ReFuelEU Aviation Handbook

September 2024

Version 1

As one of the elements within the European Union's Fit for 55 package, the ReFuelEU Aviation regulation represents an important initiative to maximize the potential contribution of sustainable aviation fuels towards air transport's decarbonization. This Handbook on ReFuelEU Aviation aims to assist airlines navigate the regulation and its requirements, and facilitate compliance.

Disclaimer: The IATA ReFuelEU Aviation Handbook should not be interpreted as IATA's endorsement of all the implementation elements within the Regulation.

Our position remains that at today's nascent stage of SAF production, technology-push policy initiatives should come first.

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Term	Definition
Advanced biofuels	Aviation fuels that are either: "advanced biofuels" as defined in Article 2, second paragraph, point (34), of Directive (EU) 2018/2001; "biofuels" as defined in Article 2, second paragraph, point (33), of Directive (EU) 2018/2001, produced from the feedstock listed in Part B of Annex IX to that Directive; or, "biofuels" as defined in Article 2, second paragraph, point (33), of Directive (EU) 2018/2001, except biofuels produced from "food and feed crops" as defined in Article 2, second paragraph, point (40), of that Directive, and which comply with the sustainability and lifecycle emissions savings criteria laid down in Article 29 of that Directive and are certified in compliance with Article 30 of that Directive.
Aircraft operator	A person that operates at least 500 commercial passenger air transport flights or 52 commercial all-cargo air transport flights departing Union airports in the previous reporting period.
Airport	As defined in Article 2(1) of Directive 2009/12/EC – "means any land area specifically adapted for the landing, taking-off, and maneuvering of aircraft, including the ancillary installations which these operations may involve for the requirements of aircraft traffic and services, including the installations needed to assist commercial air services."
Airport management body	As defined in Article 2(2) of Directive 2009/12/EC – "means a body which, in conjunction with other activities or not as the case may be, has as its objective under national laws, regulations or contracts the administration and management of the airport or airport network infrastructures and the coordination and control of the activities of the different operators present in the airports or airport network concerned" – or, the body for which the Member State concerned has reserved the management of the centralized infrastructures for fuel distribution systems for another body under Article 8(1) of Council Directive 96/67/EC.
Aviation fuel	Drop-in fuel manufactured for direct use by aircraft.
Aviation fuel supplier/Fuel Supplier	Supplying aviation fuel or hydrogen for aviation at a Union airport and as defined in Article 2(38) of Directive (EU) 2018/2001 – "an entity supplying fuel to the market that is responsible for passing fuel through an excise duty point or, where no excise is due or where duly justified, any other relevant entity designated by a Member State."
Batch	A quantity of SAF that can be identified with a number and can be traced.
Commercial air transport flight	Implies flights operated for transporting passengers, cargo, or mail for remuneration or hire, including business aviation.
Competent authority	The authority designated by a respective Member State to implement the regulation and to impose fines under the regulation.
Conventional aviation fuel	Aviation fuels produced from fossil non-renewable sources of hydrocarbon fuels.
Greenhouse gas scheme	A scheme granting benefits to aircraft operators for the use of SAF.
Lifecycle emissions	Carbon dioxide equivalent emissions of SAF that take into account carbon dioxide equivalent emissions of energy production, transport, distribution, and use onboard, including during combustion, calculated in accordance with the methodologies adopted under Article 28(5) or Article 31(5) of Directive (EU) 2018/2001 or other relevant Union law.

Low-carbon aviation fuels	Synthetic low-carbon aviation fuels or low-carbon hydrogen for aviation.
Principal place of business	The head office or registered office of an aviation fuel supplier in the Member State within which the principal financial and operational control of the aviation fuel supplier takes place.
Recycled carbon aviation fuels	Aviation fuels that are "recycled carbon fuels" as defined in Article 2, second paragraph, point (35), of Directive (EU) 2018/2001, which comply with the lifecycle emissions savings threshold referred to in Article 29a(2) of that Directive and are certified in compliance with Article 30 of that Directive.
ReFuelEU	The 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).
Renewable hydrogen	Hydrogen for use in aircraft that qualifies as a "renewable fuel of non-biological origin," as defined in Article 2, second paragraph, point (36), of Directive (EU) 2018/2001, and which complies with the lifecycle emissions savings threshold referred to in Article 29a(1) of that Directive and is certified in compliance with Article 30 of that Directive.
Reporting period	The period from 1 January until 31 December preceding the reporting year.
Reporting year	The period from 1 January to 31 December, during which the reports under Articles 8 (aircraft operators) and Article 10 (fuel suppliers) are to be submitted.
Sustainable aviation fuel (SAF)	Aviation fuels that are either: synthetic aviation fuels, advanced biofuels, or, recycled carbon aviation fuels.
Synthetic aviation fuels [1]	Aviation fuels that are "renewable fuels of non-biological origin," (RFNBO) as defined in Article 2, second paragraph, point (36), of Directive (EU) 2018/2001, which comply with the lifecycle emissions savings threshold referred to in Article 29a(1) of that Directive and are certified in compliance with Article 30 of that Directive.
Total yearly non-tanked quantity	The sum of the yearly non-tanked quantities by an aircraft operator at all Union airports over the course of a reporting period.
Union airports	Airports 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 are not situated in an outermost region, as listed in Article 349 TFEU.
Union database (UDB)	As established in Article 31a of Directive (EU) 2018/2001 – "Union database is set up to enable the tracing of liquid and gaseous renewable fuels and recycled carbon fuels."
Yearly aviation fuel required	The amount of aviation fuel referred to as "trip fuel" and "taxi fuel" in Annex IV to Commission Regulation (EU) No 965/2012 that is necessary to operate all the flights covered by ReFuelEU operated by an aircraft operator departing from a given Union airport, over the course of a reporting period.
Yearly non-tanked quantity	Difference between the yearly aviation fuel required and the actual fuel uplifted by an aircraft operator.

[1] While for the purposes of the regulation, this term refers specifically to RFNBO, it must be noted that, from a broader technical perspective, all unblended or neat SAF is considered synthetic, thus defined as Synthetic Blending Component (SBC). See the IATA SAF Handbook for further reference.

Introduction

The 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), henceforth "regulation" or "ReFuelEU," lays down harmonized rules on the uptake and supply of sustainable aviation fuels (SAF).[2,3]

The ReFuelEU Aviation initiative is part of the "Fit for 55" package, which endeavors to reduce the European Union's (EU) emissions by at least 55% by 2030 relative to 1990 levels. This package includes other initiatives like the EU Emissions Trading System (ETS) and the Renewable Energy Directive, which are also concerned with aviation and have several interlinkages.

This handbook is meant to help aircraft operators navigate the regulation and its requirements, with the overarching objective of facilitating compliance. Each section addresses a specific part of the regulation and begins with a factual breakdown, followed by answers to frequently asked operational questions provided by airlines. However, several open questions persist, some of which are captured in Annex B and could be answered pending further clarifications from the European Commission (EC).

[2] **Article 1**
[3] **Article 3(7) describes SAF to include synthetic aviation fuels, aviation biofuels and recycled carbon aviation fuels**

1. Scope of the regulation

ReFuelEU applies only to commercial air transport flights[4] and concerns aircraft operators, Union airports and their managing bodies, and aviation fuel suppliers.[5] Furthermore, it contains the following thresholds for Union airports and aircraft operators to fall within its scope.

1.1. Thresholds

Given the thresholds and opt-in provisions below, the Commission must publish a consolidated and updated list of Union airports and aircraft operators that fall within the scope of ReFuelEU.[6]

1.1.1 Union airports

"Union airports" are airports[7] 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.[8] Here, the "reporting period" is from 1 January until 31 December, preceding the reporting year.[9] Additionally, a Union airport cannot typically be situated in an outermost region.[10, 11]

A Member State, after consulting (or upon the request of) the airport management body[12] of an airport outside of the threshold described above and located on its territory may decide for that airport to be considered as a Union airport if, at the time of the decision, the airport takes measures to facilitate access of aircraft operators to aviation fuels containing minimum shares of SAF as established in the regulation.[13] This decision must be communicated to the European Commission (Commission) and the European Union Safety Agency (EASA) at least six months before the reporting period from which the decision applies.

1.1.2 Aircraft operator

"Aircraft operator" means a person that operates at least 500 commercial passenger air transport flights or 52 commercial all-cargo air transport flights departing Union airports in the previous reporting period.[14] If it is impossible to identify that person, it refers to the aircraft's owner. Here, "commercial air transport flight" implies flights operated for transporting passengers, cargo, or mail for remuneration or hire, including business aviation.[15]

A person operating commercial flights outside the threshold described above may decide to be treated as an aircraft operator under the regulation. Similarly, a person operating non-commercial flights, either fully or partially, may choose to be treated as an aircraft operator under this regulation. This decision must be conveyed to the Member State whose competent authority or authorities are responsible for that aircraft

[4] Article 2(1)
[5] Article 3(19) – supplying aviation fuel or hydrogen for aviation at a Union airport and as defined in Article 2(38) of Directive (EU) 2018/2001 (an entity supplying fuel to the market that is responsible for passing fuel through an excise duty point or, where no excise is due or where duly justified, any other relevant entity designated by a Member State)
[6] Article 2(4)
[7] Article 2(1) of Directive 2009/12/EC
[8] Article 3(1)
[9] Article 3(22) - Period from 1 January to 31 December, during which the reports under Articles 8 (aircraft operators) and Article 10 (fuel suppliers) are to be submitted
[10] Article 3(1)
[11] As listed in Article 349 of the Treaty on the Functioning of the European Union (TFEU)
[12] As defined in Article 2(2) of Directive 2009/12/EC or, the body for which the Member State concerned has reserved the management of the centralized infrastructures for fuel distribution systems for another body pursuant to Article 8(1) of Council Directive 96/67/EC
[13] Article 6(1)
[14] Article 3(3)
[15] Article 3(4)

operator,[16] and that Member State shall communicate this decision to the Commission and EASA at least six months before the reporting period from which the decision applies.

1.2. Member State and competent authority attribution

Member States must designate the competent authority or authorities to implement the regulation and to impose fines as detailed in Section 5[17] The Commission, EASA, and the Member States' competent authorities are expected to cooperate to ensure the regulation's effective implementation and compliance.

The attribution of aircraft operators to a specific Member State, and therefore its competent authority or authorities, must be done in accordance with the list of aircraft operators and their regulating Member States under the EU ETS Directive.[18] If this isn't possible, then the attribution must be done according to the rules laid down in the EU ETS directive.[19] The Commission and Eurocontrol may support the Member States in the attribution process.

The Member State attribution for a Union airport managing body must be done based on the territorial jurisdiction of the respective Union Airport.[20]

For a fuel supplier, the attribution must be done based on its principal place of business. If its principal place of business does not fall within a Member State, then the attribution is done to the Member State where the fuel supplier supplied most fuel in 2023 or in the first year of providing fuel to the Union market, whichever is the latest.[21]

1.3. FAQs

Are the outermost regions excluded?

Airports located in outermost regions are excluded from being considered "Union airports" as defined in the regulation. However, the airport management body of an airport situated in an outermost region may request that the Member State on whose territory the airport falls to be treated as a "Union airport." This will ensure that the airport falls within ReFuelEU's scope.

However, before the Member State decides, the concerned airport management body must ensure that measures are taken to facilitate aircraft operators' access to aviation fuels containing minimum shares of SAF as established in the regulation at the time of the request. The decision made by the Member State must be conveyed to EASA at least six months before the reporting period when that decision would apply.[22]

The Commission must provide a consolidated and updated list of Union airports for each reporting period.[23] The list of Union airports for the reporting period 2024 can be found here (along with the list of aircraft operators, and the designated competent authorities of the Member States).

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[16] Article 11(5)
[17] Article 11(1)
[18] Commission Regulation (EC) No 748/2009 establishes a list of aircraft operators who performed an aviation activity described in Annex I to Directive 2003/87/EC (EU ETS) on or after 1 January 2006
[19] Article 18a of Directive 2003/87/EC
[20] Article 11(6)
[21] Article 11(7) and Article 11(8)
[22] Article 2(2), second sub-paragraph
[23] Article 2(4)

Do territories associated with all the European Economic Area (EEA) member countries fall within this scope?

The regulation only applies to EU Member States. Therefore, the member countries of the EEA that are not part of the European Union (Iceland, Liechtenstein, Norway) do not fall within the scope of ReFuelEU. Additionally, Switzerland is neither a member of the EU nor the EEA (although it is part of EFTA, and participates in the single market with several exceptions) and falls outside the scope of ReFuelEU regulation.

This distinction is reflected in the list of Union airports within the scope, for the reporting period 2024.

What exactly are the "flights covered by this Regulation"? All the flights departing Union airports?

The regulation concerns commercial air transport flights performed by an aircraft operator, that fall within its scope. The list of aircraft operators for the reporting period 2024 can be found here. The phrase "flights covered by this Regulation" has always been accompanied consecutively by "departing from given Union airports", or equivalent, mainly in the context of an aircraft operator's reporting obligations.

Do flights performed on wet leases fall within the scope of this regulation?

Yes, as long as the flight is a commercial air transport flight, within the regulation's definition, and is performed by an aircraft operator that falls within the scope of the regulation. The ICAO designator is the determining factor for which flights fall under the responsibility of which aircraft operator, regardless of whether the aircraft is leased, owned, or wet-leased.

Do the provisions apply only to fuel uplifted onto intra-EU flights?

No, they apply to all fuel uplifted by aircraft operators at Union airports, for both intra-EU and extra-EU flights, conducted by both EU and non-EU aircraft operators.

Would the competent authority under ReFuelEU be the same as that for EU ETS?

The competent authorities responsible for enforcing the application of the ReFuelEU are assigned by the Commission, and each operator has the designated authority indicated in the list of aircraft operators in scope. The list of contacts for the authorities is available on the EC page here.

The attribution of aircraft operators to a specific Member State (and hence its competent authorities) must be done as per the list of aircraft operators and their regulating Member States under the EU ETS Directive. If this is not possible, then the attribution must be done according to the rules laid down in the EU ETS directive. Therefore, for most aircraft operators, their Member State attribution would be the same.

Each Member State must clarify whether their designated competent authority/authorities under the EU ETS Directive and ReFuelEU regulation are the same or different. This would determine whether aircraft operators have a common point of contact for both mechanisms.

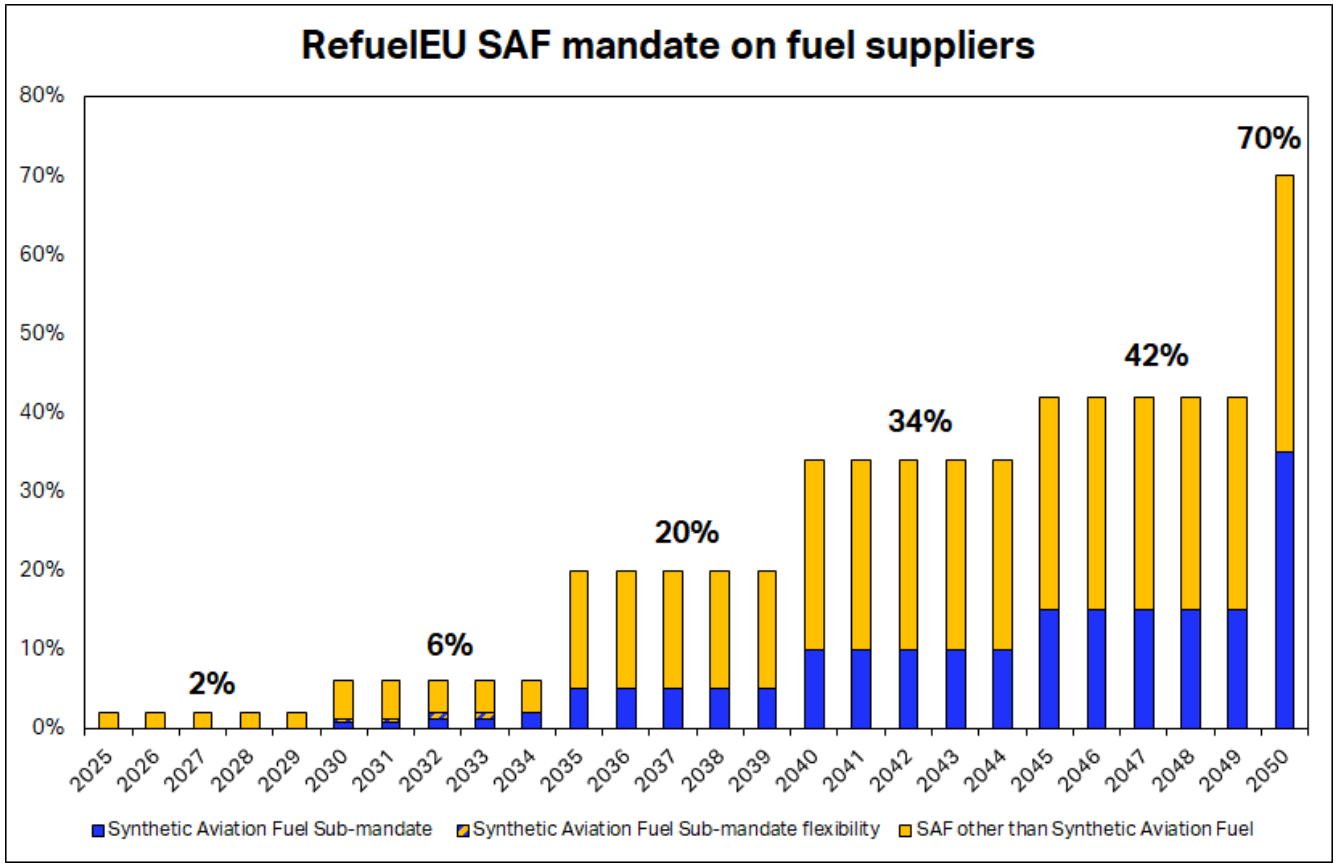
2. Obligations

The implementation of ReFuelEU implies obligations on fuel suppliers, Union airports, and aircraft operators, which are discussed in the following subsections.

2.1. Fuel suppliers

Under ReFuelEU, aviation fuel suppliers are mandated to ensure that all the aviation fuel made available to aircraft operators at each Union airport contains the minimum shares of SAF,[24] including that of synthetic aviation fuel,[25] as outlined in Annex A and illustrated in Chart 1.[26]

Chart 1: Obligations on fuel suppliers under ReFuelEU



Source: IATA Sustainability and Economics, Regulation (EU) 2023/2405

The flexibility mechanisms,[27] discussed in Section 8, offer some leeway to a fuel supplier regarding how it achieves its supply mandates among all the Union airports to which it supplied aviation fuel over a given reporting period. However, these flexibility mechanisms are currently envisioned to be applied only from 1 January 2025 until 31 December 2034. Furthermore, fuel suppliers may utilize the mass balance system[28] to demonstrate compliance with their obligations. In a mass balance system, SAF would be mixed in the jet fuel

[24] **Article 3(7)**
[25] **Article 3(12)**
[26] **Annex 1**
[27] **As described in Article 15, and discussed in detail in Section 8**
[28] **Article 30 of Directive (EU) 2018/2001**

supply chain, and separation is solely based on proper accounting. At every interface along the supply chain, the quantity of SAF entering and leaving is balanced within a defined period.

The supply of SAF produced from the following feedstocks will not count towards a fuel supplier's targets: food and feed crops,[29] intermediate crops, palm fatty acid distillate, palm and soy-derived materials, and soap stocks and their derivates.[30] However, the supply of renewable hydrogen[31] and low-carbon aviation fuels[32] would be deemed to contribute towards the minimum shares.[33]

Generally, if a supplier fails to meet a target in a given reporting period, that shortfall will be carried over to the subsequent reporting period. However, a few exceptions are provided for synthetic aviation fuel (see Section 3.1.1.).

2.1.1 Shortfalls in the supply of SAF, including synthetic aviation fuels

There is no "buy-out" provision for the fuel suppliers to meet their supply obligations in a given reporting period. In other words, the supply deficiency, or shortfall, of SAF or synthetic aviation fuels against an obligation for a reporting period is not deemed met even if the supplier pays the fines to the Member States as outlined in Section 6.2.1. In addition to paying the penalty,[34] the supplier will have to ensure that they supply that shortfall in the next reporting period, in addition to meeting their obligation for that period. This applies to the accumulated shortfalls for SAF and synthetic aviation fuels.

However, some flexibility is afforded concerning shortfalls in the supply of synthetic aviation fuels, mirroring the flexibility offered in their supply. If a fuel supplier fails to supply the average shares of synthetic aviation fuel from 1 January 2030 to 31 December 2031, then that shortfall must be fulfilled between 1 January 2032 and 31 December 2034, in addition to the supply obligations for that period. Similarly, any shortfall between 1 January 2032 and 31 December 2034 must be fulfilled by the subsequent reporting period,[35] along with the supply obligations for that period.

2.2. Union airport managing body

Union airport managing bodies are also obligated under ReFuelEU to take necessary measures to ensure aircraft operators can access fuels containing SAF.[36] If aircraft operators have difficulties accessing SAF in Union airports, they can report this to the competent authority, which will raise the matter with the concerned Union airport managing body.[37]

2.3. Aircraft Operators

Put simply, tankering is the practice of uplifting more than the required fuel to fly a sector in anticipation of not uplifting, at the destination, some or all of the fuel needed for a subsequent sector. This may be done for several operational, safety, or economic reasons.

The regulation obligates aircraft operators to ensure that the yearly quantity of fuel uplifted at a given Union airport is at least 90% of their yearly aviation fuel required, as a measure to curb tankering. The "yearly aviation fuel required" is defined as "the amount of aviation fuel referred to as 'trip fuel' and 'taxi fuel' in Annex IV to

[29] **Article 2 of Directive (EU) 2018/2001**
[30] **Article 4(5)**
[31] **Article 3(16)**
[32] **Article 3(18)**
[33] **Article 4(1) and Article 4(2)**
[34] **Article 12(8)**
[35] **Article 4(7) and Article 12(8)**
[36] **Article 6(1)**
[37] **Article 6(2) to Article 6(5)**

Commission Regulation (EU) No 965/2012[38] that is necessary to operate all the flights covered by this regulation operated by an aircraft operator, departing from a given Union airport, over the course of a reporting period".[39] The fuel amounts include conventional aviation fuel (kerosene) and SAF, and the obligation comes into effect from 1 January 2025.[40]

Compliance with fuel safety rules may result in an operator falling below the required uplift levels for a given year; however, the operator must justify this to their competent authority and EASA,[41] including indicating the routes impacted. Information about this non-compliance should also be included in the aircraft operator's report to their competent authority and EASA (see Section 4.2).

2.3.1 Exemptions

On specific new or existing routes shorter than 850 kilometers or for routes connecting with airports on islands without rail or road connections and departing from a Union airport and of distance of less than 1,200 kilometers, aircraft operators can request their competent authority's exemption from complying with their obligation upon adequate justification.[42] The request must be made at least three months before the exemption is expected to become operational, and the competent authority must decide at the latest one month before the envisaged exemption. However, these exemptions would be available only for the following situations:

i. Serious and recurrent operational difficulties in refueling aircraft at a given Union airport, preventing aircraft operators from performing turnarounds within a reasonable time.

ii. Structural aviation fuel supply difficulties stemming from the geographic characteristics of a given Union airport, leading to significantly higher prices of aviation fuels compared to prices applied on average to similar types of aviation fuels in other Union airports due in particular to specific fuel transport constraints or to limited availability of fuels at that Union airport and placing the aircraft operator concerned at a significant competitive disadvantage compared to market conditions existing in other Union airports with similar competitive characteristics.

The competent authority must notify the Commission of the list of authorized and rejected exemptions, justifying its decision and the assessment upon which it is based. The Commission will publish the list of authorized exemptions and update that list at least once a year.[43]

For example, in Chart 2, an aircraft operator is flying an aircraft from Airport A to Union Airport B, with an onward journey to Airport C which is situated less than 850 kilometers from Union Airport B. Supported by justifications that fall within the situations enumerated above, the aircraft operator may apply for an exemption from uplifting at least 90% of their yearly aviation fuel required at Union Airport B. Importantly, Airports A and C may not have to qualify as Union Airports, as defined under this regulation (Section 2.2.1).

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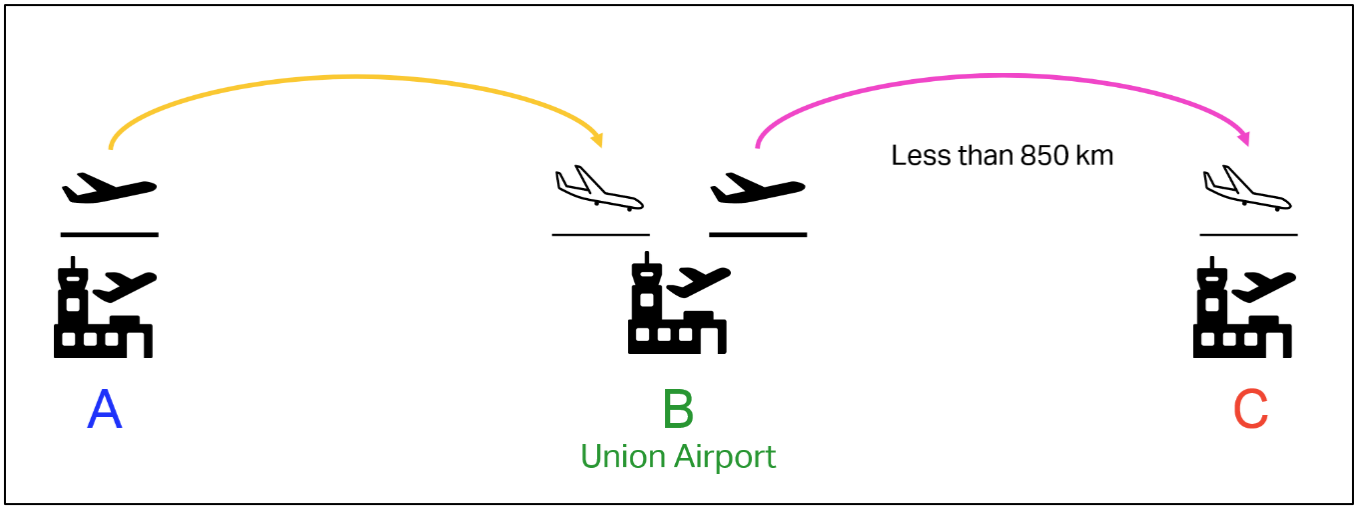
[38] Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council

[39] Article 3(24)
[40] Article 8
[41] Article 5(2)
[42] Article 5(3)
[43] Article 5(8)

Chart 2: Example of when the exemptions could be triggered



Source: IATA Sustainability and Economics

Furthermore, the exemption would be granted only for a limited validity period, at most one year.[44] Following information from the competent authorities, the Commission must publish and update the list of authorized exemptions at least once a year.[45]

The Commission must adopt detailed guidelines on applying these exemptions, including elements that aircraft operators must provide to justify requested exemptions.[46]

2.4. FAQs

What Sustainability Certification Schemes are accepted besides ISCC EU or RSB EU RED?

The different kinds of fuels that fall within the definition of SAF, including synthetic aviation fuel, must comply with their respective sustainability criteria as detailed in the Renewable Energy Directive. The European Commission has, so far, recognized 15 voluntary and national certification schemes, including Roundtable of Sustainable Biofuels EU RED (RSB EU RED) and International Sustainability and Carbon Certification (ISCC EU).

Will the exemptions provided in Article 5 also cover cases of monopoly in fuel supply at an EU airport that led to significantly higher prices of aviation fuels, especially considering Article 5(3)(b)?

The provisions in Article 5(3)(b) concern significant competitive disadvantages that aircraft operators may face at a given Union airport originating only from these two scenarios: the geographic characteristics of the airport or the limited availability of fuels. As such, cases of supply monopoly, which entail a situation where sufficient fuel is present albeit controlled by a single entity, may not fall within these scenarios.

[44] **Article 5(5)**
[45] **Article 5(8)**
[46] **Article 5(11)**

Will the guidelines that the Commission prepares according to Article 5(11) be binding on the Member States and their competent authorities?

No, the Guidelines mentioned in Article 5(11) are only meant to contain the elements that an aircraft operator must provide to justify the exemptions they request and help Member States make decisions about awarding these exemptions. They are not binding.

Would exemptions be granted for routes longer than 850 km to non-island Union airports, if other operational reasons result in regular departure/turnaround delays at the destination Union airport?

The regulation does not provide exemptions to routes longer than 850 km to non-island destination airports, without exception.

The exemptions and the ensuing situations detailed in Article 5(3) concern only the originating Union airport in which the aircraft operator is obligated to ensure that the yearly quantity of aviation fuel uplifted is at least 90% of the yearly aviation fuel required.[47] Whether the destination airport is a "Union airport" or not, or the circumstance of airport operations or fuel supply at that airport, are not being considered.

How will the regulations impact or apply to diverted flights departing Union airports?

Aircraft operators may make an unplanned landing at an airport different from the destination airport indicated by them in the last approved flight plan filed before the flight departure.

Pending confirmation from the EC, it is expected that both the diverted flight and the subsequent flight are to be reported under Article 8 if departing from a Union airport. Due to its unplanned nature, whether a flight is to be reported is based on its commercial nature and where it departs from.

Should the data for calculating the yearly aviation fuel requirement come from the flight plans? If so, which version of the Operational Flight Plans (OFP) should be used and how?

Pending confirmation from the EC, for the fuel quantities that have been planned for taxi and trip fuel categories, aircraft operators are expected to use the final version of the OFPs (which is signed by the captain) for each flight within the scope of ReFuelEU. These quantities can, in turn, be used to calculate the yearly aviation fuel requirement.

[47] **Article 5(1)**

If 80% of the required fuel is uplifted at one Union airport and the remaining 10% at another, the initial flight may not meet the 90% requirement, but subsequent refueling compensates for this shortfall. Would this scenario still be considered compliant with the regulation?

No, the regulation obligates aircraft operators to ensure that the **yearly** quantity of fuel uplifted at any given Union airport is at least 90% of the yearly aviation fuel required at that Union airport. The obligation is based on aggregating all flights performed by an aircraft operator at a given Union airport operated over a year and not applied on a per-flight basis.

However, it is at the sole discretion of aircraft operators how they choose to meet their obligations in terms of their fuel uplift strategies, which may be subject to regulatory constraints. There could also be conditions under which it will not be possible to meet the obligations for some airports and route combinations.

Are there any restrictions on the amount of fuel that can be uplifted from Union airports when the destination is outside of Europe? Similarly, is it permissible to uplift additional fuel from the airport of origin as long as the remaining aircraft tank capacity upon arrival allows for the uplift of 90% of the required fuel for the next flight?

The restriction of the minimum 90% of the required fuel uplift in a Union airport applies to a flight regardless of the destination being in or outside Europe. There is no limitation on the fuel onboard at departure for the flight arriving at a Union airport, as long as, on an aggregated basis over a year, the obligation to uplift at least 90% of the fuel requirement at the Union airport is met.

Regarding the requirement to report non-compliance due to safety reasons or technical difficulties, what type of evidence must be submitted to support such claims? What is the timeline for this report? Should it be done immediately upon the occurrence of the incident?

The regulation provides for aircraft operators falling below their obligation thresholds at a Union airport due to compliance with fuel safety rules. In such cases, they must "duly justify" to their competent authority and EASA for having fallen below their obligation thresholds, along with an indication of affected routes. There is currently no clarification on the documents to be submitted to support this justification, but it is expected to be made in a guidance document.

Is there a list of the specific routes to which these exemptions related to Article 5 apply?

There is no prevalent list of routes that the exemptions described in Article 5(3) automatically apply. Based on the exemption requests made by aircraft operators, the competent authorities of Member States must notify the Commission of their lists of authorized and rejected exemptions, along with justifications for their decisions. The Commission then must publish a list of authorized exemptions and update it at least once a year.

Is there an obligation for airlines to purchase the SAF mandated on fuel suppliers?

No, airlines are not obligated to purchase or uplift any specific amount of SAF associated with the supplier mandate.

However, in countries where an SAF mandate on fuel suppliers applies, it has been observed that some fuel suppliers tend to impose surcharges related to the SAF mandate. The regulation does not provide any basis for imposing such charges or any stated rules for establishing the level of these charges. In any case, airlines that have to bear a SAF mandate-related surcharge should seek sustainability documentation from their suppliers for the appropriate volume of SAF to allow them to reduce their obligations under EU ETS (refer to Section 5.1).

Airlines may not automatically receive the sustainability documentation from their suppliers and hence may need to enter into additional negotiations to re-define their existing conventional aviation fuel (CAF) contracts. Alternatively, where practical, entering into a SAF supply contract for the mandated volume could also avoid the imposition of the surcharge. Having a SAF supply contract also opens the opportunity for an airline operating intra-EU flights to claim the 20 million ETS allowances that have been set aside to assist in covering the price difference between CAF and SAF.

IATA is also working to promote the adoption of "dual conformance"[48] (i.e., a batch of SAF being compliant with two regulatory requirements such as the EU Renewable Energy Directive and ICAO's Carbon Offsetting and Reduction Scheme for International Aviation, i.e., CORSIA), which will allow SAF-use claims under CORSIA for ex-EU flights and/or non-EU aircraft operators that are not subject to EU ETS (see Section 5.2).

[48] IATA has produced a document to help airlines understand the requirements and criteria for SAF sustainability certification. "In-depth: Understanding SAF Sustainability Certification"

3. Reporting

The regulation imposes reporting regulations on both fuel suppliers[49] and aircraft operators,[50] which are discussed in the following subsections.

3.1. Reporting obligations on fuel suppliers

The fuel suppliers must report in the Union database[51] by 14 February of a reporting year,[52] and for the first time in 2025, the information described in Section 4.1.2.

3.1.1 Union database

The EU Renewable Energy Directive[53] (EU RED) established the Union database. It is a comprehensive traceability tool that aims to trace consignments of renewable and recycled carbon fuels and the raw materials used for their production – from the origin of the raw materials to the point where fuels are put on the EU market for final consumption. The database is intended to ensure market transparency and traceability in the supply chain for such fuels, mitigating the risk of irregularities and fraud.

Member States may set up their own national databases according to their national law or practice. These national databases may be linked with the Union database, provided that they comply with the latter in terms of timeliness of data transfer, the typology of data sets, and the data quality and verification protocols. Furthermore, Member States should ensure that data entered into the national database are instantly transferred to the Union database. For example, the French domestic database (CarbuRe) was recently linked to the Union database.

The Member States must have the necessary legal and administrative framework at the national level to ensure that the data entered by the fuel suppliers is accurate, verified, and audited.[54] The Commission would publish annual reports about the data in the Union database in an aggregated form, with due regard to the protection of commercially sensitive information, including the quantities, the geographical origin, and feedstock type of fuels.[55]

3.1.2 Information to be reported by fuel suppliers

The following information must be reported in the Union database by the fuel suppliers:

i. The amount of aviation fuel supplied at each Union airport, expressed in tonnes.

ii. The amount of SAF supplied at each Union airport, and for each type of SAF, as detailed in point iii., expressed in tonnes.

iii. The conversion process, the characteristics and origin of the feedstock used for production, and the lifecycle emissions of each type of SAF supplied at Union airports.

iv. The content of aromatics and naphthalenes by percentage volume and of sulphur by percentage mass in aviation fuel supplied per batch,[56] per Union airport, and at Union level, indicating the total volume

[49] **Article 10**
[50] **Article 8**
[51] **As established in Article 31a of Directive (EU) 2018/2001 – legislative text of EU RED**
[52] **Article 3(22) - Period from 1 January to 31 December, during which the reports by aircraft operators and fuel suppliers are to be submitted**
[53] **Directive (EU) 2018/2001**
[54] **Article 31a(5) of Directive (EU) 2018/2001 – legislative text of EU RED**
[55] **Article 31a(6) of Directive (EU) 2018/2001 – legislative text of EU RED**
[56] **Article 3(10) – "batch" means a quantity of SAF that can be identified with a number and can be traced**

and mass of each batch and test method applied to measure the content of each substance at batch level.

v. The energy content for aviation fuel and SAF supplied at each Union airport for each fuel type.

3.2. Reporting obligations on aircraft operators

Aircraft operators must submit their report by 31 March of a reporting year, containing information concerning the respective reporting period, i.e., the calendar year preceding the reporting year. The first report must be submitted in 2025, containing information from 2024. The reports must be submitted to the aircraft operator's competent authority and EASA.[57]

The report must also be verified by an independent verifier in accordance with the requirements set out in the EU Emission Trading System's (EU ETS) legal text and subsequent implementing acts.

3.2.1 Information to be submitted by aircraft operators

The aircraft operators must report the following information to their respective competent authorities and EASA, according to the templates laid down in the regulation:[58]

i. The total amount of aviation fuel uplifted at each Union airport, expressed in tonnes.

ii. The yearly aviation fuel required,[59] per Union airport, expressed in tonnes.

iii. The yearly non-tanked quantity,[60] per Union airport, which is to be reported as 0 (zero) if the yearly non-tanked quantity is negative or if it is lower than or equal to 10% of the yearly aviation fuel required.

iv. The yearly tanked quantity, per Union airport for reasons of compliance with applicable fuel safety rules,[61] expressed in tonnes.

v. The total amount of SAF purchased from aviation fuel suppliers, for the purpose of operating their flights covered by this regulation, departing from Union airports, expressed in tonnes.

vi. For each purchase of SAF, the name of the aviation fuel supplier, the amount purchased expressed in tonnes, the conversion process, the characteristics, and origin of the feedstock used for production, and the lifecycle emissions of the SAF, and where one purchase includes different types of SAF with differing characteristics, providing that information for each type of SAF.

vii. The total flights operated covered by this regulation departing from Union airports, expressed in number of flights and in-flight hours.

To allow the aircraft operators to declare SAF use in their reports, fuel suppliers must provide them with relevant, accurate information relating to the concerned reporting period, for free and as soon as possible. The latest that this information must be provided is 14 February during the reporting year, concerning information from the concerned reporting period.[62]

[57] **Article 8(1)**
[58] **Annex II**
[59] **Article 3(24) - defined as the amount of aviation fuel referred to as 'trip fuel' and 'taxi fuel' in Annex IV to Commission Regulation (EU) No 965/2012**
[60] **Article 3(25) – defined as the difference between the yearly aviation fuel required and the actual fuel uplifted by an aircraft operator**
[61] **According to Article 5(2)**
[62] **Article 9(2)**

3.3. FAQs

How exactly should aircraft operators submit the reports? Will the Member States or EASA create an interface?

Yes, EASA has put together a digital reporting tool called the "ReFuelEU Aviation Sustainability Portal" for aircraft operators to meet their reporting obligations under Article 8 and provide the requested data according to the template provided in Annex II.

How will the regulation ensure that aircraft operators receive accurate and timely information from fuel suppliers to meet their reporting obligations?

The regulation requires fuel suppliers to promptly provide aircraft operators with relevant, accurate information relating to the SAF the aircraft operators purchased, free of charge, during a given reporting period. The information must be provided no later than 14 February of the reporting year concerning information for the reporting period (previous calendar year).

The regulation also provides timelines for aircraft operators to request fuel suppliers to submit information regarding the purchased SAF.[63] For information concerning an ongoing reporting period, aircraft operators must make their requests to their fuel suppliers at least 45 days before the end of that period, and the fuel suppliers must provide the information within 45 days before the end of that period. For information related to a reporting period that has already ended, the fuel suppliers must provide the information within 90 days of receiving the request from the aircraft operators.

If fuel suppliers provide misleading or inaccurate information about the SAF purchased by aircraft operators, they are liable to a fine, as discussed in Section 6.2.2.

It is stated that separate calculations must be made for each flight. What kind and granularity of information are aviation fuel suppliers obliged to provide aircraft operators with?

As detailed in Section 4.2.1, it is important to note that all the information to be reported by aircraft operators is on an aggregated yearly basis, not at a per-flight level. However, per-flight level calculations may be necessary for some of the data points; for example, "yearly aviation fuel required" needs to be calculated based on the trip and taxi fuel needed for each flight performed by aircraft operators at Union airports.

Fuel suppliers' obligation to transmit relevant and accurate information is limited to the SAF purchased by aircraft operators. This is to allow aircraft operators to comply with their reporting obligations under the ReFuelEU regulation and also to claim the environmental benefits of the purchased SAF under a greenhouse gas scheme like EU ETS or CORSIA.

[63] **Article 9(3)**

Since the report needs to be verified in accordance with EU ETS legislation, does this mean that airline operators must include their monitoring and reporting processes under ReFuelEU in their EU ETS Annual Emissions Monitoring Plan?

No such requirements are mentioned in the regulation.

How are trip fuel and taxi fuel determined and calculated? For example, is it based on the average fuel required multiplied by the number of trips or the actual fuel required for each flight? What are the accepted data?

Pending confirmation from the EC, aircraft operators are expected to use the final version of the Operational Flight Plan, signed by the captain, for each flight subject to ReFuelEU reporting requirements, to determine the fuel quantities that have been planned for taxi and trip fuel categories.

How should data gaps be dealt with? Is there a threshold not to be exceeded, as in EU ETS?

While the regulation does not address the occurrence and management of data gaps, pending guidance from the EC, aircraft operators are expected to maintain primary and secondary data sources for the fuel information to be reported under the regulation. In the absence of primary data sources, a secondary source is to be used, recorded at a similar time, and providing an equivalent measurement to the primary source.

If both primary and secondary data sources are missing for the first reporting year, i.e., 2025, the aircraft operator is expected to provide a detailed explanation for the missing data.

Are there any exempted flight types that should not be reported?

Only commercial air transport flights conducted by aircraft operators (see List of definitions), fall within the scope of ReFuelEU by default. Operators conducting non-commercial flights, like flights performed by military aircraft and flights used only for operations for humanitarian, repatriation, and returns, whether voluntary or enforced, including readmissions, search, rescue, disaster relief, or medical purposes, as well as for customs, police, and fire-fighting operations, do not fall within the scope, and therefore their operators need not report these flights under ReFuelEU.

How is the yearly non-tanked quantity calculated?

The yearly non-tanked quantity is calculated as the difference between the yearly aviation fuel required and the actual fuel uplifted by an aircraft operator before flights covered by this regulation, departing from a given Union airport, over the course of a reporting period.

The total yearly non-tanked quantity is the sum of the yearly non-tanked quantity across all the Union airports from which an aircraft operator performs flights during a given reporting period.

Aircraft operators are required to report the total number of flights and flight hours. How are 'flight hours' defined in this context? Are they based on block time (including taxi time) or trip time (excluding taxi time)?

Pending confirmation from the EC, aircraft operators are expected to report block times ("block-to-block") in hours. Block time is measured from the time an aircraft first moves to take off – moment that the aircraft is pushed back from the gate or begins taxiing from its parking stand, until it finally stops at the end of the flight – when it comes to a final stop at a gate or parking stand after landing. Therefore, taxi times are included in the reported flight hours.

When it is stated that various documents should accompany the aircraft operator's report to EASA, does this imply that the report is submitted directly to EASA by the aircraft operator without involvement from the designated competent authorities?

According to Article 8, aircraft operators must submit their reports to both their respective competent authorities and EASA.

EASA has created a digital reporting tool called the "ReFuelEU Aviation Sustainability Portal" for aircraft operators to meet their reporting obligations. All competent authorities have access to this tool.

How long should data be stored by airlines?

While the regulation does not specify details, and pending confirmation from the EC, aircraft operators are expected to maintain their documents for at least four years, including the reporting year. Depending on their respective enforcement rules, this period is also expected to vary between Member States.

Should the yearly required fuel quantity data be presented in a consolidated or itemized manner? Is it reported per individual flight, or is only the cumulative annual figure provided?

Like the rest of the information an aircraft operator must report, it should only be reported as an aggregated yearly figure.

4. SAF claims by aircraft operators

Although the obligations related to SAF are solely on the fuel suppliers (see Section 3), the regulation also contains provisions for aircraft operators claiming their use of SAF under greenhouse gas schemes (like EU ETS and CORSIA). In particular, aircraft operators must not claim benefits from the same batch of SAF under more than one greenhouse gas scheme.[64]

Furthermore, the aircraft operator's report to EASA must include:

i. A declaration of the greenhouse gas schemes they participate in and in which they can report SAF.

ii. A declaration that they have not reported identical batches of SAF under more than one greenhouse gas scheme.

iii. Information on participation in Union, national, or regional financial support schemes that compensate for the costs of SAF purchased and whether the same batch of SAF has received support under more than one financial support scheme.

To enable aircraft operators to report their SAF use under a greenhouse gas scheme, aviation fuel suppliers are obligated to provide the former with all the necessary, accurate information within defined timelines.[65]

4.1. Claiming use of SAF under EU ETS

Aircraft operators can claim SAF use under EU ETS in two ways:

4.1.1 Zero-rating for SAF

SAF is zero-rated in ETS, and it can be claimed to reduce aircraft operators' emissions.[66] Under the ETS monitoring and reporting requirements of the aircraft operator, emissions must be calculated as follows:

$$Emissions = Fuel\ consumption \times emission\ factor$$

where the $emission\ factor$ for biofuels that comply with the criteria set out in EU RED[67] is zero, and the $emission\ factor$ for jet kerosene (Jet A1 or Jet A) is 3.16 t CO_2/t fuel.[68] Emissions from renewable fuels of non-biological origin using hydrogen from renewable sources compliance with EU RED[69] is also zero-rated until the implementing acts referred to in EU ETS have been adopted.[70]

A separate calculation must be made for each flight and each fuel. Notably, the zero $emission\ factor$ applies only to the "SAF" part of the blended fuel an aircraft operator may use. Essentially, where the emission factor of a kind of SAF is zero, the emission factor of each batch of blended fuel must be calculated and reported as the preliminary emission factor (3.16 t CO_2/t fuel) multiplied by the fossil fraction of the fuel.[71]

[64] **Article 9(1)**
[65] **Article 9(2) and Article 9(3)**
[66] **Article 14(1) and Annex iV(Part B) of Directive 2003/87/EC – EU ETS legal text**
[67] **Directive (EU) 2018/2001**
[68] **Annex IV (Part B) of Directive 2003/87/EC – EU ETS legal text**
[69] **Article 25 of Directive (EU) 2018/2001**
[70] **Specifically, Article 14(1) of Directive 2003/87/EC**
[71] **Article 54a(7) of Commission Implementing Regulation (EU) 2018/2066 – MRR**

4.1.2 ETS allowances to cover price difference between the use of fossil jet fuel and SAF

Between 1 January 2024 and 31 December 2030, to cover part of or all of the price differential between the use of conventional aviation fuel and that of relevant eligible aviation fuels, a maximum of 20 million ETS allowances will be reserved for commercial aircraft operators, on a transparent, equal-treatment and non-discriminatory basis, for the use of sustainable aviation fuels, and other aviation fuels that are not derived from fossil fuels, identified in the ReFuelEU regulation, for flights within the scope of EU ETS.[72]

When calculating the average cost differential between conventional aviation fuel and the relevant eligible aviation fuels, the Commission will consider the report (see Section 9.1) published by EASA under the ReFuelEU regulation. This information must be published by the Commission in the Official Journal of the European Union every year for the previous year.

By 1 January 2028, the Commission must evaluate this incentive and submit a report to the European Parliament and the Council. The report may be accompanied by a legislative text to extend the incentive until 31 December 2034, especially to incentivize the use of renewable fuels of non-biological origin. To aid this evaluation, aircraft operators must establish, document, implement, and maintain a written procedure to monitor all eligible aviation fuels, which is certified according to the criteria established by EU RED, and shall report the amounts of SAF claimed as a separate memo item in their annual emission report.[73] They may use the Union database for this purpose (see Section 4.1.1).

Where SAF is physically mixed with fossil fuels and delivered to the aircraft in physically identifiable batches, the aircraft operator may base the estimation of the SAF content on a mass balance of fossil fuels, and SAF purchased.[74]

Furthermore, if SAF cannot be physically attributed at an aerodrome to a specific flight, the aircraft operator must attribute SAF to its flights for which allowances have to be surrendered under EU ETS proportionally to the emissions from those flights departing from that aerodrome calculated using the preliminary emission factor, i.e., 3.16 t CO_2/t fuel.[75]

4.2. Claiming the use of SAF under CORSIA

Under CORSIA, aircraft operators (referred to as "aeroplane operators" in the CORSIA International Standards and Recommended Practices, i.e., CORSIA SARPs)[76] can claim emissions reductions from the use of SAF (referred to as "CORSIA eligible fuels – CEFs" in CORSIA SARPs) in a given compliance period to lower their offsetting requirements in that compliance period.[77] The emissions reductions from the use of SAF in a given year "y" are calculated as:

$$ER_y = FCF \times [\sum_f MS_{f,y} \times \left(1 - \frac{L_{CEF}}{LC}\right)]$$

[72] Article 3c(6) of Directive 2003/87/EC
[73] Article 54a(1) of Commission Implementing Regulation (EU) 2018/2066 - MRR
[74] Article 54a(4) of Commission Implementing Regulation (EU) 2018/2066 – MRR
[75] Article 54a(5) of Commission Implementing Regulation (EU) 2018/2066 – MRR
[76] Annex 16 Volume IV to the Convention on International Civil Aviation (Chicago Convention), Second Edition, July 2023
[77] Section 3.3., Annex 16 Volume IV (CORSIA SARPs)

where,

ER_y is the emissions reductions from the use of SAF in a given year "y";

FCF is the fuel conversion factor equal to 3.16 kg CO_2/kg fuel for Jet A, Jet A1, TS-1, or No.3 Jet fuels; and 3.10 kg CO_2/kg fuel for AvGas or Jet B fuels;

$MS_{f,y}$ is the total mass of type of neat SAF "f" (CORSIA eligible fuel) claimed in a given year "y" as reported by the aircraft operator's Emissions Report to their State;[78]

L_{CEF} is the life cycle emissions value for a given type of SAF "f" (in gCO_{2e}/MJ);

LC is the baseline life cycle emissions value for aviation fuel, equal to 89 gCO_{2e}/MJ for Jet A, Jet A1, TS-1, or No.3 Jet fuels, and 95 gCO_{2e}/MJ for AvGas.

Notably, aircraft operators that intend to claim emissions reductions from using CORSIA eligible fuels must ensure that they meets the CORSIA Sustainability Criteria as defined within the ICAO document entitled "CORSIA Sustainability Criteria for CORSIA Eligible Fuels".[79,80] Furthermore, claims of emissions reductions from an aircraft operator's use of SAF are based on the mass of SAF according to purchasing and blending records. This is because SAF purchased by a particular aircraft operator may not be physically used in its aircraft. Given that aviation fuel supply chains are not segregated at aerodromes, it is not feasible to determine the specific CORSIA eligible fuel content at the point of uplift in an aircraft.

Notably, the sustainability criteria for SAF under CORSIA differ from those that SAF needs to meet to allow their supply under ReFuelEU and claim under EU ETS, which are governed by the provision of EU RED.[81] A batch of SAF is usually certified under one of the two sets of criteria, which constrain the greenhouse gas scheme/mechanism under which they may be claimed. However, it is also possible that a single batch of SAF is certified under both (or more) of these sustainability criteria. In the case that SAF is certified under multiple sustainability criteria, aircraft operators can choose the greenhouse gas scheme/mechanism under which they would like to claim the environmental benefits of that batch of SAF.

4.3. FAQs

What exactly constitutes a "greenhouse gas scheme"? Are airport incentives included in this?

Article 3(27) clarifies that a "greenhouse gas scheme" means a scheme granting benefits to aircraft operators for the use of SAF. This includes mechanisms like EU ETS and ICAO CORSIA. However, pending confirmation from the EC, airport incentives towards SAF use by aircraft operators are not included.

Furthermore, according to Article 9(1)(c), aircraft operators must provide EASA with information regarding their participation in "Union, national or regional financial support schemes," which enable them to be "compensated for the costs of SAF purchased and information on whether the same batch of SAF has received support under more than one financial support scheme." This requirement does not include any potential support that aircraft operators may benefit from SAF incentives at the airport level.

[78] **Field 14.b in Table A5-1 from Appendix 5, Annex 16 Volume IV (CORSIA SARPs)**
[79] **Section 2.2.4, Annex 16 Volume IV (CORSIA SARPs)**
[80] **ICAO, CORSIA Sustainability Criteria for CORSIA Eligible Fuels, Third Edition, November 2022**
[81] **Article 2, Directive (EU) 2019/2001 – EU RED legal text**

Can an aircraft operator claim mandated SAF under the ReFuelEU regulation for zero-rating under the EU ETS Directive?

The obligations related to SAF lie only on fuel suppliers under the ReFuelEU regulation. Yes, aircraft operators can claim the SAF purchased from fuel suppliers (who may be meeting their supply obligations under ReFuelEU through that batch of SAF) for zero-rating under the EU ETS Directive as long as the sustainability criteria are satisfied.[82]

Aircraft operators can also claim such SAF use to benefit from the allowances reserved for the uplifting of SAF under EU ETS.[83]

Can an aircraft operator claim SAF that they buy in the EU under both EU ETS and CORSIA?

Aircraft operators cannot claim the same batch of SAF under more than one greenhouse gas scheme, for example, under both EU ETS and CORSIA. To this end, aircraft operators must provide a declaration to EASA that "they have not reported under more than one greenhouse gas scheme identical batches of SAF.[84]"

Depending on the sustainability certification of a batch of SAF, aircraft operators can claim that batch against the corresponding scheme. If the same batch of SAF has received certification under more than one scheme's sustainability framework, aircraft operators have a choice under which scheme they would like to claim the use of that batch of SAF. In any case, the same bath of SAF cannot be claimed under more than one scheme.

Does SAF have to be certified for dual-conformance under the sustainability criteria for both ICAO CORSIA and EU RED to enable fuel suppliers to meet their supply obligations under RefuelEU and for airlines to claim it against CORSIA?

In this particular scenario, and as things stand, yes.

On the one hand, the concerned batch(es) of SAF must satisfy the sustainability criteria laid out in EU RED so that the fuel supplier with a supply obligation under ReFuelEU can meet that obligation. On the other hand, aircraft operators require that the same batch(es) of SAF also receive certification according to CORSIA's sustainability criteria for CORSIA Eligible Fuel to claim them under CORSIA.

[82] See Article 14 (and the Implementing Regulations originating from it) and Annex IV Part B of Directive 2003/87/EC
[83] Article 3c(6) of Directive 2003/87/EC
[84] Article 9(1)(b)

What documents must be provided to benefit from the free allowances allotted for using SAF under EU ETS?

Pending confirmation from the EC, a standalone application process for the SAF allowances under EU ETS is not expected. The reporting will likely align with the Monitoring and Reporting Regulation (MRR) reporting of fuels, which will be integrated into the annual EU ETS reporting in March. The reporting of eligible fuels according to the MRR will be considered an application for SAF allowances by the airline. No extra templates are anticipated.

However, this process might also vary among the Member States.

5. Penalties

To ensure compliance with the provisions of the regulation, by 31 December 2024, Member States must establish and implement various penalties. Such penalties shall be "effective, proportionate, and dissuasive, taking into account, in particular, the nature, duration, recurrence, and gravity of the infringement.[85]"

Member States must have the legal and administrative framework at their national level to ensure that obligations under the regulation are fulfilled and to enforce the associated penalties.[86] Furthermore, Member States are encouraged to use the revenues generated from these penalties "to support research and innovation projects in the field of SAF, the production of SAF or mechanisms allowing the price differences between SAF and conventional aviation fuels to be bridged." Additionally, Member States must report on the use of aggregated revenues from the penalties every five years and for the first time by 25 September 2026.[87]

The enforced penalties may be classified based on the stakeholders to which they are applied.

5.1. Penalty on aircraft operator against tankering

Member States must impose fines to ensure that aircraft operators comply with obligations (see Section 3.3) regarding their minimum yearly fuel uplift at Union airports. The fine must be at least twice as high as the amount resulting from multiplying the yearly average price of aviation fuel per tonne by the total yearly non-tanked quantity.[88] Therefore, Member States have some leeway to determine the actual quantum of the fines.

The Member State's competent authority must explain the methodology applied to determine the average price of aviation fuel in the Union aviation fuel market. That methodology shall be based on verifiable and objective criteria, including from the latest available technical report published annually by EASA, referred to in Section 9.

5.2. Penalties on fuel suppliers

Fuel suppliers are liable for different penalties depending on the fuel type and the nature of the transgression. In all cases, the Member State is required to decide the actual quantum of the penalty.

5.2.1 Fuel supplier unable to supply minimum shares of SAF, including synthetic aviation fuels

If fuel suppliers are unable to meet their obligation to supply the minimum shares of SAF,[89] as outlined in Section 3.1, they are liable to a fine that is at least twice as high as the amount resulting from the multiplication of the difference between the yearly average price of conventional aviation fuel and SAF per tonne by the quantity of SAF not complying with the minimum shares for a given reporting period.[90]

Similarly, if fuel suppliers are unable to meet their obligation to supply the minimum shares of synthetic aviation fuels between 1 January 2030 and 31 December 2034, as outlined in Section 3.1, they are liable to a fine that is at least twice the amount resulting from the multiplication of the difference between the yearly average price of

[85] **Article 12(1)**
[86] **Article 12(9)**
[87] **Article 12(10)**
[88] **Article 3(26) – the total yearly non-tanked quantity is the sum of the yearly non-tanked quantities by an aircraft across all Union airports in a reporting period**
[89] **Article 4**
[90] **Article 12(8)**

conventional aviation fuel and synthetic aviation fuel per tonne by the quantity of synthetic aviation fuels not complying with the minimum shares for a given reporting year.

Again, the Member State's competent authority must explain the methodology for determining the average price of conventional aviation fuel, SAF, and synthetic aviation fuel in the Union aviation fuel market. That methodology shall be based on verifiable and objective criteria, including the latest technical report published annually by EASA, referred to in Section 9.

As discussed in Section 3.1.1, paying the penalty for shortfalls in supply during a reporting period for both SAF and synthetic aviation fuel does not excuse fuel suppliers from meeting those shortfalls in subsequent reporting periods.

5.2.2 Misleading or inaccurate information regarding SAF supplied

In addition to penalties related to the supply of SAF and synthetic aviation fuels, Member States must also ensure that a fuel supplier proven to have provided misleading or inaccurate information regarding the characteristics or origin of the SAF it supplied, is liable to a fine.[91]

This transgression may occur either in the information that was provided to aircraft operators[92] (see Section 5) or as part of the fuel supplier's reporting obligations[93] (see Section 4.2). The fine must be at least twice the amount resulting from the multiplication of the difference between the yearly average price of conventional aviation fuel and SAF per tonne by the quantity of SAF about which the misleading or inaccurate information was provided for a given reporting period.[94]

5.3. FAQs

Who decides the penalties, and by when?

The rules on the different kinds of penalties provided in the regulation[95] must be established by the Member States and notified to the Commission by 31 December 2024, for the first time. Any subsequent amendments affecting these rules must also be conveyed to the Commission without delay.[96] Furthermore, Member States must have the necessary legal and administrative framework in place at the national level for collecting fines.[97]

Will the Member States decide the penalties each year?

While the member must frame the rules for the different kinds of penalties states by 31 December 2024 for the first time, a yearly update to these fines could be expected as several of them consider the yearly average price of conventional aviation fuel, SAF, or synthetic aviation fuel per tonne.

In determining the quantum of the fines, the Member States' competent authorities must explain the methodology applied to determine the price of aviation fuel, SAF, and synthetic aviation fuel on the Union aviation fuel market. The methodology may also be based on the annual technical report that will be published by EASA, discussed in Section 9.1.

[91] **Article 12(6)**
[92] **According to Article 9(2)**
[93] **According to Article 10**
[94] **Article 12(8)**
[95] **Article 12(2), Article 12(3), Article 12(4), Article 12(5), Article 12(6), Article 12(8)**
[96] **Article 12(1)**
[97] **Article 12(9)**

Will the fine be calculated at the Union airport level summed up to all Union airports an aircraft operator flies out of in a reporting period?

Member States are required to establish penalties to ensure that aircraft operators comply with the anti-tankering obligations under the regulation, which are discussed in Section 3.3.[98] While deciding on the quantum for the fines, they must ensure that it is at least twice as high as the amount resulting from multiplying the yearly average price of aviation fuel per tonne by the total yearly non-tanked quantity. Since the total yearly non-tanked quantity is the sum of the yearly non-tanked quantities by an aircraft across all Union airports in a reporting period, it can be expected that the fine is also calculated for a non-complying aircraft operator across all Union airports in a reporting period.

Can aircraft operators "buy out" from their uplift obligations relating to anti-tankering?

The obligations on the fuel suppliers include explicit provisions that any shortfalls in the supply of SAF, including synthetic aviation fuel, must be compensated for in the subsequent reporting period, in addition to paying the penalty for non-compliance. In essence, fuel suppliers cannot "buy out" from complying with their obligations.

However, there are no such counter-compliance provisions regarding the obligations of the aircraft operators concerning anti-tankering under Article 5, in addition to the penalty.

[98] **Article 12(2)**

6. Environmental labelling scheme

The regulation establishes a voluntary labelling scheme to enable the comparison of the environmental performance of flights on the same routes.[99] The aircraft operator must make the request to EASA, which issues the labels[100] after the payment of a charge.[101]

Notably, a flight's environmental performance level will be based on the average environmental performance of the flights carried out by an aircraft operator on a specific route for the previous corresponding scheduling period.[102, 103] It is also envisaged that the labels issued under this scheme would be valid only for a limited period not exceeding one year, which must be made visible by the aircraft operator in the label.[104] By 1 January 2025, the Commission will adopt an implementing act laying down detailed provisions regarding the duration of validity[105] and other details of the label.

6.1. Scope of the labelling scheme

When an aircraft operator falling within the scope of this regulation (see Section 2.1.2) requests the issuance of labels for flights within the regulation (see Section 2), labels are issued for those flights departing from Union airports (see Section 2.1.1). However, when an aircraft carrier makes such a request, it must be for all its flights under the regulation and departing from Union airports.

Furthermore, aircraft operators may optionally also request the issuance of a label within the scheme for flights covered by the regulation arriving at Union airports. Again, when an aircraft carrier makes such a request, it must be for all its flights under the regulation and arriving at Union airports.[106]

In other words, the request for a label cannot be made for select routes.

6.2. Information included in the label and methodology of their calculation

The label must include the following information:

i. The expected carbon footprint per passenger, expressed in metrics such as in kilograms of CO_2 per passenger, for the period of validity of the label,[107] as calculated by EASA.[108]

ii. The expected CO_2 efficiency per kilometer, expressed in metrics such as in grams of CO_2 per passenger per kilometer, for the period of validity of the label[109], as calculated by EASA.[110]

iii. Period of validity of the label.[111]

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[99] **Article 14(1) and Article 14(8)**
[100] **Article 14(6)**
[101] **Article 14(9)**
[102] **According to Article 2(d) of Regulation (EEC) No 95/93 – essentially either the "summer or winter period as used in the schedules" of aircraft operators**
[103] **Article 14(3)**
[104] **Article 14(5)**
[105] **Article 14(11)(c)**
[106] **Article 14(2)**
[107] **Article 14(3)(a)**
[108] **Article 14(4)**
[109] **Article 14(3)(b)**
[110] **Article 14(4)**
[111] **Article 14(5)**

While calculating the expected carbon footprint per passenger and the expected CO_2 efficiency per kilometer, EASA must do so based on a "standardized and science-based methodology" using information from the aircraft operators concerning the following factors:[112]

i. The types of aircraft, average number of passengers, and freight loads supplemented when needed with estimations of those factors, such as the average load factors for the specified route for a given time period.

ii. The performance of the fuel used on the flights carried out by the aircraft operator based on the fuel uptake and using metrics such as the total amount of SAF uplifted, the percentage over the total fuel uptake, the quality and origin, the composition and the lifecycle emissions from fuel use calculated for the flight.

The actual details of the "science-based methodology" and the procedure through which aircraft operators are to provide EASA with the relevant information mentioned above, along with the procedure for EASA to issue the labels, will be made clear in the implementing act that the Commission should adopt by 1 January 2025.[113]

6.3. Review of existing labels

EASA is also required to periodically conduct reviews to check whether there are any changes in the factors based on which the information for the labels was calculated within their period of applicability. EASA may conclude that the label is no longer appropriate, revoke the existing label, and issue a new one after providing an opportunity for the aircraft operator to explain the change in factors. The aircraft operator must reflect any change without any delay.[114]

The exact conditions under which the review is to be carried out by EASA and the procedures to revoke existing labels for issuing new ones will be detailed in the implementing act that the Commission should adopt by 1 January 2025.[115]

6.4. Potential compulsory environmental labelling scheme

The Commission is required to, by 1 July 2027, present a report to the European Parliament and the Council containing an assessment of the functioning of the environmental labelling scheme along with possible improvements and additional measures, with a view to establishing a compulsory environmental labelling scheme.

The compulsory scheme could encompass all aspects of the environmental performance of flights or sets of flights and the different decarbonization measures that aircraft operators take. To enable this, the report may be accompanied by a legislative proposal.[116]

[112] **Article 14(4)**
[113] **Article 4(11)(a) and Article 4(11)(b)**
[114] **Article 14(7)**
[115] **Article 14(11)(d) and Article 14(11)(e)**
[116] **Article 14(12)**

6.5. FAQs

Can aircraft operators request for the labels on specific routes?

No, when an aircraft operator requests the issuance of labels for flights within the regulation's scope, it is issued for those flights departing from Union airports. However, when an aircraft carrier makes such a request, it must be for all its flights under the regulation and departing from Union airports.

Furthermore, aircraft operators may optionally also request the issuance of a label within the scheme for flights covered by the regulation arriving at Union airports. Again, when an aircraft carrier makes such a request, it must be for all its flights under the regulation and arriving at Union airports.

Can aircraft operators use other labelling schemes with similar information, but which apply different methodologies to those presented in the environmental labelling scheme under this regulation?

The regulation requires the Commission to adopt implementing acts detailing the "possibility and conditions under which aircraft operators may display, without using a label under this Article, any environmental performance information" like the one instituted by the regulation for flights departing from Union airports. [117]

However, pending confirmation from the EC, the regulation does not explicitly prohibit the adoption of other labeling schemes.

Will EASA release a template for the labels?

No, the Commission must release the templates by 1 January 2025.

The Commission must adopt implementing acts by 1 January 2025 to ensure the implementation of the Environmental Labelling Scheme. [118] These acts must also lay down detailed provisions on the scheme, including the templates for displaying the label. [119]

[117] **Article 14(11)(h)**
[118] **Article 14(11)**
[119] **Article 14(11)(f)**

7. Flexibility mechanisms

The regulation established flexibility mechanisms for fuel suppliers to meet their obligations (see Section 3.1), which are currently envisioned to apply from 1 January 2025 until 31 December 2034. During this time frame, a fuel supplier may supply the minimum shares of SAF [120] as a weighted average over all the aviation fuel it supplied across Union airports for that reporting period. [121]

7.1. Potential improvements to the flexibility mechanisms

The regulation also provides for improving these flexibility mechanisms pending an assessment from the Commission. In that effort, the Commission must carry out an assessment of developments on SAF production and supply in the Union aviation fuel market.

These improvements include the possibility of setting up or recognizing a "system of tradability" of SAF to enable fuel supply in the Union without being physically connected to a supply site during the flexibility period. This system may incorporate elements of a "book and claim" scheme enabling aircraft operators or fuel suppliers, or both, to purchase SAF through contractual arrangements with aviation fuel suppliers and to claim the use of SAF at Union airports.

The Commission must present the assessment in a report to the European Parliament and to the Council accompanied by a legislative proposal, where appropriate. [122]

7.2. FAQs

Is the flexibility mechanism currently provided for in the regulation intended for use by both fuel suppliers and aircraft operators?

No, the flexibility mechanism currently mentioned in the regulation is only to ease obligation compliance for fuel suppliers and does not include provisions for aircraft operators.

However, pursuant to the assessment performed by the Commission, the regulation foresees a potential improvement to the flexibility mechanisms by setting up "a system of tradability of SAF to enable fuel supply in the Union without it being physically connected to a supply site." This system could be used by both fuel suppliers and aircraft operators to purchase SAF and claim its benefits.

Under the flexibility mechanism potential improvements, if an aircraft operator is contracted to Supplier X in CDG and AMS, can they supply minimum SAF to use at only AMS for both CDG and AMS obligations?

Firstly, the fuel suppliers' obligation is to ensure that all the aviation fuel made available to aircraft operators at each Union airport contains the minimum shares of SAF, including that of synthetic aviation fuel, as outlined in Annex A. As such, this obligation does not imply that fuel suppliers must ensure that the minimum share of SAF, including that of synthetic aviation fuel, is made available to each aircraft operator at each Union airport. It is

[120] **Annex 1 of the regulation**
[121] **Article 15(1)**
[122] **Article 15(2)**

meant to address the aggregated supply of a fuel supplier to all its aircraft operator customers at a Union airport.

Having addressed this and pending confirmation from the EC, a fuel supplier may technically meet its obligations on a weighted average basis between all the Union airports across the Member States.

8. Reports and review

Both EASA and the Commission have the obligation to publish reports in prescribed timelines under the regulation.

8.1. EASA's annual Technical Report

EASA must publish a technical report annually based on the reports submitted by Union airport managing bodies,[123] aircraft operators,[124] and fuel suppliers[125] (for the latter two, see Section 4). This report must also be forwarded to the European Parliament and the Council and contain, at minimum, the following information:[126]

i. The aggregated amount of SAF purchased by aircraft operators at the Union level for use on flights covered by this regulation departing from a Union airport and per Union airport.

ii. The aggregated amount of SAF and synthetic aviation fuels supplied at the Union level, per Member State and per Union airport. The report shall include the amount and type of feedstock used at the Union level, per Member State, and per Union airport, and an analysis of the ability of aviation fuel suppliers to comply with the minimum shares defined in Annex A (see Section 3.1).

iii. As far as possible, the amount of SAF supplied in the third countries with which an agreement regulating the provision of air services has been concluded by the Union, or the Union and its Member States, and in other third countries where such information is publicly available.

iv. The state of the market, including price information and trends in SAF production and use in the Union and per Member State and, as far as possible, in the third countries with which an agreement regulating the provision of air services has been concluded by the Union, or the Union and its Member States, and in other third countries, including information on the evolution of the price gap between SAF and conventional aviation fuels (see Section 6 for how Member States may utilize this information in conceiving penalties for aircraft operators and fuel suppliers that fail to meet their obligations under the regulation).

v. The status of compliance of the Union airport managing body per airport regarding their obligations.[127]

vi. The compliance status of each aircraft operator and aviation fuel supplier having an obligation under this regulation in the reporting period.

vii. The origin and characteristics of all SAF and the sustainability characteristics of hydrogen for aviation purchased by aircraft operators for use on flights covered by this regulation departing from Union airports.

viii. The average total content of aromatics and naphthalenes by percentage volume and of sulphur by percentage mass in aviation fuel supplied by Union airport and at Union level.

ix. The state of advancement of projects at Union airports pursuing initiatives to facilitate the access of aircraft operators to hydrogen or electricity used primarily for the propulsion of an aircraft and to provide the infrastructure and services necessary for the delivery, storage, and uplifting of such hydrogen or

[123] **Article 7**
[124] **Article 8**
[125] **Article 10**
[126] **Article 13(1)**
[127] **Under Article 6 – Obligations of Union airport managing body to facilitate the access to SAF**

electricity to refuel or recharge aircraft in line with national policy frameworks for deployment of alternative fuel infrastructure where relevant.[128]

8.2. Commission's report to the European Parliament and the Council and subsequent review

The Commission must submit a report to the European Parliament and the Council on the implementation of the regulation, for the first time by 1 January 2027, and every four years after that.[129]

The report must contain a detailed assessment of the evolution of the aviation fuels market and the impact of that evolution on the functioning of the aviation internal market of the Union, including on the competitiveness and connectivity, in particular for islands and remote territories, and on the cost-effectiveness of lifecycle emissions reductions. In addition, the report shall inform on technological advancements in the area of research and innovation in the aviation industry that are relevant to SAF, including the reduction of non-CO_2 emissions or direct air capture technologies.[130]

The regulation also provides for potential revisions to be made based on the findings of the Commission's report. This includes potential revisions to the scope of ReFuelEU, the definitions for fuels considered SAF, the eligible fuels, the minimum shares outlined in Annex A, and the quantum of fines.

The report must also evaluate the possible widening of the scope of ReFuelEU to include other energy sources and other types of synthetic fuels defined in EU RED[131] while considering the principle of technological neutrality. The report shall also assess initiatives, improvements, and additional measures to facilitate and promote an increased supply and uptake of non-drop-in aviation fuels and related services, infrastructure, and technologies consistent with decarbonizing air transport.[132]

8.3. FAQs

Are the findings of EASA's annual Technical Report binding on the Member States? For instance, when deciding the quantum and rules for the different kinds of fines outlined in the regulation.

No, the findings of the Technical Report on the state of the market for SAF in the EU, including price trends, may inform the Member States, but are not binding on them.

However, the Member States must clarify their methodology applied for determining the price of conventional aviation fuel, of SAF, and of synthetic aviation fuel on the Union aviation fuel market.[133]

[128] **Article 7(2) and Article 7(3)**
[129] **Article 17(1)**
[130] **Article 17(2)**
[131] **Directive (EU) 2018/2001**
[132] **Article 17(3)**
[133] **Article 12(7)**

Are Member States consulted while the EC drafts its report to the European Parliament and the Council?

Yes, the Commission may consult Member States when it drafts the report, at least six months before its adoption.[134]

Will the regulation adapt to policy developments in other parts of the world?

In the Commission's report to the European Parliament and the Council, it must include information, as far as possible, on the policy developments in "relevant third countries", and on the "development of a potential policy framework for supply and uplift of SAF at the ICAO level.[135]"

Notably, there is also a provision foreseeing possible amendments to the regulation to align with a potential policy framework on SAF uptake at the ICAO level, hinting at the ICAO Global Framework for aviation cleaner energies (adopted on 24 November 2023).

[134] **Article 17(7)**
[135] **Article 17(5)**

Annex A – Minimum Shares of SAF: supply obligation on fuel suppliers

(a) From 1 January 2025, each year, a minimum share of 2 % of SAF;

(b) From 1 January 2030, each year a minimum share of 6 % of SAF, of which:

i. For the period from 1 January 2030until 31 December 2031, an average share over the period of 1,2 % of synthetic aviation fuels, of which each year a minimum share of 0,7 % of synthetic aviation fuels;

ii. For the period from 1 January 2032until 31 December 2034, an average share over the period of 2,0 % of synthetic aviation fuels, of which each year a minimum share of 1,2 % from 1 January 2032until 31 December 2033and of which a minimum share of 2,0 % from 1 January 2034until 31 December 2034of synthetic aviation fuels;

(c) From 1 January 2035, each year, a minimum share of 20 % of SAF, of which a minimum share of 5 % of synthetic aviation fuels;

(d) From 1 January 2040, each year, a minimum share of 34 % of SAF, of which a minimum share of 10 % of synthetic aviation fuels;

(e) From 1 January 2045, each year, a minimum share of 42 % of SAF, of which a minimum share of 15 % of synthetic aviation fuels;

(f) From 1 January 2050, each year a minimum share of 70 % of SAF, of which a minimum share of 35 % of synthetic aviation fuels.

Annex B – Open Questions

a) If an airline has a bulk supply agreement in place (or self-supply), where they take the product from the source and are responsible for the logistics to get the product to the airport, would that airline automatically become a supplier and must comply with the regulation?

b) According to Article 8(1)(e), aircraft operators must report the "total amount of SAF purchased from aviation fuel suppliers, for the purpose of operating flights covered by this regulation, departing from Union airports" – since the SAF-related obligation is on the fuel suppliers, why is this information necessary? No claims are made by airlines under ReFuelEU; only under EU ETS and CORSIA.

c) Will the Union database contain data on whom the fuel supplier sold their SAF to? Can this information be derived from the database?

d) What exactly does "purchased SAF" mean? Is there a standard format or typical document detailing what should be included as proof?

e) Do fuel suppliers have to report only to the Union Database, or can they also report to national databases linked to the Union Database (for example, France's CarbuRe)?

f) Will the technical report described in Article 13 also include price trends for conventional aviation fuel? It is not included in the minimum required information.

g) Are there guidelines for Member States to lay down the rules and implement the penalties for failure to comply?

h) Would the methodology be consistent with the provisions under CountEmissionsEU?

i) What exactly does it mean to supply fuel as a weighted average over all the aviation fuel it supplied across Union airports for that reporting period?" How exactly is this weighted average calculation made?

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