Guidance Document

Reporting of Aviation Fuel Suppliers under Article 10 of ReFuelEU Aviation

Version 1.0 - updated 17/11/2025 (Valid for the 2025 reporting period onwards)

European Commission

With the support of

EASA

ICF

Version History

Date	Version status	Remarks
17 November 2025	Published	First version

Table of Contents

Disclaimer

This guidance document represents the views of the Commission services at the time of publication. It aims to illustrate best practices and provide basic technical explanations regarding the reporting obligations of aviation fuel suppliers under Article 10 of Regulation (EU) 2023/2405, otherwise referred to as 'the Regulation' or 'RFEUA'.

This guidance document is not legally binding and does not commit the European Commission.

1 Introduction

1.1 Purpose this guidance document

This guidance document is intended to facilitate the understanding of the reporting obligations, procedures, timelines, and responsibilities applicable to aviation fuel suppliers under Article 10 of Regulation (EU) 2023/2405, hereafter referred to as 'RFEUA' or 'the Regulation'. The guidance is provided as support for aviation fuel suppliers obligated to report, verifiers acting on behalf of aviation fuel suppliers where relevant, and competent authorities.

The guidance document may be revised as necessary under the supervision of the European Commission (DG MOVE). A version history is provided at the beginning of the document, detailing all changes made. Aviation fuel suppliers are advised to ensure they are using the most recent version of the guidance and to remain in close contact with the competent authorities.

1.2 Structure of this guidance document

This guidance document is structured into the following chapters:

- **Chapter 2** provides a high-level overview of the reporting process, reporting obligations, roles, and timelines, as well as clarifications on several key aspects impacting the reporting obligations;
- **Chapter 3** provides detailed instructions for completing Reporting Template A and the reporting of information related to aviation fuel and SAF supplied at Union airports;
- **Chapter 4** provides detailed instructions for completing Reporting Template B and the methodology for determining and reporting the relevant properties of aviation fuel supplied to Union airports;
- **Annex I** features a glossary with the definition of key acronyms and terms.

1.3 Where to find further information

ReFuelEU Aviation Regulation	**ReFuelEU Aviation – legal text** Includes important definitions (Article 3), obligations of aviation fuel suppliers to supply minimum shares of SAF (Article 4), as well as reporting obligations for aviation fuel suppliers (Article 10).
ReFuelEU Aviation webpage	**ReFuelEU Aviation webpage** European Commission webpage on the ReFuelEU Aviation Regulation. Includes important information related to the implementation of the Regulation, including the list of aviation fuel suppliers in scope of the Regulation and the EU Member States each aviation fuel supplier is assigned to.
ReFuelEU Aviation FAQ	**ReFuelEU Frequently Asked Questions (FAQs)** Supporting technical FAQs on the interpretation of certain provisions of the Regulation.

2 General guidance on reporting process

2.1 Reporting obligations of aviation fuel suppliers

Who is required to report under Article 10?

RFEUA Article 10 puts reporting obligations on aviation fuel suppliers.

RFEUA (Article 3.19) stipulates that 'aviation fuel supplier' *means a 'fuel supplier' as defined in Article 2, second paragraph, point (38), of Directive (EU) 2018/2001, supplying aviation fuel or hydrogen for aviation at a Union airport*.

Directive (EU) 2018/2001[1] – hereafter EU RED – defines a 'fuel supplier' as *'an entity supplying fuel to the market that is responsible for passing fuel through an excise duty point or, in the case of electricity or where no excise is due or where duly justified, any other relevant entity designated by a Member State.'*

On its ReFuelEU Aviation webpage, the European Commission publishes a list of aviation fuel suppliers in scope of RFEUA for each reporting period. Note however that the list is indicative, and aviation fuel suppliers not listed are not necessarily exempt from their respective obligations under RFEUA. It ultimately remains the responsibility of the individual aviation fuel supplier to determine whether they are in scope of the Regulation. The list also indicates the EU Member State each aviation fuel supplier is assigned to.

What are aviation fuel suppliers required to report under Article 10?

Aviation fuel suppliers are required to report the following information relating to the reporting period:

a) *the amount of aviation fuel supplied at each Union airport, expressed in tonnes;*

b) *the amount of SAF and eligible fuel supplied at each Union airport, and for each type of SAF, as detailed in point (c), expressed in tonnes;*

c) *the conversion process, the characteristics and origin of the feedstock used for production, and the lifecycle emissions of each type of SAF and eligible fuel supplied at Union airports;*

d) *the content of aromatics and naphthalenes by percentage volume and of sulphur by percentage mass in aviation fuel supplied per batch, per Union airport and at Union level, indicating the total volume and mass of each batch and test method applied to measure the content of each substance at batch level;*

e) *the energy content for aviation fuel and SAF and eligible fuel supplied at each Union airport, for each type of fuel.*

[1] 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 (recast).

Note: Definitions for aviation fuels, SAF, and other RFEUA eligible aviation fuels

According to RFEUA, aviation fuels are drop-in fuels manufactured for direct use by aircraft (Article 3.6).

Aviation fuels include conventional aviation fuels (i.e. 'aviation fuels produced from fossil non-renewable sources of hydrocarbon fuels', Article 3.14), SAF (as defined in Article 3.7) as well as other eligible aviation fuels (namely low-carbon aviation fuels, see Article 3.18).

Note that unless otherwise specified, whenever 'SAF' is mentioned in this guidance document, it should be understood as referring also to other RFEUA eligible aviation fuels.

2.2 Reporting timeline and process

By when are aviation fuel suppliers required to report under Article 10?

Aviation fuel suppliers are required to gather the relevant data for the reporting period from 01 January to 31 December ('reporting period') and report these by 14 February of the subsequent year ('reporting year'), as defined in Article 3 (22 and 23) of the Regulation.

For instance, aviation fuel suppliers are required to report by 14 February 2026 (2026 being the reporting year) for the reporting period 01 January to 31 December 2025.

How are aviation fuel suppliers required to report the relevant information under Article 10?

The EU's Union Database (UDB) will be used for the traceability and reporting of SAF as well as for the reporting of aviation fuel amounts and aviation fuel properties.

However, for the 2025 reporting period and until further notice, and as a temporary measure until traceability and reporting is fully implemented in the UDB, the relevant information as per RFEUA Article 10 will be reported by aviation fuel suppliers via the UDB and CIRCABC platforms:

Platform	Used for reporting which information?	Process of information submission
UDB (Union Database)[2]	• **aviation fuel properties supplied to Union airports**, as per Article 10 d)	The aviation fuel supplier has two options of submitting the information as per Article 10 d): a) Enter batches manually in the UDB directly (via the UDB menu 'Report on Aviation fuel properties') b) Enter batches in Reporting Template B (= Excel file that facilitates a bulk upload to the UDB) and subsequent automatic upload to the UDB

[2] To access the UDB, visit:
- UDB Production (= Live) environment - https://webgate.ec.europa.eu/UnionDatabase/
- UDB Testing environment - https://webgate.acceptance.ec.europa.eu/UnionDatabase/

Only the Production environment is suitable for reporting.

CIRCABC (access via the aviation fuel supplier's account in the UDB)	• **aviation fuel amounts** (inclusive of any SAF), as per Article 10 a); • **SAF amounts and characteristics**, as per Article 10 b), c); and • **energy content** for both SAF and aviation fuel, as per Article 10 e)	The aviation fuel supplier is required to enter the required information in Reporting Template A. Reporting Template A should subsequently be uploaded by the aviation fuel supplier to their respective folder on the CIRCABC platform. The respective CIRCABC folder can be accessed through the aviation fuel supplier's UDB account, via navigating to the menu 'Report on SAF, other eligible aviation fuels & totals'.

Note that, to be able to report properly, the aviation fuel supplier should necessarily be registered in the UDB and CIRCABC platforms, assigned an aviation fuel supplier scope in the UDB, and assigned to an EU Member State. Please contact your competent authority in case you encounter issues with registration. A list of competent authorities and their contact data can be found on the ReFuelEU Aviation webpage.

Note: Reporting of all aviation fuel and SAF supplied in one report

Any given aviation fuel supplier will submit only one completed Template A and one completed Template B. Both completed Templates are intended to cover all amounts supplied by the aviation fuel supplier, regardless of where the aviation fuel or SAF is supplied[3] or whether the SAF amount is to be counted towards the RFEUA minimum share of SAF or not.

Note: Ensuring the accuracy of information provided by aviation fuel suppliers

As per RFEUA Article 10, EU Member States are responsible for having the necessary legal and administrative framework in place at national level to ensure that information entered by aviation fuel suppliers in the UDB is accurate.

Aviation fuel suppliers are therefore strongly encouraged to proactively consult with their administering competent authority to be aware of any potential specific procedures put in place by that authority.

2.3 Clarification on key aspects impacting the reporting obligations

2.3.1 Supplied 'to' vs. 'at' Union airports

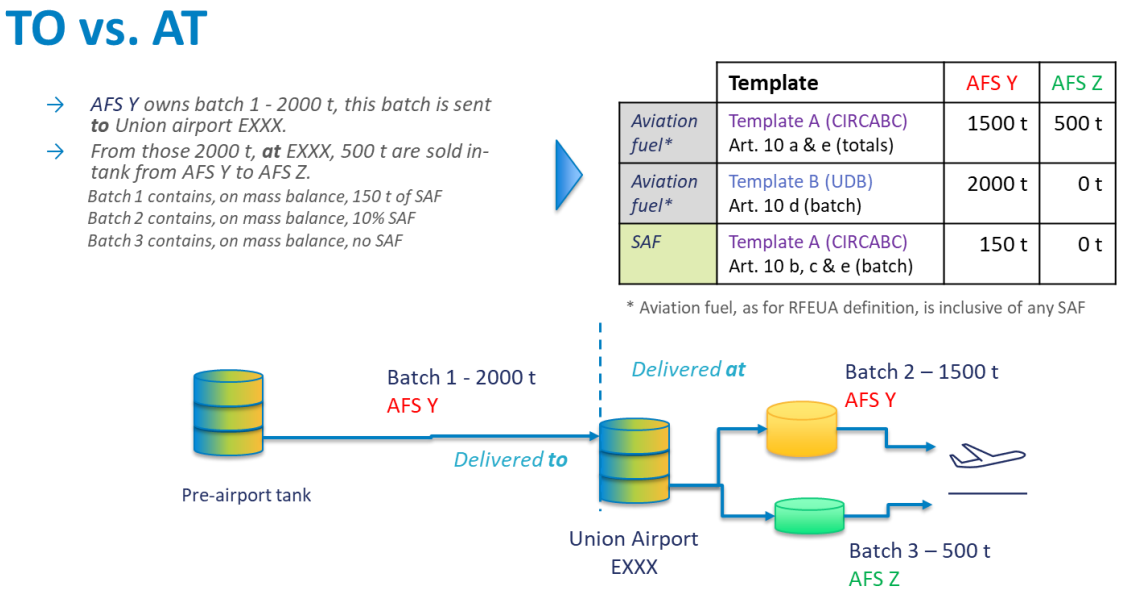
RFEUA Article 10 a), b), c) and e) specifies that the supplied amount of SAF and aviation fuel refers to the amount delivered **at** the Union airport (i.e. referring to the transaction that occurs once the aviation fuel or SAF is at the Union airport), in line with RFEUA Article 4.

[3] […] from 1 January 2025 until 31 December 2034, for each reporting period, an aviation fuel supplier may supply the minimum shares of SAF defined in Annex I as a weighted average over all the aviation fuel it supplied across Union airports for that reporting period (Article 15.1).

RFEUA Article 10 d) requires the information on aviation fuel properties to be provided per batch and per Union airport. Consistent with industry practices, such data is most readily available for each batch at the time of delivery **to** the respective Union airport.

Due to the difference in scope stemming from 'to' vs. 'at', the amounts reported under Article 10 a) may differ from those reported under Article 10 d) **for the same aviation fuel supplier**.

The figure below provides an example illustrating the distinction between aviation fuel amounts supplied "to" versus "at" Union airports.



Since the scope of Article 10 a), b), c) and e) differs compared to Article 10 d), the reference for whether to include a given batch of aviation or SAF for a reporting period also differs.

For reporting as per Article 10 a), b), c) and e): All aviation fuel and SAF that was **supplied at** a Union airport between 01 January and 31 December (inclusive) of a given reporting period should be reported by 14 February of the subsequent year, using Reporting Template A.

Importantly, any aviation fuel or SAF that was delivered to a Union airport but remains in storage or stock at the airport fuel farm by the end of the reporting period **should not** be reported until the subsequent reporting period when it is actually supplied to an aircraft operator. **Invoices or uplift** documents may be used to substantiate these specific situations.

For reporting as per Article 10 d): In contrast, any aviation fuel **dispatched from a pre-airport tank to** a Union airport between 01 January and 31 December (inclusive) of a given reporting period should be reported as part of that reporting period by 14 February of the subsequent year, using Reporting Template B, independently of when the aviation fuel is actually supplied *at* the

Union airport. The reference date for reporting is the **dispatch date to** the Union airport, which should be traceable in the relevant documentation.

Note that a given batch may have to be reported in different reporting periods if required, i.e. if the supply 'to' and 'at' the Union airport occurs in two different reporting periods. In such case, the batch needs to be divided in sub-batches.

2.3.2 Supplied at Union airports vs. supplied to aircraft operators at Union airports

The reporting obligations for aviation fuel suppliers outlined in RFEUA Article 10 encompass **all** amounts of aviation fuel supplied *to* and *at* Union airports, regardless of whether or not the aviation fuel or SAF is delivered to an aircraft operator in scope of RFEUA. This means that those SAF amounts which the aviation fuel supplier chooses not to count towards the RFEUA minimum shares of SAF (i.e. primarily those SAF amounts intended to be accounted in voluntary frameworks (see the following section 2.3.3)) should nevertheless be reported.

When reporting the **total amount of SAF** supplied at Union airports – in Reporting Template A, tab '3. SAF Totals' – the aviation fuel supplier should distinguish between

a) the total amount of SAF supplied at Union airports that is **not** to be counted towards the minimum shares of SAF as per RFEUA Article 4 and Annex I (see section 2.3.3);

b) the total amount of SAF supplied at Union airports (deducting the amount from a)); and

c) the share of b) that is actually supplied to aircraft operators in scope of RFEUA.

This differentiation helps clarify which SAF amounts supplied by the aviation fuel supplier are to be counted towards the minimum shares of SAF under RFEUA, and which SAF amounts are to be considered outside the scope of the minimum shares.

Similarly, when reporting the **total amount of aviation fuel** supplied at Union airports – in Reporting Template A, tab '4. Aviation Fuel Totals' – the aviation fuel supplier should distinguish between

a) the total amount of aviation fuel supplied at Union airports; and

b) the share of a) that is actually supplied to aircraft operators in scope of RFEUA.

Note that when reporting the total amount of aviation fuel supplied at Union airports, all SAF amounts should be included in that figure, including those that the aviation fuel supplier does not wish to be counted towards the minimum shares of SAF under RFEUA.

2.3.3 Reporting of SAF that is not to be counted towards SAF minimum shares

An aviation fuel supplier may wish not to count certain amounts of SAF towards the minimum shares of SAF under RFEUA if doing so would prevent them, or other parties (such as aircraft operators or corporate customers), from accounting for the SAF volume or the associated GHG emissions reduction in a scheme or towards a target that is incompatible with RFEUA (primarily due to 'additionality' requirements in voluntary reporting frameworks).

In such cases, the aviation fuel supplier should still report those SAF amounts, including their characteristics. Reporting Template A provides the aviation fuel supplier with the possibility to specifically exclude those amounts from counting towards the minimum shares of SAF under RFEUA.

2.4 Competent authorities and economic operators in scope

The most up-to date lists of competent authorities for RFEUA and economic operators in scope of the Regulation are provided on the RFEUA webpage using data made available to the European Commission and published for information purposes.

Note that Union airports, aircraft operators and aviation fuel suppliers not listed are not necessarily exempt from their respective obligations under ReFuelEU Aviation. It is the responsibility of each party to independently assess whether it is in scope of the Regulation and to take appropriate action accordingly.

List	Description
List of Union Airports	List of Union airports in scope of ReFuelEU Aviation for the reporting period. Note that updates to the list are possible during a given reporting period, as airports have the option to voluntary opt-in to be considered Union airports. The Union airport names and ICAO codes included in this list should be used by aviation fuel suppliers when reporting. IATA codes are not used for reporting.
List of Aviation Fuel Suppliers	List of aviation fuel suppliers in scope of ReFuelEU Aviation for the reporting period. List also includes the EU Member State the aviation fuel supplier is assigned to. Note that the list is indicative, aviation fuel suppliers not listed are not necessarily out of scope of the Regulation and exempt from their respective obligations.

List of Aircraft Operators	List of aircraft operators in scope of ReFuelEU Aviation for the reporting period. Note that the list is indicative, aircraft operators not listed are not necessarily out of scope of the Regulation.
List of Competent Authorities of the Member States	List of competent authorities per EU Member State, including the competent authority responsible for aviation fuel suppliers in that EU Member State.

3 Reporting Template A - Reporting of SAF and aviation fuel (Article 10 a, b, c, e)

'Reporting Template A - SAF and total aviation fuel' is intended to collect the relevant information required as per Article 10 a), b), c) and e).

It is accessible via the RFEUA webpage ('Templates for economic operators' via 'Main documents'). Aviation fuel suppliers are advised to carefully check the version of Template A as stated in the tab '0. Instructions' to ensure they are using the latest version.

3.1 How to complete Template A

The following tabs in Template A should be duly filled in by the aviation fuel supplier:

1. General information (about the aviation fuel supplier);
2. SAF batches (for entering information pursuant to Article 10 b), c) and e));
3. SAF totals (for entering information pursuant to Article 10 b));
4. Aviation fuel totals (for entering information pursuant to Article 10 a) and e));
5. Totals (relevant for establishing compliance pursuant to Article 4).

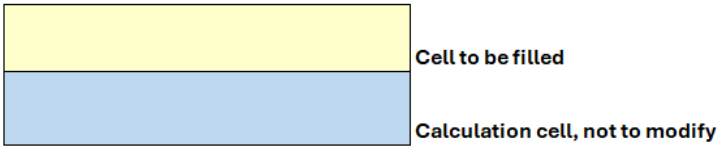
Any report via Template A will only be considered complete if tabs (1), (2), (3), (4) and (5) have been completed:

For tabs (2), (3) and (4), more rows can be inserted as needed. Please make sure to use the function insert entire row when doing so - if data is simply copy-pasted only, data validation checks embedded in the template may be lost, complicating future data verification.

Aviation fuel suppliers are responsible for ensuring the data is reported in the requested format and that any calculation performed within Template A is accurate before submission.

Cells colour scheme:

Aviation fuel suppliers should take into account the following cells colour scheme as for which cells should be completed and which should not be modified:



How to report decimals:

Please only use "." as separator for decimals (up to 4 decimals are possible). Avoid the use of "," as separator of decimals or thousands.

How to report amount of aviation fuels and SAF in mass:

Units are to be clearly stated for each field and particular attention should be paid to avoid confusing metric tonnes, tons, cubic meters, litres or gallons. In Template A, amounts of aviation fuel and SAF are always requested in metric tonnes. When amounts are not readily available in metric tonnes, and only for the data reported in Template A, it is possible to convert from standard volume (at 15 ºC) to mass, using the standard fuel density as per Implementing Regulation - 2018/2066 - EN - EUR-Lex:

Standard conversion value = 0.8 kg/litre *(only applicable for reporting in Template A)*

Worked example:

To facilitate understanding of how to complete Reporting Template A, a worked example using Template A has been prepared. It can be downloaded from the ReFuelEU Aviation webpage. The worked example describes the sample case of an aviation fuel supplier and showcases how each of the tabs in Template A would need to be completed.

3.2 How to upload Template A

The Reporting Template A, once filled out, should be uploaded to the European Commission's CIRCABC database. The aviation fuel supplier has access to their respective folder in the CIRCABC database via their UDB account. By uploading the completed Template A in CIRCABC, the aviation fuel supplier declares that all data submitted is accurate and complete.

In case of issues accessing CIRCABC, the aviation fuel supplier should contact their competent authority. A list of competent authorities and their contact data can be found on the ReFuelEU Aviation webpage (‘List of competent authorities of the Member States responsible for enforcing the application of ReFuelEU Aviation’).

How to name your completed Template A before upload to CIRCABC:

File names that are excessively long or contain spaces or special characters may cause issues during upload and should therefore be avoided. Before uploading the completed template, please name the file according to the following convention:

[YEAR]_A_[Unique NTR-ID of aviation fuel supplier].xlsx

where:

[YEAR] = Reporting period the template is completed for

[ID] = Unique VAT number of aviation fuel supplier

For example: 2025_A_ATU12345678.xlsx

3.3 Template A – detailed guidance

Tab '0. Instructions'

The tab '0. Instructions' includes general instructions for completing Reporting Template A.

Tab '1. General Information'

The tab '1. General Information' is intended for identification of and general information on the aviation fuel supplier, including contacts.

This tab features the following data fields:

Data field	Example	Description
Legal entity name of aviation fuel supplier	Aviation Fuel Supplier EURO Ltd.	Name of the legal entity for which the report is submitted (i.e. the aviation fuel supplier name)
VAT number of aviation fuel supplier	AT 7893774	VAT registration number of the aviation fuel supplier legal entity. This is the unique number that identifies a taxable person (business) or non-taxable legal entity that is registered for VAT
UDB economic operator ID of aviation fuel supplier	AT-VAT-7893774	Identification code (NTR-ID) of the aviation fuel supplier entity within the UDB. May be equal to VAT. You will find this identification code in the UDB, under the 'Organisation' tab --> 'My organisation' Example: DE_VAT_ABCD123456789
Address of principal place of business	Airport Street, 8998 Province, Austria	Address of the head office or registered office of the aviation fuel supplier in the Member State within which the principal financial and operational control of the aviation fuel supplier takes place
Country	Austria	Country where the head office or registered office of the aviation fuel supplier is located in
Name of primary contact person of aviation fuel supplier	John Smith	Person to be contacted in case of clarifications regarding the report
Telephone number of primary contact person	*+45 7878787*	*Optional (useful in case the competent authority needs to contact the aviation fuel supplier for clarifications)*
E-mail address of primary contact person	jsmith@AFSE.at	Email address of the person to be contacted in case of clarifications regarding the report
Name of secondary contact person of aviation fuel supplier	Laura Roman	Alternative person to be contacted in case of clarifications regarding the report

Data field	Example	Description
Telephone number of second contact person	*+45 7878799*	*Optional (useful in case the competent authority needs to contact the aviation fuel supplier for clarifications)*
E-mail address of second contact person	LRoman@AFSE.at	Email address of the alternative person to be contacted in case of clarifications regarding the report

Tab '2. SAF Batches'

In this tab, the aviation fuel supplier should report all SAF batches supplied at Union airports (as per Article 10 b), c) and e)).

All SAF batches should be reported in this tab, no matter whether or not supplied to aircraft operators in scope of RFEUA, and inclusive of SAF amounts that the aviation fuel supplier wishes not to count towards the minimum share of SAF as per RFEUA Article 4 and Annex I.

RFEUA defines a batch as 'a quantity of SAF that can be identified with a number and can be traced' (Art 3.10). For completing Reporting Template A, the unique identifier for a SAF batch (i.e. the unique identifier included in a Proof of Sustainability (PoS) or Proof of Compliance (PoC) document) can be considered as batch reference.

Note that most of the fields are free text (alphanumerical). Some fields however contain validation rules – notably the fields for 'country of origin of the raw material / feedstock', 'fuel conversion process' and 'category of SAF'. Entering different names or denominations compared to those provided in each dropdown list should be avoided.

The tab features the following data fields:

Data Field	Example	Description
Name of Union Airport	Graz	Enter the name of the Union Airport where the SAF is supplied at and marked for final consumption (as usually indicated on the PoS or similar documentary evidence).
ICAO code of Union Airport	LOWG	Enter the ICAO code of the Union Airport where the SAF is supplied at and marked for final consumption (as usually indicated on the PoS or similar documentary evidence). *Please note that you need to enter the ICAO code (four letters), which is different from the IATA code (3 letters). The ICAO code is included, together with the official name of the Union airport, in the list of Union airports published on the ReFuelEU webpage.*
Date of batch delivery at Union Airport	13/06/2025	Indicate the date on which the batch of SAF is supplied at the Union Airport and where it is marked for final consumption (as usually indicated on the PoS or similar documentary evidence). *Indicate the date in the format [dd/mm/yyyy]*

Data Field	Example	Description
Batch number	PoS/9897765-21	Indicate the unique code that allows to identify and trace the batch of SAF. Usually, the identifier in the relevant documentary evidence, such as the Unique Number at the Proof of Sustainability.
Type of documentary evidence	PoS	Select the type of documentary evidence that demonstrates the compliance of the batch of SAF with the relevant sustainability and GHG emissions savings criteria (e.g., Proof of Sustainability document, Proof of Compliance document). The preferred documentary evidence is either the PoS or PoC. Alternative documentary evidence may be accepted by the relevant competent authorities instead, provided that that documentary evidence allows for identifying the SAF batch and the associated sustainability characteristics (including demonstrating compliance with the sustainability criteria and GHG emission savings).
Total amount of SAF (in tonnes)	1567.2	Indicate the amount of SAF (in tonnes) for the batch as stated in the documentary evidence (e.g., for blended SAF, this is the neat SAF portion certified as compliant with the sustainability and GHG emissions savings criteria).
Raw material / feedstock name	Used Cooking Oil	Indicate the name of the raw material / feedstock that the SAF was produced from. Do not refer to intermediate products, but to the original feedstock. Use the raw material / feedstock names from the UDB list for raw materials & intermediate products.
Raw material / feedstock code	URWU004	Indicate the Union Database code of the raw material / feedstock that the SAF was produced from. Do not refer to intermediate products, but to the original feedstock. Use the UDB codes from the UDB list for raw materials & intermediate products.
Country of origin of the raw material / feedstock	Germany	Indicate the country of origin in which the raw material / feedstock was produced or generated, as stated in the documentary evidence.
Fuel conversion process	Lipids Co-Processing - ASTM D1655 A1	Select the conversion pathway used for producing the SAF.
Category of SAF	[[b]] | '[aviation] biofuels' - Art 3(8)(b) [RED = Annex IX Part B]	Select the category of SAF (e.g., '[aviation] biofuels' for HEFA produced from used cooking oil).

Data Field	Example	Description
Energy content of SAF	67389.6	Indicate the absolute energy content in MJ (e.g. 150000) for the batch of SAF, as stated in the documentary evidence.
Lifecycle emissions value	8.4	Indicate the lifecycle emissions value in gCO_2eq/MJ (e.g., 15) for the batch of SAF, as stated in the documentary evidence. Do not report the emissions savings or the emission savings percentage but the **lifecycle emissions**. *Note: The lifecycle emissions calculation should follow the EU RED methodology (and not, for instance, the CORSIA methodology and be inclusive of any lifecycle step, including final transportation and distribution of the fuel.*
Comments by aviation fuel supplier		*Optional – To provide any comment you deem relevant to consider regarding the batch of SAF.*

Tab '3. SAF Totals'

In this tab, the aviation fuel supplier should report the total amount of SAF supplied per Union airport during the reporting period.

This tab is intended to facilitate the reporting obligation as per Article 10 b) ('amount of SAF supplied at each Union airport') and supports the determination of compliance of aviation fuel suppliers with their obligation as per Article 4 and Annex I.

In this tab, the SAF amounts should be reported per Union airport. Note that, due to the applicability of the flexibility mechanism until 31 December 2034, for each reporting period, compliance with the obligation as per Article 4 and Annex I is determined at the aggregated Union level, and not individually per Union airport.

Importantly, the aviation fuel supplier should distinguish between the total amount of SAF supplied at the Union airport and the amount of SAF supplied to aircraft operators in scope of RFEUA at that Union airport. In addition, the aviation fuel supplier should indicate the amount of SAF that was delivered at the Union airport but is not to be counted towards the minimum share of SAF under RFEUA (see also section 2.3.3).

Accordingly, an aviation fuel supplier should report the following three values:

a) Total amount of SAF supplied at Union Airport that is NOT to be counted towards minimum shares of SAF.
   - The amount of SAF supplied at the Union Airport that the aviation fuel supplier does not wish to be counted towards the minimum shares of SAF as per Article 4 and Annex I of RFEUA.
   - This value may be zero.

b) Total amount of SAF supplied at the Union Airport that the aviation fuel supplier wishes to be counted towards the minimum shares of SAF as per Article 4 and Annex I of RFEUA.
   - This amount excludes the amount indicated for point a) above.

c) Total amount of SAF supplied to aircraft operators in scope of RFEUA at Union Airport.
   - The total amount of SAF supplied to aircraft operators in scope of RFEUA at the Union Airport that the aviation fuel supplier wishes to be counted towards the minimum shares of SAF as per Article 4 and Annex I of RFEUA.
   - This amount excludes those amounts supplied to aircraft operators not in scope of RFEUA as well as those amounts that the aviation fuel supplier wishes not to be counted towards the minimum shares of SAF.
   - To validate whether an aircraft operator is in scope of RFEUA, aviation fuel suppliers should consult the relevant list of aircraft operators (see section 2.4) and definitions in the Regulation (Article 3). In case of doubt, they are also advised to confirm the status directly with the aircraft operator.

The tab features the following data fields:

Data Field	Example	Description
Name of Union Airport	Graz	Enter the name of the Union Airport where the SAF is supplied at. Make sure the name is the one stated in the most recent list of Union airports applicable to the reporting period.
ICAO code of Union Airport	LOWG	Enter the ICAO code of the Union Airport where the SAF is supplied at. Make sure the code is the one stated in the most recent list of Union airports applicable to the reporting period.
Total amount of SAF supplied at Union Airport that is NOT to be counted towards minimum shares of SAF (in tonnes)	104.5	Enter the amount - if any - of SAF supplied at the Union Airport that you wish not to be counted towards the minimum shares of SAF as per Article 4 and Annex I of RFEUA. This value can be zero (= leave empty).
Total amount of SAF supplied at Union Airport (in tonnes)	1400.8	Enter the total amount of SAF supplied at the Union Airport that you wish to be counted towards the minimum shares of SAF as per Article 4 and Annex I of RFEUA. The sum of this amount plus the amount you do not wish to count towards the SAF minimum shares (see field above) should be equal to the total amount of SAF batches entered in tab '2. SAF Batches'.
Total amount of SAF supplied to in scope aircraft operators at Union Airport (in tonnes)	1387	Enter the total amount of SAF supplied to aircraft operators in scope of RFEUA at the Union Airport that you wish to be counted towards the minimum shares of SAF as per Article 4 and Annex I of RFEUA. Refer to the list of aircraft operators in scope of RFEUA linked in section 2.4. Note that this amount cannot be bigger than the total amount of SAF supplied at that Union airport.

Example

An aviation fuel supplier supplies a total of 5,000 t of SAF at Union airport ZZZZ.

Of this amount, 300 t are supplied voluntarily by the aviation fuel supplier, i.e. due to an arrangement with an aircraft operator and a corporate customer the aviation fuel supplier wishes to ensure 'additionality' and therefore wishes not to count the 300 t towards the SAF minimum shares as per RFEUA Article 4 and Annex I.

Of the remaining 4,700 t (5,000 – 300), 15 t are supplied to military operators and 85 t to other aircraft operators not in scope of RFEUA. The rest is supplied to aircraft operators in scope of RFEUA.

For Union airport ZZZZ, the aviation fuel supplier reports the following in Reporting Template A:

- in tab '2. SAF batches': A given number of batches totalling 5,000 t.
- in tab '3. SAF totals':

Total amount of SAF supplied at Union Airport that is NOT to be counted towards minimum shares of SAF (in tonnes)	300
Total amount of SAF supplied at Union Airport (in tonnes)	4,700
Total amount of SAF supplied to aircraft operators in scope of RFEUA at Union Airport (in tonnes)	4,600

Note that, additionally, tab '3. SAF Totals' includes three columns titled 'cross checks'. These columns are intended solely to help the aviation fuel supplier identify potential reporting or calculation errors. In essence, they serve to validate that the total amount of SAF reported in tab '2. SAF Batches' corresponds to the amounts reported in tab '3. SAF Totals', and that the totals in tab '3. SAF Totals' are consistent with respect to each other.

Tab '4. Aviation Fuel Totals'

In this tab, the aviation fuel supplier should report the total amount of aviation fuel supplied per Union airport during the reporting period (as per Article 10 (a)). Note that this includes both SAF and conventional/fossil-based jet fuel.

In reporting the totals for aviation fuel supplied, it is important that the aviation fuel supplier differentiates between the type of aviation fuel (e.g., Jet A or AVGAS) supplied, as this is relevant for calculating the compliance with the obligation as per Article 4 and Annex I of RFEUA.

Accordingly, aviation fuel suppliers should report the following two values, per type of aviation fuel (Jet A1, Jet A, AVGAS, Jet B):

a) Total amount of aviation fuel supplied at the Union airport.

b) Total amount of aviation fuel supplied to aircraft operators in scope of RFEUA at that Union airport.
   - To validate whether an aircraft operator is in scope of RFEUA, aviation fuel suppliers should consult the relevant list of aircraft operators (see section 2.4) and definitions

in the Regulation (Article 3). In case of doubt, they are also advised to confirm the status directly with the aircraft operator.

The tab features the following data fields:

Data Field	Description
Name of Union Airport	Indicate the name of the Union Airport where the aviation fuel is supplied at.
ICAO code of Union Airport	Indicate the ICAO code of the Union Airport where the aviation fuel is supplied at.
Aviation fuel type	Select the type of aviation fuel supplied. **Ensure you use exactly** one of the denominations allowed in the dropdown list: JetA1, JetA, JetB, AVGAS
Aviation fuel energy content	Enter the energy content of the aviation fuel supplied at the Union airport (lower calorific value). If this data is available to you, please enter an actual value in MJ/kg (can be weighted average per Union airport). Otherwise, please indicate a default value of 43 MJ/kg.
Total amount of aviation fuel supplied at Union airport (in tonnes)	Enter the total amount of aviation fuel supplied at the Union Airport. Note that this includes the total amount of aviation fuel supplied, i.e. both SAF and conventional jet fuel.
Total amount of aviation fuel supplied to in scope aircraft operators at Union airport (in tonnes)	Enter the total amount of aviation fuel supplied to aircraft operators in scope of RFEUA at the Union Airport. Note that this includes the total amount of aviation fuel supplied, i.e. both SAF and conventional jet fuel.

Example

An aviation fuel supplier supplies 5,000 t of SAF and 150,000 t of conventional Jet A1 at Union airport ZZZZ.

Of those amounts, 5,000 t are supplied to military operators and 300 t to other aircraft operators that are not in scope of RFEUA. The rest is supplied to aircraft operators that are in scope of RFEUA.

For Union airport ZZZZ, the aviation fuel supplier reports the following in Reporting Template A:

- in tab '4. Aviation Fuel Totals':

Aviation fuel type	Jet A1
Total amount of aviation fuel supplied at Union airport (in tonnes)	155,000
Total amount of aviation fuel supplied to aircraft operators in scope of RFEUA at Union Airport (in tonnes)	149,700

Tab ‘5. Totals’

This tab aggregates the total amounts of aviation fuel and SAF supplied at Union airports, based on the data entered by the aviation fuel supplier in the preceding tabs of Reporting Template A. To facilitate the assessment of the aviation fuel supplier’s compliance with the obligation to supply the minimum share of SAF under Article 4 and Annex I of RFEUA, the tab also compares the reported amounts of SAF and aviation fuel in Tabs 3 and 4, respectively:

- Total amount of SAF supplied at Union airports by aviation fuel supplier;
- Total amount of aviation fuel supplied at Union airports by aviation fuel supplier;
- Total amount of SAF supplied to aircraft operators in scope of RFEUA at Union airports;
- Total amount of aviation fuel supplied to aircraft operators in scope of RFEUA at Union airports.

With regard to the value of each total amount, the aviation fuel supplier will have to declare that that value is accurate and may be considered for assessing compliance. The aviation fuel supplier may wish to contest any or all of the values automatically calculated by Reporting Template A. In this case, they will have to provide an explanation in the dedicated comment box in that tab ‘5. Totals’. In addition, they will need to provide the amounts/values they deem to be correct instead.

The tab includes the following (note that values/amounts are exemplary):

Total amount of SAF supplied at Union airports by aviation fuel supplier		
5000	**Units** Tonnes	**Additional Information**
I declare that the value above represents the total amount of SAF supplied at Union airports by the aviation fuel supplier (excluding amounts specifically excluded as such in tab '3. SAF Totals'). **This amount may be considered for assessing compliance with the obligation to supply the minimum share of SAF for the reporting period.**	Yes	IMPORTANT: If you select NO, provide an explanation in the comment box below.

Total amount of aviation fuel supplied at Union airports by aviation fuel supplier		
150000	**Units** Tonnes	**Additional Information**

I declare that the value above represents the total amount of aviation fuel supplied at Union airports by the aviation fuel supplier. **This amount may be regarded as the '100%' against which the minimum share of SAF for the reporting period is calculated against.**	Yes	Note that amounts of aviation fuel types other than Jet A or Jet A1 are excluded from this figure. IMPORTANT: If you select NO, provide an explanation in the comment box below.

Total amount of SAF supplied to aircraft operators in scope of RFEUA at Union airports		
4600	**Units** Tonnes	**Additional Information**
I declare that the value above represents the total amount of SAF supplied to aircraft operators in scope of RFEUA at Union airports by the aviation fuel supplier (excluding amounts specifically excluded as such in tab '3. SAF Totals'). **This amount may be considered for assessing compliance with the obligation to supply the minimum share of SAF for the reporting period.**	Yes	IMPORTANT: If you select NO, provide an explanation in the comment box below.

Total amount of aviation fuel supplied to aircraft operators in scope of RFEUA at Union airports		
149700	**Units** Tonnes	**Additional Information**
I declare that the value above represents the total amount of aviation fuel supplied to aircraft operators in scope of RFEUA at Union airports by the aviation fuel supplier to aircraft operators. **This amount may be regarded as the '100%' against which the minimum share of SAF for the reporting period is calculated against.**	Yes	Note that amounts of aviation fuel types other than Jet A or Jet A1 are excluded from this figure. IMPORTANT: If you select NO, provide an explanation in the comment box below.

Share of SAF supplied at Union airports	3.33 %
Share of SAF supplied to aircraft operators in scope of RFEUA at Union airports	3.07 %

4 Reporting Template B – Reporting of aviation fuel properties (Article 10 d)

'Reporting template B - Aviation fuel properties' is intended to collect the relevant information required as per Article 10 d) for aviation fuel supplied to Union airports.

It is accessible via the RFEUA webpage ('Templates for economic operators' via 'Main documents'). Aviation fuel suppliers are advised to carefully check the version of Template B as stated in the tab '2. Instructions' to ensure they are using the latest version.

Reporting Template B facilitates a bulk upload of aviation fuel data (per batch) to the UDB. Note that, alternatively, the aviation fuel supplier may also enter batches manually in the UDB directly (via the UDB menu 'Report on Aviation fuel properties', accessible via the UDB account).

4.1 Clarification of requirements

Aviation fuel properties, including mass, volume, aromatics and naphthalenes content in percentage per volume and sulphur content in percentage per mass should be provided per batch, per Union airport and at Union level, as per Article 10 d).

This information can be based on existing fuel properties tests performed following industry standards such as DEF STAN 91-091, ASTM D1655 and EI/JIG 1530, that set the quality assurance requirements along the supply chain, including during blending, batch mixing, and the storage and distribution of aviation fuels to and at airports.

This section provides guidance on the scope and methodology for reporting those values. It describes how to report the aviation fuel amounts (mass, volume and properties), the relevant location to measure or calculate the properties, and relevant dates. It also outlines the reporting of aviation fuel properties, accepted methods for calculating aviation properties and applicable test methods.

Note that the energy content and the Hydrogen to Carbon ratio may be, on a voluntary basis, reported by the aviation fuel supplier together with the other properties requested by RFEUA. This is due to the relevance of this parameter to the non-CO_2 reporting under the EU ETS non-CO_2 MRV, though it is not mandatory under RFEUA.

4.2 Location for reporting of aviation fuel properties

Considering the above, and applicable only to Article 10 d) for aviation fuel, the recommended practice is as follows:

- Fuel mass, volume and properties may be reported either at the pre-airport terminal (last batching tank)[4] – when aviation fuel is dispatched to the airport fuel farm (depot) – or,

[4] Tank at refinery or depot from which a Union airport is supplied.

where available, at the airport fuel farm itself. For reporting purposes, these locations are considered equivalent.

  - Note that the reported quantities of these batches (batch size)[5] at these points are not considered for calculations towards the SAF minimum shares as per Article 4 and Annex I of RFEUA (see section 2.3.1., 'supplied 'to' vs. 'at' Union airports).

- The data reported may consist of either:
  - **Calculated values at pre-airport:** based on the latest measured data (i.e. the most recent traceable Certificate of Analysis, CoA), calculated fuel properties at the airport[6]. The calculation is made per batch supplied to the Union airport.
  - **Measured values at pre-airport:** while RFEUA does not require performing measurements at the airport (or pre-airport), it is still an option that the aviation fuel supplier voluntarily provides the measured data. In such case, measurement should be made per batch supplied to the Union airport.
  - **Measured values at origin:** as a particular case, and only when the pre-airport tank is either the point of entry (e.g., port depot), the refinery or those are directly connected with the airport without any other connection (see Case 1 below) it is also possible that the aviation fuel supplier reports the values in the CoA at those points, on the idea the calculation would deliver similar if not equal values.

In all cases, in addition to the calculated or measured data, the following information should be reported:

- the batch reference that enables traceability (e.g. an internal registry entry, CoA reference, or similar identifier); and
- the mass and volume of the batch delivered to the airport by the aviation fuel supplier[7]. Note the use of standard density values is not allowed for conversion of this data.

The reference data used, such as CoA, CoQ or RT, and any additional tests if applicable, as well as the calculation methodology in case applicable, should be made available upon request to the relevant competent authority[8].

It is acknowledged that CoQ or CoA documents may not include measurements of naphthalenes. Where this is the case, the reasons for the lack of this data should be reported in the field 'NAPHTHALENES_REMARKS' (e.g., "measurement was not required due to compliance with the smoke point criterion, measurement not possible due to…")[9].

[5] In this context, a batch of aviation fuel is defined as a distinct quantity of fuel that can be characterised by one set of test results, as for release certificate.
[6] If the entity responsible for managing fuel quality for the batch and the AFS are not the same, the AFS must make arrangements to ensure data availability for reporting.
[7] If the batch is shared by several entities, the amount reported should be the one responsibility of the AFS, not the total size.
[8] The UDB allows up to five documents to be uploaded per batch. Please refer to the section Evidence – Certificate Number for further details.
[9] FAQ on ReFuelEU Aviation - Mobility and Transport - European Commission

4.3 Relevant dates for reporting of aviation fuel properties

As previously mentioned, any aviation fuel dispatched from a pre-airport tank to a Union airport between 01 January and 31 December (inclusive) of a given reporting period should be reported, as part of that reporting period, in the subsequent year (the reporting year). The reference date for reporting is the dispatch date to the airport, which should be traceable in the relevant documentation. The reporting is made per batch.

Example

On 14 November 2025, aviation fuel supplier 'R' introduces batch R1 (CoA-04445), comprising 500 tonnes, into storage facility F. The batch is later transferred **to** an intermediate storage facility G, which serves as a pre-airport tank.

On 01 January 2026, 'R' dispatches 200 tonnes from storage G to Union airport EXXX. These 200 tonnes should be reported under Article 10 d) by 'R' as part of the 2026 reporting period (to be submitted in the 2027 reporting year).

The remaining 300 tonnes do not need to be reported unless, and only when, they are dispatched to a Union airport. If they are later sent to EXXX or another Union airport, the batch quantity and dispatch date should be updated accordingly and reported following the same procedure.

The reporting obligation applies to all Union airports throughout the entire reporting period, i.e. from 01 January to 31 December, regardless of the date of publication of the list of Union airports[10]. Note that updates to the list of Union airports are possible during a given reporting period, as airports have the option to voluntary opt-in to be considered Union airports.

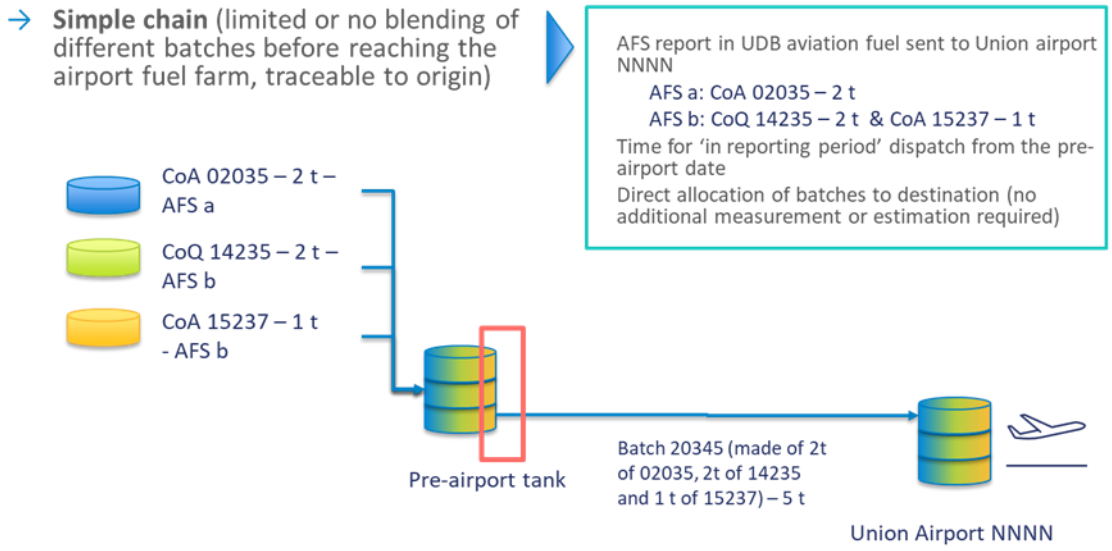
4.4 Examples illustrating differences in supply points

Case 1: Aviation fuel supplied directly to a Union airport depot or from a pre-airport storage tank containing traceable batches

An aviation fuel supplier dispatches a batch of jet fuel from an upstream storage facility for direct delivery to the airport's fuel farm. Alternatively, the batch may pass through intermediate storage, though traceability of the batches is maintained.

In such cases, a CoQ, CoA, or RT is available for each batch – even if blending occurs upstream of the airport – containing measured fuel quality data from the point of origin. The actual quantity delivered and its properties can then be directly linked to the dispatch and are therefore considered valid for reporting purposes (see figure below).

[10] Note that list is generated based on data made available to the European Commission and published for information purposes. Union airports not listed there are not necessarily exempt from their respective obligations under ReFuelEU Aviation. It is the responsibility of each airport managing body to independently assess whether it is in-scope of the regulation and to take appropriate action accordingly.



Variation of case: CoA 02035 covers 2 t, which are supplied to NNNN in 2 lots (2x 1 t each). If those are supplied in the same reporting period, the 2 lots can be reported as a unique batch (registry entry).

In these cases, the 'Determination Method' should be reported in Reporting Template B as 'Measured at origin'. Alternatively, the reported properties may be calculated or measured at the pre-airport tank. In such instances, the 'Determination Method' should be indicated as either 'Calculated at pre-airport tank' or 'Measured at pre-airport tank'.[11]

To ensure data consistency, it is important that these approaches are not mixed (i.e. different 'Determination Methods') within a single supply line to a Union airport. The aviation fuel supplier is therefore encouraged to consult with the relevant pre-airport or airport tank manager to determine the common or preferred approach for dispatches to a specific Union airport and use it in all cases. To reduce administrative burden, the simplest applicable method should be selected whenever possible, provided that it is applied consistently in the same supply line.

Case 2: Fuel Supplied indirectly to a Union airport (e.g. via comingled distribution system)

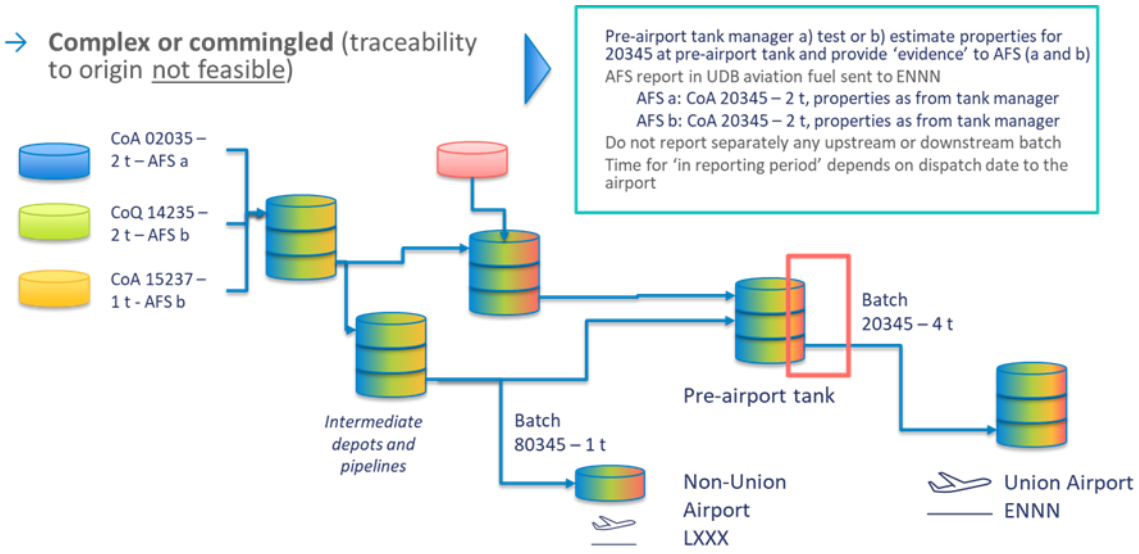
Fungible distribution systems [12] are those in which multiple certified jet fuel batches are commingled during transport and storage. In such systems, traceability from point of manufacture (refinery or terminal) to point of consumption (airport) is inherently infeasible, as batches may be added or withdrawn throughout the distribution process.

For reporting purposes in these cases, fuel properties at the pre-airport tank should be either measured or calculated using the best available information (e.g. through data correlation).

[11] Alternatively, the reported properties may be estimated or measured at the pre-airport tank. In such instances, the 'Determination Method' should be indicated as either "Estimated at pre-airport tank" or "Measured at pre-airport tank".
[12] CEPS is a fungible distribution system. CEPS re-certifies jet fuel in intermediate storage tanks.

As in Case 1, the quantity supplied is based on dispatch documentation. As a reminder, each aviation fuel supplier is required to report the quantities – both mass and volume – it supplies to a Union airport, regardless of the total batch size being calculated (e.g. tank capacity), which may be larger.

Where properties are calculated the 'Determination Method' should be reported as 'Calculated at pre-airport'. If properties are measured, the method should be reported as 'Measured at pre-airport'. Calculation or measurement conducted at the Union airport depot will be considered equivalent to pre-airport for reporting purposes and 'Determination Method' should be reported as for the options above in those cases. See the figure below (different colours are used only to illustrate the challenges of tracing from origin to destination).



The figure above is a simplified, illustrative example. For instance, a single pre-airport tank may serve multiple airports or have other release destinations. These factors should be considered when reporting the data.

In cases of complex or commingled chains, the determination method 'Measured at origin' is not feasible and should not be used. While both calculation and measurement at the pre-airport tank are considered compatible within the same supply line to a Union airport, the aviation fuel supplier is encouraged to consult with the pre-airport tank manager to identify the common or preferred approach for dispatches to the specific Union airport in question. To reduce administrative burden, the simplest applicable method should be selected whenever possible, provided it is applied consistently in all cases per supply line.

4.5 Reference methods for calculating aviation fuel properties

As clarified in FAQ28[13], no additional testing is required at the airport. This section outlines the procedures and methods for performing a calculation in cases where the original data cannot be

[13] https://transport.ec.europa.eu/transport-modes/air/environment/refueleu-aviation/faq-refueleu-aviation_en#:~:text=It%20is%20not,certificate%20of%20analysis.

traced forward to the pre-airport terminal and additional testing is not feasible or desired by the aviation fuel supplier.

Aviation fuel suppliers should rely on original CoQ or similar documentation, along with actual density values obtained at the pre-airport tank, to calculate the properties of the fuel supplied at the airport. These calculations are sufficient to meet the reporting and traceability requirements of the reporting obligations under RFEUA Article 10 d) for aviation fuels.

Sulphur, naphthalenes, and aromatics are linear blending properties, which can be directly calculated using weighted averages of the individual batch characteristics. When comingling multiple batches within a tank, the resulting values for these linear properties (i.e. sulphur, naphthalene, and aromatic content) can be calculated as weighted averages of the contributing batch data (direct calculation).

Energy content (optional) is derived from a formula and behaves differently. Two approaches are recommended[14]:

- **Direct calculation**: Calculate the energy content of each individual batch received in the tank, then calculate the energy content of the final batch using a weighted average of those individual values.
- **Property-based calculation**: First, calculate the weighted average of all relevant properties included in the ASTM D3338 formula (aromatics, density, volatility, and sulphur). Then apply the *ASTM D3338 Formula for Net Heat of Combustion* to these weighted averaged values to calculate the energy content of the blend.

Calculation example:

The pre-airport tank has an initial volume of 1000 m^3 with an aromatic content of 12.5 % v/v, a naphthalenes content of 1% v/v, a sulphur content of 0.100 % m/m, a density of 805.0 kg/m3, an energy content of 43.378 MJ/kg and volatility of 227ºC (T10: 203ºC, T50: 233ºC and T90: 245ºC).

The received batch has a volume of 2000 m^3 with an aromatic content of 24 % v/v, a naphthalenes content of 2 % v/v, a sulphur content of 0.003 % m/m, a density of 810.0 kg/m^3, an energy content of 43.241 MJ/kg and volatility of 233ºC (T10: 180ºC, T50: 250ºC and T90: 270ºC).

1- **Direct calculation** (content of the pre-airport tank after received batch that will be supplied to the airport)

Aromatics → (1000 m^3 x 12.5 %v/v + 2000 m^3 x 24 %v/v) / (1000 m^3 + 2000 m^3) = 20.2 %v/v

Naphthalenes → (1000 m^3 x 1 %v/v + 2000 m^3 x 2 %v/v) / (1000 m^3 + 2000 m^3) = 1.7 %v/v

Sulphur → (1000 m^3 x 0.100 %m/m + 2000 m^3 x 0.003 %m/m) / (1000 m^3 + 2000 m^3) = 0.035 %m/m

[14] The use of default energy values is only accepted for hydrogen for aviation to be counted towards those shares. For article 10 d) purposes, actual energy content, measured or calculated following one of the two approaches indicated here, should be reported.

Energy → (1000 m^3 x 43.378 MJ/kg + 2000 m^3 x 43.241 MJ/kg) / (1000 m^3 + 2000 m^3) = **43.287 MJ/kg (direct calculation)**

It should be mentioned that the initial volume or heel content of the tank has to be taken into account only if it represents **more than 3% of the final tank volume**.

2- Property-based calculation for energy content

ASTM D3338 Formula for Net Heat of Combustion:

In SI units (MJ/kg):
Qp2 = [5528.73 - 92.6499A + 10.1601T + 0.314169AT]/D - 0.0791707A - 0.00944893T - 0.000292178AT + 35.9936

Qp2 = net heat of combustion, MJ/kg, sulphur-free basis,

A = aromatics, volume %

D = density, kg/m^3 at 15 °C

T = volatility: boiling point or average of Test Method D86 or D2887 10%, 50%, and 90% points, °C.

To correct for sulphur content:
Q = Qp × [1 - 0.01(S)] + C(S), where C = 0.10166 (SI units)

Each property included in the formula should first be calculated directly, based on the contents of the pre-airport tank:

Aromatics → (1000 m^3 x 12.5 %v/v + 2000m^3 x 24 %v/v) / (1000 m^3 + 2000 m^3) = 20.2 %v/v

Density → (1000 m^3 x 805.0 kg/m^3+ 2000m^3 x 810.0 kg/m^3) / (1000 m^3 + 2000 m^3) = 808.3 kg/m^3

T10 → (1000 m^3 x 203 °C + 2000 m^3 x 180 °C) / (1000 m^3 + 2000 m^3) = 187.7 °C (same for T50 and T90)

Sulphur → (1000 m^3 x 0.100 %m/m + 2000 m^3 x 0.003 %m/m) / (1000m^3 + 2000 m^3) = 0.035 %m/m

The formula is subsequently applied using these calculated values to determine the energy content of the blend.

Energy content with property-based calculation: 43.285 MJ/kg

EO internal reference and evidence

The UDB (and Reporting Template B) requests each batch to be associated to an internal reference (EO Internal Reference) of the aviation fuel supplier. This refers to a unique code used to identify the relevant supporting evidence. If the batch can be directly traced to a CoA or CoQ, that document identifier may be cited as the appropriate reference.

If a calculation is used, the reference should include the name or code (i.e. internal reference) that can be traced to the aviation fuel supplier's internal document outlining the calculation

method applied. The latest should also specify any CoA, CoQ, RT number, or other relevant analyses used in the calculation, which should be made available to the competent authority or EASA upon request.

Note that Reporting Template B currently does not yet support bulk uploading of evidence files. Providing only the appropriate reference to the document (rather than the document itself) may be accepted at the discretion of the relevant authorities. Aviation fuel suppliers are encouraged to confirm this with their respective competent authorities.

Test Method

Reporting Template B (or direct reporting in the UDB) requires reporting the test method applied for each property. In cases where values are calculated, data for a given property may be derived from different test methods. Two scenarios are possible:

- **Equivalent methods:** If the calculation uses data from different methods that are considered equivalent, the most relevant method may be indicated (e.g. the one applied to the largest mass or volume). However, the calculation document should trace the original data and reference all methods used.
- **Non-equivalent methods:** If the calculation relies on data from methods that are **not** considered equivalent, a correction is required. This is particularly relevant for aromatics, as there are deviations between methods measuring aromatics and total aromatics[15]. *Inter laboratory studies have demonstrated the correlation between total aromatics content measured by IP 156/ASTM D1319 and IP 436/ASTM D6379. Bias between the two methods necessitates different equivalence limits (...). Testing laboratories are encouraged to measure and report total aromatics content by the two methods to assist verification of the correlation. In cases of dispute IP 156 will be the referee method*[16].
  When this occurs, the aromatics value should be reported as the 'aromatics' test (i.e. IP 156) and adjusted using a specified formula. To convert values from the Jet A-1 total aromatics test method to the aromatic's method, a linear adjustment may be applied for reporting purposes. If Test Method D 6379 or IP 436 is used, multiply the total aromatics content in vol% by 25/26.5 (=0.9434), and use this corrected value in place of aromatics for reporting and for inclusion in the formulas above in section 'Reference methods for calculating aviation fuel properties'.

4.6 How to complete Template B

The aviation fuel supplier should navigate to the tab '1. Bulk Upload':

[15] Note value to be reported is aromatics, not total aromatics. Similarly, value to be reported for sulphur is sulphur, not mercaptan.
[16] DEF STAN 91-091 issue 18

In tab ‘1. Bulk Upload’, the relevant information is then entered per batch, starting in row 3.

Note that completing just the Reporting Template B - without subsequent upload of batch data to the UDB - is not considered as completed reporting.

Use of exact names/designations:

Entering different names or designations compared to those indicated in the column ‘selectable options’ in tab ‘3. Explanation of Fields’ should be avoided. Use exactly one of those options provided (including caps, spaces, etc.).

For example, while the standard designation for Jet-A1 is typically written with a hyphen or, alternatively, with a space, the only selectable option is ‘JetA1’. This restriction is necessary to minimize errors during upload to the UDB. If the field is reported instead as AVTUR, Jet-A1, Jet A1, or jeta1, the upload will not be completed successfully.

How to report decimals:

Please only use "." as separator for decimals (up to 4 decimals are possible). Avoid the use of "," as separator of decimals or thousands.

Use of actual values:

Note that all values requested in Template B should be actual values. Default values are not allowed.

Mandatory fields for batch upload to the UDB:

Not all data fields have to necessarily be completed for each batch/data entry. The first two columns in tab ‘3. Explanation of Fields’ clearly categorise each data field, as follows:

- Data fields that are marked as ‘mandatory’ in column ‘mandatory to indicate so batch can be uploaded to UDB’ should necessarily be completed, otherwise upload of the batch/data entry to the UDB will not be possible.
- Data fields that are not marked as ‘mandatory’ but are marked as ‘required’ in the next column ‘required to indicate as per Article 10d’ should generally be completed. However, upload of the batch/data entry to the UDB is technically possible even if you leave one or several of these fields blank. If you leave one or several of data fields blank, you should have sufficient justification available to present to your competent authority upon request. You may proactively leave a comment in the field ‘BATCH_REMARKS’ for that batch/data entry in this regard.
- Data fields that are neither marked as ‘mandatory’ in column ‘mandatory to indicate so batch can be uploaded to UDB’ nor as ‘required’ in column ‘required to indicate as per Article 10d’ are optional to complete. You are nevertheless encouraged to complete these fields if the data is available to you.

Aviation fuel mass vs aviation fuel volume:

Note that 'AVIATION_FUEL_MASS' is a field that is mandatory to indicate for each batch. If, for a given batch, solely a value for 'AVIATION_FUEL_VOLUME' is available instead, that value should

be converted to a value for 'AVIATION_FUEL_MASS' using the actual density of the aviation fuel batch. Exceptionally, if solely a value for 'AVIATION_FUEL_VOLUME' is available and the actual density of the batch is not known, the aviation fuel supplier is required to provide the value for 'AVIATION_FUEL_VOLUME' as well as provide a value for 'AVIATION_FUEL_MASS', using a proxy conversion value of 0.8 kg/l. In such case, the aviation fuel supplier should additionally indicate in the field 'BATCH_REMARKS' that this conversion was used.

Worked example:

To facilitate understanding of how to complete Reporting Template B, a worked example using Template B has been prepared. It can be downloaded from the ReFuelEU Aviation webpage. The worked example describes the sample case of an aviation fuel supplier and showcases the 'Bulk upload' tab in Template B would need to be completed.

4.7 How to upload Template B

Reporting Template B, once completed, should be uploaded via the tab 'Report on aviation fuel properties' within your aviation fuel supplier UDB account. It is possible to upload more than one template to add new batches. Note that if you upload the same batch more than once it will be duplicated in the UDB, so be aware of using subsequent uploads solely for new information to be added, while using the respective UDB features to correct or remove previous uploaded batches.

If you wish to request support regarding your UDB account or the upload process, you can find the relevant points of contact here.

How to name your completed Template B before upload to the UDB:

File names that are excessively long or contain spaces or special characters may cause issues during upload and should therefore be avoided. Before uploading the completed template, please name the file according to the following convention:

[YEAR]_B_[Unique NTR-ID of aviation fuel supplier].xlsx

where:

[YEAR] = Reporting period the template is completed for

[ID] = Unique VAT number of aviation fuel supplier, including country code

For example: 2025_B_ATU12345678.xlsx

Modifying or removing batches in the UDB after upload:

Note that you can modify or remove aviation fuel batches uploaded to the UDB using the EO_INTERNAL_REFERENCE number. It is thus advisable to ensure that this number is unique and traceable with regard to any relevant internal registry entries and related evidence.

4.8 Template B – detailed guidance

Navigate to the tab ‘1. Bulk Upload’ and enter the relevant information per batch, starting in row 3. Do not remove rows 1 and 2 in that tab, as this would impact the bulk upload function to the UDB.

Note that the tab ‘3. Explanation of Fields’ provides a detailed description of each requested data field, the selectable options for that field (if any), the characters allowed, as well as an example.

Follow carefully the indications to ensure a smooth upload. If errors occur, the UDB should report those and the data that was not uploaded after the upload attempt.

The data fields in the tab ‘1. Bulk Upload’ are depicted on the following page.

UI Label Name	DATABASE FIELD	Example	Explanation	Selectable options	Characters allowed	Mandatory for UDB upload?	Required under Art. 10d?
Reporting Period - Calendar Year	**REPORTING_PERIOD_CALENDAR_YEAR**	2025	The year corresponding to the reporting period. Format YYYY	-	Year (4 digits)	Mandatory	Required
Reporting Period - Quarter	**REPORTING_PERIOD_QUARTER**	Q1	The quarter corresponding to the reporting period.	Q1, Q2, Q3, Q4	One of the options or left blank		
Economic Operator Internal Reference	**EO_INTERNAL_REFERENCE**	EO0123456	Internal reference code used by the economic operator for tracking the batch. This reference should allow the economic operator or the competent authorities to identify, trace and retrieve all certificates or tests relevant to the reported data.	-	Numbers and letters (alphanumeric)	Mandatory	Required
Aviation Fuel Type	**AVIATION_FUEL_TYPE**	JetA1	The type/grade of the aviation fuel supplied.	JetA1, JetA, JetB, AVGAS	One the selectable options	Mandatory	Required
Aviation Fuel Mass	**AVIATION_FUEL_MASS**	5000.0000	The mass of aviation fuel in metric tonnes.	-	Number with up to 4 decimals. Point as decimal separator. No thousands separator	Mandatory	Required
Aviation Fuel Volume	**AVIATION_FUEL_VOLUME**	4900.0000	The volume of aviation fuel in cubic meters.	-	Number with up to 4 decimals. Point as decimal separator. No thousands separator		Required
Destination Union Airport	**DESTINATION_UNION_AIRPORT**	EHAM	The airport to which the aviation fuel is supplied. ICAO CODE (four capital letters)	-	ICAO CODE (four capital letters)	Mandatory	Required

UI Label Name	DATABASE FIELD	Example	Explanation	Selectable options	Characters allowed	Mandatory for UDB upload?	Required under Art. 10d?
Determination Method	**DETERMINATION_METHOD**	Measured at origin	Indicates if the values that are provided by the aviation fuel supplier were measured or calculated (i.e. based on RT data correlation) at airport or pre-airport storage (i.e. the point in the aviation fuel logistics chain that is closest to the actual airport fuel farm). It applies to energy content, aromatics, naphthalenes, sulphur and H/C content reported.	Measured at origin, Calculated at pre-airport, Measured at pre-airport	One of the selectable options or left blank		Required
Energy Content by Mass	**ENERGY_CONTENT_BY_MASS**	42.80	Actual energy content of the fuel in MJ/kg (or GJ/t). The use of default values is not accepted. This information is not mandatory to be reported under RFEUA, but you are encouraged to provide this information if available.	-	Number with up to 2 decimals. Point as decimal separator. No thousands separator		
Aromatics Test Method	**AROMATICS_TEST_METHOD**	ASTM D1319	The standard test method used to determine aromatics content. In case the DETERMINATION-METHOD is calculation, if several methods apply, select the most relevant and note the required adjustments in case of expected divergence (e.g. total aromatics vs. aromatics). If the method is not included in the list, report 'Other' in here and report the test used in 'AROMATICS_OTHER_TEST_METHOD'.	ASTM D1319, ASTM D6379, IP 156, IP 436, ASTM D8267, ASTM D8305, Other	One of the selectable options or left blank		Required
Aromatics Other Test Method	**AROMATICS_OTHER_TEST_METHOD**	IPXXX	If 'Other' is indicated in AROMATICS_TEST_METHOD, specify the used method here.	-	Free text or left blank		Required

UI Label Name	DATABASE FIELD	Example	Explanation	Selectable options	Characters allowed	Mandatory for UDB upload?	Required under Art. 10d?
Aromatics Content by Volume	**AROMATICS_CONTENT_BY_VOLUME**	20.5	The percentage by volume (% v/v) of aromatic compounds in the fuel batch. A 20.5% is reported as 20.5	-	Number with up to 1 decimal. Point as decimal separator. No thousands separator		Required
Naphthalenes Data Not Available	**NAPHTHALENES_DATA_NOT_AVAILABLE**	True	Indicate 'True' if naphthalene data is **not** available. If data is available report 'False' as in the example.	True, False	True or False or left blank		Required
Naphthalenes Remarks	**NAPHTHALENES_REMARKS**	Compliant with standard as smoke point >25	Any additional comment on naphthalenes content, e.g. why data on the naphthalenes content is not available.	-	Free text or left blank		Required
Naphthalenes Test Method	**NAPHTHALENES_TEST_METHOD**	ASTM D1840	The standard test method used to determine naphthalene content. In case the DETERMINATION-METHOD is calculation, if several methods apply, select the most relevant. If the method is not included in the list, report 'Other' in here and report the test used in 'NAPHTHALENES_OTHER_TEST_METHOD'.	ASTM D1840, Other	One of the selectable options or left blank		Required
Naphthalenes Other Test Method	**NAPHTHALENES_OTHER_TEST_METHOD**	NA	If 'Other' is indicated in NAPHTHALENES_TEST_METHOD, specify the used method here.	-	Free text or left blank		Required
Naphthalenes Content by Volume	**NAPHTHALENES_CONTENT_BY_VOLUME**	2.10	The percentage by volume (% v/v) of naphthalenes in the aviation fuel batch. A 2.10% is reported as 2.10.	-	Number with up to 2 decimals. Point as decimal separator. No thousands separator		Required

UI Label Name	DATABASE FIELD	Example	Explanation	Selectable options	Characters allowed	Mandatory for UDB upload?	Required under Art. 10d?
Sulphur Test Method	**SULPHUR_TEST_METHOD**	ASTM D5453	The standard test method used to determine sulphur content. In case of Calculation as DETERMINATION-METHOD, if several methods apply, select the most relevant and note the required adjustments in case of expected divergence (e.g. total sulphur vs. mercaptan). If the method is not included in the list, report 'Other' in here and report the test used in 'SULPHUR_OTHER_TEST_METHOD'.	ASTM D5453, ASTM D2622, ASTM D4294, IP 243, IP 373, IP 447, IP 336, Other	One of the selectable options or left blank		Required
Sulphur Other Test Method	**SULPHUR_OTHER_TEST_METHOD**	-	If 'Other' is indicated in SULPHUR_TEST_METHOD, specify the used method here.	-	Free text or left blank		Required
Sulphur Content Percent by Mass	**SULPHUR_CONTENT_PERCENT_BY_MASS**	0.0300	The percentage of (total, no mercaptan) sulphur in the fuel batch by mass (% m/m). A 0.030% is reported as 0.0300.	-	Number with up to 4 decimals. Point as decimal separator. No thousands separator		Required
Sulphur Content Percent - DL	**SULPHUR_CONTENT_PERCENT_DL**	BELOW DL	Indicate if the provided value for sulphur is below the detection limit, indicating BELOW DL I.e. if the available value in the certificate/lab test is < 0.03. In such case, SULPHUR_CONTENT_PERCENT_BY_MASS is equal to 0.0300, and this field is reported as 'BELOW DL'. This field can be left blank when not applicable.	BELOW DL or left blank	One of the selectable options or left blank		Required

UI Label Name	DATABASE FIELD	Example	Explanation	Selectable options	Characters allowed	Mandatory for UDB upload?	Required under Art. 10d?
Hydrogen to Carbon Test Method	**HYDROGEN_TO_CARBON_TEST_METHOD**	ASTM D5291	The test method used to determine hydrogen-to-carbon ratio in the aviation fuel batch. This information is not mandatory to be reported under RFEUA, but you are encouraged to provide this information if available.	ASTM D5291, ASTM D3701, Other	One of the selectable options or left blank		
Hydrogen Other Test Method	**HYDROGEN_OTHER_TEST_METHOD**	-	If a different test method is used, specify here. This information is not mandatory to be reported under RFEUA, but you are encouraged to provide this information if available.	-	One of the selectable options or left blank		
Hydrogen to Carbon Ratio	**HYDROGEN_TO_CARBON_RATIO**	1.8	Molar ratio of hydrogen to carbon in the fuel batch. This information is not mandatory to be reported under RFEUA, but you are encouraged to provide this information if available.	-	Number with up to 1 decimals. Point as decimal separator. No thousands separator		
Batch Remarks	**BATCH_REMARKS**	Batch remarks	Additional remarks, if any, on the batch delivery.	-	Free text or left blank		

Annex I - Glossary

Term	Definition
Aviation fuel	'Aviation fuel' means drop-in fuel manufactured for direct use by aircraft (see Article 3.6). It includes conventional (fossil-based) aviation fuels, SAF (see Art. 3(7)), and other eligible fuels (see Art. 3.18)) as defined in RFEUA.
Batch	A quantity of SAF that can be identified with a number and can be traced (Art. 3.10)
CIRCABC	'Communication and Information Resource Centre for Administrations, Businesses and Citizens'. Platform for aviation fuel suppliers to submit the completed Reporting Template A for review by competent authorities and for access by EASA for the purpose of collecting data for the Annual Technical Report as per Article 13.
CoA - Certificate of Analysis	A CoA is issued by independent inspectors and/or laboratories and contains the results of measurements for fuel quality compliance but does not necessarily contain or provide information regarding those identified as being required at point of manufacture or the type and amount of any additives or percentage of synthetic or hydroprocessed components.
CoQ - Certificate of Quality	The CoQ is produced at the point of manufacture and is the original document describing the quality of a batch of aviation fuel. A CoQ either originates from a Refinery (in which case it may be entitled "Refinery Certificate of Quality" (RCQ) or from a midstream terminal that manufactures a Sustainable Aviation Fuel (SAF) blend and issues its Certificate of Quality.
EASA	The European Union Aviation Safety Agency is an EU agency designated with several competences within RFEUA implementation.
ReFuelEU Aviation, RFEUA	Regulation (EU) 2023/2405 of the European Parliament and of the Council
RT - Recertification Test	The recertification test is normally used when aviation fuels are transferred in multiproduct systems such as pipelines or ocean-going tankers. Recertification testing comprises a reduced set of tests (compared with the full set in the CoQ or CoA) that are particularly sensitive to contamination.
SAF - Sustainable Aviation Fuel	SAF are aviation fuels that comprise synthetic aviation fuels, aviation biofuels or recycled carbon aviation fuels (see art. 3(7)).
UDB - Union Database	A platform developed and managed by the European Commission that aims to ensure the tracing of liquid and gaseous transport fuels, including SAF.
Competent authority	Competent authority for the aviation fuel supplier at national level for that EU Member state in which the aviation fuel supplier has its principle place of business (see Article 11.7).
PoS - Proof of Sustainability	Standardized and controlled document that provides evidence that a batch of a product, such as SAF, complies with a set of sustainability criteria, including greenhouse gas (GHG) emission savings criteria. It serves as a verifiable record of compliance. In the UDB, a PoS is the digital reference.
PoC - Proof of Compliance	Standardized and controlled document that provides evidence that a batch of product, such as SAF, complies with a set of sustainability criteria, including greenhouse gas (GHG) emission savings criteria.

	The PoC is based on an underlying Proof of Sustainability (PoS) and can only be issued once the underlying PoS has been surrendered to relevant competent authorities or has alternatively been marked for future submission. The PoC is primarily intended to serve as documentary evidence that fuel suppliers can forward to downstream users who may not have access to the original PoS document, such as aircraft operators, to support their claims in regulatory schemes such as the EU Emissions Trading System (ETS).