CORSIA approved SCS. The ICAO document entitled "CORSIA Approved Sustainability Certification Schemes" provides a list of currently approved SCSs.

CEFs can be produced and uplifted anywhere globally. However, as CEFs will be blended and may also be further co-mingled after blending at various points in the fuel supply infrastructure (e.g. pipelines, storage tanks, etc.) they will not typically be physically attributed to a specific operator or flight (cf. Annex 16, Volume IV, Part II, Chapter 2, 2.2.4.3, Note 1).

To claim emissions reductions under CORSIA, an aeroplane operator must monitor emissions according to the Annex 16, Volume IV, Part II, Chapter 2 and must provide the necessary information according to Annex 16, Volume IV, Appendix 5, Table A5-2. This can be accomplished by completing the CEF reporting template, which is supplementary to the Emissions Report and is accessible on the ICAO CORSIA website. The information provided in this document must be verified. Part of the information described in Annex 16, Volume IV, Appendix 5, Table A5-2 may also be provided directly in the pertinent sustainability documentation, such as the Proof of Sustainability (PoS) or the Proof of Compliance (PoC).

When verifying CEF claims, the verification body should follow a 6-step approach as described and shown below (Figure 1).

Figure 1. Verification steps when verifying CEF claims

- 1 -

Information provided in the Emissions Report

a) Summary of reported international flights and emissions

Total CO_2 emissions from international flights (in tonnes):	
Total CO_2 emissions from flights subject to offsetting requirements (in tonnes):	
Total number of international flights during reporting period:	
Total number of international flights subject to offsetting requirements:	
Total emissions reductions claimed from the use of CORSIA eligible fuels (in tonnes):	

b) Summary of fuel quantities(*) (in tonnes):

(*) For the purposes of this template, the fuel total could include the sum of equivalent fuels.

Jet-A	
Jet-A1	
TS-1	
No. 3 Jet	
Jet-B	
AvGas	

b1) CORSIA eligible fuels claimed

If claiming emission reductions from the use of CORSIA eligible fuels, please complete the table below. Supplementary information about the claim is also required, and can be reported using the CORSIA eligible fuels supplementary information template.

(*) For the purposes of this template, the fuel total could include the sum of equivalent fuels.

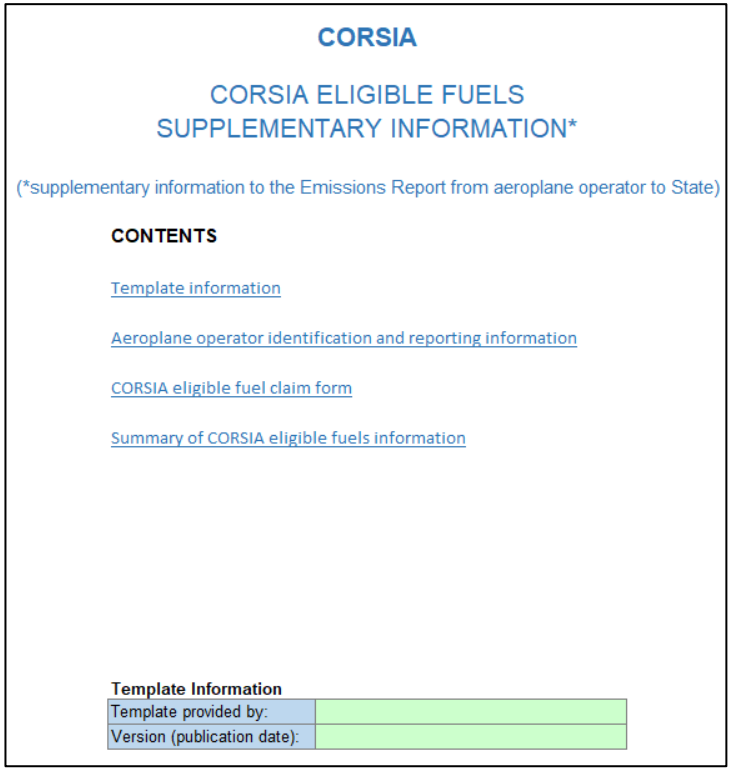
Fuel type			Total mass of the neat CORSIA eligible fuel (in tonnes)	Approved Life Cycle Emissions values	Emission reductions claimed
Fuel type (e.g. Jet-A) (*)	Feedstock	Conversion process			
Total emission reductions from the use of CORSIA eligible fuel(s) claimed					

- Total flights and emissions from international flights
- Total flights and emissions from international flights with offsetting requirements
- Total emissions reductions claimed from the use of CORSIA eligible fuels
- Summary of total fuel quantity per fuel type
- Summary of CORSIA eligible fuels claimed

CORSIA Eligible Fuels Supplementary Information form

- The Aeroplane Operator indicates in their Emissions Report if it uses CORSIA eligible fuels and should attach an additional CORSIA Eligible Fuels Supplementary Information form

- In this template the Aeroplane Operator should include
  - AO information
  - Amount of Fuel Claimed
  - Information regarding that fuel



CORSIA

CORSIA ELIGIBLE FUELS
SUPPLEMENTARY INFORMATION*

(*supplementary information to the Emissions Report from aeroplane operator to State)

CONTENTS

Template Information

Template provided by:	
Version (publication date):	

ETM Volume IV Appendix 1.3 CEF template_ETM Vol IV 3rd edition

Aeroplane Operator Identification

AEROPLANE OPERATOR IDENTIFICATION AND REPORTING INFORMATION

a) Name of aeroplane operator

Please enter the name of the aeroplane operator. This name should be the legal entity carrying out the aviation activities.

a1) Address of the aeroplane operator

Please enter the address of the aeroplane operator.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

b) Reporting year

CORSIA Eligible Fuel Claim

For each claim of emission reductions form the use of CEF a CEF Claim Form is required

CORSIA ELIGIBLE FUEL CLAIM FORM

Note: for each claim of emissions reductions from the use of CORSIA eligible fuels, please replicate this form and fill separately.

Fuel Claim #:

---

a) Purchase date

Please enter the date when the neat CORSIA eligible fuel was purchased. Use the format yyyy-mm-dd.

Information on the Fuel Producer

→ The producer of the batch needs to be identified and contact details need to be provided

b) Identification of the producer of the CORSIA eligible fuel

b1) Name of producer of the neat CORSIA eligible fuel

Please enter the name of the fuel producer.

b2) Address of the producer of the neat CORSIA eligible fuel

Please enter the address of the producer of the neat CORSIA eligible fuel.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

Information on Fuel Production

c) Fuel production

c1) Date of production of the neat CORSIA eligible fuel

Please enter the date of production of the neat CORSIA eligible fuel. Use the format yyyy-mm-dd.

c2) Location of the production of the neat CORSIA eligible fuel

Please enter the address of the production of the neat CORSIA eligible fuel.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

c3) Batch identification number:

c4) Mass of each batch of neat CORSIA eligible fuel produced

Please enter the total mass of each batch of neat CORSIA eligible fuel produced (in tonnes).

Information regarding the date of production, location, batch ID and total mass is required

Information on Fuel Type

d) Fuel type

d1) Type of fuel

Please enter the type of fuel (i.e., Jet-A, Jet-A1, TS-1, No. 3 Jet, Jet-B, AvGas) for the purpose of computation of Life Cycle Emissions factors.

d2) Feedstock type

Please enter the information on the feedstock used to create the neat CORSIA eligible fuel.

d3) Conversion process

Please enter the conversion process (i.e., a type of technology used to convert a feedstock into neat CORSIA eligible fuel).

This includes the feedstock type and conversion process

Batch Information

In case the whole batch is not bought by the operator…..

e) Portion of batch purchased (if needed)

e1) Percentage

If less than an entire batch of neat CORSIA eligible fuel is purchased, please enter the proportion of neat CORSIA eligible fuel batch purchased (in percentage terms).

e2) Mass of batch purchased

Please enter the mass of CORSIA eligible fuel batch purchased (in tonnes).

f) Mass of neat CORSIA eligible fuel

Please enter the total mass of all batches of neat CORSIA eligible fuel included in the claim (in tonnes).

This is important since up until today all certified SAF requires to be blended up to a certain percentage with conventional jet fuel

Emissions and Sustainability Information

g) Sustainability documentation

Please provide evidence that the fuel satisfies the CORSIA Sustainability Criteria i.e., reference of attached valid certification document.

---

h) Life Cycle Emissions Values of the CORSIA eligible fuel

h1) Default or Actual Life Cycle Emissions value (L_{CEF})

Please enter the Life Cycle Emissions value (in gCO_2e/MJ).

h2) Default or Actual Core Life Cycle Assessment (LCA) value

Please enter the Core Life Cycle Assessment (LCA) value (in gCO_2e/MJ).

h3) Default Induced Land Use Change (ILUC) value

Please enter the Induced Land Use Change (ILUC) value (in gCO_2e/MJ).

Chain of Custody Traceability

If the Aeroplane Operator is not the original purchaser, information of the intermediate purchaser(s) is required

i) Intermediate purchaser 1 (if needed)

If the aeroplane operator claiming emissions reductions from the use of CORSIA eligible fuels is not the original purchaser of the fuel from the producer (e.g., the aeroplane operator purchased fuel from a broker or a distributor), include the identity and contact information of these purchaser(s).

i1) Name of the intermediate purchaser 1.

Please enter the name of the intermediate purchaser 1.

i2) Address of the intermediate purchaser 1.

Please enter the address of the intermediate purchaser 1.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

Information on the shipper is also required

k) CORSIA eligible fuel shipper

k1) Name of the CORSIA eligible fuel shipper.

Please enter the name of the party responsible for shipping of the neat CORSIA eligible fuel to the fuel blender.

k2) Address of the CORSIA eligible fuel shipper.

Please enter the address of the party responsible for shipping of the neat CORSIA eligible fuel to the fuel blender.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

Chain of Custody Traceability

An aeroplane operator can only claim a reduction to its offsetting requirements from the use of such fuel if it was blended during the associated compliance period

…. as well as for the blender

The objective is to make the chain of custody traceable

l) Fuel blender

l1) Name of the fuel blender

Please enter the name of the party responsible for blending neat CORSIA eligible fuel with aviation fuel.

l2) Address of the fuel blender

Please enter the address of the party responsible for blending neat CORSIA eligible fuel with aviation fuel.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

m) Location of blending

Please enter the location where the neat CORSIA eligible fuel is blended with aviation fuel.

Address:	
City:	
State/Province/Region:	
Postcode/ZIP:	
Country:	

Information on the amount of ‘Neat’ Fuel Claimed

n) Neat CORSIA eligible fuel received

n1) Date the neat CORSIA eligible fuel was received

Please enter the date the neat CORSIA eligible fuel was received by blender. Use the format yyyy-mm-dd.

n2) Mass of neat CORSIA eligible fuel received

Please enter the mass of neat CORSIA eligible fuel received (in tonnes).

o) Blend ratio of neat CORSIA eligible fuel and aviation fuel

Please enter the blend ratio of neat CORSIA eligible fuel and aviation fuel.

p) Documentation demonstrating blending

Please provide documentation demonstrating that the batch or batches of CORSIA eligible fuel were blended into aviation fuel (e.g., the subsequent Certificate of Analysis of the blended fuel).

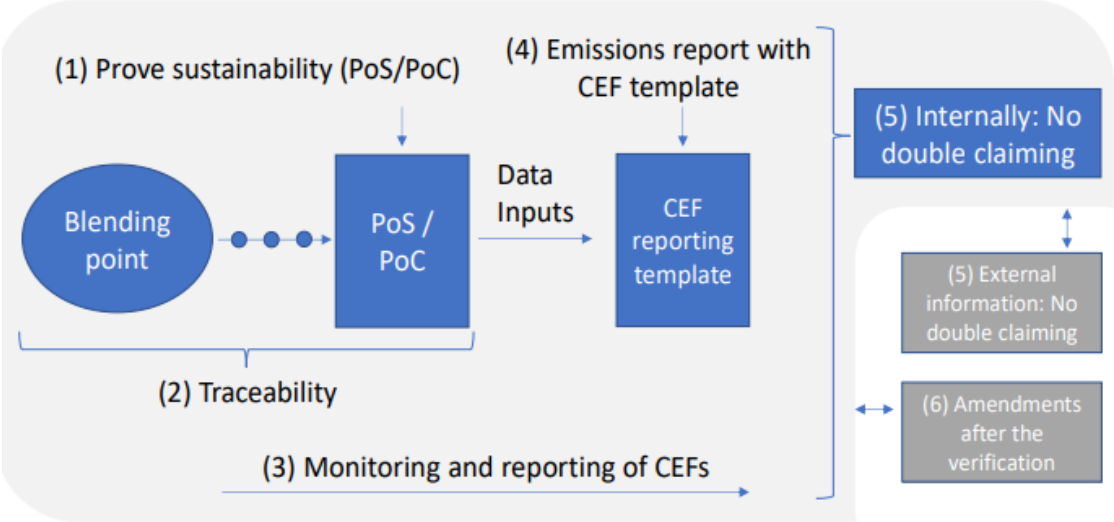
q) Mass of neat CORSIA eligible fuel claimed

Please enter the mass of neat CORSIA eligible fuel claimed (in tonnes).

The total neat CEF information as well as the blend ratio is required

AO to provide documentation demonstrating that the batch was blended into aviation fuel

Verification of the CEF Claims



Source: Figure 1 (Verification steps when verifying CEF claims) from the ICAO document "Guidance on Verification of CORSIA eligible fuel claims"

Verification of the CEF Claims: Considerations

1. **PoS/PoC**: an AO claiming CEFs will provide a PoS/PoC to demonstrate that the fuel claimed for **is a CEF**
2. **Traceability**: It is the task of the **CORSIA verifier to trace back PoS/PoC documentation to the last certified entity**, so AO should enable the verification body to quickly confirm traceability. An AO will provide satisfactory documentary evidence of purchase, any relevant blending, delivery and the mass of the CEF
3. **Monitoring and reporting of CEF**: the VB should confirm the implementation of documented processes and controls related to the **purchase, delivery, eligibility and claiming of CEF**.

Appendix III-B: Example Case 2 – Completed PoS Template for RSB ICAO CORSIA

Proof of Sustainability (PoS)

Batch ID Number:	Batch 12345
Number of the Delivery Note	Invoice 54321
Date of Shipment:	09 April 2024
Date of Issuance:	17 April 2024

Supplier (name of certified operator who issue the PoS)

Name:	Address:
London Fuels Ltd	Address 123, London, UK

Supplier - site from which the product is forwarded (if different from the supplier above)

Name:	Address:

Customer

Name:	Address:
Belfast Aviation Ltd	Address 321, Belfast, UK

Information if site is managed by a third party (in case of warehouses, distribution centers etc). Please, not applicable

Name:	Address:
If the site from which the product is forwarded is managed by an external third party	

Certification Information

RSB Certification Scheme:	Valid RSB Certificate Number:
RSB ICAO CORSIA	4576
Certification body:	Chain of Custody Model:
SCS Global	Mass Balance
RSB Short claim:	
RSB ICAO CORSIA	

General Information

Product Description:	SAF-HEFA
Raw Material:	UCO
Country of Origin:	France
Quantity of Certified Product:	10 MT

Original Batch Producer Information (Only for SAF Producer)
This information should be reproduced along the supply chain with future PoS

Date of Original Production:	09 April 2024
Original Batch Number (Unique Number):	Invoice 54321
Mass of Original Batch (MT):	10

Original Batch Producer Information (Only for SAF Producer)
This information should be reproduced along the supply chain with future PoS

Date of Original Production:	09 April 2024
Original Batch Number (Unique Number):	Invoice 54321
Mass of Original Batch (MT):	10

Only for wastes, residues and by-products (materials or products):

Raw material is eligible as waste, residue or by-product under the RSB ICAO CORSIA certification scheme (refer to Annex III - Positive List, in RSB-STD-12-001) ☑ Yes ☐ No

Greenhouse Gas Information

GHG intensity:	30	g CO2e/MJ	Default value (if no, specify disaggregated actual values at item 7 below)		Yes
GHG value contains transport emissions?	☑ Yes ☐ No	If so:	Transport type	Distance	km
For final products:					
GHG Savings (g CO2 eq/MJ):		Fossil fuel comparator (g CO2eq/MJ)			89
GHG Savings (%)	66	Lower heating value (MJ/kg):			

Note: The PoS issued from SAF production point onwards is to be supplemented with a CORSIA eligible fuel form containing the data fields listed in Appendix I-A.

Appendix III-A: Example Case 1 – Completed PoS Template for ISCC CORSIA

Proof of Sustainability (PoS) for CORSIA Eligible Fuels V2.0

For one batch of CORSIA eligible fuel according to the ICAO Standards and Recommended Practices, Annex 16, Volume IV, Part II, Appendix 5, Table A5-2

Unique Number of Sustainability Declaration / Batch ID number:	ABC-123
Place and date of dispatch:	CEF producer site, Example Street 123, 789 Ontario; 15 March 2024
Date of Issuance:	17. Mar 24

ISCC www.iscc-system.org

Original CEF Batch Information
This information is determined by the CORSIA eligible fuel (CEF) producer and must be forwarded/reproduced by downstream entities along the supply chain with future PoS

Date of CEF production:	27 February 2024
Original CEF batch number (as determined by CEF producer):	ABC-123
Mass of original CEF batch (in mt):	10

Supplier	Recipient
Name: Example CEF producer	Name: Example CEF blender
Address: CEF producer site Example Street 123 789 Ontario	Address: CEF blender site Another Example Street 456 678 Toronto
Certification System: ISCC CORSIA	
Certificate Number: ISCC-CORSIA-Cert-U0133-11804512	Contract Number: DEF456

1. General Information

Type of Product:	ATJ-SPK (ethanol)
Type of Raw Material	Corn grain
Additional Information (voluntary):	
Country of Origin (of the raw material):	Canada
Quantity:	10,000 mt ☐ m³ ☑ metric tons
Energy content (MJ):	440.000 MJ

2. Scope Of Certification Of Raw Material

The raw material complies with the approved CORSIA sustainability criteria (i.e., was certified under ISCC CORSIA or another CORSIA approved scheme)[1]	☑ Yes ☐ No
The raw material complies with the approved CORSIA sustainability criteria as well as additional social sustainability criteria (i.e., was certified under ISCC CORSIA PLUS)[2]	☐ Yes ☑ No
The raw material was additionally certified according to the low land use change (LUC) risk approach[3]	☐ Yes ☑ No
The raw material meets the definition of waste, residue or by-product according to CORSIA[4]	☐ Yes ☑ No

3. Life Cycle Emissions Information

Use of default core life cycle emissions value ☐ Yes ☑ No

Default induced land use change (ILUC) value (or DLUC value where applicable)[5]: 29,7 gCO2eq/MJ

Actual core life cycle emissions values:

1	2	3	4	5	6	7		
10,0 +	2,0 +	4,0 +	2,0 +	8,0 +	3,0 +	0,0	= 29	gCO2eq/MJ

Total life cycle emissions of the CORSIA eligible fuel (CEF): 58,7 gCO2eq/MJ

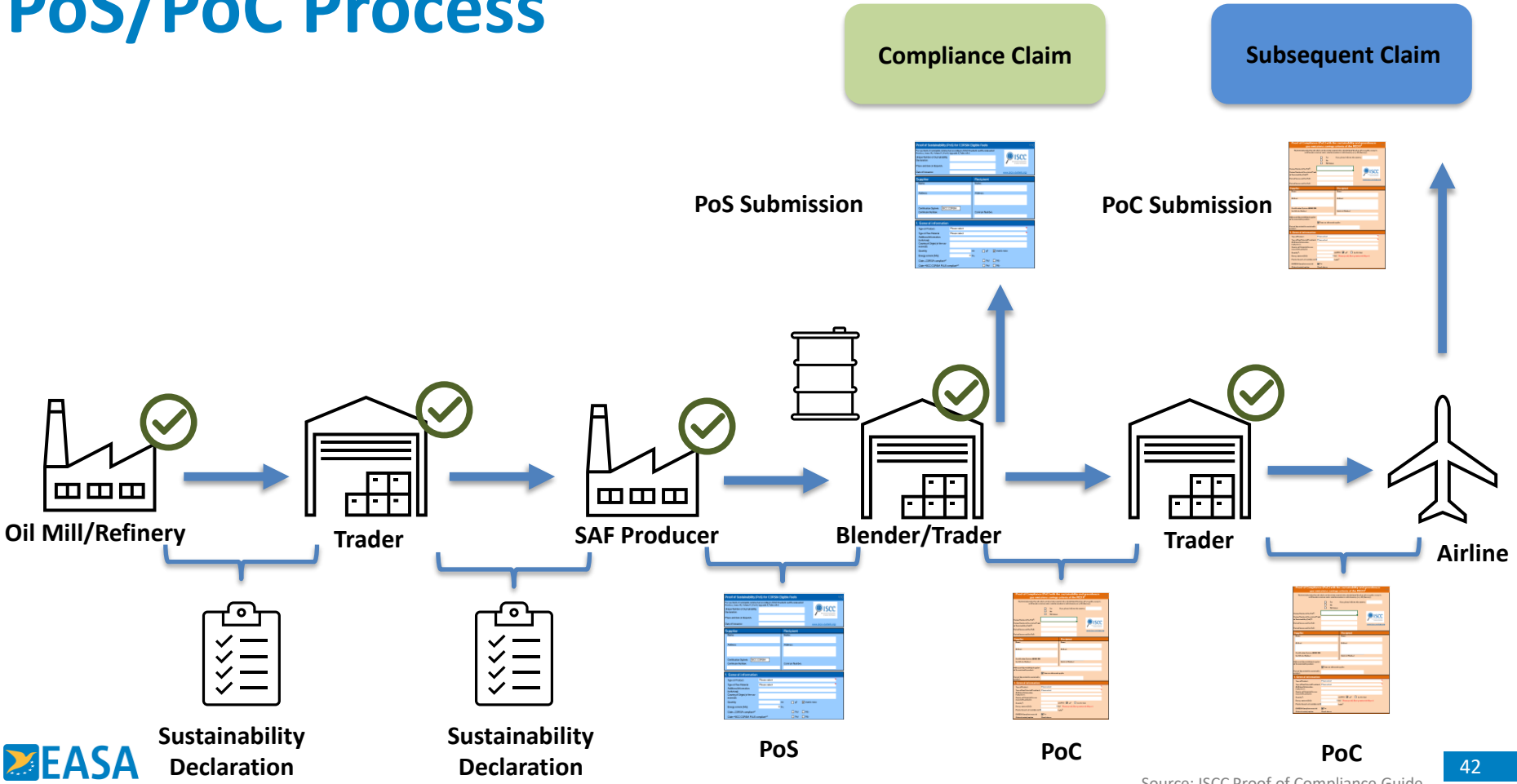
Life cycle emissions reduction of the CORSIA eligible fuel:[6]

34,0% for jet fuel (baseline: 89 gCO2eq/MJ) 38,2% for aviation gasoline (AvGas) (baseline: 95 gCO2eq/MJ)

This form is valid without signature. By issuing this PoS, the issuing party guarantees that all information made on this Proof of Sustainability are correct, in compliance with the requirements of ISCC and CORSIA

Note: The PoS issued from SAF production point onwards is to be supplemented with a CORSIA eligible fuel form containing the data fields listed in Appendix I-A.

PoS/PoC Process



Source: ISCC Proof of Compliance Guide

Verification of the CEF Claims: Considerations

4. **Emissions Report with CEF template**: the data and calculations provided in the **Emissions Report** and the **supplementary CEF template** have to be assessed
5. **No double claiming**: to ensure the integrity of the scheme emissions reductions made by AOs under CORSIA should **not be counted** towards any additional mitigation obligations
6. **Amendments after the verification**: a VB may become aware of an issue after the verification of the CORSIA Emissions Report and associated CEF claim, that would render the verification opinion invalid or inaccurate. The VB should bring this to the **attention of the State Authority**.

Summary of CEF Used by the Aeroplane Operator

ER= 3.16 x 3,500 x (1-13.9/89) = 9,332 tonnes

SUMMARY OF CORSIA ELIGIBLE FUELS INFORMATION

a) Summary of CORSIA eligible fuels (by fuel claim #)

Please provide a summary of the CORSIA eligible fuels claimed for the reporting year.

Fuel claim #	Fuel type			Total mass of neat CORSIA eligible fuel claimed (in tonnes)	Life cycle emissions values of the CORSIA eligible fuel	Emissions reduction from CORSIA eligible fuels claimed (in tonnes)
	Type of fuel	Feedstock type	Conversion process			
1	Jet-A1	UCO	HEFA	3,500	14	9,332
2						
3						
4						
5						
6						
7						
8						
9						
10						

b) Summary of information of CORSIA eligible fuels claimed

b1) Total of emissions reduction from CORSIA eligible fuels claimed (in tonnes)

Please enter the sum of the values included in column "Emissions reduction from CORSIA eligible fuels claimed (in tonnes)" of the table above.

9,332

How are emissions reductions calculated?

ERy = CEF Emissions Reduction

L_{CEF} Life cycle emissions value for CORSIA Eligible Fuel

Fuel conversion factor (fixed)
3.16 for Jet-A/Jet A-1

$$ERy = 3.16\ X \left(3{,}500\ \text{x} \left(1 - \frac{13.9}{89}\right)\right) = 9{,}332\ tonnes\ of\ CO_2$$

Baseline life cycle emissions (fixed)
89 for Jet-A/Jet-A1 [gCO_{2e}/MJ]

Total mass of neat CEF claimed
(tonnes)

In conclusion….

- CORSIA Eligible Fuels must meet the CORSIA Sustainability Criteria requirements and demonstrate lifecycle emissions reduction of 10% compared to conventional aviation fuel
- CORSIA Eligible Fuels can reduce an aeroplane operator’s offsetting requirements
- Claims are based on the purchase of CORSA Eligible Fuel
- An aeroplane operator can't use the same batch of CEF in another ‘GHG Scheme’

Total offsetting requirements with CEF

→ This is calculated by the aeroplane operator's administering state as follows:

$$FOR = (OR1 + OR2 + OR3\ ) – (ER1 + ER2 + ER3)$$

→ Remember - whilst reporting is an annual process, offsetting is done every three years

Key
FOR: Aeroplane Operator's total final offsetting requirements
OR: Aeroplane Operator's offsetting requirements
ER: Emission reductions from the use of CEF

Next Session:

SAF in other Market Based Measures


Capacity Building
GHG Emissions
Sustainability
FT-SPK
Drop-in Fuel
RSB
Sustainability Criteria
Certification
PtL
Used Cooking Oil (UCO)
Safety
CAPEX
Life Cycle Emissions
ASTM D1655 DEF Stan 91-091
HEFA
Co-processing
SAF
'neat' SAF
ASTM D4054
ISCC
Environmental
Feedstock
Alternative
Cost
Municipal Solid Waste
ASTM D7566
CORSIA Eligible Fuels
Sustainability Certification Schemes
Socio-Economic
Approved ASTM Pathways
AtJ
Risk
CO_2
Land use change
Technology
Blending

EASA
European Union Aviation Safety Agency

EU-CORSIA
Africa & Caribbean

Thank you for your attention

Working for quieter and cleaner aviation.

Your safety is our mission.

easa.europa.eu/connect

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