CORSIA Eligible Fuel Claims on the CADO SAF Registry

A Framework for Transparency and Traceability

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2. Executive Summary

The CADO SAF Registry streamlines the management, reporting, and verification of CORSIA-Eligible Fuel (CEF) claims by providing a secure digital platform for registering, transferring, redeeming, and claiming SAF environmental attributes. Aligned with ICAO standards and the IATA SAF Accounting and Reporting Methodology, the Registry supports both regulatory and voluntary SAF claims, starting with a strong focus on CEF claims.

For aircraft operators, the Registry simplifies the end-to-end CEF claim process by enabling submission of sustainability documentation, management and retirement of SAF environmental attributes (i.e., SAF Fuel Units, SFUs), and automatic generation of the CORSIA supplementary information required for emissions reporting. Verifiers benefit from enhanced transparency through access to sustainability records and transaction histories directly on the CADO SAF Registry, supporting key verification activities such as sustainability validation, traceability, and double-claim prevention. State authorities can also access relevant claim information to cross-check reported CEF claims and strengthen reporting assurance.

Overall, the CADO SAF Registry enhances the integrity, transparency, and efficiency of CEF accounting and reporting, supporting aviation's decarbonization goals while reducing administrative burden for industry participants, including airlines, verifiers, and regulators.

3. Introduction

CORSIA is the globally agreed framework for aviation to maintain carbon-neutral growth. Aircraft operators may use either CEF or CORSIA-eligible emissions units to address their obligations under CORSIA. Its compliance involves a reporting process whereby aircraft operators complete the template and obtain third-party verification of the supplementary information for CEF to be included in the Emissions Report. Once verified, the aircraft operator can submit their claim to the state authority, which must then report to ICAO.

The CADO SAF Registry, unique in its ability to enable both regulatory and voluntary SAF reporting, helps streamline CEF management and reporting. Referencing Doc 9501, Volume IV of the ICAO Environmental Technical Manual (ETM)[1] (2025), this paper sets out the processes by which aircraft operators, airline auditors, and state authorities can leverage the CADO SAF Registry to streamline reporting and verification.

This paper is being published in parallel to the White Paper, Enabling SAF claims in regulatory schemes via the CADO SAF Registry: CORSIA and UK ETS claim[2] pilots, after the successful pilots on regulatory claims, including CORSIA, tested with a governmental agency, verifier, and multiple airlines in two jurisdictions.

4. Context and Rationale

4.1. Aircraft Operators making CEF Claims

Aircraft Operators can use the CADO SAF Registry to manage environmental attributes associated with CEF and generate the CEF supplementary information to the Emissions Report.

4.1.1. Registration

Aircraft Operators or their suppliers can register CEF to the CADO SAF Registry. Registration, in the context of the CADO SAF Registry, is a process whereby a valid owner of SAF environmental attributes inputs the details of that SAF batch into the Registry, effectively surrendering the sustainability documentation (Proof of Sustainability (PoS) or equivalent documentation). The CADO SAF Registry enables a detailed registration process that includes all necessary supporting information for CEF claims. At this point, Aircraft Operators or their suppliers are expected to enter the information necessary for CORSIA claims, along with the relevant documentation.

[1] Environmental Technical Manual - Volume IV
[2] Enabling SAF claims in regulatory schemes via the CADO SAF Registry - CORSIA and UK ETS claim pilots

The CADO SAF Registry validators receive SAF registrations and review the inputs and documentation. As part of the validation process, an interoperability check is conducted, meaning that CADO SAF Registry checks with other partner SAF registries whether the same batch of SAF was registered elsewhere. Once validated, the digital environmental attributes of the SAF or SFUs become active and can be transacted (transferred, redeemed, etc) along the value chain.

In principle, Registration can be done only by either the PoS issuer or the recipient identified in the PoS. If the PoS issuer registers, the resulting SFUs must be transferred to the recipient identified in the PoS. If the recipient registers, they may freely transfer or redeem the SFUs.

4.1.2. Redemption

Aircraft Operators with active SFUs can redeem them. Redemption in the CADO SAF Registry represents the virtual burning of the SFUs, creating Scope 1 and Scope 3 emissions reductions. At this point, the Scope 1 recipient (Aircraft Operator) and Scope 3 recipient(s) (business travelers, shippers, and freight forwarders) can be attributed. Additionally, the Aircraft Operator performing a redemption is expected to input the scheme for which they intend to claim the SFUs, and the system limits the acceptable scheme based on the certification of the SAF, represented by the PoS or PoC (Proof of Compliance). For example, a registration of a CORSIA-eligible fuel with a PoS issued under CORSIA can be claimed for either CORSIA or voluntary purposes. Other schemes, such as regional/national ETS schemes, cannot be selected for the CEF.

4.1.3. Claiming

All redeemed SFUs are shown in the claiming module of the Scope 1 and Scope 3 recipient. These recipients can then use the Claiming module of the CADO SAF Registry to allocate the redeemed SFUs to the relevant claiming year. Claiming years can be set independently by the Scope 1/Scope 3 owner. In other words, the Scope 1 and Scope 3 owners can set different claiming years for the same SFUs.

Once SFUs are allocated to a claiming year, Aircraft Operators can use the “Generate CEF Claim Form” functionality to produce a complete CEF supplementary document to the CORSIA Emissions Report. The supplementary document is complete with information pertinent to CEF Claims, given that the registering party input that information at the time of registration, and it is accompanied by all documents attached at the point of registration. The CEF supplementary document can be further edited manually, in case there is missing information, before it is shared with verifiers and the competent authority.



4.2. Verification steps for Verifiers

As per the Environmental Technical Manual, verifiers should follow a six-step approach when verifying CEF claims:

1. Prove sustainability
2. Traceability
3. Monitoring and reporting of CEFs
4. Emissions report with CEF supplementary information
5. Internally: No double claiming; external information: No double claiming
6. Amendments after the verification

Many of these steps can be streamlined within the CADO SAF Registry. The Aircraft Operator can invite the Verifier to review activity performed on the Registry in read-only mode and mark redemptions as audited. The Verifier can receive the auto-generated CEF supplementary document from the Aircraft Operator to cross-check and validate the content of the report against the Aircraft Operator’s activity on the system.

4.2.1. Prove Sustainability

Verifiers are responsible for verifying the sustainability attributes of CEF, which can be done using the PoS/PoC document.

All SFUs claimed in the CADO SAF Registry for CORSIA purposes have an attached PoS/PoC. Therefore, only CORSIA-eligible fuels with the correct PoS documentation can be included in a CEF supplementary documentation generated by the CADO SAF Registry, as per 2.1.2 Redemption and 2.1.3 Claiming.

Against the auto-generated CEF supplementary documentation and attached PoS/PoC document, the Verifier, if invited, can view all activity, including the inventory and Claiming module, by the Aircraft Operator on the CADO SAF Registry. From the inventory, the Verifier can view the attachments to each SFU, enabling a review of the standard document procedure.

4.2.2. Traceability

Verifiers are also responsible for checking the traceability of the PoS/PoC document. The PoS/PoC document trail starts at SAF production and down to and including the fuel blender. All parties in this document trail must be certified under a CORSIA Sustainable Certification Scheme (SCS) and are therefore audited. The recipient of the PoS after blending, e.g., the Aircraft Operator, may not be a certified party and is not obligated to receive audits. Verifiers are responsible for checking for any part of the trail that involves a non-certified party.

An invited Verifier on the Registry can view the PoS from the Aircraft Operator's inventory to determine which party issued the PoS, which was surrendered to the Registry. The Verifier can further validate the party who performed the transfer (if any) to the Aircraft Operator, via the immutable logbook.

Additionally, to comply with the requirement to verify that the CEFs are not sold after verification, the Verifiers can review the inventory to ensure that the CEFs have been redeemed. Redemption is an irreversible process, meaning SFUs cannot be reactivated for transactions.

4.2.3. Monitoring and reporting of CEF

This section does not apply to CADO SAF Registry.

4.2.4. Emissions Report with CORSIA eligible fuel supplementary information

The CADO SAF Registry auto-generates a CEF template from information provided by the registrant and validated by the Validator. Therefore, there is reasonable assurance that the information in the supplementary information is accurate against documentation and calculated correctly in accordance with the CORSIA SARPs.

4.2.5. No double claiming

To assess the risks of double claiming, the verifier can start with the core items below, according to the ETM:

1. The mandatory/voluntary schemes the Aircraft Operators participate in

2. The Aircraft Operator's sales to a third party

A main purpose of the CADO SAF Registry is to prevent double counting through a robust framework. CADO SAF Registry prevents double counting in the following ways, following Table 3-13 of the ETM: examples of potential double claiming (Scope 1).

1. When a single Aircraft Operator claims the same batch of CEF in multiple CORSIA Reporting years, it is considered double-counting – the claiming year selection in the Claiming module is irreversible. CEFs must be allocated to a claiming year to generate a CEF supplementary document.

2. When a single Aircraft Operator claims the same batch of CEF in multiple schemes, it is considered double-counting – only one scheme can be selected, and the selection cannot be changed after redemption.

3. When two different parties are claiming the same batch of SAF in one or more schemes, it is considered double-counting – once an SFU is redeemed, it cannot be reversed and further transacted. Furthermore, the CADO SAF Registry safeguards against double-counting risks through interoperability with Assure

SAF Registry and 123Carbon[3]– data sharing among registries to ensure that the same SAF batch is not registered twice.

Following Table 3-14 of the ETM, example scenarios and the risk of potential double claiming (outside Scope 1 only).

1. When an Aircraft Operator claims emissions, and a fuel producer/supplier also claims the same batch under a mandate, it is not considered double-counting – this issue is resolved with documentation further up the supply chain. If a PoC is registered in the Registry, the mandate/incentive for which the PoS was surrendered must be listed.

2. When an Aircraft Operator claims emissions, and a fuel producer/supplier also claims the same batch for an incentive, it is not considered double-counting – this issue is resolved with documentation further up the supply chain. If a PoC is registered into the Registry, the mandate/incentive for which the PoS was surrendered must be listed.

3. When an Aircraft Operator and their customer(s) claim benefits under Scope 1 and Scope 3 respectively, it is not considered double-counting - the Registry allows the Scope 3 benefit to be allocated to corporate clients under one Scope 3 category. It also allows Scope 1/Scope 3 recipients to set the claiming year independently.

4. When an Aircraft Operator and their customer(s) claim benefits under Scope 1 and Scope 3 respectively, and the producer/supplier also claims the same batch under a mandate/incentive, it is not considered double-counting – the Registry allows SAF for which the producer/supplier may have claimed under a mandate/incentive to be registered and normally redeemed for Scope 1 and Scope 3 beneficiaries.

5. When two different Aircraft Operators are claiming the same batch of SAF in one or more schemes, it is considered double-counting – once an SFU is redeemed, it cannot be reversed and further transacted.

4.2.6. Amendments after the verification

This section does not apply to CADO SAF Registry.

4.3. State authorities receiving CEF claims

State authorities have access to a state module, where they can review Scope 1 claims by Aircraft Operators who opt in to information sharing with them.

State authorities with access rights to redemption information by an Aircraft Operator can cross-check the verified CEF claims report received outside the Registry against information on the Registry, providing an added layer of assurance.

The information on the SAF attributes that State authorities have access to via the Registry includes but is not limited to:

- Amount of SAF equivalent (in tonnes, kg, liters, gallons, m3)
- Scope 1 Owner (Aircraft Operator)
- Country of Production
- Date of SAF Production
- Feedstock Type
- Conversion Process
- Incentive(s)
- Mandate(s)

[3] https://www.cado.org/en/updates/cado-saf-registry-123carbon-and-assure-saf-registry-collaborate-on-interoperability-pilot-to-strengthen-saf-attribute-integrity-across-sectors/

- Policy Instrument(s)
- Regulatory Claim
- Audit Date

5. Conclusion

The CADO SAF Registry was built based on the IATA SAF Accounting and Reporting Methodology[4], which recognizes and aims to be harmonious with the ICAO SARPs. The platform provides integrity for both regulatory and voluntary SAF claims, including CEF.

6. Glossary

- CADO – Civil Aviation Decarbonization Organisation
- CEF – CORSIA Eligible Fuel
- CORSIA – Carbon Offsetting and Reduction Scheme for International Aviation
- ETM – Environmental Technical Manual
- IATA – International Air Transport Association
- ICAO - International Civil Aviation Organization
- PoC – Proof of Compliance
- PoS – Proof of Sustainability
- Redemption - The action of virtual fuel consumption that converts SAF batches into emissions reductions in the Registry
- Registration - The process of registering SAF batches in the Registry
- SAF – Sustainable Aviation Fuel
- SARPs - Standards and Recommended Practices
- SFU – SAF Fuel Unit, the working unit of the Registry, corresponding to 1 kg of neat SAF

[4] IATA Sustainable Aviation Fuel (SAF) Accounting & Reporting Methodology