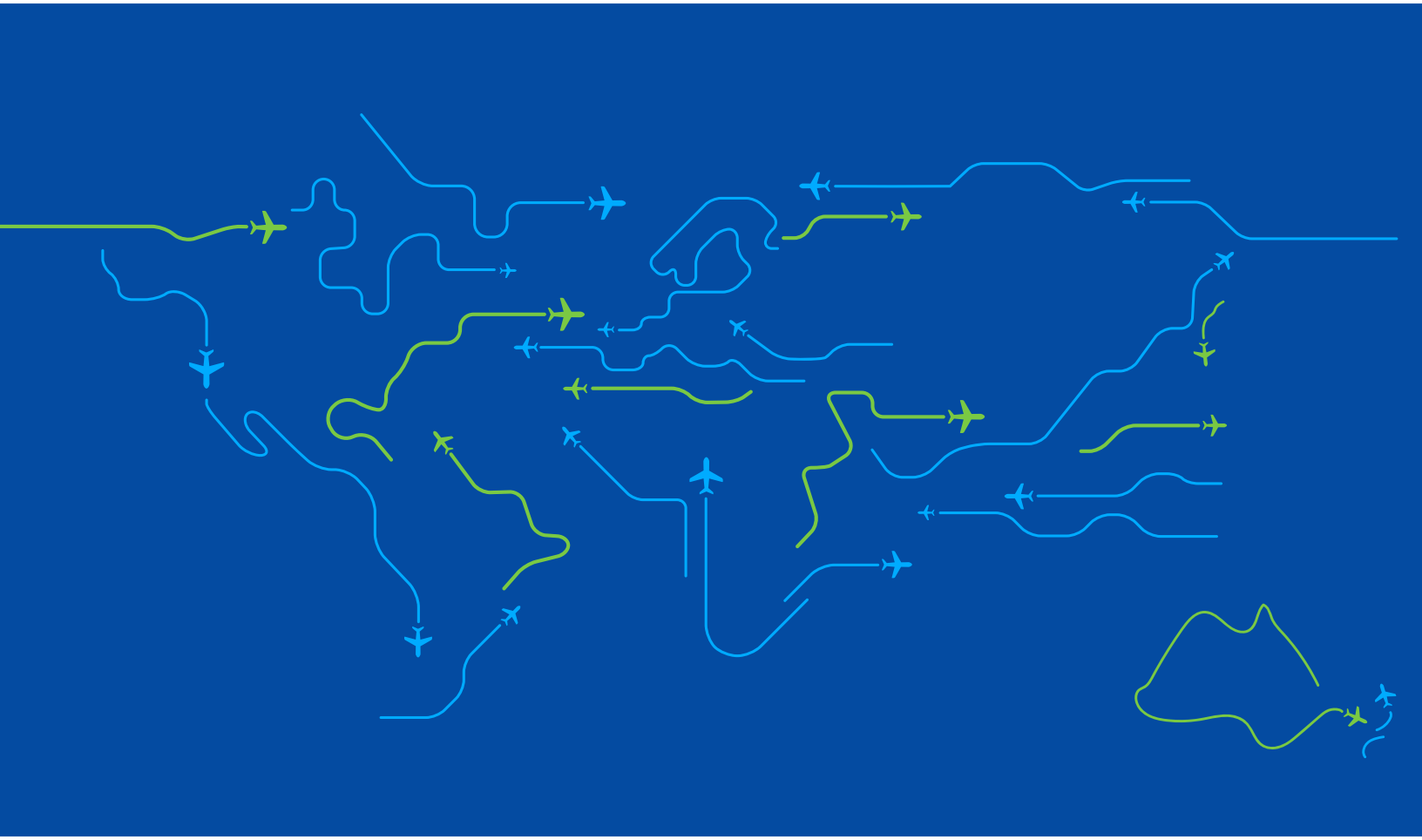

Global Methodology for Sustainable Aviation Fuel Environmental Attribute Transactions

COSAFA

Council on Sustainable Aviation Fuels Accountability (CoSAFA)
cosafamethod.org

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Table of Contents

Glossary: Definitions and Acronyms

1. Introduction

1.1 Council on Sustainable Aviation Fuels Accountability

1.2 CoSAFA Objective

2. Methodology Brief

2.1 Methodology Scope

2.2 Current Methodology Limitations and Future Refinements

2.3 Methodology Overview

3. Standard Tracking for Neat SAF

3.1 Unique Identifier

3.2 Standardized Product Transfer Documents

3.3 Tracking and Linking Environmental Attribute with SAF Quantity

4. Methodology Participants

5. Methodology Principles

6. SAF Claims Accounting

6.1 SAF Accounting

6.2 Sample Transactions

7. Auditing Requirements

8. Contact

Annexes:

i. Registration Package
ii. Requirements for Proof of Environmental Attribute
iii. Requirements for Product Transfer Document

Glossary - Definitions and Acronyms

Blended SAF: Neat SAF that has been blended with fossil jet fuel and certified to meet ASTM D1655 standards. The blending ratio of neat SAF and fossil jet fuel is dependent on feedstock and production processes.

California LCFS: California Low Carbon Fuel Standard (California regulatory program)

CI: Carbon Intensity

Claim: To have ownership or purchase ownership of the available environmental attribute(s) associated with a quantity of SAF. The owner uses the attribute(s) to demonstrate emissions reduction in regulatory or voluntary programs.

CORSIA: Carbon Offsetting and Reduction Scheme for International Aviation (International Civil Aviation Organization adopted program)

CoSAFA: Council on Sustainable Aviation Fuels Accountability

Customer / Environmental Attribute Customer: A general term for the party that purchases SAF or the environmental attributes to use for claims. This can be for both scope 1 and scope 3 claims. However, for scope 1 claims the party is generally referred to more specifically as the operator and scope 3 claims the customer.

Double Counting: Two different parties claim/demonstrate use of the same quantity of SAF within the same compliance program for the same emissions reduction purpose. Further detailed in section 5 SAF claims accounting.

ESG: Environmental, Social, and Governance

EU ETS: European Union Emissions Trading Scheme (EU regulatory program)

Feedstock: Raw material used to produce SAF, both biogenic and non-biogenic material.

Final Transfer: The SAF environmental attribute has completed its final transfer to the party who will make all final claims/demonstrate the final use of the SAF environmental attribute but has not completed the final claim and retired the SAF credit.

GHG: Greenhouse Gases

GHGP: Greenhouse Gas Protocol (voluntary greenhouse gas accounting standard)

Neat SAF: SAF that has not been blended with fossil jet fuel and is ASTM D7566 certified.

Operator: Any owner of an aircraft that operates the aircraft or authorizes its use. For leased aircraft, the lessee is the operator.

PoEA: Proof of Environmental Attributes (first data layer containing detailed life-cycle analysis of a given SAF quantity)

PTD: Product Transfer Document (secondary data layer providing life-cycle chain of custody environmental information for the customer to claim SAF use)

RED II: Renewable Energy Directive II (EU regulatory program)

Retired SAF Claim: Credits redeemed for the environmental attribute(s) for a quantity of SAF under a regulatory or voluntary program. Retired indicates the SAF is no longer eligible for additional credit claims.

RFS: US EPA Renewable Fuel Standard Compliance Program

RIN: Renewable Identification Number (within US RFS)

SAF: Sustainable Aviation Fuel

SAF Batch: A quantity of D7566 neat SAF sustainably certified as a single unit of product.

SBTi: Science Based Target initiative (voluntary greenhouse gas compliance and accounting standard)

Scope 1 emissions (Direct GHG emissions): "Direct greenhouse gas emissions occur from sources that are owned or controlled by the company…"[1]

Scope 2 emissions (Indirect GHG emissions): "Emissions from purchased or acquired electricity, steam, heat and cooling." 1

Scope 3 emissions (Other Indirect GHG emissions): "Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company." [1] 15 different categories for Scope 3 emissions.

SCS: Sustainability Certificate Scheme

Surrender of certificate: The original certificate owner relinquishes ownership of proof of sustainability for a given quantity of SAF.

UK ETS: United Kingdom Emissions Trading Scheme (UK regulatory compliance program)

[1] World Resource Institute and World Business Council for Sustainable Development, The Greenhouse Gas Protocol A Corperate Accounting and Reporting Standard revised edition

1. Introduction

As the global aviation industry strives to achieve its 2050 CO_2 emissions goals, Sustainable Aviation Fuel (SAF) growth is critical to achieving this reality. Increased demand for SAF highlights the importance of supply chain accountability and credible information about the environmental attributes of the end product.

The increase of regulatory and third-party compliance programs to help drive SAF market growth is quickly becoming a crowded and convoluted arena. Differing regulatory and voluntary requirements within a fundamentally global industry and supply chain burden SAF producers and customers, hampering well-intentioned economic drivers of SAF production through opaque and individualized documentation. Without a commonly understood and universally recognized methodology for SAF environmental attribute transaction documentation, accounting, and auditing, both producers and consumers are burdened with navigating nuances of differing compliance frameworks and combating product skepticism.

Overcoming this burden requires the development of a neutral, transparent, publicly available, and government-recognized universal methodology, documenting transparent product information flow from producer to end user. This transaction methodology (referred to as the CoSAFA methodology throughout) will provide the foundation for a robust, and verifiable environmental transaction system and support global book and claim markets.

1.1 Council on Sustainable Aviation Fuels Accountability (CoSAFA)

CoSAFA is a 501(c)(3) non-profit; the Board of Directors is an "association of associations" representing the global aviation sector, comprised of, the International Air Transport Association (IATA), the International Business Aviation Council (IBAC), General Aviation Manufacturers Association (GAMA), National Air Transportation Association (NATA), and National Business Aviation Association (NBAA).

The CoSAFA Board of Directors works alongside leading SAF producers and invested SAF stakeholders in developing this global methodology.

1.2 CoSAFA Objective

Provide government and consumer confidence in SAF through transparent environmental attribute documentation and a smooth transfer of information encompassing the SAF life-cycle. Providing integrity and reducing friction in SAF transactions through a common set of fair operating rules enabling SAF market growth in a global economy.

CoSAFA aims to establish commonly understood and universally recognized procedures for decoupling SAF's environmental attributes from the physical product while allowing the customer complete visibility of the environmental attributes and available SAF claims of purchased SAF. Throughout the entire SAF life-cycle, well-designed chain of custody protocols will allow product and transaction tracing, provide an appropriate means of verifying relevant data, and prevent fraudulent double counting of environmental attributes. This transparency provides confidence and clarity for SAF use and adoption. It is essential that product carbon intensity and other sustainability data be consistently reported, auditable, and traceable to the party providing the information. The following are key characteristics of the CoSAFA methodology:

- **Publicly Available –** Broad stakeholder agreement on a publicly available standardized transaction methodology will simplify validation and transparency in SAF transactions, counterparty claims, and regulatory or voluntary environmental program compliance.
- **Integrated –** CoSAFA's non-proprietary and collaboratively developed transaction methodology will be universally compatible for use under all widely applied regulatory or voluntary SAF programs. CoSAFA will remain neutral on independent criteria or standards for environmental attributes within a SAF product and established rules concerning eligibility or restrictions for SAF uses, transactions, or compliance obligations. The CoSAFA transaction methodology for SAF enables transparency and validation for any volume of SAF applied within regulatory or voluntary SAF programs.
- **Decoupled –** Separating the environmental attributes of SAF from the physical product will enable the development of robust global interoperable book and claim systems which track and verify the life-cycle chain of custody for the physical fuel and the digital environmental attributes associated with the specific quantity of SAF. Decoupling SAF environmental attributes and the

creation of a transparent book and claim system allows customers to purchase SAF benefits that do not have direct access to physical SAF product.

- **Transparent –** CoSAFA's transaction methodology is publicly available for voluntary use by any party in the aviation sector and those supplying fuel and related services to the aviation sector. The broad availability of these procedures, coupled with transparent and standardized SAF chain of custody documentation, provides clarity for all parties on emissions calculations and SAF compliance eligibility.
- **Verifiable –** The methodology establishes rigorous procedures to certify and audit environmental attribute claims and transactions to include the retirement of credits eliminating the possibility of double counting. Third-party and open ability of government auditing helps ensure the validity of claims.
- **Flexible –** Operations are conducted in a manner that is consistent with maximizing the ease of use for all participants and the incorporation of evolving technologies, while ensuring the level of rigor necessary to warrant government and market confidence in the validity of environmental attribute transactions.

2. Methodology Brief

2.1 Scope of Methodology

Defining an information and data flow process that ensures the integrity of SAF environmental claims within established regulatory and voluntary programs – CoSAFA's global methodology will be neutral on available compliance programs and established criteria or definitions for SAF eligibility.

By aggregating and aligning SAF environmental attribute data and SAF chain of custody requirements for global regulatory SAF compliance programs and voluntary SAF ESG performance reporting standards, the CoSAFA transaction methodology enables SAF environmental attribute data to smoothly transfer from producer to consumer, mirroring the physical fuel flow from feedstock to the wing of an aircraft.

The CoSAFA methodology clearly defines a standard set of rules and processes for the flow of require information from producer to the end user with associated accounting and auditing guidelines, to provide a credible digital representation of the SAF product, ensuring the SAF's integrity and its associated environmental attributes. The scope of this methodology remains neutral on required environmental attribute standards for SAF or required emissions reductions. Additionally, it is open to multiple methods for calculating environmental attributes.

The intent is to simply provide credible environmental attribute data (calculated using already published and established methods for determining environmental attributes) for given quantities or batches of SAF for the customer, while protecting the business processes of all entities within the SAF supply chain and use. This methodology will continue to evolve as SAF production technologies progress and regulatory and voluntary markets change.

It is imperative that governments and market stakeholders have an active voice early and often throughout the development of this methodology, defining the data inputs needed to harmonize the transfer of SAF environmental attribute information while protecting and verifying the integrity of SAF use claims. Section 8 details how to provide feedback and become involved in the CoSAFA process.

2.2 Current Methodology Limitations and Future Refinements

Creating a harmonized means for recording SAF transactions compatible with a rapidly expanding set of SAF environmental attribute definitions, regulations, and accounting, is an intensive and collaborative process. CoSAFA acknowledges the limitations of this current draft below and seeks to make future improvements through active stakeholder engagement with open and transparent partnerships.

Regulatory and Voluntary information requirements: Draft V1.0 of this methodology attempts to incorporate all requirements needed to claim SAF production and use under the following systems, CORSIA, California LCFS, US RFS, RED II, EU ETS, and UK ETS. The information requirements for these regulatory programs are derived from published public guidelines for reporting. However, due to limited access to the internal reporting mechanisms within these regulations, some required information may potentially be absent from this draft. Through the review process involving regulatory engagement and stakeholder consultation, CoSAFA will work to incorporate all information requirements.

CoSAFA is neutral on regulatory and voluntary programs used for SAF claims and does not intend to show a preference for the regulatory programs in this document. CoSAFA will work to include all additional regulatory requirements and voluntary SAF program requirements in future methodology versions and as future programs are published.

CoSAFA aims to provide a method that will enable the chain of custody to operate seamlessly in both regulatory and voluntary programs throughout the SAF life-cycle.

Sustainability Certificate Transfer: Under current sustainability proof requirements, sustainability certificates cannot be shared or duplicated among SAF supply chain parties. One party may surrender a sustainability certificate but, in doing so, forfeits the ability to use the certificate under additional regulatory programs. For example, a producer may surrender a sustainability certificate to a customer, allowing the customer to demonstrate SAF use under CORSIA. However, the producer no longer has the ability to demonstrate sustainability compliance with other regulatory programs, such as the California LCFS, and is therefore not eligible for California LCFS credits. The transfer of sustainability documentation prevents the "stacking" of credits. CoSAFA's methodology works to demonstrate a method for sharing sustainability certifications among SAF supply chain parties that avoids the surrender

of certificates but protects the credibility and sustainability of the SAF product and certificate.

SAF Chain-Of-Custody tracking: There are many transaction methods available for SAF purchases; for example, an airline, corporate customer, or business aviation operator may purchase blended SAF for a direct upload into an aircraft wing. In this instance, tracking the chain of custody of the blended SAF to the aircraft is reasonable. However, one distinct benefit of blended SAF is the ability to use it as a drop in fuel. Once blended and then certified as D1655 the fuel may then use the same commercial distribution networks as traditional fossil jet fuel. With this method of transaction, tracking the blended SAF to the last storage facility is most practical. In the future, it may be possible to track SAF to each individual aircraft even when used as a drop in fuel; until a reasonable tracking method is developed, the CoSAFA methodology will track to the aircraft wing when able but may end the chain of custody at the last storage facility.

Immutable Tracking ID: Immutable identification codes for tracking both SAF and data inputs are essential to the integrity of the CoSAFA transaction methodology. Each piece of data will be assigned a unique tracking code specific to that input linking this piece of information to a single quantity of fuel. A secure blockchain solution may be used to track information inputs and the SAF chain of custody; however, this methodology does not dictate the use of blockchain, as long as the unique identification code format in section 3 is followed and substantiating information is linked.

CoSAFA recognizes that several solutions for tracking methods exist and will continue to work with stakeholders to further standardize the requirements for immutable data tracking while allowing flexibility for future technology developments.

Section (3) further describes how tracking numbers should be comprised.

Auditing: This methodology dictates the need for extensive auditing procedures to protect the credibility of the environmental attributes of the SAF quantities, the business practices of all parties involved, and to ensure credible claims that eliminate double counting. Auditing procedures are discussed in this methodology. However, additional requirements and future drafts will be developed with stakeholder engagement and working groups to further describe more stringent audit requirements.

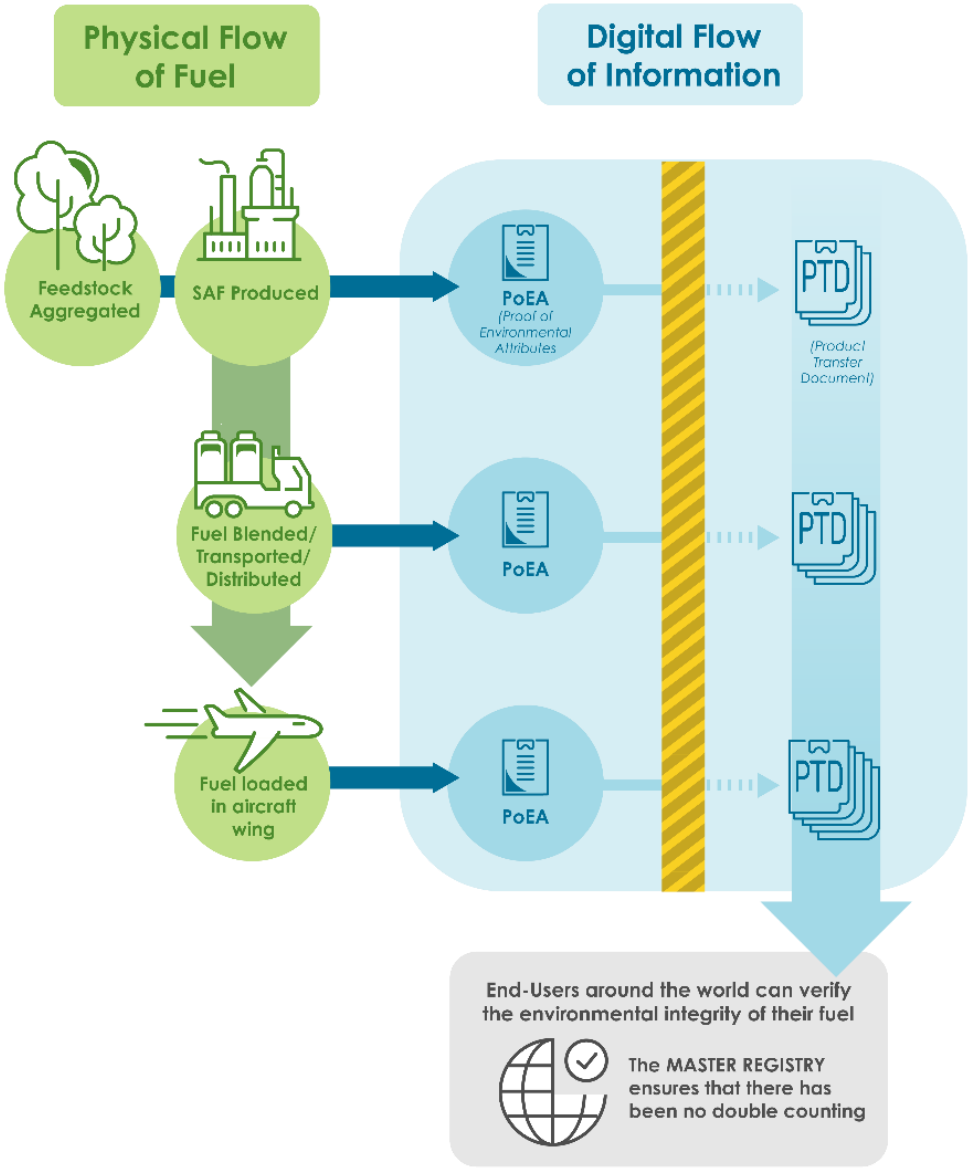
Master Registry: A master registry of SAF claims made in all regulatory and voluntary programs is necessary to protect the legitimacy of SAF markets. The Master Registry is essential to prevent fraudulent claims and double counting. CoSAFA continues to

seek partners and advocate for harmonizing and producing a publicly available Master Registry maintained by a neutral, global entity. Minimum Master Registry requirements are discussed in section 5 (Methodology Principles).

2.3. Methodology Overview

The CoSAFA SAF transactions methodology incorporates two parallel information data flows that mirror the SAF chain of custody. This dual-track information flow will ensure the integrity of the SAF claims while supporting established business and regulatory practices.

- *Data will be used to track the physical flow of SAF from feedstock to aircraft wing or airport storage.*
- *Additional data will track the creation and disposition of the environmental attributes.*
- *The export of data to a Master Registry ensures no fraudulent double counting occurs.*



The diagram above illustrates key components for tracking SAF throughout the chain of custody while supporting information flow for SAF and book and claim transactions. CoSAFA is **not creating a registry or book and claim system**, the image above and key components discussed below are intended to demonstrate key capabilities or functions that SAF transactions and a book and claim registry should have, to provide transparent information to the end user while also protecting business-sensitive information. Transaction systems do not need to use the same nomenclature such as Proof of Environmental Attribute (PoEA) but the functionality of these features discussed must be part of the transaction system.

Registration: Transaction systems must keep a registration of all parties operating within their platform. At a minimum the registrations should include an initial package of documents for each of the required compliance programs the party choses to participate in. These documents are specific to the registering party but do not differ between given quantities of SAF. If the document/requirement has an expiration date, this will be annotated in the registration system. These documents are visible for required auditing purposes but not to other parties. Annex i further describes the document requirements. Section 7 further illustrates the auditing procedures.

SAF Quantity: The unit for SAF quantities uploaded into the transaction system will be kg of avoided CO_2e of the neat SAF. Transaction parties may provide alternate units on the Product Transfer Document such as gallons or litres, but the quantity via the unique ID will be kg of avoided CO_2e with associated calculation method. Section 3 further describes the units as a base within the unique ID.

Tracking and record of physical SAF chain of custody: A record of the location, date, time, and entity handling the physical SAF product will be entered into the PoEA.

Proof of Environmental Attributes (PoEA) data layer: The PoEA data layer is the first layer of information providing a digital record guaranteeing the proof of environmental attributes for a given quantity of neat SAF. It incorporates all necessary information to demonstrate, with integrity, the product's associated environmental attributes. As the physical SAF product progresses through its chain of custody, the PoEA data is compiled with inputs from SAF transactions and parties involved in the physical SAF chain of custody. Each piece of data provided within the PoEA data layer is given a unique immutable identifier specific to the given SAF quantity. The data compiled within the PoEA will contain potentially sensitive information for parties along the chain of custody. Each party entering, uploading, or providing information into the PoEA data layer will only have access and visibility to the information they have entered; they cannot access data from other parties. Complete visibility of data or necessary data items within the PoEA layer will be available to specified and agreed-upon auditors and required regulatory agencies. Access to this data layer is further outlined in section (7). Components of this data layer are further outlined in Annex ii.

Product transfer document (PTD) data layer: The PTD data provides a digital information layer containing necessary reporting and claiming information throughout the SAF chain of custody. Specified information within the PoEA database feeds the data provided on the Product Transfer Document (PTD). The PTD data layer mirrors the chain of custody of the physical SAF, provides the eligibility of

the SAF product in regulatory or voluntary programs, and provides the customer with the required information to make appropriate claims. The PTD data layer provides transparency and confidence in SAF environmental claims by linking the immutable code for substantiating information in the PoEA data layer to each entry, preventing double counting while protecting business practices, and allowing the flow of environmental information from the producer to the end customer. Components of this data layer are further outlined in Annex ii. Participants providing information to the PTD and customers have visibility on all components and stages of the PTD.

Product Transfer Document: The final PTD represents the compiled and verified environmental attributes for a quantity of SAF. The environmental attribute customer can use this documentation for qualifying regulatory or voluntary SAF market claims. The PTD also represents all claims made using the specified quantity of SAF. The components of the PTD are further detailed in Annex iii

Linking the Product Transfer Document to SAF claims: All claims made for a quantity of SAF must be indicated in the PoEA and PTD data layers by the party who claimed eligible credits for the specified SAF. The final PTD will reflect all claims by each party and indicate those claims have are retired.

SAF Claims Exported, Retired, and Canceled on Master Registry: SAF claims may occur throughout multiple points of the SAF chain of custody. For example, a producer may claim RFS (Renewable Fuel Standard) credits after production and delivery of the SAF (when the SAF meets all requirements of the RFS system). Each party making a SAF claim is responsible for inputting the claim into the transaction system. Once the physical SAF product has completed its life-cycle through, the chain of custody information is documented in both the PoEA and the PTD data layers. When all eligible claims have been completed and documented, the SAF transaction system will indicate this quantity of SAF is retired and no longer eligible for claims, a final PTD document will be created, and the unique immutable identification number for the SAF quantity will be exported to a Master Registry. The Master Registry will prevent double counting with multiple verification methods, ensuring a given quantity of SAF has not been previously claimed. The underlying PoEA data, which substantiates SAF claims, is safeguarded and stored for auditing and verification purposes.

Canceled SAF quantities are also exported to the master registry, and available data is stored similarly to retired SAF claims.

Master Registry Verification: After a customer selects the claims for which a quantity of SAF will be used, the information technology platform will validate against the Master Registry that all claims for the specific quantity of SAF have not previously been retired or canceled.

3. Standardized Tracking for Neat SAF

3.1 Unique Identification Code

> ***Neat SAF must be tracked using a unique identifier to prevent fraudulent double counting and assist with tracking through the chain of custody. Currently many different neat SAF identifiers are in use, a standard identifier universally used across all SAF batches is necessary to provide confidence for all SAF transactions.***

A standardized identification number is critical to preventing fraudulent double counting. To track each quantity of neat SAF, the SAF must be assigned a unique identifier which prevents double counting of SAF batches and assists in tracking the physical product through the chain of custody. The CoSAFA method for identifying fuel quantities is outlined below.

The SAF ID is comprised of 3 parts: the main identification number and 2 sub-identifiers consisting of the SAF environmental attributes, and the SAF eligibility. The sub-identifiers are separated by parenthesis. The colors below correspond to the associated explanation for that portion of the unique identifier. Below is what a full identifier should look like.

Main identification number: The main identification number is split into 4 components listed below. The colors correspond to the description below.

PPPCCC-FF-UUDDDDDDSSSSSSSSEEEEEEEEMMRRRRRBBB

1. SAF Producer [ticker symbol e.g. CVX (first three if a 4 letter ticker)]
2. Production location
    a. Country (3 digits)
    b. Facility ID (2 digits)
    c. Unit ID (2 digits)
3. Production Date (yymmdd)
4. Batch Unit Range Start-End 00000-99999XX
    a. 1 Batch Unit = 1 avoided kg CO_2e. This enables batches of SAF to be divided and sold in 1 kg CO_2e increments. The entire range of batch units is the total amount of CO_2e per batch in kg
    b. Model used for CO2 calculation IC / CG

i. CG = California Greet
ii. IC = ICAO CORSIA
iii. OT = Other (must be indicted on PTD)

5. **R**atio of avoided kg CO_2e per unit of Neat SAF (units below)
   a. Indicates the kg CO_2e to 2 decimal places
   b. The letter following the number indicates the volume units being used
      i. A=Litres
      ii. B=Gallons
      iii. C=Tons
   c. E.g. 1500B would indicate 15.00 kg CO_2e per gallon of neat SAF
   d. To establish the CO2e of uplifted SAF, the **R**atio would be divided by the **B**lend Percentage
   e. E.g. (15.00 kg / 0.30 blend = 4.50 kg avoided per blended gallon)
6. **B**lend Percentage of uplifted SAF with one decimal place
   a. The percentage of Neat SAF (e.g. 300 indicates 30.0% SAF & 70.0% fossil Jet-A
   b. 100% Neat SAF would be indicated by a 000

In the example CVXCAN-02-042306170000010099999CG1500B300:

- Chevron
- At one of their Canadian refinery locations
- On June 17, 2023
- Produced 10,000 batch units of neat SAF
- Each gallon of neat SAF represented 15.00 kg of CO_2e
- Calculated using the California Greet method
- The SAF was uplifted in 70/30 Jet-A/SAF blends

*The flight customer in this example achieves **4.50 kg of CO2e** avoided per gallon of uplifted SAF.*

Additional Data and Recordkeeping

The information reflected in the unique identification number represents only a portion of the data that will need to be retained for verification and audit purposes. Each batch of neat SAF documented using the CoSAFA methodology – and therefore each unique identifier transacted – will be accompanied by additional material and information. This material can be accessed by appropriate parties, including auditors, for purposes of validation of SAF volumetric and decarbonization claims.

Sub-identifier 1 (Characteristics): Sub-identifier one provides the carbon intensity and feedstock data for the indicated quantity of fuel. The sections below correspond to each portion of sub-identifier 1.

Example: 37.13IC_7*$FOGS_8$*$HEFA_9$*$ISCC_{10}$*BO_{11}

7. CI reduction value per quantity of NEAT SAF in:
    a. gCO_2e/MJ [00.00]
    b. Calculation method (same units as indicted in main ID)
        i. CG = California Greet
        ii. IC = ICAO CORSIA
8. Feedstock [4 digits alpha numeric]
    a. FOGS = Fats, Oils, and Greases
    b. ETHL = Corn grain
    c. OSED = Oil Seeds
    d. ALGE = Algae
    e. AGRS = Agricultural Residue
    f. FRRS = Forestry Residues
    g. WDWS = Wood mill waste
    h. WDBM = Woody Biomass
    i. MSWS = Municipal Solid Waste Streams
    j. WTWS = Wet Wastes (manures, Wastewater treatment sludge)
9. Conversion process [4 digits alpha numeric if 4]
    a. HEFA = Hydroprocessed Esters and Fatty Acids
    b. FTXX = Fisher- Tropsch
    c. SPKA = FT Synthesized Paraffinic Kerosene Plus Aromatics
    d. ATJX = Alcohol to Jet
    e. SIPX = Synthesized Isoparaffins
    f. CHJX = Catalytic Hydrothermolysis Jet Fuel
    g. COPS = Co-processing
10. SAF Certifier [4 digits alpha numeric]
    a. ISCC = International Sustainability Carbon Certification
    b. TRSB = The Roundtable on Sustainable Biomaterials
    c. OTHR = Other. The name must be listed on the PTD and proof of sustainability within the PoEA.
11. Biogenic or non-biogenic [2 digits alpha numeric]
    a. BO = Biogenic
    b. NB = Non-biogenic

Sub-Identifier 2 (SAF eligibility): This sub-identifier provides the regulatory and voluntary eligibility for a quantity of neat SAF beginning with its production. The series of numbers prior to the dash indicate what the quantity of SAF is eligible for after production. The legend below describes how to read this sub-identifier.

Prior to dash
- 1 = Eligible for program
- 0 = non-eligible for program

After dash
- 5 = The SAF has been used for compliance in that program = 5
- 0 = Was never eligible = 0 (Same as prior to dash)
- 9 = Not used to make claim or no longer eligible.

The letters below indicate what compliance program corresponds to which numbered spot. As the neat SAF transits through the chain of custody, the sub-identifier will grow after the dash to indicate what programs a quantity of fuel has been used in, is still eligible for, or no longer eligible based on previous claims. In the example below neat fuel when produced was eligible for California LCFS credit, RFS credit, and CORSIA use, it is not eligible within EU ETS, UK ETS, or RED, but is eligible within a voluntary program (voluntary programs to be added in later versions of the CoSAFA methodology, a place holder will be used until future versions). The SAF was used to claim California LCFS credit, RFS credit, and CORSIA use; because LCFS Credit, RFS credit, and CORSIA use, were claimed with this quantity of fuel it was no longer eligible for use in the voluntary program (for demonstration of concept only).

ex. $1_A1_B1_C0_D0_E0_F0_G1_H$ – $5_A5_B5_C0_D0_E0_F0_G9_H$

A. CA LCFS
B. RFS
C. CORSIA
D. EUETS
E. UKETS
F. RED
G. OTHR* must be indicated what program on the PTD
H. Voluntary program – A 1 or a 3 and category number will be added after number 5 if used for this program

3.2 Standardized Product Transfer Document

The product transfer document is a complete set of information about the environmental attributes for a purchased quantity of SAF. The information present on this document provides the SAF environmental attribute information for the attribute purchaser. The supplemental document will provide all necessary information to demonstrate use of SAF/purchased SAF attributes in eligible programs.

Product Transfer Document Guidance: The featured PTD contains all of the information that must be indicated for each quantity of SAF. The information listed on this document must be supported with associated documents in the Proof of Environmental Attribute layer. Annex iii lists the required supporting documents needed in the PoEA. The standardized SAF receipt developed by 4Air and NATA provided a foundation for the below PTD.

Find the Product Transfer Document on the following page

Neat SAF Identification Number:
PPPCCC-FF-UUDDDDDDSSSSSSSSEEEEEEEEMMRRRRRBBB (77.777788889999101010101111) (EEEEEEE – CCCCCCC)

Vendor	Receiver
Name	Name
Address	Address

Transaction Information	
Product Type	Biogenic / non-biogenic SAF
Volume Blended SAF (Indicate Units)	Gallons, Litres, etc
Volume Neat SAF (Indicate Units)	Gallons, Litres, etc
Uplift Date	dd.mm.yyyy
Uplift Location	ICAO code
Method of Transfer	Physical uplift or Book and Claim
Aircraft	Tail number of aircraft that received fuel (Not required)
Blend Ratio	29.7/70.3

Fuel Attribute Information

Producer / Location/Date	Feedstock	Feedstock Region	Sustainability Certifier and type
Name and Address dd.mm.yy	Ie. FOG/ Tallow	Ie. Canada	Ie. ISCC CORSIA, etc.
Conversion Process	**Carbon Intensity (neat) /Calculation Method**	**Lower Hearing Value**	**Compliance Eligibility**
ie. HEFA	ie. 19.5 gCO2e/MJ CORSIA	Ie. 44.1 MJ/kg	LCFS, RFS, CORSIA, etc.

Carbon footprint is decreased XXX gCO_2e per gallon or Litre

Final Accounting

Production credit or mandate claimed,	What program (list all)	year
Ie. Yes	LCFS, RFS, etc.	2023
Regulatory credit claimed	**What program (list all)**	**year**
ie. Yes	ie. CORSIA	2024
Voluntary credit claimed (If applicable Scope and Category)	**What program (list all)**	**Year**
Ie. Scope 1 or Scope 3 Cat 6	SBTi	2023

Yellow boxes will be completed by end users

Supplemental document: The supplemental information document provides all information needed for an attribute purchaser to demonstrate SAF use/purchase of SAF attributes in an eligible compliance program. The information required is dependent on the SAF quantities eligibility as indicated in the unique identification number and on the PTD.

Find the Supplemental document on the following page

Neat **SAF Identification Number:** PPPCCC-FF-UUDDDDDDSSSSSSSSEEEEEEEEMMRRRRBBB (77.777788889999101010101111) (EEEEEEE – CCCCCCC)	CORSIA	UK ETS	RED II	EU ETS
FUEL PRODUCTION DATA				
Date fuel was produced	x	x	*	*
Production Location	x	x	x	x
Batch ID Number	x	x	x	x
Mass of each batch - neat	x	x		
FUEL TYPE				
Type of fuel	x	x	*	*
Feedstock Type	x	x	x	x
Conversion process	x	x	x	x
Blend ratio of neat SAF and aviation fuel	x	x	x	x
PORTION OF BATCH PURCHASED				
Purchase Date	x	x	x	x
Percent of batch purchased if less than entire batch	x	x		
Mass of batch purchased	x	x	x	x
Mass of neat SAF purchased/claimed	x	x	x	x
EMISSION VALUES				
Default of Actual Life Cycle Emissions Value (LSf)	x	x	x	x
Default of Actual Core Life Cycle Assessment Value (LCA)	x	x		
Default Induced Land Use Change (ILUC) Value	x	x		
Energy content by weight (MJ/Kg)			x	x
Energy content by volume			x	x
INTERMEDIATE PURCHASERS/ FUEL SUPPLIER (IF MORE THAN 1, INFORMATION FOR ALL)				
Name	x	x	x	x
Address	x	x	*	*
FUEL SHIPPER (NEAT)				
Name of shipper	x	x		
Address of shipper	x	x		
FUEL BLENDER				
Name of the fuel blender	x	x		
Address of the fuel blender	x	x		
Location of blending	x	x		
Date the neat eligible fuel was received (by blender)	x	x		
Mass of neat eligible fuel received (by blender)	x	x		
Documentation demonstrating blending (Jet A certification certificate of aviation fuel)	x	x	*	*

3.3 Tracking and Linking Environmental Attributes with SAF Quantity

The information provided in the unique identifier, PTD, and supplemental attribute information is supported by substantiating documents in the PoEA data. It is essential to link the substantiating information to the quantity of fuel to provide integrity to the information provided by customers.

The environmental attribute substantiating information in the PoEA data supports all the information provided to the SAF attribute purchaser in the SAF ID, PTD, and supplemental information. Although the purchaser does not have direct access to the substantiating information to protect proprietary information, these supporting documents will be audited by third-party auditors and government regulators. To support these auditing procedures the substantiating information needs to be linked to the quantity of fuel.

All substantiating documents will be labeled with the SAF unique ID main number followed by one of the identifiers below that indicate what substantiating information it is providing. Details below:

Main identifiers substantiating information: will use M followed by numbers 1-4 separated by periods. If 1 document supports multiple categories all category numbers will be included.

For example, the substantiating document for the producer location and date will be labeled:
PPPCCC-FF-UUDDDDDDSSSSSSSSEEEEEEEEMMRRRRRBBB*M.2.3

1. SAF Producer [ticker symbol e.g. CVX (first three if a 4 letter ticker)]
2. Production location
3. Production Date (ddmmyy)
4. Batch Unit Range Start-End 00000-99999XX
5. Ratio of avoided kg CO2e per gallon of Neat SAF
6. Blend Percentage of uplifted SAF

Sub-identifier 1 substantiating information: will use the Main SAF ID followed by SI1 then numbers 5-9 separated by periods. If 1 document supports multiple categories will include all numbers.

For example:
PPPCCC-FF-UUDDDDDDSSSSSSSSEEEEEEEEMMRRRRRBBB *SI1.8.9

7. CI reduction value per quantity in
8. Feedstock [4 digits alpha numeric]
9. Conversion process [4 digits alpha numeric if 4]
10. SAF Certifier [4 digits alpha numeric]
11. Biogenic or non-biogenic [2 digits alpha numeric]

Sub-identifier 2 Substantiating information: will use the Main SAF ID followed by SI2 then numbers 10-17 separated by periods. If 1 document supports multiple categories will include all numbers.

For example:
PPPCCC-FF-UUDDDDDDSSSSSSSSEEEEEEEEMMRRRRRBBB *SI2.12.13.17

12. CA LCFS
13. RFS
14. CORSIA
15. EUETS
16. UKETS
17. RED
18. OTHR
19. Voluntary program

4. Methodology Participants

The CoSAFA Global Methodology for Environmental Attribute Transactions will be publicly available to all SAF market participants and stakeholders of SAF production, supply chain, and end use. CoSAFA invites all interested SAF stakeholders to engage in its efforts to develop an effective Global Methodology for managing SAF transaction data.

The below participants are anticipated to be the most involved users of the CoSAFA methodology and SAF transactions. CoSAFA welcomes ongoing engagement of these and other SAF stakeholders.

- Airports
- Blending Terminals
- Commercial Airlines
- Corporate Customers
- Feedstock suppliers
- Fixed Base Operators (FBOs)
- Fuel Distributors
- Operators
- Producers
- Sustainability auditors
- Sustainability Certificate Scheme certifiers
- Transportation providers
- Travel Management Companies

5. Methodology Principles

CoSAFA will create a neutral methodology for SAF environmental transactions, providing governments and consumer confidence in SAF use through substantiated claims. To this end, the methodology principles enable the ability to support regulatory and voluntary compliance program standards without setting additional or conflicting standards for SAF. The CoSAFA methodology remains neutral on SAF production methods, feedstocks, environmental attribute calculation methods, credit stacking, or additionality requirements, while enabling the documentation and proof of these restrictions for programs in which they are required.

Participation in CoSAFA Methodology: The CoSAFA SAF transaction methodology is neutral, publicly available, and open for all parties within the aviation industry, SAF supply chain, and innovative technology sector. Participants must agree to this document's guidelines, requirements, and auditing procedures. Participants using the CoSAFA methodology will be registered and reviewed by CoSAFA. Participating transaction systems using the CoSAFA methodology will be audited in accordance with section (7).

Information Technology Systems: CoSAFA is information technology system neutral and will not dictate which digital platforms are used for SAF transactions. Digital platforms will be registered, reviewed, and audited by approved third-party auditors in accordance with auditing procedures discussed further in section (7).

Information Technology Requirements: Although the flow of information from feedstock to wing lends itself to digital documents and systems. The CoSAFA methodology does not preclude direct transactions between producers and end customers. If these direct transactions follow the methodology requirements for unique ID, information flow, claiming, auditing, and master registry integration, they can be approved under the CoSAFA methodology.

SAF Feedstock and Production Methods: CoSAFA is SAF feedstock and production method neutral and does not advocate for or against specific SAF feedstocks or production processes. CoSAFA's methodology is intended to ensure the customer is provided relevant information regarding the production process and attributes of purchased quantities of SAF and which claims the purchased SAF is eligible.

Environmental Attributes Calculations: Numerous credible methods for calculating the environmental attributes of SAF have been established. CoSAFA does not advocate for one calculation method over others. The CoSAFA methodology will ensure the customer knows what method was used to calculate a quantity of SAF's environmental attributes (such as the Carbon Intensity) and demonstrate what claims the SAF is eligible for based on the calculated attributes and method of calculation.

SAF Claims: CoSAFA is neutral on regulatory or voluntary compliance programs and will not advocate for SAF to be claimed in any one program over another.

Retirement: When all eligible claims have been made or the SAF has completed its final transfer and the customer has made all desired claims (even if it is eligible for additional claims) the end customer retires the SAF quantity in the transaction system - the unique ID number for the given SAF quantity is retired. The SAF PTD and associated data are stored, and the unique ID code is exported to the Master Registry.

Canceled SAF quantities: SAF quantities may be canceled by the initiator of the SAF product (this will usually be the producer). The SAF PTD and associated data are stored, and the unique ID Code is exported to the Master Registry, dated, and deemed canceled with a justification. No claims or credits can be made or generated on the given quantity of SAF.

Expired Credits/ SAF Vintage: SAF credits for any quantity of fuel using the CoSAFA methodology will expire after a 7-year period from date of production unless dictated by the requirements of the regulatory or voluntary compliance program. CoSAFA does not intend for vintage requirements to be shorter than any regulatory or voluntary program and will extend the vintage period if longer vintage periods are published.

Master Registry: Although CoSAFA is not creating a Master registry for retired or canceled credits, CoSAFA advocates for the following requirements to be included in a Master Registry. The Master Registry should be neutral, publicly available, and auditable by designated third-party officials per regulatory and voluntary program requirements. Relevant stakeholders should help determine and implement strict guidelines for sensitive information storage and data aggregation. As SAF use grows, it is possible to have several active registries and SAF markets. For the integrity of SAF claims and use, a Master Registry integration with all operating SAF registries and markets, is critical to ease the burden of cross-checking multiple registries for SAF customers and prevent double counting. This registry enables governments, participants in the SAF supply chain, and customers to reference and ensure a given quantity of SAF has not already been retired or canceled. Further

discussion and coordination amongst SAF stakeholders to outline the additional needs of a Master Registry is crucial to the harmonization of this process.

6. SAF Claims Accounting

The CoSAFA transaction methodology provides final accounting of SAF environmental attribute claims through complete visibility on the regulatory and voluntary claims made for a specified quantity of SAF. This visibility helps prevent double-counting while enabling credit stacking. Allowing multiple stakeholders to claim SAF incentives or meet SAF mandates along checkpoints within the SAF chain of custody spreads the increased cost of SAF among multiple parties and reduces the burden for individual customers. This translates to increased affordability and a larger SAF customer base.

6.1 SAF Claims Accounting Principles

Accounting: The CoSAFA transaction methodology provides checkpoints along the SAF chain of custody, enabling SAF's environmental attributes to be claimed throughout its life-cycle. The transaction methodology also indicates what claims a quantity of SAF is eligible for and by which party in both, the physical chain of custody and the decoupled attributes. The transaction system will provide checks on all claims to ensure they meet credit stacking, additionality, and other accounting requirements for regulatory and voluntary programs. The final PTD accounts for all transactions and claims made throughout the SAF life-cycle. The PTD enables stakeholders to credibly demonstrate the integrity of their SAF claims for regulatory and voluntary compliance reporting taking into consideration environmental attribute accounting principles. All final SAF claims for accounting purposes will be compiled and exported to a Master Registry.

Environmental attribute accounting has become a widely discussed topic among SAF stakeholders, regulators, and voluntary compliance programs. Below is CoSAFA's guidance on environmental attribute accounting when detailed guidance is not dictated within established regulatory or voluntary compliance mechanisms.

Additionality: A term used to indicate a project or carbon credit claim which reduces greenhouse gas emissions that would not have occurred without outside market drivers. If the project or claim would have occurred without additional market influences, the project or claim is not additional and does not meet additionality. This term was historically used in reference to carbon offsets. Additionality is not required to claim credit for SAF use unless the quantity of SAF is being claimed within a regulatory or voluntary compliance program that requires proof of additionality.

There are several definitions of additionality for book and claim programs in use, it is incumbent upon the transaction system to ensure fuel sold as eligible within these programs meets the specific criteria of each.

Credit stacking: A quantity of SAF may be used to meet multiple regulatory or voluntary compliance program requirements when allowed by these mechanisms. Credits may be stacked when eligible, or credits may be sold individually. For example, if a quantity of SAF meets California LCFS and US RFS requirements the same party may claim both credits. Another demonstration of credit stacking would be for a customer to claim CORSIA credit, the SAF producer to claim California LCFS credit, and the SAF producer to sell US RFS RINs to another customer. Two different customers cannot use the same batch of SAF to claim credit under the same regulatory or voluntary program – ***double counting***.

Splitting SAF quantities: A customer may purchase only a portion of the decoupled environmental attributes for a quantity of SAF registered on the transaction system. For example, a producer registers 1,000 avoided kg CO_2e in transaction system, a customer may purchase 500 avoided kg CO_2e of eligible SAF for compliance, and second customer may purchase the second 500 avoided kg CO_2e of eligible SAF for their compliance.

Scope 1 and 3 Reporting and Emissions Reduction Claims: Thousands of companies have set and committed to science based net-zero targets outlined by the Science Based Target initiative (SBTi) and guided by the Greenhouse Gas Protocol, including many airlines, air transport customers, and aviation stakeholders. These voluntary programs assist companies to report overall emissions and account for emissions reductions to achieve a path toward net-zero. Emissions are reported in three scopes: 1, 2, and 3. These scopes are further defined in the glossary. Although this draft of the CoSAFA methodology focuses on regulatory claims and voluntary ESG reporting, future version will include detailed guidance for GHGP and SBTi reporting. Many operators and air transportation users calculate their scope 1 and 3 emissions as defined by the GHGP for reporting within SBTi and other voluntary emissions reporting programs, or for their own ESG reports. Below is CoSAFA's method for accounting scope 1 and 3 emissions claims when not used within SBTi or another initiative that may prescribe a different method of accounting.

Entities reporting scope 1 emissions for air transport activities may report SAF emissions data when they use physical SAF for their operations, or they purchase SAF through a book and claim system (purchase the environmental attributes of a quantity of SAF). For a given quantity of SAF, two different entities cannot report SAF use for scope 1 operations; either the physical SAF is reported, or the digital SAF

environmental attributes may be reported. However, SAF may be reported under scope 1 emissions calculations and claimed as a scope 3 emissions reduction by a separate entity. Although only scope 1 and 2 emissions are required to be reported under GHGP guidance, many companies are accounting for their scope 3 emissions. When a third-party purchases SAF or the SAF environmental attributes, they may also claim these emissions reductions when accounting for scope 3 emissions. There are 15 different categories for scope 3 emissions; multiple entities may claim scope 3 emissions reductions if these reductions are in different categories – multi scope recognition.

A common scenario for reporting scope 1 emissions and claiming scope 3 emissions reductions: a corporate customer wishes to reduce their scope 3 emissions for travel. The corporate customer then pays an airline to fly using SAF. The airline can report SAF use for their scope 1 emissions report, and the corporate customer may claim scope 3 emissions reductions for this flight. Both the scope 1 reporting and scope 3 claiming of the SAF environmental attributes and emissions reductions will be documented on the PTD and exported to the Master Registry.

Scope 3 Emissions Reductions Without an Associated Scope 1 Reduction: A Scope 3 customer may desire to purchase SAF or the environmental attribute for only Scope 3 reduction purposes without involving a Scope 1 customer or enabling a Scope 1 user to demonstrate a Scope 1 reduction. However, with this type of transaction, there is a continued discussion on the requirement to associate the Scope 3 emissions reduction with an operators' Scope 1 claim. CoSAFA welcomes feedback and input into the eligibility or conditions of Scope 3 only purchases.

Split Selling Scope 1 and Scope 3 Reductions: Scope 1 and scope 3 emissions reductions may be sold separately by any party who purchases the entire environmental attribute, the fuel supplier/reseller, FBO, operator, or scope 3 customer. The unique identifier must indicate when both are used for emissions reduction claims and annotated on the PTD. PoEA must indicate who purchased each.

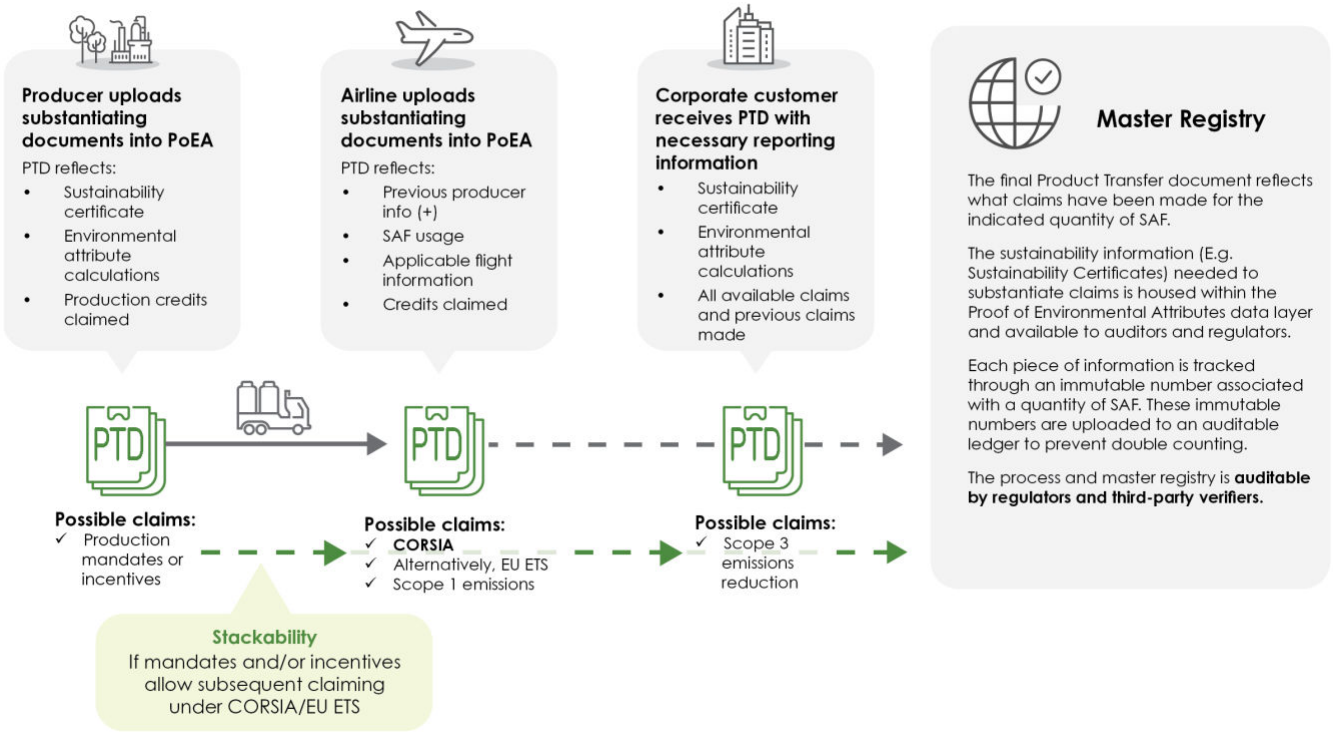
Reporting SAF Outside of a Compliance Program: SAF environmental attributes may be used to claim credit within a regulatory or voluntary program. Claiming credit for SAF use or production is beneficial to meet mandatory or voluntary emissions reductions and production obligations. However, a party may wish to demonstrate SAF use or the purchase of SAF environmental attributes (book and claim) for public disclosure and ESG documents, and SAF reporting. An entity may use the CoSAFA PTD to substantiate SAF use on reporting documentation without claiming credit under a regulatory or voluntary program. The PTD will indicate the SAF was used for

reporting purposes along with claims made by other parties in the SAF chain of custody.

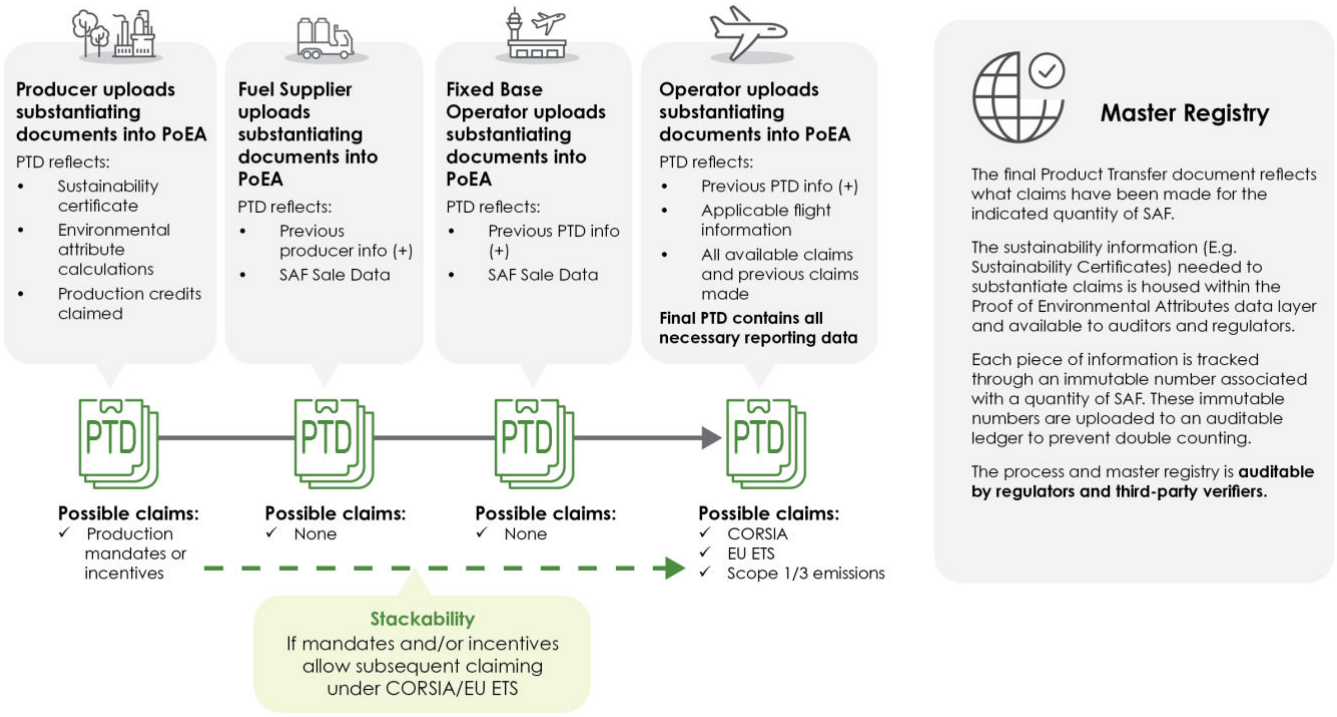
6.2 Sample Transactions

The Below diagram demonstrates how a sample transition works in three different scenarios.

1. An airline directly purchases SAF or the environmental attributes from a producer on behalf of a corporate customer.



2. In this transaction the SAF producer sells SAF to a fuel supplier or reseller who sells the SAF to an aviation service provider such as a Fixed Base Operator (FBO) who sells the fuel to an operator.



7. Auditing Requirements

To ensure environmental claims are both credible, and globally fungible, auditing requirements will be an essential component of the CoSAFA Global Methodology. To function appropriately the auditing requirements will, at a minimum, need to:

- *Enable government auditing of transactions,*
- *Ensure the integrity of SAF environmental attribute claims,*
- *Involve appropriate third-party review of data and recordkeeping,*
- *Allow protection of business-sensitive information,*
- *Enable efficient compliance with the application of a manageable resource cost.*

How to become CoSAFA approved: A transaction system must demonstrate compliance with all standardized portions of the CoSAFA methodology - PTD and with substantiating information. Interested parties will have a portion of their transactions verified by CoSAFA and sign an attestation to abide by the CoSAFA methodology and auditing requirements.

Maintaining CoSAFA approval: To maintain CoSAFA approval transaction systems must follow the below auditing requirements. CoSAFA approval will be on an annual basis from the time of initial approval unless approval is revoked. If approval is revoked the transaction system must reapply for CoSAFA approval.

Entities to be audited: CoSAFA is working to instill government and SAF customer confidence through process standardization, enabling reduced friction and eliminating the burden of multiple systems for SAF chain of custody stakeholders. Thus, the CoSAFA and approved third-party auditors will audit the SAF transaction systems, not each individual user of the transaction system. However, through the auditing process of transaction systems it may be necessary for transaction participants to supply pertinent information for the auditing process, as needed. In short, the transaction systems will be audited to ensure compliance program requirements are met and the required substantiating documents are within the appropriate data layers, registered users are following the methodology inputs, SAF

claims are properly retired or canceled, and the transaction system integrates with the Master Registry.

Methodology Auditing: Transaction parties or platforms using CoSAFA's Global Methodology for Sustainable Aviation Fuel Environmental Attribute Transactions must be registered and approved by CoSAFA. CoSAFA or approved third-party auditors will audit approved parties' methodology by selecting all or a portion of the systems transactions to ensure they comply with this documented methodology. Audits will occur at a minimum of twice a year, one audit will be a scheduled audit and one audit will be an unscheduled audit.

Government confidence in book and claim transactions is critical for SAF use. Government regulators will be authorized to audit transactions of SAF that have been used for compliance within their regulatory program. Approved personnel for voluntary programs will also be authorized to audit transactions for SAF that have been used for compliance within their voluntary program.

Third-Party Auditors: As the number of users of CoSAFA's methodology grows primary auditing responsibility will transition from CoSAFA to approved third-party auditors. CoSAFA will audit third-party audits once a year.

How to Become a Third-Party Auditor: Later versions of the CoSAFA methodology will dictate the process for becoming a CoSAFA approved third-party auditor.

Initial Registration Package: Participating parties' registration for transaction platforms will be audited as part of the CoSAFA methodology auditing process no less than twice a year. This is an audit of the transaction platform, not the registered party. Audits of the registration package include ensuring all required pieces of information for transaction systems parties are retained and properly stored. Additionally, the registration is subject to be audited by regulatory and voluntary compliance programs as their requirements dictate. Regulatory and voluntary SAF compliance program auditors are only authorized to access information required to participate within their individual compliance program.

Product Transfer Documents: The PTD will be audited by demonstrating the environmental attribute information indicated on the PTD is supported with all necessary substantiating documents in the PoEA and are - properly linked to the appropriate quantity of fuel via the identification method outlined in section (3), complete and valid, not inappropriately used for other quantities of fuel, and all necessary documents are retained to support regulatory or voluntary requirements.

Proof of Environmental Attributes data: The PoEA data is subject to be audited by CoSAFA approved third-party auditors and regulatory and voluntary compliance programs as their requirements dictate. Third-party auditors will be required to validate all portions of the PoEA substantiating information, regulatory and voluntary SAF compliance programs auditors are only authorized to access information required to participate within their individual compliance program. Sustainability certification program auditors are permitted access to PoEA data required as part of their auditing process. The party who uploaded the data into the PoEA can also authorize visibility of this data to parties they have authorized through writing. Parties cannot grant authority to information within the PoEA they did not upload or own.

Data storage requirements on retired and canceled claims: Historical transaction records shall be kept for seven years unless a longer period is required for compliance with a regulatory or voluntary program. Historical transaction records include all information within the PoEA and the PTD data layer.

Failure to follow auditing requirements: If any party operating under CoSAFA approval fails to meet auditing requirements, CoSAFA transaction approval will be revoked until auditing requirements are met and subject to possible fines.

Compliance Failure: Any party that fails to comply with the requirements of this document will have CoSAFA transaction approval revoked until requirements are met and subject to possible fines.

Unauthorized disclosure of data: Any party that discloses unauthorized data within the transaction process will have CoSAFA transaction approval revoked until the data breach has been corrected or permanently revoked and is subject to possible fines.

8. Contact Details

Government and market stakeholders are critical to the continue development and success of establishing fair rules for book and claim and SAF transactions. To provide feedback or discuss how to participate in the CoSAFA development process and future pilot testing reach out via the contact information below.

Contact details regarding the Global Methodology for Sustainable Aviation Fuel Environmental Attribute Transactions (Draft V 1.0)

Madison Carroll | Executive Director (CoSAFA)

Council on Sustainable Aviation Fuels Accountability

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mcarroll@cosafamethod.org

linkedin.com/company/Cosafa

AJW, Inc. provides the secretariat for CoSAFA

Annex i

Registration Package

Minimum Participant Initial Registration requirements:

1. Participant Company Name and Address (primary address)
2. Primary point of contact and job title
3. Primary point of contact information (minimum of e-mail and phone number)

Required information to participate in the following compliance programs:

Note: the information below is not required as part of registration. The information below indicates what is required for SAF to be eligible to use within each compliance program; if a SAF producer chooses not to provide the information below, the SAF product will not qualify for credit in the indicated compliance program.

CORSIA / EU ETS

ISCC CORSIA Certified Fuel

1. Plant operation permit, including layout plan and capacities of storage facilities
2. Record of incoming and outgoing sustainable products (weighbridge tickets and sustainability declarations)
3. Records of any internal processing of sustainable products, including the respective yields/conversion factors
4. Records of the periodic reporting on opening and closing stock for incoming and outgoing sustainable and non-sustainable material
5. List and contracts with all suppliers (including farms/plantations, points of origin, and certified suppliers) and recipients of sustainable material
6. List and contracts with subcontractors and service providers related to sustainable products
7. Records regarding the data transfer to the certification system chosen by this company or to the relevant public authority in charge or to the certification body which conducted the audit with respect to this standard

8. Records regarding the transfer of data to and from any sustainability databases used

9. Records on internal audits, non-conformities with these standards, related corrective actions, and/or identified discrepancies within the documentation

10. Signed version of the ISCC Terms of use in force

11. If common to all SAF batches being transacted: In the case of individual life-cycle emissions calculations, the Technical Report contains the life-cycle emissions calculations and the input data used for the calculation. If this is different for each batch of SAF, the life-cycle emissions calculations must upload with Proof of Environmental Attributes data.

LCFS

1. Approved fuel pathway

2. CARB annual reports and verification date with next report due date

3. Quarterly project reports and verification date with next report due date

RED II

1. Geographic origin, date update, and expiration date (must be updated annually)

2. Feedstock type date, updated and expiration date (must be updated annually)

3. A declaration of all regulatory and voluntary programs the registrant participates in

UK ETS

1. Geographic origin, date update, and expiration date (must be updated annually)

2. Feedstock type, date updated, and expiration date (must be updated annually)

3. A declaration of all regulatory and voluntary programs the registrant participates in

Annex ii

Requirements for Proof of Environmental Attribute

The requirements below are derived from regulatory and voluntary compliance programs. These requirements indicate the information needed to verify the environmental attribute claims for each batch of SAF. Each piece of information listed may not be available or required for each quantity of SAF. However, the requirements below indicate what is required to claim compliance within differing regulatory and voluntary SAF programs.

Items in blue italics indicate information that will populate the product transfer document from the PoEA.

1. **Feedstock Identification**
    a. Certified Documentation from feedstock provider(s) of sustainability certification, which includes geographic origin location (CORSIA, LCFS)
    b. Type of feedstock (matching list of acceptable feedstocks from CORSIA, California LCFS, US RFS)
    c. Amount of each type of feedstock from each provider
    d. Geographic Origins of Feedstock verified annually (RED, EU ETS)

    *Note: This information can be contained with the registration data

2. **Fuel Producer Identification**
    a. Name of producer of neat fuel / RIN Generator (CORSIA, California LCFS, US RFS, UK ETS)
    b. Address of producer of neat fuel (CORSIA, California LCFS, US RFS, UK ETS)
    c. United States Federal Employer Identification Number FEIN This is either the company ID or facility ID (California LCFS, US RFS)
    d. Or California LCFS Facility ID / Production Company ID (California LCFS)

3. **Fuel Production Data**
    a. Documented RIN pathway approval (can also be found in registration package) (US RFS)

b. Documentation of approved fuel pathway (can also be found in registration package) (California LCFS, CORSIA, UK ETS)
c. Date of production of neat fuel (CORSIA, California LCFS, US RFS, UK ETS)
d. Location of production of neat fuel (Address) (CORSIA, California LCFS, US RFS, UK ETS)
e. Batch identification:
    i. Batch identification number (CORSIA, RED, EU ETS, UK ETS)
    ii. RIN (US RFS)
f. RIN reporting period (US RFS)
g. Mass of each batch of neat fuel produced (tonnes) (CORSIA, UK ETS)
h. Volume of batch produced (gallons) (US RFS)
i. Fuel pathway code (California LCFS)

4. Fuel Type

a. Type of Fuel (Jet-A, Jet-A-1, Jet-B, AvGas) (CORSIA, California LCFS, US RFS, UK ETS)
b. Feedstock Type / US RFS D Code (CORSIA, California LCFS, US RFS, RED, EU ETS, UK ETS)
c. Conversion process (CORSIA, California LCFS, US RFS, RED, EU ETS, UK ETS)
d. Blend ratio with of neat SAF and aviation fuel (CORSIA, California LCFS, US RFS, REDI, EU ETS, UK ETS)
e. Aggregated Transaction indicator (T/F) (California LCFS)
f. Volume of ethanol denaturant and applicable equivalence value of each batch (gal) (US RFS)
g. Quantity and type of co-products produced with each batch (US RFS)

5. Portion of Batch Purchased

a. Purchase Date (CORSIA, California LCFS, US RFS, RED, EU ETS, UK ETS)
b. Percentage of batch purchased if less than entire batch (CORSIA, UK ETS)
c. Mass of batch purchased (tonnes) (CORSIA, EU RED, EU ETS, UK ETS)
d. Mass of neat fuel (mass of all batches purchased tonnes) (CORSIA, EU RED, EU ETS, UK ETS)

e. Volume (gal) of each blend stock (California LCFS)
f. Volume of RINS (gal) for each D Code (US RFS)
g. After blending statement "This volume of fuel must be used in the designated form, without further blending." (US RFS)

6. Sustainability Documentation

a. Certification document
    1. Confirmation of certification from all parties within physical SAF supply chain (CORSIA)
b. Supporting documents of the certification process, third-party auditors, certification body
c. Dates of certification
d. All parties the certificate has been transferred as proof of certification
e. SCS certification (CORSIA, California LCFS, EU RED, EU ETS, UK ETS)
    *1. *Name of the certification program*

7. Life-cycle Emissions Values of Fuel

a. Party that conducted LCA
b. Default or Actual Life Cycle Emissions value (LSf) (gCO2e/MJ) using appropriate methodology per regulation claimed, indicate which methodology used. ie. CA GREET 3.0 (CORSIA, California LCFS, RED, EU ETS, UK ETS)
c. Demonstrated core LCA calculations if using default approval of default LCA value
d. Default or Actual Core Life Cycle Assessment value (LCA) gCO2e/MJ) (CORSIA, UK ETS)
e. Default Induced Land Use Change (ILUC) value gCO2e/MJ (CORSIA, UK ETS)
f. Supporting documents (certificate of approval) of applied CI value, Direct Emissions CI, Indirect Emission CI, and Total CI
g. Applied CI value (CA LCFS)
h. Direct Emission CI (CA LCFS)
i. Indirect Emission CI (CA LCFS)
j. Total CI (CA LCFS)
k. Certificates of approval of energy values
l. Feedstock energy value (BTU) (US RFS)

m. *Total energy value (MMBTU) (US RFS)*
n. Certificates of approval of energy content by weight
o. *Energy Content by weight Annex III RED II (MJ/Kg) (RED, EU ETS)*
p. *Energy Content by volume Annex III RED II (MJ/l) (EU RED, EU ETS)*

8. Intermediate Purchasers

a. *Name of intermediate purchaser (required for all if multiple) (CORSIA, UK ETS)*
b. *address of intermediate purchaser (required for all if multiple) (CORSIA, UK ETS)*

9. Fuel (Neat) Shipper

a. Transportation method (truck, rail, boat, pipe)
b. *Name of fuel shipper (neat shipper to blender) (CORSIA, UK ETS)*
c. *Address of fuel shipper (neat shipper to blender) (CORSIA, UK ETS)*

10. Fuel Blender

a. *Name of Fuel Blender (CORSIA, UK ETS)*
b. *Address of Fuel Blender (CORSIA, UK ETS)*
c. *Location of Blending (CORSIA, UK ETS)*
d. *Date neat SAF was received (by blender) (CORSIA, UK ETS)*
e. *Mass of neat SAF received (by blender) (CORSIA, UK ETS)*
f. *Blend ratio of neat SAF with aviation fuel (CORSIA, UK ETS)*
g. *Documentation of blending (certification certificate of aviation fuel) (CORSIA, UK ETS)*
h. *Mass (tonnes) of neat eligible fuel claimed (CORSIA, UK ETS)*
i. *Certificate of Analysis (D7566 is now certified as Jet A)*

11. Fuel (Blended)

a. Transportation to storage or airport method (truck, rail, boat, pipe)
b. *Name of fuel shipper (blender to storage/airport)*
c. *Address of fuel shipper (blender to storage/airport)*

12. Physical SAF End Use Information

a. *Date of uplift*
b. *Location of uplift (ICAO code)*

c. *Aircraft identification code (Such as flight number / tail number)*
d. *Total blended volume uplifted in aircraft*
e. *Total neat volume uplifted (total fuel multiplied by blend ratio)*

13. Additional Information

a. *Produced in California (Y/N) (California LCFS)*
b. *Production for Import (Y/N) *Note this is for out-of-state producers first fuel reporting entity for fuel imported into California (California LCFS)*
c. *Import (Y/N) *Note this is for non-fuel producers who choose to be the first fuel reporting entity for out-of-state fuel imported into California (California LCFS)*
d. *Per gallon price of SAF with RIN price included (US RFS)*
e. *Statement "RIN generation calculations were followed per § 80.1426(f)(3), (4), or (5) for each verified batch, as applicable" (US RFS)*
f. *Invoice document identification numbers associated with each verified batch, if applicable (US RFS)*
g. *Statement: "This volume of neat or blended ethanol is designated and intended for use as transportation fuel or jet fuel in the 48 US contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430" (US RFS)*

Annex iii

Requirements for Product Transfer Document

The requirements below are derived from regulatory and voluntary compliance programs. These requirements indicate the information a customer will need to claim credit within each program listed. Each piece of information listed may not be available or required for each quantity of SAF. However, the requirements listed below indicate what is required if a customer wishes to claim compliance within differing regulatory and voluntary SAF claims. See the PTD reference chart at the conclusion of Annex III for quick reference.

1. **Feedstock Identification**
    a. Geographic Origins of Feedstock verified annually (RED, EU ETS)
        Note: This information will be contained with the registration data
2. **Fuel Producer Identification**
    a. Name of producer of the neat fuel / RIN Generator (CORSIA, California LCFS, US RFS, UK ETS)
    b. Address of the producer of the neat fuel (CORSIA, California LCFS, US RFS, UK ETS)
    c. United States Federal Employer Identification Number *FEIN This is either the company ID or facility ID* (California LCFS, US RFS)
    d. Or California LCFS Facility ID / Production Company ID (California LCFS)

3. **Fuel Production Data**
    a. Date of production of neat fuel (CORSIA, California LCFS, US RFS, UK ETS)
    b. Location of production of neat fuel (Address) (CORSIA, California LCFS, US RFS, UK ETS)
    c. Batch identification number / RIN number (CORSIA, US RFS, RED, EU ETS, UK ETS)
    d. RIN reporting period (US RFS)
    e. Mass of each batch of neat fuel produced (tonnes) (CORSIA, UK ETS)
    f. Volume of batch produced (gallons) (US RFS)
    g. Fuel pathway code (California LCFS)

4. **Fuel Type**
    a. Type of Fuel (Jet-A, Jet-A-1, Jet-B, AvGas) (CORSIA, California LCFS, US RFS, UK ETS)
    b. Feedstock Type / US RFS D Code (CORSIA, California LCFS, US RFS, EU RED, EU ETS, UK ETS)
    c. Conversion process (CORSIA, California LCFS, US RFS, RED, EU ETS, UK ETS)
    d. Blend ratio with of neat SAF and aviation fuel (CORSIA, California LCFS, US RFS, RED, EU ETS, UK ETS)
    e. Aggregated Transaction indicator (T/F) (California LCFS)
    f. Volume of ethanol denaturant and applicable equivalence value of each batch (gal) (US RFS)
    g. Quantity and type of co-products produced with each batch (US RFS)

5. **Portion of Batch Purchased**
    a. Purchase Date (CORSIA, California LCFS, US RFS, RED, EU ETS, UK ETS)
    b. Percentage of batch purchased if less than entire batch (CORSIA, UK ETS)
    c. Mass of batch purchased (tonnes) (CORSIA, EU RED, EU ETS, UK ETS)
    d. Mass of neat fuel (mass of all batches purchased tonnes) (CORSIA, EU RED, EU ETS, UK ETS)
    e. Volume (gal) of each blendstock (California LCFS)
    f. Volume of RINS (gal) for each D Code (US RFS)
    g. After blending statement" "This volume of fuel must be used in the designated form, without further blending." (US RFS)

6. **Sustainability Documentation**
    a. SCS certification (CORSIA, California LCFS, EU RED, EU ETS, UK ETS)
        *i. *Name certification program*

7. **Life cycle Emissions Values of Fuel**
    a. Default or Actual Life Cycle Emissions value (LSf) (gCO2e/MJ) *using appropriate methodology per regulation claimed, indicate which methodology used. ie. CA GREET 3.0* (CORSIA, California LCFS, RED, EU ETS, UK ETS)

b. Default or Actual Core Life Cycle Assessment value (LCA) gCO2e/MJ) (CORSIA, UK ETS)
c. Default Induced Land Use Change (ILUC) value gCO2e/MJ (CORSIA, UK ETS)
d. Applied CI value (CA LCFS)
e. Direct Emission CI (CA LCFS)
f. Indirect Emission CI (CA LCFS)
g. Total CI (CA LCFS)
h. Feedstock energy value (BTU) (US RFS)
i. Total energy value (MMBTU) (US RFS)
j. Energy Content by weight *Annex III RED* (MJ/Kg) (EU RED, EU ETS)
k. Energy Content by volume *Annex III RED* (MJ/l) (EU RED, EU ETS)

8. Intermediate Purchasers

a. Name of intermediate purchaser (required for all if multiple) (CORSIA, UK ETS)
b. address of intermediate purchaser (required for all if multiple) (CORSIA, UK ETS)

9. Fuel (Neat) Shipper

a. Name of fuel shipper (neat shipper to blender) (CORSIA, UK ETS)
b. Address of fuel shipper (neat shipper to blender) (CORSIA, UK ETS)

10. Fuel Blender

a. Name of Fuel Blender (CORSIA, UK ETS)
b. Address of Fuel Blender (CORSIA, UK ETS)
c. Location of Blending (CORSIA, UK ETS)
d. Date Neat SAF was received (by blender) (CORSIA, UK ETS)
e. Mass of neat SAF received (by blender) (CORSIA, UK ETS)
    i. In tonnes (CORSIA)
f. Blend ratio of neat SAF with aviation fuel (CORSIA, UK ETS)
    i. Rounded to the nearest % (CORSIA)
g. Documentation of blending (Jet A certification certificate of aviation fuel) (CORSIA, UK ETS)
h. Mass (tonnes) of neat eligible fuel claimed (CORSIA, UK ETS)
i. Certificate of Analysis (D7566 is now certified as Jet A)

11. Fuel (Blended)

a. Name of fuel shipper (blender to storage/airport)
b. Address of fuel shipper (blender to storage/airport)

12. Physical SAF End Use Information

a. Date of uplift
b. Location of uplift (ICAO code)
c. Aircraft identification code (Such as flight number / tail number)
d. Total blended volume uplifted in aircraft
e. Total neat volume uplifted (total fuel multiplied by blend ratio)

13. Additional information:

a. Produced in California (Y/N) (California LCFS)
b. Production for Import (Y/N) **Note this is for out-of-state producers first fuel reporting entity for fuel imported into California* (California LCFS)
c. Import (Y/N) **Note this is for non-fuel producers who choose to be the first fuel reporting entity for out-of-state fuel imported into California* (California LCFS)
d. Per gallon price of SAF with RIN price included (US RFS)
e. Statement "RIN generation calculations were followed per § 80.1426(f)(3), (4), or (5) for each verified batch, as applicable" (US RFS)
f. Invoice document identification numbers associated with each verified batch, if applicable (US RFS)
g. Statement: "This volume of neat or blended ethanol is designated and intended for use as transportation fuel or jet fuel in the 48 US contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430" (US RFS)

Product Transfer Document Reference Table

	California LCFS	US RFS	CORSIA	UK ETS	RED II	EU ETS
FEEDSTOCK IDENTIFICATION						
Geographic Origin					x	x
PRODUCER IDENTIFICATION						
Name of the fuel (neat) producer / RIN Generator	x	x	x	x	*	*
Address of the fuel (neat) producer	x	x	x	x	*	*
US Federal Employer Identification Number (FEIN)	x	x				
or California LCFS Facility ID	x					
FUEL PRODUCTION DATA						
Date fuel was produced	x	x	x	x	*	*
Production Location	x	x	x	x	x	x
Batch ID Number/RIN		x	x	x	x	x
RIN reporting period		x				
Mass of each batch - neat			x	x		
Volume of batch produced (gallons)		x				
FUEL TYPE						
Type of fuel	x	x	x	x	*	*
Fuel pathway code	x					
Feedstock Type	x		x	x	x	x
D Code		x				
Conversion process	x	x	x	x	x	x
Blend ratio of neat SAF and aviation fuel	x	x	x	x	x	x
Aggregated Transaction Indicator (T/F)	x					
Volume of ethanol denaturant and applicable equivalence value of batch (gal)		x				
Quantity and type of co-products with each batch		x				

	California LCFS	US RFS	CORSIA	UK ETS	RED II	EU ETS
PORTION OF BATCH PURCHASED						
Purchase Date	x	x	x	x	x	x
Percent of batch purchased if less than entire batch			x	x		
Mass of batch purchased			x	x	x	x
Mass of neat SAF purchased/claimed			x	x	x	x
Volume (gal) of each blend stock	x					
Volume of RINS (gal) for each D Code		x				
After blending statement		x				
SUSTAINABILITY DOCUMENTATION						
Verification that fuel meets sustainability requirements	x	x	x	x	x	x
EMISSION VALUES						
Default of Actual Life Cycle Emissions Value (LSf)	x	x	x	x	x	x
Default of Actual Core Life Cycle Assessment Value (LCA)			x	x		
Default Induced Land Use Change (ILUC) Value			x	x		
Applied CI	x					
Direct Emission CI	x					
Indirect Emission CI	x					
Total CI	x					
Feedstock energy value (BTU)		x				
Total energy value (MMBTU)		x				
Energy content by weight (MJ/Kg)					x	x
Energy content by volume					x	x
INTERMEDIATE PURCHASERS/ FUEL SUPPLIER (IF MORE THAN 1, INFORMATION WILL BE NEEDED FOR ALL)						
Name			x	x	x	x
Address			x	x	*	*

	California LCFS	US RFS	CORSIA	UK ETS	RED II	EU ETS
FUEL SHIPPER (NEAT)						
Name of shipper			x	x		
Address of shipper			x	x		
FUEL BLENDER						
Name of the fuel blender			x	x		
Address of the fuel blender			x	x		
Location of blending			x	x		
Date the neat eligible fuel was received (by blender)			x	x		
Mass of neat eligible fuel received (by blender)			x	x		
Documentation demonstrating blending (Jet A certification certificate of aviation fuel)	*	*	x	x	*	*
Mass (tonnes) of neat eligible fuel claimed	*	*	x	x		
PHYSICAL SAF END-USE INFORMATION						
Date of uplift						
Location of uplift (ICAO code)						
Aircraft identification code (Such as flight number / tail number)						
Total blended volume uplifted in aircraft						
Total neat volume uplifted (total fuel multiplied by blend ratio)						
ADDITIONAL INFORMATION						
Produced in California (Y/N)	x					
Production for Import (Y/N)	x					
Import (Y/N)	x					
Per gallon price of SAF with RIN price included		x				

	California LCFS	US RFS	CORSIA	UK ETS	RED II	EU ETS
Statement "RIN generation calculations were followed per § 80.1426(f)(3), (4), or (5) for each verified batch, as applicable"		x				
Invoice document identification numbers associated with each verified batch, if applicable		x				
Statement: "This volume of neat or blended ethanol is designated and intended for use as transportation fuel or jet fuel in the 48 US contiguous states and Hawaii. Any person exporting this fuel is subject to the requirements of 40 CFR 80.1430" (US RFS)		x				

*Indicates this is not a required item but is highly recommended