EASA
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ReFuelEU Aviation
Manual for Aircraft Operators and Verification Bodies

Version 2.1

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Disclaimer

This document is issued by the European Union Aviation Safety Agency (referred to as both 'EASA' and 'the Agency') to provide its stakeholders with an updated, consolidated, and easy-to-read publication. It has been prepared by putting together the officially published EU regulations, EASA acceptable means of compliance (AMC) and guidance material (GM) (including their amendments) adopted so far and stakeholder input. However, this document is not an official publication, and EASA accepts no liability for the use contained herein.

Versioning

Date	Version	Comment
09/10/2024	1.0	First publication of the manual.
12/11/2025	2.0	Restructuring of the report, and inclusion of further clarifications, particularly on the SAF reporting and data gaps aspects.
17/12/2025	2.1	Further detailed information in the verification section.

The latest manual for aircraft operators and verification bodies can be found on EASA's website.

Table of contents

Table of figures and tables

1 Introduction

1.1 Purpose

This manual has been developed to guide aircraft operators (AOs) and Verification Bodies (VBs) in the monitoring, reporting and verification of the data referred to in Article 8 and Annex II of the ReFuelEU Aviation Regulation. These obligations must be reported to both competent authorities (CAs) and to the European Union Aviation Safety Agency (EASA).

This document builds on Regulation (EU) 2023/2405 of the European Parliament and of the Council of 18 October 2023 on ensuring a level playing field for sustainable air transport ("ReFuelEU Aviation" or "RFEUA"), and the Commission interpretative guidelines on the application of the exemptions referred to in Article 5 RFEUA ("Commission guidelines").

The manual will be revised as necessary under the supervision of EASA and the European Commission (DG MOVE, Directorate E for aviation). The first reporting year served as a test and a valuable learning opportunity to avoid encountering significant difficulties in reporting and verification in subsequent years. In fact, stakeholders' feedback from the first reporting exercise in 2025 informed the update of the manual. The reporting takes place in the Sustainability Portal[1] ("the Portal"), an EASA-developed platform to facilitate the reporting process.

The updates to this document include restructuring of content, clarifications in the scope of reportable flights, references to new supporting documentation, information on data gaps and inclusion of reporting for the SAF tab of the official AO reporting template.

1.2 Where to find relevant information

This **manual for AOs and VBs** is one of the supporting documents made publicly available for the application of the RFEUA Regulation. In addition to this manual, the **Commission guidelines**,[2] produced and published in 2024 by the European Commission, constitutes the second set of documentation focused on the guidance for the scope and application of the exemptions set out in Article 5 RFEUA.

Furthermore, EASA developed a set of technical documentation shared through its website and available on **the Portal**. Indeed, a knowledge base exists on the Portal which provides simple information on how to navigate it and guidance on how to correctly onboard CAs and AOs to the platform to perform the reporting process.

All documents can be found on the websites of the European Commission Directorate General for mobility and transport[3] and EASA.

[1] EASA sustainability portal support page.

[2] Commission interpretative guidelines on the application of the exemptions referred to in Article 5 RFEUA.

[3] ReFuel EU Aviation – European Commission website.

COMMISSION GUIDELINES	**Commission guidelines on the application of Article 5** Guidance on the scope of Article 5 and the application of the exemptions.
OPERATIONAL MANUAL	**Manual for aircraft operators and verification bodies** Operational guidance on how to fill in the template's columns and carry out the monitoring, reporting and verification (MRV) processes.
TECHNICAL SUPPORT	**Sustainability Portal manuals & FAQs** Supporting technical FAQs can be found in the Portal's knowledge base describing how to use the EASA Sustainability portal in which the AOs will report.

Figure 1: RFEUA document structure for three different purposes: Legal, operational and technical aspects.

2 General Guidelines

2.1 Reminder of aircraft operators' RFEUA obligations

AOs are subject to two obligations under REFUA:

Article 5 RFEUA: AOs are required to uplift at least 90% of the aviation fuel required (trip + taxi fuel) at Union airports (UAs) on a yearly basis, regardless of whether it is conventional fuel or Sustainable Aviation Fuel (SAF). In the cases this threshold is not met, AOs can justify as per Article 5.2. Alternatively, AOs may also request refuelling exemptions on certain routes meeting the criteria set out in Article 5.3. Under RFEUA Regulation, AOs are not subject to any obligation to demonstrate a minimum purchase of SAF. The requirement is strictly limited to reporting.

Article 8 RFEUA: AOs are additionally required to submit by the 31 of March of each reporting year, the completed official reporting template with the data of the respective reporting period to the CAs and to the Agency via either EASA's Portal (preferred) or email.

2.2 Aircraft operators in scope of RFEUA obligations

What is an aircraft operator under the RFEUA Regulation?

According to Article 3.3 RFEUA, an AO is "a person that operated at least 500 commercial passenger air transport flights, or 52 commercial all-cargo air transport flights departing from UAs in the previous reporting period or, where it is not possible for that person to be identified, the owner of the aircraft." All AOs within the scope of RFEUA are required to comply with the requirements of Article 5.1 and the reporting obligations established in Article 8 and Annex II of RFEUA for those flights departing from a given UA.[4]

AOs in the same corporate group cannot be considered as a single operator under RFEUA scope.

Management companies that file flight plans and pay route changes on behalf of AOs are not the AO as per definition of Article 3(3) RFEUA. Within the framework of RFEUA, an AO may delegate responsibilities to a service company to act on its behalf before the CA of the administering Member State (MS). The scope of this delegation, such as compliance reporting, depends entirely on the agreement between the AO and the service provider. However, the legal responsibility under RFEUA remains with the AO holding the valid operating licence.

In which year does the threshold apply?

The reporting period (year X-1) refers to the calendar year preceding the reporting year (year X), which is the year in which the operator must submit its data. Therefore, only AOs who exceed the flight threshold two years prior to the reporting year ("the previous reporting period", year X-2), are subject to the regulation. For example, for the reporting obligations in 2026 (reporting year), to report flights of 2025 (reporting period), the relevant flight activity to be accounted in the threshold must have occurred in 2024 (previous reporting period) and reflected in the 2025 AO in scope list of the Commission.

[4] 'Union Airport' means an 'airport' as defined in Article 2, point (1), of Directive 2009/12/EC of the European Parliament and of the Council (…) where passenger traffic was higher than 800 000 passengers or where the freight traffic was higher than 100 000 tonnes in the previous reporting period, and which is not situated in an outermost region, as listed in Article 349 Treaty of the Functioning of the European Union (TFEU).

How do aircraft operators know if they fall within the scope of RFEUA?

To ensure efficient implementation of the Regulation, each AO is assigned to an administering MS.[5] The Commission, with the assistance of EUROCONTROL and in cooperation with MSs, prepares and publishes an annually updated list of AOs falling within the scope of RFEUA, and their respective administering MS. The list is published on the Commission's website[6] and contains the following details for each AO listed:

- Its "unique identifier"- EUROCONTROL's Central Route Charges Office (CRCO) Identification Number used for invoicing route charges;
- The name of the AO;
- The AO's State of origin;
- And the administering MS.

Being listed by the Commission as an AO does not definitively establish whether a person or entity qualifies as such under the Regulation. AOs are responsible for independently assessing whether they fall within the scope of the Regulation and for taking appropriate action.

What should aircraft operators do if they are incorrectly included or omitted from the scope list?

If an AO believes it is incorrectly listed -or omitted- from the Commission's list regarding RFEUA scope, it should contact its CA for clarification. The CA may request supporting documentation, such as flight information or operational data, to assess and verify the aircraft operator's claim.

Opt-in

An AO operating commercial air transport flights below the threshold established in Article 3(3) RFEUA can choose to be treated as an AO under the scope of RFEUA. Similarly, an AO may decide that its non-commercial flights be covered by the Regulation. In these cases, they must notify the CA of the MS responsible for these AOs of their intention to opt into the Regulation. Once the opt-in has been confirmed, the AO will result in the Commission's list of AOs falling in the scope of RFEUA. It is recommended that AOs request and obtain confirmation of their inclusion during the reporting period to ensure clarity regarding their reporting obligations during the subsequent reporting year.

2.3 Scope of flights to be reported

Only flights that fall under the responsibility of the AO should be considered in the report. The International Civil Aviation Organisation (ICAO) designator, used as a call sign for air traffic control (ATC) purposes in box 7 of the flight plan, is the determining factor for assessing and deciding which flights fall under the responsibility of the AO, regardless of whether the aircraft is leased, owned or wet-leased. When the unique ICAO designator is not available, this will be determined by the registration numbers of relevant aircraft which is used as a call sign for ATC purposes in box 7 of the flight plan.

[5] Pursuant to Article 11(5) of RFEUA.

[6] List of aircraft operators established pursuant to Article 2.4 and 3.3 of ReFuelEU Aviation. All AOs that meet conditions set out in RFEUA are subject to the obligations of RFEUA, regardless of whether they are included or not in the list published.

Flights included in the scope of the reporting obligations under Article 8 RFEUA

RFEUA applies to **commercial air transport flights** which, in line with Article 3(4) RFEUA, refers to "a flight operated for transport of passengers, cargo or mail for remuneration or hire, including a business aviation flight operated for commercial purposes." As a general rule, flights performed by an aircraft registered under their Air Operator Certificate (AOC) shall be deemed to constitute commercial air transport, irrespective of the manner in which the flight plan is filed, including whether filed under "G" or "N".[7]

According to RFEUA Regulation and the Commission guidelines, the reporting obligations of Article 8 RFEUA applies to:

- **Commercial flights performed in the framework of public service obligations.**
- **Maintenance, repositioning and ferry flights** as long as these flights are linked to the AO's commercial activities.
- **Diverted flights and the subsequent flight** are both to be reported under Article 8 RFEUA if departing from a UA**.** A commercial flight might be diverted when it makes an unplanned landing at an airport different from the destination airport indicated by the AO in the last approved flight plan filed prior to the flight departure. If for any operational reason the AO does not meet the 90% uplift obligation of the required fuel in that unplanned UA due to the subsequent flight, the AO must provide justification as described in Annex A of this manual.
- **Commercial flights performed with aircraft with a maximum take off mass (MTOM) of less than 5.7 tonnes.** While excluded from the reporting of the EU ETS Directive, the RFEUA Regulation does not explicitly refer to these types of flights, hence, they fall within the scope of RFEUA.
- **Flights performed under visual flight rules operated on a commercial basis** also fall under reporting requirements. While excluded from the reporting of the EU ETS Directive, the RFEUA Regulation does not explicitly refer to these types of flights, hence, they fall within the scope of RFEUA.

Flights excluded from the scope of the reporting obligations under Article 8 of RFEUA

According to RFEUA Regulation and the Commission guidelines, the reporting obligations of Article 8 RFEUA do not apply to:

- **Military, humanitarian, repatriation** and **return flights** including **readmissions,[8] search and rescue, disaster relief** or to flights for **medical purposes**, as well as for **customs, police,** and **fire-fighting operations**.
- **Training flights** of the flight crew for their type license certification.
- **Any circular flight** (departing and arriving at the same airport without an intermediate stop) are also excluded.
- **Flights on official mission (State flights**), of a reigning Monarch and his immediate family, of Heads of State, Heads of Government and Government Ministers, of a country other than a MS, do not fall within the scope of RFEUA and are therefore also excluded from the reporting obligations under Article 8 RFEUA.

[7] Where "G" stands for general aviation and "N" non-scheduled.

[8] In the meaning of the EU migration and asylum policy legislation.

In practice, flights that are excluded from reporting obligations may be identified through the use of exemption codes provided by EUROCONTROL's Central Route Charges Office (CRCO), and/or by examining the flight identification field within the operational flight plan (OFP).

Considerations regarding exempted routes under Article 5.3 (a) and (b) RFEUA

The flights performed on routes for which exemptions under Article 5.3 (a) and (b) have been granted are out of the scope of the reporting obligations under Article 8 RFEUA. AOs can apply for temporary exemptions from the obligation to refuel prior to departure on specific routes departing from UAs. These exemptions apply to certain routes, limited to a maximum distance of 850 km or routes departing from airports situated on islands without rail or road connections limited to a maximum distance of 1200 km, under the specific circumstances laid down in Article 5.3 (a) and (b) RFEUA. Section 5 of the Commission guidelines on the application of the exemptions explains how AOs can request and justify those exemptions. It also outlines the process and timelines for submitting the requests to the CAs as required by Article 5 RFEUA.

Flights operated on routes for which exemptions under Article 5.3 (a) and (b) have been granted are included in the scope of the thresholds used to determine whether an AO falls under the RFEUA Regulation. The duration of such exemptions depends on the nature and extent of the operational or structural issue that justifies them, and they may be granted for a limited period. While one year is the maximum duration allowed, it is not necessarily the default or minimum period for which the exemption must be granted.

The following table provides the list of flights that must be included and excluded in the report of Article 8 of RFEUA.

REPORTABLE FLIGHTS	**NON-REPORTABLE FLIGHTS**
Passenger flights	Non-EU State flights
Cargo flights	Military flights, customs and police flights
Maintenance flights	Humanitarian and rescue flights
Diverted flights	Scientific research flights
Repositioning flights	Medical flights
Ferry flights	Fire-fighting flights
Flights performed in the framework of public service obligations	Training flights of the flight crew for their type license certification
	Any circular flight
	Flights performed in exempted routes during the temporary period under Article 5.3 of RFEUA
	Repatriation flights, return flights, including readmission[9]

Table 1: Summary table of reportable and non-reportable flights under Article 8 RFEUA.

[9] In the meaning of the EU migration and asylum policy legislation.

Step-by-step process to determine flights that are to be reported under RFEUA

AOs under the scope of RFEUA (please refer to section 2.2 for details on scope) should follow the step-by-step instructions bellow to determine the list of flights to be reported. It is important to note that, when calculating the number of reportable flights in accordance with Article 8 RFEUA, some AOs may not reach the threshold of 500 commercial passenger flights or 52 all-cargo flights in the reporting period. **However, this does not exempt them from the reporting obligation**. The flight threshold is used solely to determine whether an AO falls under the scope of the Regulation, and it applies to the previous reporting period (year X-2).

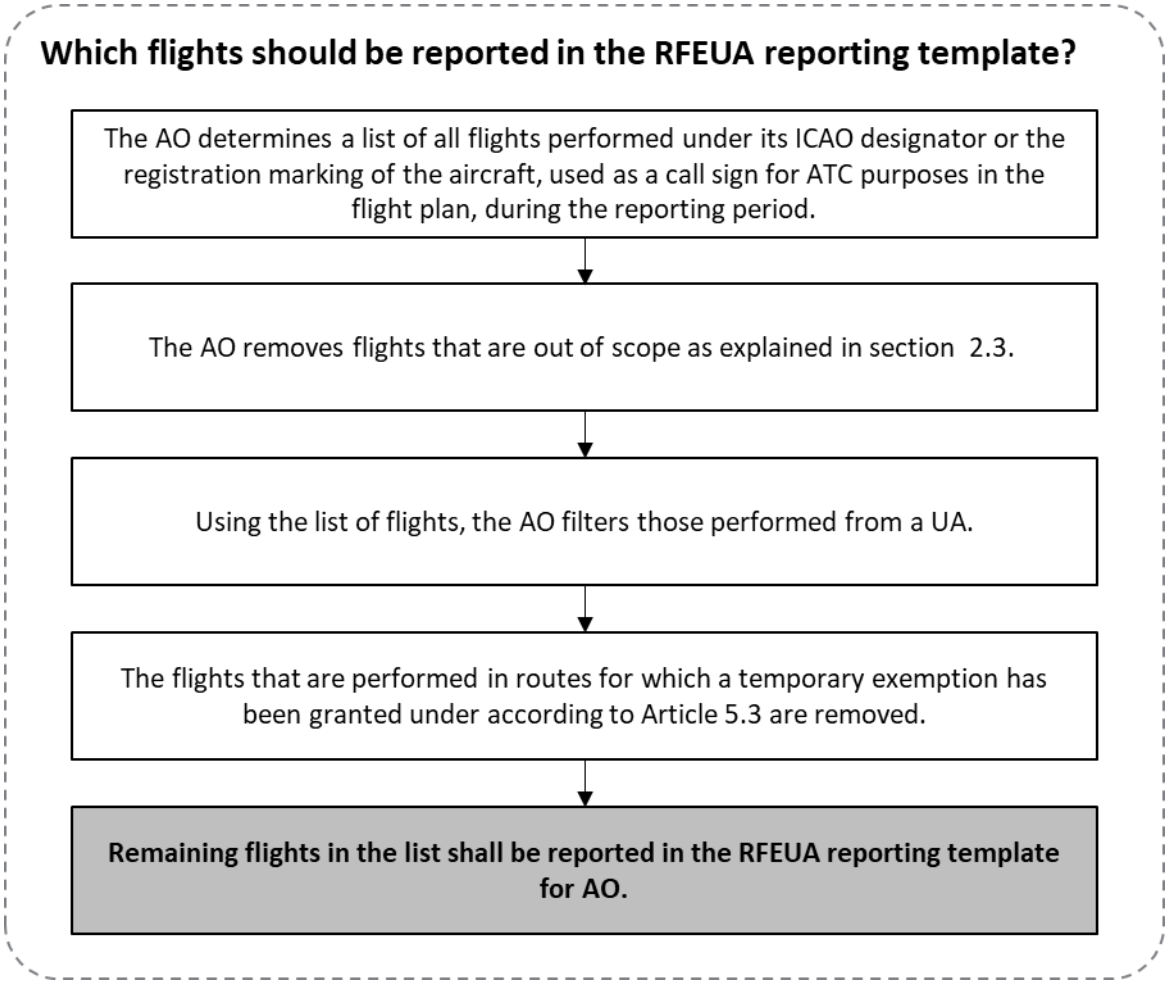

Figure 2: Process to determine the flights for the RFEUA reporting obligations.

2.4 Understanding Fuel Categories needed for the reporting

The core element of the RFEUA reporting requirements for AOs is the fuel information they must report on an annual basis. To meet the reporting requirements, AOs will need to provide both planned fuel and actual fuel information.

Fuel planning is regulated by EASA in the acceptable means of compliance (AMC) and guidance material (GM) to Annex IV Commercial air transport operations[10] [Part-CAT] in section ***AMC1 CAT.OP.MPA.181 Fuel/energy scheme — fuel/energy planning and in-flight replanning policy — aeroplanes***. Table 2 below, column *EASA AMC Fuel Categorisation*). This categorisation is included in the operations manual[11] and, in the context of RFEUA, it applies to AOs with an AOC delivered by the national aviation authorities of MSs of the European Union or by EASA.

Third-country AOs that fall within the scope of RFEUA (if departing from a UA) might comply with ***ICAO Annex 6 "Operation of Aircraft"*** [12] instead of EASA's AMC. Additionally, national regulations and company-specific fuel category customisations may differ from both ICAO Annex 6 classification and EASA's fuel scheme, using different nomenclature and category content. It is therefore important to establish a common understanding of what constitutes each fuel category.

Fuel planning requirements under any fuel scheme are composed of the following components regardless of the rules in application:

- The minimum legally required fuel to operate a flight;
- The discretionary fuel at the sole discretion of the commander;
- Extra fuel for anticipated delays or specific operational constraints.

Any additional fuel not clearly defined by the applicable regulation as essential for the flight's safety[13] would be considered economic fuel tankering.[14] This binary definition is to provide a clear definition between the necessary fuel, and fuel for economic tankering (refer to section 4.4 of Commission guidelines).

For reference purposes, Table 2 below shows the different fuel categories used under EASA and ICAO fuel planning policies for the pre-flight calculation to be included in the OFP as per ***AMC1 CAT.OP.MPA.175(a) Flight preparation, AMC1 CAT.OP.MPA.181 point (c)*** and ***ICAO's Annex 6 – Part I***, and the corresponding definitions as per EASA AMC.

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[10] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council, OJ L 296, 25.10.2012, p. 1.

[11] ORO.MLR.100 Operations Manual.

[12] ICAO Flight Planning and Fuel Management (FPFM) Manual, DOC 9976.

[13] Some regulations have additional fuel categories that could be accounted as fuel tanked for safety rules and not detailed in the ICAO nor the EASA schemes (e.g. extreme temperature fuel).

[14] Fuel tankering is a practice whereby an aircraft carries more fuel than required for its flight in order to reduce or avoid refuelling at the destination airport.

Basic fuel scheme principle	ICAO Annex 6 fuel categorisation	EASA AMC fuel categorisation	EASA AMC definition[15]	RFEUA categorisation
Legally required fuel	Taxi fuel	Taxi fuel	At minimum the expected fuel before take-off including the APU consumption	Required fuel
	Trip fuel[16]	Trip fuel	Fuel for take-off, climb, cruise, descent, approach, and landing	
	Contingency fuel	Contingency fuel	Fuel required to compensate for unforeseen factors	Yearly Tanked Fuel Justified under Article 5(2)[17] YTFJ
	Destination alternate fuel	Destination alternate fuel	Fuel for missed approach and trip towards an alternate airport	
	Final reserve fuel	Final reserve fuel	Required 30 minutes of fuel at holding speed 1500 ft above destination aerodrome according to CAT.OP.MPA.181(c)	
	Additional fuel	Additional fuel	Include an amount of fuel that allows the aeroplane to proceed, in the event of an engine failure or loss of pressurisation	
Commander's discretionary fuel	Discretionary fuel	Discretionary fuel	Fuel at the sole discretion of the commander	
Extra fuel	Not a separate category in ICAO Annex 6, but, for the purposes of aligning with EASA's categorisation, considered as fuel accounted for the operating conditions related to 4.3.6.2 of ICAO Annex 6	Extra fuel	Include anticipated delays or specific operational constraints that can be predicted	
Other fuel	N/A	N/A	N/A	Economic tankering

Table 2: Fuel categories in the OFP as per the EASA AMC & GM for Part CAT and ICAO Annex 6, Part I.

[15] The below definitions apply to basic fuel scheme to Class A aeroplanes without variations. If other aeroplanes or fuel schemes are used, the AO must refer to the applicable EASA fuel scheme.

[16] For the purposes of RFEUA, trip fuel to be considered as defined in the ICAO Annex 6 but excluding the fuel *accounted for the operating condition 4.3.6.2* of the Annex, which according to EASA fuel policy is considered as extra fuel.

[17] Please refer to section 5.2 for more details.

Third-country aircraft operators/Use of other fuel schemes

Third-country AOs that are out of the scope of the Commission Regulation (EU) No 965/2012 might have other fuel planning schemes aligned with the relevant ICAO Annex and guidance material. In this case, with the exception of the “taxi fuel” and “trip fuel” as per EASA definition, the rest of the categories are potentially eligible to be considered as tanked quantities for fuel safety rules only if properly justified under Article 5.2 of RFEUA and if they do not include any quantity tanked for economic reasons.

3 Overview of the fuel monitoring, reporting and verification (MRV) process to meet RFEUA requirements

3.1 Monitoring

Throughout the reporting period (1 January to 31 December of the year preceding the reporting year), the AO is expected to monitor flights and associated fuel information. Before the 31 March of the reporting year, the AO must submit to its CA and EASA a verified and completed reporting template that meets the requirements of Annex II of RFEUA (see section 4 of this manual).

Accurate monitoring of flights and the required fuel information is essential to ensure that AOs:

- Meet their reporting obligations; and
- Properly justify the non-tanked quantities at UAs where they do not meet the 90% annual uplift threshold of their yearly required fuel for flights departing from that airport.

To perform accurate monitoring, the AO should implement a management system, with well-defined procedures and control activities to keep track of flights subject to RFEUA reporting requirements. This includes those flights that are performed by both owned and/or leased-in aircraft. It is the responsibility of the AO to ensure the accuracy, completeness, consistency and traceability of the information to be reported to its CA and EASA.

In addition, to ensure completeness of the data, ***both the data of flights from UAs and the data from previous flights are expected to be monitored.*** This is particularly important for UAs in which the 90% uplift requirement cannot be met due to fuel uplifted in the previous flights, regardless of whether those previous flights had departed from a UA or not and whether those flights are within the scope of the RFEUA reporting obligations or not.

It is therefore recommended that fuel information for all flights departing or arriving at a UA of all aircraft used by the AO is duly monitored.

The AO is expected to implement a monitoring process where data is collected, processed and stored during the reporting period to ensure:

- Completeness of the aircraft operated;
- Completeness of the list of flights operated under the unique ICAO designator or aircraft registration numbers by airport pair with departure and or arrival in a UA during the reporting period;
- Accuracy of planned trip and taxi fuel per flight as identified in the final and signed version of the OFP of each flight;
- Accuracy of the quantities of the other categories of fuel as reflected in the OFP of each flight;
- Accuracy of actual fuel consumption of all flights arriving at a UA;
- Completeness of the list of flights that are subject to RFEUA reporting requirements, excluding those out of the scope of RFEUA and those for which temporary exemptions have been granted under Article 5.3 RFEUA;
- Accuracy of fuel uplift for flights subject to RFEUA reporting requirements;
- Appropriate use of density factor to fuel uplift values;

- Accuracy of block time in hours per flight subject to RFEUA reporting requirements;
- Accuracy of wet leased operations, ensuring inclusion of leased aircraft and traceability of their fuel and flight data;
- Accurate record of data gaps and missing information to provide information about the challenges faced during the reporting period;
- Accurate calculation of data gaps and missing information using alternative calculation methods, as well as threshold calculation (as explained in Section 3.4 of this manual).
- Accurate supporting documentation for any of the abovementioned data and the required documents that the AO would need to provide to the CA to justify falling below the threshold in Article 5.1 RFEUA;
- Accuracy of SAF purchase information;
- It is recommended that AOs use EUROCONTROL data, such as the EUROCONTROL ETS Support Facility Tool, to check their flight data against the data recorded in their internal systems. This cross-checking process will provide the verifier with confidence in the accuracy and completeness of the reported flights.

3.1.1 Recommendation of the development of a Monitoring Process

As part of the MRV process, an AO should be able to monitor and justify all the data mentioned previously for its RFEUA reporting duties. To ensure the reliability, fairness, and consistency of the RFEUA reporting, the monitored data must be robust and traceable.

To achieve this, each AO may establish a written Monitoring Plan (MP). The MP documents the internal monitoring procedures and ensures they are not subject to arbitrary changes. The MP acts as a manual for the AO's staff, providing clear and step-by-step guidance.

It may also help in addressing the circumstances of individual AOs providing sufficient flexibility. It should therefore be written in such a way that allows everyone, particularly new staff, to immediately follow the instructions. It also serves as the means to allow the CA to quickly understand the AO's monitoring activities and VBs to understand the AO's data sources and monitoring activities efficiently. Therefore, EASA recommends implementing an internal process to develop and fill the MP for the purpose of RFEUA reporting.

It is also recommended to implement internal processes that enable the easy review of the different flights operated to and from a UA especially focusing on the sequence performed by a single aircraft.

Operationally speaking, the AO should ideally create automated queries feeding a master table file directly from its internal fuel or flight management / planning systems. This master monitoring table would include all flights within the scope of RFEUA and their previous flights. This tool would rapidly identify gaps and feed directly in the official **RFEUA *reporting template for aircraft operator*** necessary for reporting. AOs should record the information and data listed in the MP and section in a timely and transparent manner and compile them on an annual basis to enable the VB to verify compliance.

With the objective of harmonising the MRV process, EASA has developed the following tools:

3.1.1.1 RFEUA Monitoring Plan Template (MP)

EASA has developed the **RFEUA MP Template**[18], which has been designed to consolidate all monitoring processes required for reporting under Article 8 RFEUA and serves as a standardised template for use by AOs, VBs, and, where applicable, CAs. The MP integrates elements from RFEUA Regulation, this manual, RFEUA reporting template for AOs and the RFEUA Fuel Monitoring Tool (FMT). While the MP is not legally binding unless explicitly required by the relevant CA, it is intended as a practical support template to facilitate compliance and enhance data quality in the implementation of RFEUA. It is inspired by the MRV framework of the EU ETS and implements common components and sections from the emissions monitoring plan (EMP) under the EU ETS.

Typical elements of a monitoring plan include the following key activities carried out by the AO:

- Identification of the AO;
- Description of procedures for data management, data flow and control activities;
- Description of management fleet and flight operations data;
- Description of management of fuel monitoring data sources and data gap alternative calculation method for the purposes of reporting columns A-F of Tab 1. Fuel reporting template (explained in section 3.4 of this manual);
- Description of management of fuel monitoring data sources and missing information alternative calculation method for the purposes of reporting column H (explained in section 3.4 of this manual);
- Description of management of information on SAF purchases, and their data sources (explained in section 4.2 of this manual).

3.1.1.2 RFEUA Fuel Monitoring Tool (FMT)

EASA has also published the **RFEUA FMT**[19] that AOs can use as their raw data file before feeding in the RFEUA reporting template. An AO should be able to extract all the information from its digital system and create links to specific documents for the justifications required. Not only will this system benefit AOs, but it will also simplify the verifiers' tasks. Indeed, just like other environmental schemes, the VBs ensure the consistency and accuracy of the reported data. Working through this type of master datasheet enables full transparency and understanding of the actual operations.

[18] The RFEUA Monitoring template is published on the EASA website.

[19] The RFEUA FMT is published on the EASA website.

3.2 Reporting

Article 8 RFEUA mandates AOs to report fuel quantities following a standard template. The latest RFEUA excel reporting template for AO is published on the EASA website. Always refer to the latest version available on the website.

Detailed guidance of the reporting obligations for *Tab 1. Fuel Reporting* and *Tab 2. SAF Purchase Reporting* is provided in section 4 of the document.

In accordance with RFEUA, AOs are required to submit their reports by 31 March each year. After submission, AOs may be requested by their CA to provide additional information or supporting documentation. CAs will inform the AOs of the outcome, including any findings, required corrections, or potential penalties.

3.3 Verification

Each reporting year, before or on 31 March at the latest, the AO must submit both the RFEUA report and the corresponding verification report to the CA of the administering MS. It is recommended to begin the verification process within the reporting period, rather than waiting until it has ended. This approach makes it easier to ensure conformance and compliance, manage issues promptly, and address any data gaps, misstatements, inaccuracies, or non-conformities found during verification.

Article 8.3 RFEUA states that "the report shall be verified by an independent verifier in accordance with the requirements set out in Articles 14 and 15 of Directive 2003/87/EC, and the implementing acts adopted on the basis thereof." In other words, the verification process and accredited verifiers for the purposes of RFEUA are governed by the rules set in the EU ETS and particularly those established for the aviation sector. This means that any VB accredited by a National Accreditation Body according to the Implementing Regulation (EU) No. 2018/2067 of 19 December 2018 on the verification of data and on the accreditation of verifiers pursuant to Directive 2003/87/EC, is allowed to verify reports under RFEUA, without the need for an extension of its accreditation scope. This ensures a harmonised and consistent approach to verification across the EU and reduces the administrative burden for both VBs and AOs.

Verification involves an independent assessment of the data sources that have been used to collect, process and store during the reporting period and the data quality in the AO's report. Verification of the RFEUA report provides reasonable assurance that the reported data is free from material misstatements and material non-conformities. In addition, verification is an essential instrument in providing confidence to the CA.

Once the verifier has concluded the verification, it issues a verification report to the AO stating whether the report is verified as satisfactory or not.

3.3.1 Specific guidance for Verification Bodies

- The verifier should be given access to all sites and information in relation to the subject of the verification.
- The verifier should check the control activities that the AO has in place to identify which flights fall under the responsibility of that particular AO and that the data related to that flight is accounted for in its report. The verifier should test the way that data from leased-in or leased-out aircraft are input in the AO's systems to ensure that data of the leased aircraft is documented (collection of data that is regulated through leasing agreements).
- The verifier should check the completeness of the flights and whether flights have been attributed to the calendar year according to the time of departure measured in coordinated universal time and to the correct reporting period.
- The verifier should understand how to interpret flights that are out of the scope of RFEUA and to check exempted routes for which a temporary exemption has been granted, to avoid them from being included in the report.
- When verifying the data, the verifier should cross-check with the EUROCONTROL data from the EU ETS Support Facility or other EUROCONTROL data. This can be done by using the EU ETS Support Facility assuming access is authorised and recognising that EUROCONTROL data may not always be complete.
- When verifying the data, the verifier should also cross-check the routes for which an exemption has been granted by receiving from the AO a file with the exempted routes extracted from the EASA's Portal.
- If a MP has been prepared and shared by the AO, verifiers should use it as a reference to understand the AO's data sources and monitoring procedures effectively.
- In particular, in relation to the Fuel Reporting the verifier should:
    - Be aware of the need to monitor and verify the fuel information of the non RFEUA flights. The fuel information of, not only those flights departing from a UA, but also those landing in a UA, that are considered for the justification of tanked quantities for safety rules.
    - Examine the specific source of data used to determine the fuel uplift of flights from UAs and that density is correctly applied.
    - Check the methodologies and procedures used to monitor the fuel consumption which can be understood as Block-off minus Block-on of all flights departing or landing in a UA. Alternatively, the methodology can be proposed by the AO either through the MP or via email. In such case, the methodology or procedure has to be confirmed by CA for use.
    - Assess the frequency of data gaps and missing information occurring (as explained in 3.4 of this manual) and the control activities implemented to avoid these data gaps and missing information.
    - Assess whether the AO has correctly applied the confirmed alternative calculation methods for addressing data gaps and missing information.
    - Assess the completeness of the data points required to calculate column H of the RFEUA report and verify that the AO has the documentation to support the calculation. However, the justification details, including the type of safety or operational

documentation provided by the AO, as well as the final values in column H, will be assessed by the CA.

- Ensure that, when the AO reports a positive value in column G, it has gathered the necessary data to calculate, for that UA, the yearly tanked quantity for safety rules (column H).

- The verifier should assess the sources of information related to the purchase of SAF, as well as those supporting the associated SAF claims. In particular, the verifier should check:
  - Sustainability: That the AO has appropriate documentation to demonstrate the sustainability attributes of all SAF quantities purchased included in the report such as the documentation required for the purpose of EU ETS declarations or other MBMs. This includes, but is not limited to, the PoS and/or the PoC.
  - Traceability: the aforementioned sustainability documentation should allow the verifier to confirm traceability. Although it is not the role of the verifier to check the traceability of the whole supply chain; the verifier should be able to see in the associated sustainability documentation the name of the AFS, VAT number and Batch number of the RFEUA eligible fuel purchased.
  - Proof of purchase and delivery of the declared amounts: such elements can typically be demonstrated through purchase invoices, product transfer documents and transaction reports. In order to verify delivery, the VB should pay special attention to the identified delivery point/location. In all cases, the document demonstrating purchase or delivery will provide a cross-reference and be consistent with the proof of sustainability documents (i.e.: batch number or reference). The purpose is to ensure that all volumes that are claimed to be used by the AO can demonstrate their sustainability attributes as well.
  - Monitoring and reporting under MBMs: the verifier may evaluate the level of maturity of the procedures to monitor the volumes of SAF. One element which may increase the confidence of the verifier on the AO's procedures is the establishment of clear written and approved procedures to monitor SAF purchases under an MBM. The verifier should always remain conscious of the fact that the scope of the monitoring and the eligibility of the fuels may be different in different systems.
- Materiality refers to quantities that are considered significant, if their omission or misstatement could affect the calculation of Column G. The recommendation would be to use the materiality level threshold of 5 % of the total RFEUA reportable flights. Should they consider it necessary, CAs may provide further indication/guidance on materiality.
- In principle, the verifier should carry out site visits (either on-site or virtual site) to the aircraft operator as part of the verification.
- The verifier should report issues in the verification report. These include outstanding misstatements, non-conformities, non-compliance along with the recommendations for improvements.
- Along with verification report, the verifier should provide the accreditation certificate to AO to demonstrate they are accredited under EU ETS aviation activity.

3.3.2 RFEUA Verification Report Template

The verifier shall issue a verification report to the AO for each RFEUA report that has undergone verification. To support consistency and harmonisation across MS, EASA a standardised example of the **RFEUA Verification Report Template**[20]. This template provides a transparent and structured approach to reporting verification findings, focusing on key elements that substantiate the verifier's conclusions. It MSs and the AO's confidence in the depth of the verification process. The template ensures that all relevant details are clearly communicated to the for example, any identified misstatements, instances of non-compliance, or the percentage of data gaps in the reported information. Where necessary, the template includes specific guidance for verifiers on how to complete the template and what information is required.

[20] The RFEUA Verification Report Template is published on the EASA website.

3.4 Other considerations

3.4.1 Overview of data gaps and missing information for the purpose of complying with Article 8 RFEUA

3.4.1.1 Definition of data gaps and missing information

In context of RFEUA reporting obligations, data gaps and missing information arise when an AO lacks the necessary reference data sources required to determine fuel data for one or more flights. These instances can result from various issues, such as irregular operations, data feed problems, or system failures. For example, there might be a missing OFP or fuel invoice with no other source available. It could also be due to inaccuracies or unavailability of flight details. Additional data gaps can be identified by verifiers when carrying out verification activities.

The following distinction provides further clarification:

1. **Data sources** (primary and secondary): Documents and electronic or paper-based processes which enable to obtain the required data without calculation (e.g. data available on OFP, fuel systems, invoices…)
    - Primary data source: The default electronic or paper process and documentation used by the AO to record fuel data.
    - Secondary data source: Any other process or documentation that can be used to record fuel data, either upon agreement with the CA or as specified in the MP submitted to the CA.

2. **Data gaps/Missing information:** These refer to flights for which an alternative calculation methodology, such as historical or statistical calculation, is required to obtain the necessary fuel data fields. Such flights count is limited to the number of flights defined by the thresholds.

If the primary data source is missing, a secondary source should be used to record the necessary flight and fuel data. The secondary source must provide an equivalent measurement to the primary source and be recorded at a similar time. Ideally, the AO should use the MP to define and explain the primary and secondary data sources used. This should be communicated to the CA and will support verification process. If no MP exists, the AO must provide this information via email to both the CA and verifiers, clearly identifying the data sources used. The operator is not limited to one secondary data source; with the agreement of the CA, more than one secondary data source may be used. Importantly, using a secondary data source is not considered a data gap or missing information.

In the absence of both primary and secondary data sources, any alternative calculation method used should provide an equivalent measurement to the primary and secondary data sources.

For operational clarity and considering the purpose of the justification required in column H, a distinction is made between data gaps and missing information. In practice, two types of situations may arise when reporting under RFEUA obligations:

1. **Data gaps:** These occur when information relevant to columns A–G of the reporting template is not available, and the AO uses alternative calculation methods, such as historical or statistical reconstruction.
2. **Missing information:** Refers to cases where information relevant to column H is not available, and the AO uses alternative calculation methods such as historical or statistical reconstruction.

The AO should propose and provide detailed information to the CA on how data gaps and missing information are addressed, including the methodology used to estimate or reconstruct the unavailable data. The CA should confirm the proposed approach. The verifier should ensure that the methodology is correctly applied in the report and confirm that the issue has been appropriately identified and treated as a data gap or missing information.

In the absence of a primary data source, it is expected that the AO will have access to secondary data sources sufficient to complete columns A to D of *Tab 1: Fuel Reporting*. Only columns E, F, and H would most likely require the use of alternative calculation method to address data gaps or missing information.

3.4.1.2 Counting the data gap/missing information percentage

The use of an alternative method is considered up to:

1. 5% threshold of total RFEUA reportable flights for data gaps (column A-G);
2. 5% of all flights departing and arriving from UA for addressing missing information where justification (column H) is required.[21]

To calculate the % of

1. Data gap
   a. $$\frac{Count\ of\ flights\ using\ alternative\ calculation\ for\ column\ A{-}G\ AND\ in\ the\ RFEUA\ scope}{Count\ of\ flights\ in\ RFEUA\ scope}$$
2. Missing information:
   a. $$\frac{\begin{array}{c}Count\ of\ flights\ that\ depart\ (within\ RFEUA\ scope) or\ arrive\ (previous\ to\ a\ RFEUA\ scope\ flight)\\ at\ all\ Union\ airports\\ for\ which\ there\ is\ positive\ yearly\ non{-}tanked\ quantity\ (column\ G)\\ AND\ for\ which\ an\ alternative\ calculation\ for\ column\ H\ is\ being\ used\end{array}}{\begin{array}{c}Count\ of\ flights\ that\ depart\ (within\ RFEUA\ scope) or\ arrive\ (previous\ to\ a\ RFEUA\ scope\ flight)\\ at\ all\ Union\ airports\\ for\ which\ there\ is\ positive\ yearly\ non{-}tanked\ quantity\ (column\ G)\end{array}}$$

Note that in both cases, the % of data gaps/missing information disregards the percentage by UA (i.e. UA row in the report) but is calculated considering total number of flights under consideration.

[21] Since the acceptance of justifications under column H is the responsibility of the CAs, AOs are advised to confirm with their respective CA whether the provided justifications are deemed acceptable.

The below example shows an AO having 600 flights within the RFEUA scope (departing flights from UA). Amongst these 600 flights, 20 flights occurred from CCCC to DDDD and another 20 from DDDD to CCCC.

Union Airport Name	ICAO Code of Union Airport	Total flights operated departing from the Union Airport (N° flights)	Total flights hours operated departing from the Union Airport (N° hours)	Yearly aviation fuel required (tonnes)	Yearly actual aviation fuel uplifted (tonnes)	Yearly non-tanked quantity (tonnes)	Yearly tanked quantity for fuel safety rules (tonnes)
UA1	AAAA	250	500.00	5000.00	5000.00	0.00	
UA2	BBBB	150	300.00	3000.00	2700.00	0.00	
UA3	CCCC	100	200.00	2000.00	1000.00	800.00	
UA4	DDDD	100	200.00	2000.00	800.00	1000.00	

Table 3: AO example for data gaps.

Calculation of % data gaps:

For the operations described above, the AO may apply an alternative calculation method for determining columns A to G on a maximum of 30 flights out of the total 600 departing from all its UA.

Total data gap allowed: 600*5%=30 flights

It should be noted that the % applies on the number of flights, therefore, applying an alternative calculation to one or all of the columns (A to G) of the same flight counts as a single data gap.

Calculation of % missing information:

For the operations described above, the AO may apply an alternative calculation method for determining column H on a maximum of 18 flights out of the total 360 flights covered by missing information.

1. 100 departing flights from CCCC
2. 100 departing flights from DDDD
3. 160 flights arriving in either CCCC or DDDD and not already being accounted as departing flights (in previous bullet points 1 and 2), in this example: 40

Total missing information allowed: 360*5%=18 flights

It should be noted that the % applies on the number of flights, therefore, applying an alternative calculation to one or all the parameters (YTFJ, AFS, OFD…) of the same flight counts as one single missing information.

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3.4.1.3 Explanation matrix

Legend
Sources
Data gaps
Missing information

Tab	Column	Description	Source		Alternative calculation	Threshold
			Primary data source	Other secondary data source (upon agreement with the CA)		5%
Tab 1. Fuel Reporting	Column A	Union Airport Name	OFP (n)	Technical logs, flight logs, or other relevant documentation		5% of all RFEUA reportable flights **Data gaps:** These occur when information relevant to columns A–G of the reporting template is not available, and the AO uses alternative calculation methods, such as historical or statistical reconstruction.
	Column B	ICAO Code of Union Airport	OFP (n)	Technical logs, flight logs, or other relevant documentation		
	Column C	Total flights operated departing from the Union Airport (Nº flights)	Internal flight management systems	Eurocontrol CRCO Bills, or ETS support facility		
	Column D	Total flights hours operated departing from the Union Airport (Nº hours)	Internal flight management systems	Eurocontrol CRCO Bills, or technical logs, flight logs, ACARS messages, electronic flight bags or other relevant documentation		
	Column E	Yearly aviation fuel required (tonnes)	Planned Taxi + Trip fuel from the latest OFP signed by the pilot in command		Alternative calculation	
	Column F	Yearly actual aviation fuel uplifted (tonnes)	Measured using fuel suppliers' invoices, fuel slips, technical log or onboard systems	Measured using Fuel Suppliers' invoices, fuel slips or onboard systems	Alternative calculation or Block off (n)-Block on(n-1)	
	Column G	Yearly non-tanked quantity (tonnes)	Calculated directly in the template with a formula			
	Column H	YTFJA (n-1)	OFP (n-1)		Alternative calculation	5% of all flights departing and arriving from all UA where justification (column H) is required **Missing information:** Refers to cases where information relevant to column H is not available, and the AO uses alternative calculation methods such as historical or statistical reconstruction
		YTFJD (n)	OFP (n)		Alternative calculation	
		Yearly fuel required (n-1)	Planned Taxi + Trip fuel from the latest OFP signed by the pilot in command		Alternative calculation	
		AFC	Block off - Block on (Technical logs, flight logs, ACARS messages, electronic flight bags or other relevant documentation.)	Block off - Block or Any EU ETS or CORSIA method for actual fuel consumption calculation	ETS Support facility tool, SET (EU ETS) or CERT (CORSIA) method	

Table 4: Tab 1 explanation matrix on data gaps.

3.4.1.4 Alternative calculation for determining data

As detailed above, in cases where both primary and secondary data sources are unavailable, the AO may use an alternative calculation method to address the data gaps or missing information, provided that the use of such methods remains within the accepted thresholds.

It is recommended that the AO submit a detailed proposal outlining the methodology chosen to address data gaps and missing information. This proposal should be sent to its CA for review and confirmation prior to its use.

To ensure sufficient time for review and confirmation, the request should be submitted as early as possible, and in any case before the submission of the AO's report (by 31 March). The verifier will assess and confirm the correct application of the confirmed methodology during the verification process.

Where to do the request?
While the MP is the preferred channel for obtaining confirmation, the AO may also submit the request directly (i.e. email) to the CA up to the report submission deadline.

When to submit the request?
It is recommended that all requests for the use of alternative calculation methodologies be submitted by the end of January of the reporting year, to allow sufficient time for review and confirmation before the 31 March reporting deadline.

Examples of alternative calculation methodologies (non-exhaustive list):

- Historical approach: Applying averages based on historical data from similar routes, aircraft types, or operational conditions.
    - E.g. if only alternate fuel data is missing, the average should be applied specifically to alternate fuel, not the entire safety fuel.
- Statistical approach: Reconstructing the OFP using consistent parameters and tools to estimate the missing data.

When applying alternative calculation methods, AOs are encouraged to consider the following aspects and discuss them with the CA:

- Minimum number of flights: A statistically valid minimum number of flights must be used to ensure reliability and avoid distortion of averages. It is advisable to define this threshold in consultation with the CA.
- Outlier removal: Criteria for identifying and excluding outliers should be established. These criteria should be reviewed by both the CA and the verifier to ensure accuracy and consistency in the calculation.

Exceptional case – Previous flight operated outside the AO's control/impossibility of applying alternative calculation methods

In the very exceptional case where both primary and secondary data are unavailable, and no alternative calculation is feasible, specifically when the previous flight

- was operated outside the reporting AO's control (e.g. under a different AOC, via wet lease);

- has no equivalent historical data to apply alternative calculation (e.g. unusual flight route).

The AO may, in coordination with its CA, consider all fuel remaining in the tank as *Tanked Fuel Justified(n-1) + OFD(n-1)* for the purposes of completing column H. In such cases, this fuel quantity will not be considered as missing information.

To support this approach, the AO must demonstrate to the CA that all reasonable efforts were made to obtain the missing data. This may include, for example, incorporating specific clauses in wet lease agreements requiring the provision of RFEUA documentation.

3.4.1.5 Exceeding the 5% threshold

In cases where data gaps or missing information exceed the 5% threshold, the AO should:

- State the percentage of data gaps or missing information along with their report; and
- Engage proactively with their CA and verification body to explain the circumstances, including a detailed justification for the absence of both primary and secondary data sources.

The absence of data does not exempt the AO from its reporting obligations under RFEUA. Failure to report may result in penalties imposed by the CAs.

The VB and CA are expected to assess whether the explanations provided are sufficiently detailed to determine whether the data gaps were unavoidable. Additionally, the CA may evaluate what measures have been implemented to reduce the occurrence of data gaps and improve availability.

As part of continuous improvement, CA may require AOs to submit to an improvement report during the following year to outline the steps taken to reduce the data gaps and enhance the accuracy of their data collection and reporting systems.

How to replace missing data?

- **Data gaps**
  - Calculate the data gap percentage of total reportable flights;
  - Replace all missing values using the confirmed alternative calculation;
  - Falling above the 5% data gap threshold should be notified to the CA. The AO should engage with the CA to determine appropriate follow-up actions.
- **Missing information (optional)**
  - Calculate the missing information percentage of all flights departing and arriving from UA where justification (column H) is required;
  - Replace all missing values using the confirmed alternative calculation;
  - Falling above the 5% missing information threshold should be notified to the CA. The AO should engage with the CA to determine appropriate follow-up actions.

Special note for column H calculation:

A justification using column H can be calculated only when all parameters for every flight at each UA relevant to the calculation have either sourced or calculated values. AOs should not, in principle, replace a missing data point with a zero value unless confirmed by their CA.

3.4.2 Requirements for data retention

The Regulation imposes on AOs the burden of proof to justify to the CAs and EASA their compliance with the requirements under Article 5.1 and 5.2 RFEUA. AOs need to therefore assess for how long it is advisable to keep the relevant justifying documents, taking into consideration aspects such as the possibility of administrative or court procedures. AOs should ideally keep the justifying documents for a minimum of four years (i.e. reporting year + three years of data retention). This period may vary between MSs as national rules on enforcement applicable to the sector may prescribe different timelines. MSs should consider the data retention recommendation provided in this section when laying down the rules on penalties applicable to infringements of this Regulation as established in Article 12.1 RFEUA (see Section 4.3 of Commission guidelines on Article 5).

4 Detailed guidance on the template for aircraft operator reporting

Within the framework of RFEUA, the AO must adhere to Article 8 and Annex II and use the reporting template for AOs available on EASA's website.[22] The following sections provide a detailed explanation for each column of the template contained in the *fuel reporting* and *SAF purchase reporting* tabs and point out the sources to be referenced when gathering the required information.

4.1 Reporting template - Tab 1. Fuel reporting

The following table offers a summary of the data sources for Tab 1 – fuel reporting tab.

			Data Sources	
Tab	**Column**	**Description**	**Primary data source**	**Illustrative secondary data source (upon agreement with the CA)**
Tab 1. Fuel Reporting	**Column A**	**Union Airport Name**	OFP (n)	Technical logs, flight logs, or other relevant documentation
	Column B	**ICAO Code of Union Airport**	OFP (n)	Technical logs, flight logs, or other relevant documentation
	Column C	**Total flights operated departing from the Union Airport (Nº flights)**	Internal flight management systems	Eurocontrol CRCO bills, or ETS support facility
	Column D	**Total flights hours operated departing from the Union Airport (Nº hours)**	Internal flight management systems	Eurocontrol CRCO Bills, or technical logs, flight logs, ACARS messages, electronic flight bags or other relevant documentation
	Column E	**Yearly aviation fuel required (tonnes)**	Planned Taxi + Trip fuel from the latest OFP signed by the pilot in command	
	Column F	**Yearly actual aviation fuel uplifted (tonnes)**	Measured using fuel suppliers' invoices, technical log, fuel slips or onboard systems	Measured using fuel suppliers' invoices, technical log, fuel slips or onboard systems
	Column G	**Yearly non-tanked quantity (tonnes)**	Calculated directly in the template with a formula	
	Column H	**YTFJA (n-1)**	OFP (n-1)	
		YTFJD (n)	OFP (n)	
		Yearly fuel required (n-1)	Planned Taxi + Trip fuel from the latest OFP signed by the pilot in command	
		AFC	Block off - Block on (Technical logs, flight logs, ACARS messages, electronic flight bags or other relevant documentation.)	Block off - Block on or any EU ETS or CORSIA method for actual fuel consumption calculation

Table 5: Summary of illustrative data source for Tab 1 of the RFEUA reporting template for AO.

A	B	C	D	E	F	G	H
Union Airport Name	ICAO Code of Union Airport	Total flights operated departing from the Union Airport (N° flights)	Total flights hours operated departing from the Union Airport (N° hours)	Yearly aviation fuel required (tonnes)	Yearly actual aviation fuel uplifted (tonnes)	Yearly non-tanked quantity (tonnes)	Yearly tanked quantity for fuel safety rules (tonnes)

Figure 3: Tab 1 - Fuel reporting tab of the Reporting template for AOs as published on the EASA website.

[22] RFEUA reporting template for aircraft operators published on the EASA website.

4.1.1 Union Airport Name (Column A)

Data to report	Data Source
The AO should report the flights at the departing UA, as defined in Article 3(1) RFEUA, having considered the exclusions and exemptions explained in Section 2.3 of this manual.	AOs should use the name of the UA reflected in the list of UAs published by the Commission and updated on a yearly basis.[23] AOs must ensure they use the latest version of the list.

4.1.2 ICAO Code of Union Airport (Column B)

Data to report	Data Source
The ICAO airport code, or location indicator, is a four-letter code which designates aerodromes around the world.	These codes are defined by ICAO and published quarterly in the ICAO Document 7910. The list of UAs within the scope of RFEUA on DG MOVE website also details the ICAO code per UA.

4.1.3 Total flights operated departing from the Union Airport (Nº flights) (Column C)

Data to report	Data Source
Total flights covered under RFEUA, departing from UAs, having considered the exclusions and exemptions explained in Section 2.3 of this manual. The report must relate to actual performed flights (flights that actually took off from a UA).	The information should be extracted from the relevant internal flight management systems from the operator. Section 2 describes the steps to follow to obtain the number of flights to be reported per UA. The attribution of a flight to a specific reporting period is to be based on the time of departure measured in Coordinated Universal Time (UTC) (see example below).

Example:
If a flight departs from Paris at 23.00 p.m. UTC on 31 December 2024 and lands in Lisbon at 01.30 a.m. UTC on 1 January 2025, the flight should be listed in the 2024 report.

[23] 24/05/2024 List of Union airports established pursuant to Articles 2.4 and 3.1 of RFEUA published by EC.

4.1.4 Total flight hours operated departing from the Union Airport (Nº hours) (Column D)

Data to report	Data Source
AOs need to report the total hours operated and flown during the entire reporting period, from every UA they depart from, for the flights covered under RFEUA, having considered the exclusions and exemptions explained in Section 2.3 of this manual. "Total flight hours operated" is to be interpreted as "block time" or "block-to-block" in hours, which is measured from the time an aircraft first moves for the purpose of taking off (from the moment the aircraft is pushed back from the gate or starts taxiing from its parking stand for take-off) until it finally stops at the end of the flight (the moment it comes to a final stop at a gate or parking stand after landing).	The information should be extracted from the relevant internal flight management systems from the operator, measured in coordinated universal time.

4.1.5 Yearly aviation fuel required (tonnes) (Column E)

Data to report	Data Source
As defined by RFEUA, "yearly aviation fuel required" indicates the amount of aviation fuel referred to as "trip fuel" and "taxi fuel" in Annex IV to Commission Regulation (EU) No 965/2012(14)[24] that is necessary to operate all the flights covered by this Regulation operated by an AO, departing from a given UA, throughout a reporting period and having considered the exclusions and exemptions explained in Section 2.3 of this manual.	AOs should use the final version of the OFP (the version signed by the captain) for each flight subject to RFEUA reporting requirements, to determine the fuel quantities that have been planned for taxi and trip fuel categories.

Note: Distinction between ATC Plan and OFP
The ATC flight plan is the document filed to the Air Traffic Control unit prior to departure to advise the planned route and alternate. They include the departure, en-route, and arrival points as well as information of the aircraft and the AO.

The OFP also includes the route to be flown, but with planned flight times and flight levels considering actual wind components, fuel consumption (at each waypoint), and specifies the taxi, trip and other fuel figures. The OFP also is updated and compared to planned figures inflight by the flight crew with actual timings and fuel consumption to ensure the actual fuel consumption still allows for sufficient fuel on board upon arrival.

[24] Please refer to section 2.4 for further details.

4.1.6 Yearly actual aviation fuel uplifted (tonnes) (Column F)

Data to report	Data Source
AOs should report aggregated quantities of fuel uplifted for all flights from each UA subject to the RFEUA reporting obligations, having considered the exclusions and exemptions explained in Section 2.3 of this manual. Fuel uplift should be understood as the total fuel loaded, regardless of whether it is conventional fuel or SAF.	Each AO should determine the fuel uplift based on one of the following: a) the measurement by the fuel supplier, as documented in the fuel delivery notes or invoices for each flight; or b) data from aircraft onboard measurement systems recorded in the mass and balance documentation, in the aircraft technical log or transmitted electronically from the aircraft to the AO. AOs should use the same fuel density as used for operational and safety reasons, which may be either a standard value of 0.8 kg per litre or the actual density value.

4.1.7 Yearly non-tanked quantity (tonnes) (Column G)

Data to report	Data Source
As defined by RFEUA, "yearly non-tanked quantity" (YNT) means the difference between the yearly aviation fuel required and the actual fuel uplifted by an AO prior to flights covered by this Regulation departing from a given UA, throughout a reporting period. However, the obligation on AOs refers to the 90% uplifting of the "yearly aviation fuel required" (trip and taxi) at a departing UA, and not to the 100% (see Figure 4).Figure 4: Illustration of Yearly Non-Tanked quantity reporting in the reporting template.	Column G of the Template for AO reporting has been formulated as follows to reflect the fuel amount that is missing to reach the 90% threshold (Delta). $= \mathbf{If}\ (\mathbf{FU} \geq \mathbf{90\%} * \mathbf{FR}\ ,\mathbf{0}\ ,\mathbf{90\%} * \mathbf{FR} - \mathbf{FU})$ *Where:* *FR= Fuel Required* *FU= Fuel Uplifted*

Note: Application of the column G calculation
The current version 2.0 of the reporting template made available on the EASA website[25] has an integrated formula to automatically calculate column G and avoid reporting errors and misinterpretation of the column G. AOs must ensure that they use the latest version of the template and that the formulas remain untouched.

In order to allow for effective reporting and a clear understanding of the non-tanked quantities in relation to the uplifting obligation laid down in Article 5.1, and as illustrated below in Figure 4, **only quantities falling below the 90% threshold should be reported under the yearly non-tanked quantity (column G).**

Figure 4 (below) provides an overview of three potential scenarios that an AO might face at a UA.

[25] RFEUA reporting template for aircraft operators published on the EASA website.

1. In the first scenario, the AO uplifts more fuel than it requires yearly and, therefore, the AO does not have to report any yearly non-tanked quantities, indicated as zero in column G.
2. In the second scenario, the AO uplifts at least 90% of the fuel required from that UA, therefore the yearly non-tanked quantity should also be indicated as zero.
3. In the third scenario, the AO reports a yearly uplifted quantity lower than 90% of the required fuel, therefore the amount indicated as yearly non-tanked quantity should be the difference between the required fuel and the uplifted fuel excluding the 10% buffer.

Figure 4: Illustration of Yearly Non-Tanked quantity reporting in the reporting template.

4.1.8 Yearly tanked quantity for fuel safety rules (tonnes) (Column H)

<u>Data to report</u>

AOs need to report the justified yearly tanked quantity by providing the below calculation:

$$\boldsymbol{Column\ H = YTFJ(n-1) - YTFJ(n) + OFD(n-1)}$$

With:

$$\boldsymbol{OFD(n-1) = YFR(n-1) - AFC(n-1)}$$

$YTFJ_{(n-1)}$ = Yearly Tanked Fuel Justified of the flight arriving
$YTFJ_{(n)}$= Yearly Tanked Fuel Justified of the flight departing
$OFD_{(n-1)}$ = Operational Fuel Divergence
$YFR_{(n-1)}$ = Yearly Fuel Required
$AFC_{(n-1)}$ = Actual Fuel Consumption
(n-1) means all flights arriving at the UA
(n) means all flights departing from the UA

<u>Data source</u>

Datapoint	Subset	Source
Yearly Fuel Required (n-1)		OFP (n-1)
Yearly Tanked Fuel Duly Justified (n-1)		OFP (n-1)
Yearly Tanked Fuel Duly Justified (n)		OFP (n)
Actual Consumption(n-1)	Block-Off Fuel	OFP/Technical log (n-1)
	Block-On Fuel	OFP/Technical log (n-1)

(n-1) means all flights arriving at the UA
(n) means all flights departing from the UA

Actual consumption should be understood as:

$$\boldsymbol{AFC = Block\ Off\ Fuel - Block\ On\ Fuel}$$

Additional information can be found in ANNEX A: Explanation of column H.

4.2 Reporting template – Tab 2. SAF purchase reporting

AOs are required to report their SAF purchases in the *Tab 2. SAF Purchase Reporting*. The updated RFEUA template for AOs incorporates new columns (UA, ICAO code for UA, VAT number of the fuel supplier, Fuel conversion process and origin of feedstock).

The following table offers a summary of the data sources for Tab 2 – SAF purchase reporting.

Tab	Column	Description	Recommended Data sources
Tab 2. SAF purchase Reporting	**Column A**	**Union Airport Name**	POS/POC/PTD[26]/Delivery notes
	Column B	**ICAO Code of Union Airport**	POS/POC/PTD/ Delivery Notes
	Column C	**Fuel Supplier**	Fuel Supplier Invoice/ Fuel Supply Agreements/ Offtake Contracts/ Bunker Delivery notes/ POS/POC/PTD
	Column D	**VAT Number of Aviation Fuel Supplier**	Fuel Supplier invoice
	Column E	**Batch Number**	POS/POC/PTD
	Column F	**Amount Purchased (tonnes)**	POS/POC/PTD
	Column G	**Category of eligible fuel for use in aircraft**	Internal Source
	Column H	**Fuel conversion process**	POS/POC/PTD
	Column I	**Feedstock name**	POS/POC/PTD
	Column J	**Origin of feedstock (country)**	POS/POC/PTD
	Column K	**Lifecycle emissions of the Eligible Fuel (gCO2eq/MJ)**	POS/POC/PTD
	Column L	**Eligible Fuel (tonnes) claimed under EU ETS**	AO EU ETS report
	Column M	**Eligible Fuel (tonnes) claimed under CH ETS**	AO CH ETS report
	Column N	**Eligible Fuel (tonnes) claimed under UK ETS**	AO UK ETS report
	Column O	**Eligible Fuel (tonnes) claimed under other MBMs**	AO other MBMs reports
	Column P	**Eligible Fuel (tonnes) not claimed**	Difference between amount indicated in Column F- amounts claimed in columns L,M,N,O

Table 6: Summary of illustrative data source for Tab 2 of the RFEUA reporting template for AO.

[26] Product Transfer Documentation (PTD) is not always accepted by CAs for the purpose of SAF claims. It is recommended to coordinate with CA prior to relying on any documentation.

As an aircraft operator, am I obligated to purchase SAF?

Under RFEUA, AOs are not subject to any obligation to demonstrate a minimum purchase of SAF. The requirement is strictly limited to reporting.
Specifically, AOs must report the total amount of SAF purchased during the reporting period for the purpose of operating flights departing from UAs, regardless of the flight destination, and regardless of whether the SAF has been accounted for by aviation fuel suppliers (AFSs) as part of their mandated volumes under RFEUA.

This reporting obligation applies regardless of whether the AO has claimed, or intends to claim, the SAF under any regulated or voluntary scheme. The relevant criterion is that the SAF was purchased and physically delivered at a UA.

Scope of the SAF reporting

What is SAF defined under RFEUA Regulation?
SAF refers to all sustainable aviation fuels, not only "conventional" SAF, like synthetic aviation fuel or aviation biofuels, but also including low-carbon aviation fuels and renewable hydrogen for aviation as defined in Article 3 of the RFEUA.
While current SAF supply may not yet include all these fuel types, for the purposes of RFEUA report, the term "SAF" should be understood as encompassing all eligible fuels under RFEUA.

What is a SAF purchase?
Only SAF purchases that are substantiated by valid supporting evidence (such as but not limited to Proof of Sustainability-PoS and Proof of Compliance-PoC) should be reported in the SAF tab. This approach is consistent with requirements for SAF fuel claims under Market Based Mechanisms (MBMs), which also mandate such documentation to verify sustainability attributes and compliance for eligible fuels. Any fees paid by AOs that are not directly associated with a verified quantity of SAF that can be verified with a document to prove its sustainability attributes can not be accepted for reporting purposes.

Purchased where?
The quantity reported should be all SAF purchased by the AO at UAs. The location should be the delivery location as stated in the documents used as data sources.

Neat or blended?
All SAF quantities reported must refer to neat SAF. No blended quantity will be accepted in the reporting.

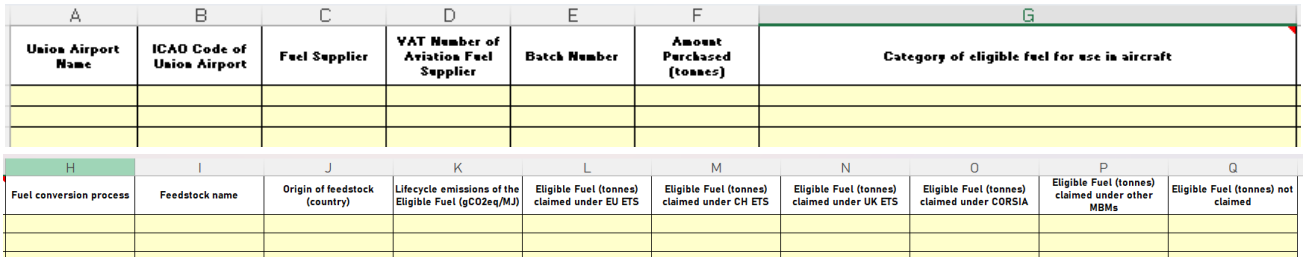
Why getting a POS/POC is critical when purchasing SAF?
It is critical for AOs to request Proof of Sustainability (PoS) and Proof of Compliance (PoC), or equivalent documentation, when purchasing SAF due to stringent reporting and compliance requirements under the different EU regulations (RFEUA and EU ETS). These documents serve as verified evidence that the SAF meets sustainability criteria and has been produced in accordance with recognised certification schemes (e.g.: ISCC, RSB). While RFEUA AOs must simply report SAF purchase, in the EU ETS, SAF with valid documentation can be zero-rated for emissions, allowing AOs to reduce their carbon liabilities and apply for free ETS allowance.

Note that while this documentation will be critical to demonstrate that the SAF purchase complies with the sustainability attributes to be accounted as SAF under RFEUA, the operator will not need to submit this documentation to the CA. It will be the role of the verifier to ensure that each batch of SAF declared in the SAF section of the report has its corresponding sustainability documentation.

Product Transfer Documentation (PTD) is not always accepted by Competent Authorities (CAs) for SAF claims. Therefore, it is recommended to coordinate with the relevant CA prior to relying on any documentation.

Without proper documentation, operators risk losing access to these financial and environmental benefits.

How to obtain the right documentation from the aviation fuel supplier?
As detailed in Article 9.2 RFEUA, "the *aviation fuel suppliers shall provide AOs with relevant, accurate information relating to the reporting period, free of charge, as soon as possible, and in any case not later than 14 February of each reporting year".*



A	B	C	D	E	F	G
Union Airport Name	ICAO Code of Union Airport	Fuel Supplier	VAT Number of Aviation Fuel Supplier	Batch Number	Amount Purchased (tonnes)	Category of eligible fuel for use in aircraft

H	I	J	K	L	M	N	O	P	Q
Fuel conversion process	Feedstock name	Origin of feedstock (country)	Lifecycle emissions of the Eligible Fuel (gCO2eq/MJ)	Eligible Fuel (tonnes) claimed under EU ETS	Eligible Fuel (tonnes) claimed under CH ETS	Eligible Fuel (tonnes) claimed under UK ETS	Eligible Fuel (tonnes) claimed under CORSIA	Eligible Fuel (tonnes) claimed under other MBMs	Eligible Fuel (tonnes) not claimed

Figure 5: Tab 2 - SAF purchase tab of the Reporting template for AOs as published on the EASA website.

4.2.1 Union Airport Name (Column A)

Data to report	Data source(s)
Name of the UA where the batch of SAF was **delivered** to the AO within the reporting period. This information is typically found under the delivery or discharge location section in any of the documents used as data sources.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) Delivery Notes ---- AOs shall use the name of the UA reflected in the list of UAs published by the Commission and updated on a yearly basis. AOs must ensure they use the latest version of the list.

4.2.2 ICAO Code of Union Airport (Column B)

Data to report	Data source(s)
The ICAO airport code, or location indicator, is a four-letter code which designates aerodromes around the world. This code should refer to the airport identified in the previous column A, where the SAF purchase was delivered.	These codes are defined by the ICAO and published quarterly in the ICAO Document 7910. The list of UAs within the scope of RFEUA on DG MOVE website also details the ICAO code per UA.

4.2.3 Fuel Supplier (Column C)

Data to report	Data source(s)
Fuel supplier shall be understood as the AFS as defined in RFEUA. In the absence of information on the obligated AFS (in case different than the	Invoices *(preferred source)* Fuel Supply Agreements or Offtake Contracts Fuel Delivery Documentation such as: Bunker delivery notes

seller), the name of the entity from which the SAF is purchased by the AO should be provided.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD)

4.2.4 VAT number of the fuel supplier (Column D)

The *VAT number of the fuel supplier* is a new addition to the AO RFEUA reporting template. This addition aims to support EASA's efforts to align, as closely as possible, the reports submitted by AOs and AFSs. Including the VAT number helps ensure accurate reporting from both parties and enables the mapping of the full SAF supply chain, from production to purchase.

The VAT number is by nature a unique identifier available and required on all transaction documents that enable to reduce the mismatch between the two RFEUA reports.

Data to report	Data source(s)
The VAT number serves as an identifier of the AFS.	Fuel Invoice or any document where this information is available.

4.2.5 Batch Number (Column E)

Data to report	Data source(s)
Batch number is the unique code that allows to identify and trace the purchased fuel along with its main characteristics.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) --- The batch number can typically be found in the sustainability evidence (Proof of Sustainability or Proof of Compliance) provided by the fuel supplier. These documents, issued under recognised schemes such as ISCC or RSB, accompany each SAF delivery and contain key traceability information.

4.2.6 Amount Purchased (tonnes) (Column F)

Data to report	Data source(s)
Amount of SAF in tonnes, for the batch as stated in the documentary evidence. This is the neat SAF (e.g. synthetic blending component) portion certified as compliant with the sustainability and GHG emissions savings criteria.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) --- The amount of SAF can typically be found in sustainability evidence (Proof of Sustainability or Proof of Compliance) provided by the fuel supplier. In the absence of such documentation, the amount stated in the purchase invoice or product transfer document (PTD) may be used as a reference, provided it can be reasonably linked to a SAF delivery.

4.2.7 Category of eligible fuel (Column G)

Data to report	Data source(s)
The category of SAF purchased, requires identifying from the proposed list, whether the fuel is advanced biofuel, synthetic aviation fuel, low-carbon fuel or another eligible fuel, as defined in the Regulation (Art. 3) (e.g. 'aviation biofuels' for HEFA from used cooking oil). A list for selection is provided in the cells of column G of the template.	Internal Source --- The category of SAF purchased is defined by the feedstock used for its production, in accordance with the definitions of the RED Directive.[27] E.g. **Used cooking oil** 'aviation biofuels' **Animal fats classified as categories 1 and 2** ***'aviation biofuels'***

4.2.8 Fuel conversion process (Column H)

Data to report	Data source(s)
Feedstock to fuel conversion process or pathway used for producing the SAF. A list for selection is provided in the cells of column H of the template.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) --- The conversion process can typically be found in sustainability evidence (Proof of Sustainability or Proof of Compliance) provided by the fuel supplier. In the absence of such documentation, this information should be requested to the fuel supplier.

4.2.9 Feedstock name (Column I)

Data to report	Data source(s)
Raw material / feedstock name that the SAF was produced from.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) --- The feedstock name can typically be found in sustainability evidence (Proof of Sustainability or Proof of Compliance) provided by the fuel supplier. In the absence of such documentation, this information should be requested to the fuel supplier.

[27] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

4.2.10 Origin of Feedstock (Column J)

Data to report	Data source(s)
Country from which the Raw material / feedstock of the SAF was produced from or collected in, by selecting from the available options.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) ----- The feedstock origin can typically be found in sustainability evidence provided by the fuel supplier. In the absence of such documentation, this information should be requested to the fuel supplier.

4.2.11 Lifecycle emissions of the Eligible Fuel (gCO_{2eq}/MJ) (Column K)

Data to report	Data source(s)
AOs should report the lifecycle greenhouse emissions value in gCO_{2eq}/MJ (e.g., 15) for the batch of SAF. It should not be reported as a savings value (e.g. 80%) but as an absolute figure.	Proof of Sustainability (PoS) Proof of Compliance (PoC) Product Transfer Documents (PTD) ----- The lifecycle emission of the SAF batch can typically be found in sustainability evidence provided by the fuel supplier. In the absence of such documentation, this information should be requested to the fuel supplier

4.2.12 Eligible fuel claims (Columns L, M, N, O, P, Q)

AOs may, at their own discretion, choose to claim the use of SAF under MBMs. Currently, neat SAF may be claimed provided that the corresponding eligibility criteria are met, and the appropriate documentary evidence is available.

AOs must indicate, in the relevant columns of the SAF tab, the amount of SAF per batch that has been claimed under each applicable scheme (EU ETS, CH ETS, UK ETS, CORSIA or others) during the same reporting period. For example, for the 2025 reporting period, operators must report the total amount of SAF purchased during 2025 and specify how much of that SAF has been included in the emissions reports submitted under applicable MBMs regarding the same year (2025). A claim refers to any intention, during the reporting year, to use SAF for compliance under a given scheme for the corresponding reporting period, regardless of whether the operator AO has received official acceptance of the claim, which may occur after the RFEUA report has been submitted.

“Other MBMs” refers to any other market-based mechanism through which the use of SAF is considered for compliance with emission reduction targets or provides an economic incentive for SAF usage or purchase.

The total amount of SAF reported in column F must match the sum of the quantities specified in columns L, M, N, O, P and Q of the template.

5 ANNEX A: Explanation of column H

5.1 Formula deep dive

RFEUA, in Article 5.2, takes into account the fact that fuel tankering, at times, occurs in order to comply with fuel safety rules, such as those laid down in Commission Regulation (EU) No 965/2012, and in such cases is justified by safety reasons. For RFEUA, the AO may justify non-compliance with the requirement to uplift at least 90% of the "yearly aviation fuel required" at a given UA through the quantity reported in column H. In other words, Column H aims at justifying column G.

Two non-uplifting reasons exists: (1) fuel previously tanked for safety reasons, and (2) fuel divergence from actual operational consumption against planned fuel quantities.

1. Fuel previously tanked for safety reasons: the fuel that has been previously tanked for safety reasons (uplifted in previous flights) and that could prevent the AO from meeting the refuelling obligation laid down in Article 5.1 of RFEUA for full or part of the yearly non-tanked quantities reported by the AO in column G per UA.
2. Operational Fuel Divergence (OFD): This refers to the quantity of fuel resulting from the difference between actual fuel consumption and the planned required fuel. Such divergence typically arises from operational fuel savings achieved during the flight (for example, air traffic control shortcuts or improved weather conditions), or from additional fuel burn caused by factors like extended delays or unexpected congestion at the airport. The OFD must be included in the justification provided in column H, to ensure it is not mistaken for economic fuel tankering.

The above considerations can be found in the formula for column H as illustrated below:

(1) Safety fuel consideration — (2) OFD

$$\boldsymbol{Column\ H = YTFJ(n-1) - YTFJ(n) + OFD(n-1)}$$

$$\boldsymbol{OFD(n-1) = YFR(n-1) - AFC(n-1)}$$

$YTFJ_{(n-1)}$ = Yearly Tanked Fuel Justified of the flight arriving
$YTFJ_{(n)}$= Yearly Tanked Fuel Justified of the flight departing
$OFD_{(n-1)}$ = Operational Fuel Divergence
$YFR_{(n-1)}$ = Yearly Fuel Required
$AFC_{(n-1)}$ = Actual Fuel Consumption
(n-1) means all flights arriving at the UA
(n) means all flights departing from the UA

The Commission guidelines provide additional explanations including how the AO must justify the aviation fuel amounts falling below the 90% threshold for fuel safety reasons. The aviation fuel amounts included in the 10% buffer as stated in Article 5.1 RFEUA do not need justification.

As illustrated below, the quantity calculated in column G (+10% buffer) is equal to the difference between the arriving and departing tanked fuel justified (TFJ) plus the OFD.

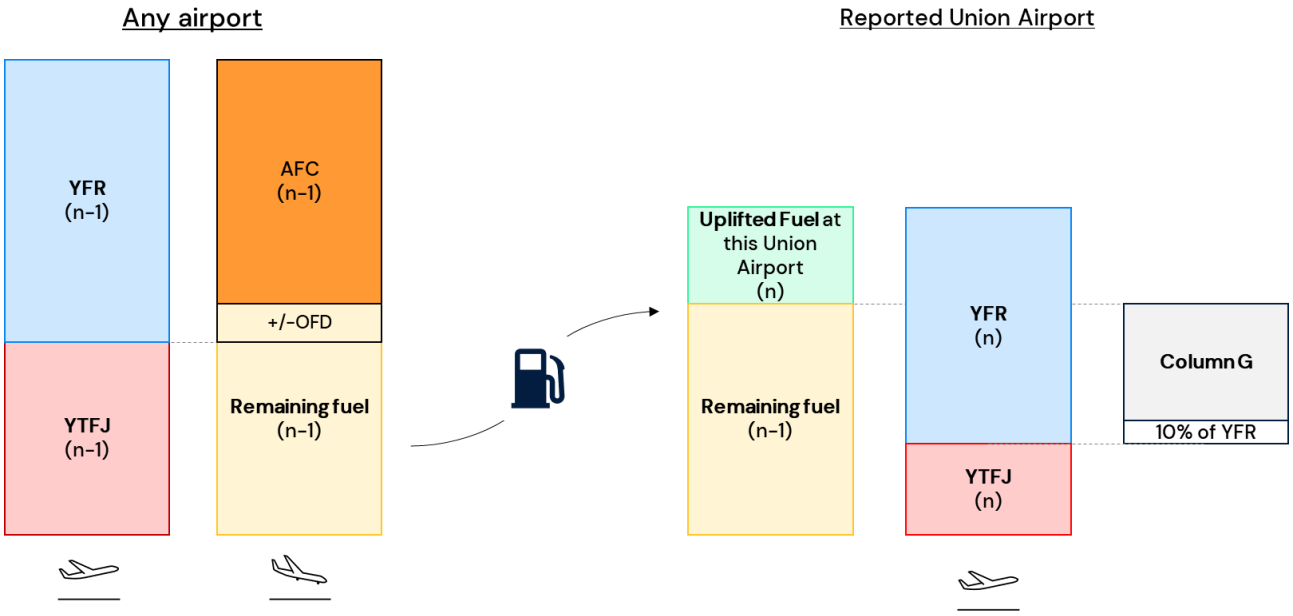


Figure 6: Illustrative constitution of yearly non- tanked quantity fuel

5.2 Yearly tanked fuel justified (YTFJ)

As detailed in Article 5.2 of the RFEUA, "*an aircraft operator may fall below the threshold in paragraph 1 of this Article where necessary for reasons of compliance with applicable fuel safety rules*." As a means of justification, the AO can provide a quantity of fuel tanked (i.e. previously uplifted) that is duly justified and that will be used in the calculation of the quantity to be reported in column H.

The **yearly tanked fuel justified (YTFJ)** corresponds to the amount of fuel provided in the following fuel categories[28] of an OFP for an arriving and a departing flight from a UA:

- the minimum legally required fuel amount, minus trip fuel + taxi fuel;
- plus the discretionary fuel;
- plus the extra fuel (understood under the EASA definition as any fuel planned for anticipated delays or specific operations constraints that can be predicted).

In addition to the normal commercial operations, a departing flight within the scope of RFEUA might exceptionally be preceded by an exceptional fuel uplift which is not related to a previous flight operation. In these very exceptional scenarios where the AO does not uplift in a UA due to that fuel previously tanked for a justifiable reason, that fuel quantity already in the tank would be considered as "tanked fuel justified" as long as the AO can provide supporting documentation.

5.3 Support documentation for the justification

As detailed above, the YTFJ is a combination of fuel categories calculated pre-flight and/or by the captain-in-command. Additional documentation could be requested by the VB and CAs to justify the amount.

Contingency, alternate, final reserve and **additional fuels** are all safety fuel categories resulting from a strict calculation defined by both EASA and ICAO. These are calculated pre-flight by fuel planning systems and approved by national authorities. They are reported on the OFP and reviewed by the captain in command.

[28] Refer to Table 7.

Considering the level of safety and the regular audits performed by authorities to ensure the quality and accuracy of the calculation, any amount of fuel falling under one of these categories and duly reported in the OFP or any other useful documentation should, in principle, be considered as justified.

The **discretionary fuel** is the quantity of fuel at the sole discretion of the captain in command. Pilots generally account for the latest weather changes, operational issues and other constraint that might result in additional burning for the flight in question. As detailed in the Commission guidelines, an AO must not instruct the pilot to uplift more aviation fuel in a specific airport for economic reasons and load it as discretionary fuel. Considering this, any fuel quantity duly reported under discretionary fuel in the OFP should be considered as justified.

Extra Fuel is a category only defined by EASA and not by ICAO's Annex 6. In fact, Commission Regulation (EU) No 965/2012 defines extra fuel as the amount of fuel *for anticipated delays or specific operational constraints that can be predicted.* In other fuel schemes these amounts might fall under other categories. There is not always a need for extra fuel and the use of this category is always unique to specific circumstances. These amounts of fuel depend on the type of event occurring and can never be predicted. However, considering the predictable nature of the constraints, when an AO uses extra fuel, it should be able to justify it using supporting documentation detailing the context of the flight in question. This fuel category should, in principle, be considered as justified by any relevant documents as referred to in the Commission guidelines section 4.2 under ***Other Documents***.

Other justifiable categories:
It may happen that some AOs have different fuel categories that could logically fall under YTFJ as existing for operational or safety reasons. The AO may, after submission and acceptance of its CA, consider these additional categories as part of the YTFJ and therefore account it in the calculation of column H.

Any other fuel that is hidden and/or does not belong to the abovementioned categories and that would not be justified would be considered as economic fuel tankering under RFEUA.[29]

The table below details the minimum supporting documentation that could be required by verifiers and CAs to validate a claim to justify quantities of fuel under each of the categorisation, for the purposes of justifying non-tanked quantities of fuel in each UA for reasons of compliance with applicable fuel safety rules.

[29] Refer to section 4.4 of Commission guidelines.

International categorisation	ICAO Annex 6 fuel categorisation	EASA AMC fuel categorisation	RFEUA categorisation	Supporting Documentation
Minimum legal fuel	Taxi fuel	Taxi fuel	Required fuel	At least the OFP
	Trip fuel[30]	Trip fuel		
	Contingency fuel	Contingency fuel	Yearly Tanked Fuel Justified under Art 5(2) YTFJ	
	Destination alternate fuel	Destination alternate fuel		
	Final reserve fuel	Final reserve fuel		
	Additional fuel	Additional fuel		
Commander's discretionary fuel	Discretionary fuel	Discretionary fuel		
Extra fuel	Not a separated category but understood as fuel accounted for the operating conditions to 4.3.6.2 of ICAO Annex 6	Extra fuel		At least the OFP and/or any other document as defined in the Commission guidelines
Other fuel	N/A	N/A	Economic tankering	Not justifiable (i.e. amounts beyond the 10% buffer)

Table 7: Summary table of supporting documentation to be provided per each fuel category.

5.4 Accounting for ALL flights departing from and arriving at a Union airport for the calculation of column H

AOs must include all flights departing from and arriving at a UA when calculating column H. This applies specifically to UAs where the operator falls below the 90% uplift threshold on a yearly basis and reports a positive yearly non-tanked quantity in column G.

The column H calculation include:

- All in-scope flights departing from the UA where column G>0
- Their respective preceding flights (even if no uplift occurred or uplift was below 90%)

[30] Trip fuel as defined in the ICAO Annex 6 but excluding the fuel *accounted for the operating condition 4.3.6.2* of the Annex.

This ensures that the yearly tanked quantity for fuel safety rules (Column H) reflects the full operational picture.

Regardless of the uplift ratio $\frac{\boldsymbol{fuel\ uplifted}}{\boldsymbol{fuel\ required}}$ for individual flights, if a flight departs from a UA where the yearly non tanked quantity is below the 90% threshold, it must be included in the column H calculation. Flights should not be excluded based on uplift percentage per flight. This prevents selective reporting and ensures transparency in fuel tankering practices.[31]

5.5 Possible outcomes for column H

The formula for the calculation of column H is meant to identify justified quantities to potentially reduce penalties if quantities are positive and approved by CA. An AO may apply correctly the formula and still get positive and/or negative results. This is perfectly normal.

Indeed, considering no economic tankering, the result of the column H formula applied flight by flight can be:

Positive (Column H >0) if	Negative (Column H <0) if	Null (Column H = 0) if
$YTJF_{(n-1)} > YTJF_{(n)}$ and OFD =0	$YTJF_{(n-1)} < YTJF_{(n)}$ and OFD =0	$YTJF_{(n-1)} - YTJF_{(n)} = -OFD$
$YTJF_{(n-1)} = YTJF_{(n)}$ and OFD >0	$YTJF_{(n-1)} = YTJF_{(n)}$ and OFD <0	$YTJF_{(n-1)} = YTJF_{(n)}$ and OFD >0

Note that other combinations are possible.

At the yearly level, column H should reflect the sum of all individual flight calculations (including their preceding flights), regardless of whether the result is positive or negative.

Excluding flights with negative results could artificially inflate the reported tanked quantity, potentially masking economic tankering. Including all flights ensures a balanced and accurate correction for fuel safety justifications.

Example of a demonstration of compliant flight exclusion

The following example illustrates the risk of excluding compliant flights. It considers a simplified reality with no economic tankering and no Operational Fuel Divergence (OFD).

[31] In case of missing data for all flights, refer to section 3.4.1.

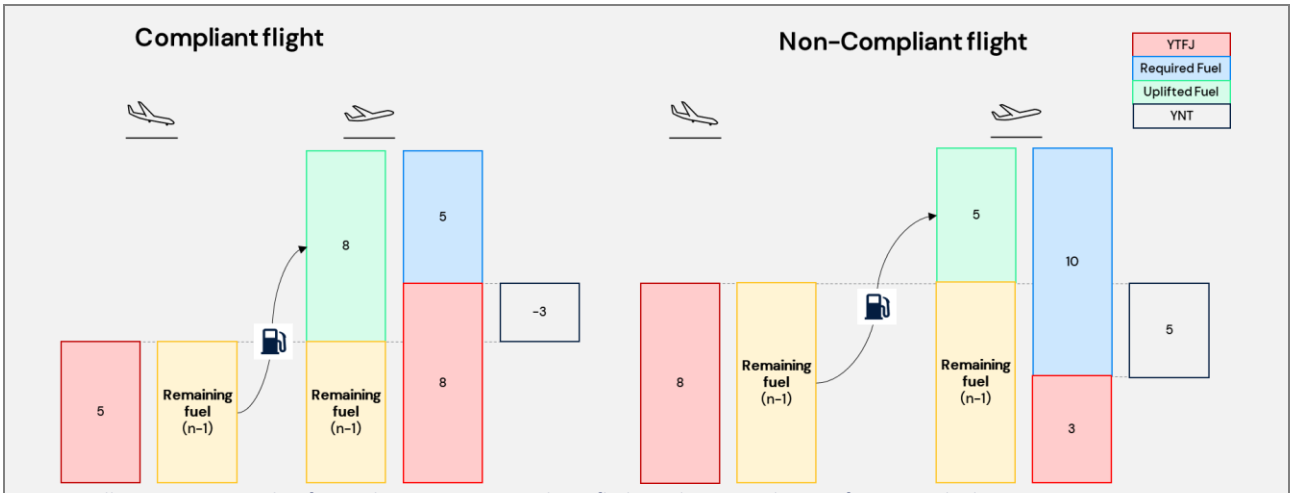


Figure 7: Illustrative example of compliant vs non-compliant flight inclusion in the justification calculation.

The table below is the corresponding reporting that the aircraft must perform for this illustrative example of a UA with two departing flights. Option 1 excludes all compliant flights while Option 2 includes ALL flights departing from this UA. As highlighted below, Option 1 enables the AO to demonstrate 5 tonnes in column H, which is highly above the YNT+10% buffer. This first option would enable an AO to tanker up to 4.5 tonnes of economic tankering justified through column H (3 tonnes + 1.5 tonnes of the 10% buffer). Option 2 provides the exact quantity of YNT+10% buffer which is the exact quantity to be justified. In this case, the AO has a 1.5 tonnes margin which corresponds to the 10% buffer provided by the Regulation.

Option 2 is the adequate approach to the calculation of column H. Option 1 is an example of what <u>not</u> to do.

	Union Airport Name	ICAO Code of Union Airport	Total flights operated departing from the Union Airport (N° flights)	Total flights hours operated departing from the Union Airport (N° hours)	Yearly aviation fuel required (tonnes)	Yearly actual aviation fuel uplifted (tonnes)	Yearly non-tanked quantity (tonnes)	Yearly tanked quantity for fuel safety rules (tonnes)
	Union Airport	XXXX	2.00		10+5	8+5	2-1.5	
1	Union Airport	XXXX	2.00		15.00	13.00	0.50	5.00
2	Union Airport	XXXX	2.00		15.00	13.00	0.50	2.00

Table 8: Example of Reporting template filled using the illustrative example.

5.6 Column H result, what to do with it?

By using the formula detailed hereabove for the justification in column H, the AO will report both positives and negative value.

Considering only positive value as a reduction of the penalty.
It remains up to the CA of each MS to decide what to do with positive and negative value in column H per UA. However, EASA's recommendation is to only consider positive value in order to reduce the penalty of the AO. Negative value would still need to be reported but would not increase the AO's penalty.

Column H application airport by airport
The justification calculated in column H is a result of flights performed on an airport basis. Therefore, the reduction of penalty calculated in column H of a row of the report (which means in a single UA) only applies to that specific airport. In other words, an excess in justification in column H in airport AAAA cannot justify other yearly non tanked quantity in airport BBBB.

How to submit a justification to its Competent Authority?
As detailed above, each use of column H should be accompanied by a detailed justification submitted to and approved by its CA.

To share this documentation, the AO has access to a (new) feature in the Portal after the submission of the RFEUA report. All details can be found in the Portal knowledge base.

5.7 Example for column H

The below illustrative examples consider three turnarounds happening at the same UA, in which some have economic tankering, and some have OFD. These three illustrative turnarounds consider three departing flights and their respective previous flights (arriving flights to that UA) that need to be reported under the same row of the template. Considering there are no other flights from that UA, the three departing flights would constitute the yearly flights of the AO from that UA to be reported.

Legend

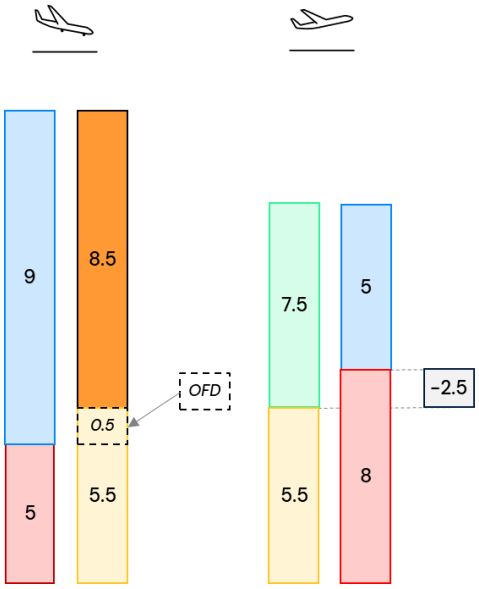
Tanked Fuel Justified	YNT
Required Fuel	Remaining fuel
Uplifted Fuel	Economic tankering
Operational Fuel Divergence	Actual Consumption

Two different scenarios are illustrated to reflect the reporting in column H for yearly tanked quantity for fuel safety rules in order to justify yearly non-tanked quantities:

5.7.1 Scenario 1 where some flights are performed with economic tankering

Flight 1 (no economic tankering and operational savings):

In this first turnaround, the AO had performed a flight to the UA with no economic tankering. In addition to this, it achieved an operational fuel saving during the flight which translates into a positive OFD. In other words, the aircraft consumed less fuel than the fuel planned as required fuel in the OFP of the arriving flight.

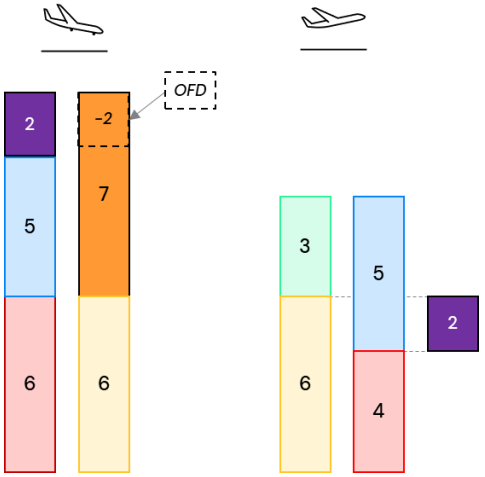


Column H= (5-8) + (9-8.5) = -2.5

Figure 8: Example of application of the formula in column H for the first turnaround reported in a single UA (Scenario 1).

Flight 2 (economic tankering and operational losses):

In this second turnaround, the AO had uplifted additional fuel of 2 tonnes as economic tankering. In addition, during the flight arriving in the UA, the AO consumed more fuel than the fuel planned as required fuel in the OFP of the arriving flight. Therefore, the OFD is negative.

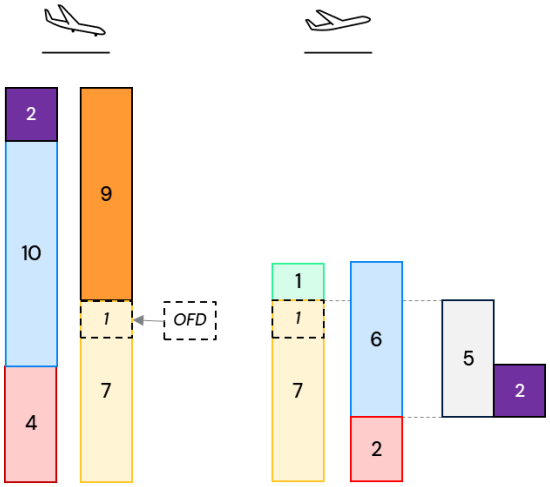


Column H= (6-4) + (5-7) = 0

Figure 9: Example of application of the formula in column H for the second turnaround reported in a single UA (Scenario1).

Flight 3 (economic tankering and operational savings):

In this third turnaround, the AO had economic tankering and operational savings. The difference between the safety fuel of the flight arriving and the safety fuel of the flight departing is 2 tonnes. In addition to this, the AO optimised its fuel consumption in the flight arriving, which results in an OFD of 1 tonne. By summing both for the calculation of column H, the tanked quantity for fuel safety rules is equal to 3 tonnes. This leaves the AO to fall short by 2 tonnes which corresponds to the economic tankering.



Column H= (4-2) + (10-9) = 3

Figure 10: Example of application of the formula in column H for the third turnaround reported in a single UA (Scenario 1).

Table 9 below illustrates how the AO should report the justification of yearly tanked quantity for fuel safety rules (column H):

- Column H is 0.5 tonnes (YTFJ + OFD)
  - Aggregated OFD is -0.5 tonnes *(0.5-2+1)*
  - YTFJ is equal to 1 tonne *((5+6+4) -(8+4+2))*

By applying the justification formula to the above scenario of three turnarounds from a single UA, the AO can justify 0.5 tonnes of yearly tanked fuel quantity for safety rules. By considering the 4 tonnes of economic tankering, that cannot be justified, the yearly tanked quantity (4.5 tonnes) is exactly equal to the difference between the yearly aviation fuel required and the yearly uplifted fuel quantities. In this case, the AO would have 2.4 tonnes of fuel that have not been duly justified (difference between 2.9 tonnes of fuel reported as yearly non-tanked (YNT) and 0.5 tonnes (column H) = 2.4 tonnes).

Column A to D

Union Airport Name	ICAO Code of Union Airport	Total flights operated departing from the Union Airport (N° flights)	Total flights hours operated departing from the Union Airport (N° hours)
Union Airport	XXXX	3.00	

Column E to H

Yearly aviation fuel required (tonnes)	Yearly actual aviation fuel uplifted (tonnes)	Yearly non-tanked quantity (tonnes)	Yearly tanked quantity for fuel safety rules (tonnes)
(5+5+6)	(7.5+3+1)	2.90	(5+6+4)-(8+4+2)+((9+5+10)-(8.5+7+9))
16.00	11.50	2.90	0.50

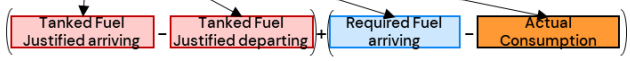
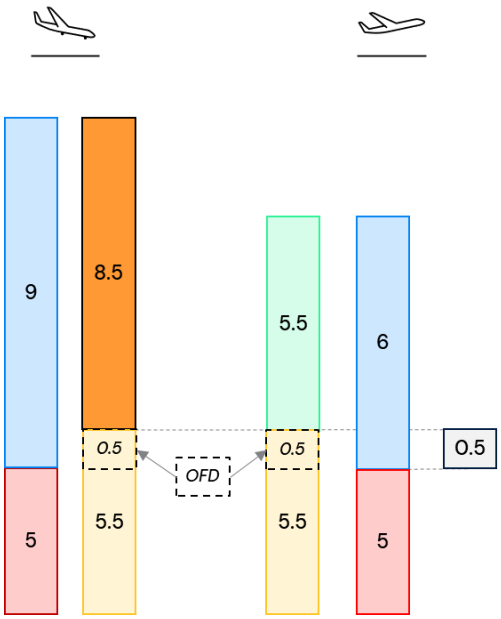


Table 9: Sample of reporting justification of Yearly tanked quantity for fuel safety rules (column H).

5.7.2 Scenario 2 where there is no economic tankering

Flight 1 (no economic tankering and operational savings):

In this first turnaround, the AO had consumed 0.5 tonnes of fuel less than planned in the flight arriving to the UA (OFD=0.5). As safety fuel for the flight arriving is equal to the safety fuel of the flight departing, the only fuel to consider in column H is the OFD.

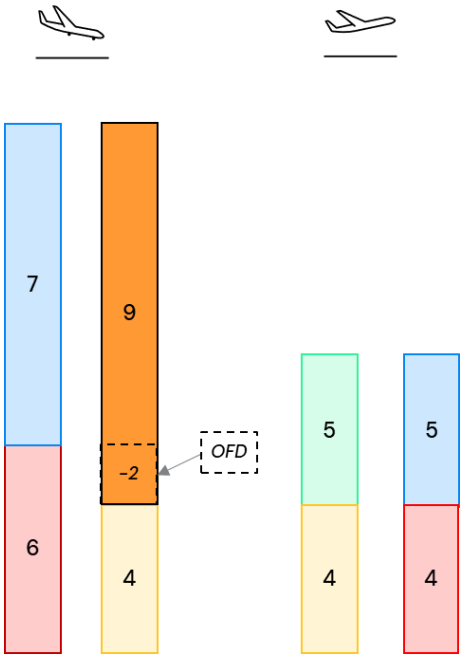


Column H= (5-5) + (9-8.5) = 0.5

Figure 11: Example of application of the formula in column H for the first turnaround reported in a single UA (Scenario 2).

Flight 2 (no economic tankering and operational losses):

In this second turnaround, the AO had consumed more fuel than the fuel planned as required fuel in the OFP of the arriving flight. The OFD is equal to -2 tonnes. The tanked quantity for fuel safety rules (column H) is equal to zero because the OFD compensates the safety fuel quantity difference (also 2 tonnes).



Column H= (6-4) + (7-9) = 0

Figure 12: Example of application of the formula in column H for the second turnaround reported in a single UA (Scenario2)

Flight 3 (no economic tankering and operational savings):

The calculation of column H for this third turnaround is a result of a difference (4 tonnes) between the safety fuel of the flight arriving (6 tonnes) and the safety fuel of the flight departing (2 tonnes) plus the operational fuel saving achieved during the flight arriving, (OFD=1 tonnes). Overall, the tanked quantity for fuel safety rules is equal to 5 tonnes.

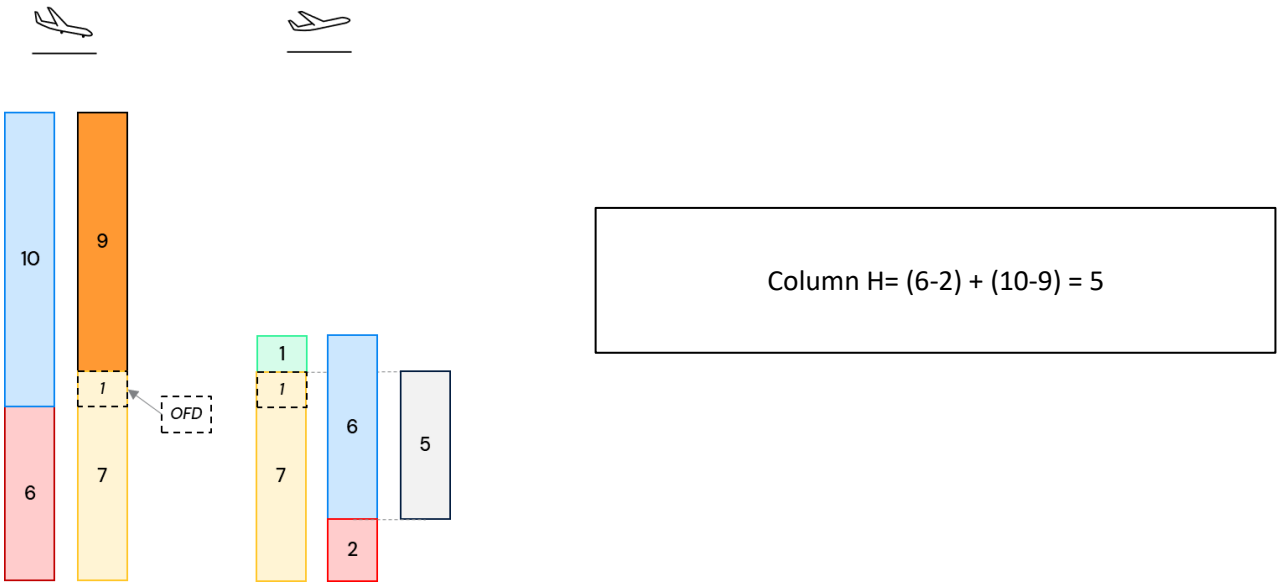


Figure 13: Example of application of the formula in column H for the third turnaround reported in a single UA Scenario 2)

Table 10 below illustrates how the AO should report the justification of Yearly tanked quantity for fuel safety rules (column H):

- Column H is 5.5 tonnes (YTFJ + OFD)
  - Aggregated OFD is -0.5 tonnes *(0.5-2+1)*
  - YTFJ is equal to 6 tonnes *((5+6+6) -(5+4+2))*

By applying the justification formula to the above example of three turnarounds from a single UA, the AO is able to justify 5.5 tonnes of yearly tanked fuel quantity for safety rules. Considering there is no economic tankering, the yearly tanked quantity justified (5.5 tonnes) is exactly equal to the difference between the yearly fuel required and the yearly uplifted fuel quantities. In this case, the AO would have justified 5.5 tonnes through the calculation of the column H and would therefore fully justify the 3.80 tonnes of yearly non-tanked quantity to the condition that all documentation proofs and verifications are correct.

Column A to D

Union Airport Name	ICAO Code of Union Airport	Total flights operated departing from the Union Airport (N° flights)	Total flights hours operated departing from the Union Airport (N° hours)
Union Airport	XXXX	3.00	

Column E to H

Yearly aviation fuel required (tonnes)	Yearly actual aviation fuel uplifted (tonnes)	Yearly non-tanked quantity (tonnes)	Yearly tanked quantity for fuel safety rules (tonnes)
(6+5+6)	(5.5+5+1)	3.80	(5+6+6)-(5+4+2)+((9+7+10)-(8.5+9+9))
17.00	11.50	3.80	5.50

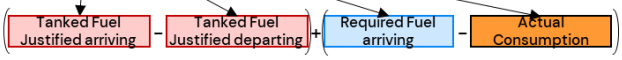


Table 10: Sample of reporting justification of Yearly tanked quantity for fuel safety rules (column H) for three turnarounds without economic tankering.

List of Abbreviations

AFC	Actual Fuel Consumption
AFS	Aviation Fuel Supplier
AO	Aircraft Operator
ATC	Air Traffic Control
CA	Competent Authority
CRCO	EUROCONTROL's Central Route Charges Office
DG MOVE	Directorate-General for Mobility and Transport
EASA	European Union Aviation Safety Agency
EU	European Union
FMT	Fuel Monitoring Tool
FR	Fuel Required
FU	Fuel Uplifted
ICAO	International Civil Aviation Organization
ISCC	International Sustainability & Carbon Certification
MBM	Market Based Mechanisms
MP	Monitoring Plan
MRV	Monitoring, Reporting and Verification
MS	Member State
MTOM	Maximum Take Off Mass
OFD	Operational Fuel Divergence
OFP	Operational Flight Plan
PoC	Proof of Compliance
PoS	Proof of Sustainability
PTD	Product Transfer Documents
RFEUA	ReFuelEU Aviation
RSB	Roundtable on Sustainable Biomaterials
SAF	Sustainable Aviation Fuel
TFJ	Tanked Fuel Justified
UA	Union Airport
UTC	Coordinated Universal Time
VB	Verification Body
VAT	Value Added Tax
YFR	Yearly Fuel Required
YNT	Yearly Non Tanked Quantity
YTFJ	Yearly Tanked Fuel Justified