

ReFuelEU Aviation initiative

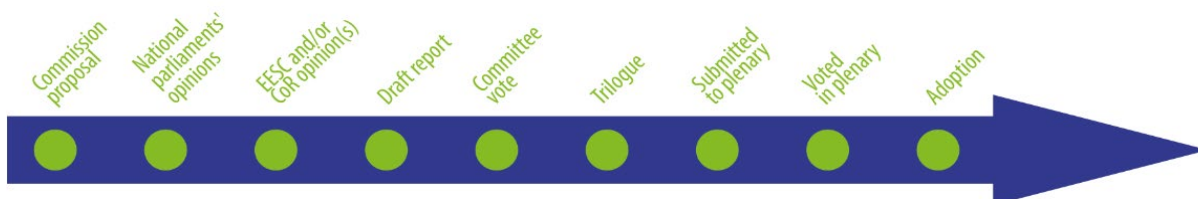
Sustainable aviation fuels and the 'fit for 55' package

OVERVIEW

EU lawmakers signed a regulation on ensuring a level playing field for sustainable air transport, otherwise referred to as the ReFuelEU Aviation Regulation, on 18 October 2023. It was published in the Official Journal on 31 October 2023 and will apply from 1 January 2024. However, Articles 4, 5, 6, 8 and 10 will apply from 1 January 2025.

The new regulation is a part of a legislative package to make the EU's climate, energy, land use, transport and taxation policies fit for reducing net greenhouse gas emissions by at least 55 % by 2030, compared with 1990 levels – the 'fit for 55' package. It seeks to ensure a level playing field for sustainable air transport. It obliges fuel suppliers to distribute sustainable aviation fuels (SAF), and envisages a growing share of SAF (including synthetic aviation fuels, or e-fuels) over time, to increase their uptake by airlines and thereby reduce emissions from aviation. Airlines must limit the uptake of jet fuel before departing from EU airports to what is needed for safe operation of flights, to ensure a level playing field for airlines and airports, and to avoid additional emissions relating to the extra weight of aircraft carrying excessive fuel.

Proposal for a regulation of the European Parliament and of the Council on ensuring a level playing field for sustainable air transport		
<i>Committee responsible:</i>	Transport and Tourism (TRAN)	COM(2021) 561 14.7.2021
<i>Rapporteur:</i>	José Ramón Bauzá Díaz (Renew, Spain)	2021/0205(COD)
<i>Shadow rapporteurs:</i>	Cláudia Monteiro de Aguiar (EPP, Portugal) Erik Bergkvist (S&D, Sweden) Ciarán Cuffe (Greens/EFA, Ireland) Kosma Złotowski (ECR, Poland) Marco Campomenosi (ID Group, Italy) Clare Daly (The Left, Ireland)	Ordinary legislative procedure (COD) (Parliament and Council on equal footing – formerly 'co-decision')
<i>Procedure completed</i>	Regulation (EU) 2023/2405. OJ L, 2023/2405, 31.10.2023.	



Introduction

The European Climate Law, adopted in June 2021, set in law the EU target for 2030 of reducing greenhouse gas (GHG) emissions by at least 55 % compared with 1990 levels, in line with priorities set out in the [Green Deal](#). On 14 July 2021, the Commission published the '[fit for 55](#)' package with a number of legislative proposals to deliver on the targets agreed in the European Climate Law. The package includes several proposals to bring down emissions from the transport sector. For aviation, these include proposals to tighten up the EU emissions trading scheme and to increase the use of alternative fuels in aviation, and the proposal to increase deployment of alternative fuels infrastructure, in particular electric charging points for stationary aircraft at EU airports.

As the development of alternative propulsion technologies and aircraft (e.g. electric aircraft) have not yet matured sufficiently to be available for commercial operations in the next decade, sustainable aviation fuels are considered to have the most potential to offer emissions reductions in the short term. To promote the take-up of production and use of such fuels in aviation, the Commission presented the [ReFuelEU Aviation](#) sustainable air transport initiative in the 'fit for 55' package. The proposed new rules oblige fuel suppliers to supply an increasing share of sustainable aviation fuels as part of the fuel supplied at EU airports. The proposal also aims to tackle fuel tankering practices, which consist of taking on more fuel than required for safe operation of a given flight at airports where it is cheaper. With these proposed changes, the Commission aims to reinforce a level playing field for air transport operators and to help cut emissions generated because of heavier overall weight of aircraft carrying excessive amounts of fuel.

Existing situation

At global and EU level, some policy actions to encourage and increase the use of sustainable aviation fuels (SAF) already exist. For instance, the International Civil Aviation Organization ([ICAO](#)) carbon offsetting and reduction scheme for international aviation ([CORSIA](#)) allows aircraft operators to use SAF that comply with a dedicated sustainability framework, instead of purchasing emissions offsets.¹

The EU emissions trading system ([EU ETS](#))² provides an incentive for aircraft operators to use biomass-based SAF certified as compliant with the sustainability framework of the recast Renewable Energy Directive (EU) 2018/2001 ([RED II](#) for short), by attributing them 'zero emissions' under the scheme; this means that airlines do not have to surrender any emissions allowances when SAF is used instead of fossil jet fuel.³

According to the RED II, Member States can count SAF towards the achievement of their national renewable energy targets, on the condition that they comply with the sustainability criteria listed in the directive. A specific multiplier of 1.2 is applied to the supplied quantity of non-food- and feed-based SAFs, meaning that they contribute 20 % more of their energy content in accounting towards the renewable energy targets.⁴

However, the Commission estimates that the regulatory framework for renewable energy and the EU ETS have not led to a sufficient increase in the uptake of SAF, and that CORSIA on its own may not provide a sufficient economic incentive for airlines to increase the use of SAF.⁵

The 'fit for 55' package, tabled in July 2021, among other things includes a [proposal](#) to amend the EU ETS rules for aviation⁶ and a [proposal](#) to revise the Renewable Energy Directive.⁷

In terms of ensuring a level playing field in aviation, several rules are in place. [Regulation \(EC\) No 1008/2008](#) on common rules for the operation of air services regulates licensing of Community air carriers, the right of Community air carriers to operate intra-EU air services, and the pricing of intra-EU air services to ensure that airlines operating in the EU can compete on the basis of equal opportunity. [Regulation \(EU\) 2019/712](#) on safeguarding competition in air transport

lays down rules on the conduct of investigations and the application of redressive measures in respect of practices distorting competition between EU and third-country air carriers.

However, fuel tankering practices have so far not been addressed by EU rules. According to the Commission proposal, safeguards against fuel tankering are necessary because these practices undermine fair competition (in that certain aircraft operators are able to benefit from favourable aviation fuel prices at their home base), and can affect the attractiveness of certain airports. The Commission also suggests that eliminating tankering practices has significant environmental benefits, and points to a Eurocontrol [study](#) that estimates that 20 % of the flights in Europe were operated using some fuel tankering, with a significant impact on emissions due to heavier on board weight of aircraft.

Parliament's starting position

Parliament's resolution ([2019/2956/RSP](#)) of 15 January 2020 on the European Green Deal called for a clear regulatory roadmap for the decarbonisation of aviation, based on technological solutions, infrastructure, requirements for sustainable alternative fuels and efficient operations. The resolution expressed support for the proposed measures to reduce emissions in the aviation sector and the strengthening of the ETS in line with the EU's climate ambition. It also called on the Commission and the Member States to work towards strengthening CORSIA.

Preparation of the proposal

As part of the consultation process, the Commission published an [inception impact assessment](#) (IIA) in which it outlined the need for action in terms of reducing emissions from air transport to reach Green Deal objectives. The IIA listed possible policy actions, including an SAF blending requirement for fuel supplied to and used by airlines; revision of the 1.2 multiplier for aviation under the Renewable Energy Directive; an auctioning mechanism for SAF supply; and a funding mechanism to encourage the deployment of SAF production facilities. The consultation was carried out between 24 March and 21 April 2020 and received [121 responses](#) from public authorities, the aviation and fuels industries, non-governmental organisations (NGOs), academics and citizens. The Commission also organised an open public consultation from August to October 2020, receiving [156 replies](#).

In addition, the Commission held two roundtables (in March and November 2020) to get stakeholders' and Member States' views on the need for regulatory action at EU level on sustainable aviation fuels. For a supporting study undertaken by an external contractor, a targeted consultation was carried out to gather further details – on the functioning of the aviation market, the state of the aviation fuels market, and the production of sustainable aviation fuels – from the aeronautics and aviation fuels industries, Member States, NGOs, and international aviation organisations.

According to the [Commission](#), throughout the consultation process a majority of stakeholders supported establishing an SAF obligation as an effective policy mechanism. However, stakeholders were divided on the specific design of the measure. Still, a majority of fuel suppliers, Member States, NGOs and airports, and some of the airlines, supported a supply-side SAF obligation with flexibility in fuel distribution, and covering jet fuel supplied for all flights departing from EU airports. Meanwhile, the majority of stakeholders saw the need for measures preventing carbon leakage and distortion in the internal aviation market. A majority of stakeholders also supported specific incentives for the production of renewable fuels of non-biological origin (RFNBOs).⁸

The proposal was accompanied by an [impact assessment](#) (IA). The IA outlines the [need for action](#) and lists a number of [policy options](#), detailing the [impact](#) of the measures, including for emissions reductions and the projected costs related to implementing the measures and other impacts. The first set of policy options included a requirement for fuel suppliers to supply SAF at EU airports; the second set of options included a requirement for airlines to uptake SAF when flying from EU airports; and a third set, the [preferred set of policy options](#), included obligations on fuel suppliers to distribute SAF, and on airlines to uptake jet fuel before departing from EU airports. Some policy

options defined targets for the increased use of SAF in terms of volume, while others defined the targets in terms of CO₂ intensity reduction.

The projected [benefits](#) of the preferred policy options include a reduction of 'well-to-wing' CO₂ emissions in the aviation sector by around 60-61 % by 2050 compared with the [baseline scenario](#). Environmental costs of aviation, related to CO₂ and air pollutants emissions, are projected to be reduced by €87-88 billion over the 2021-2050 period. SAF production capacity is projected to increase by an additional 25.5-25.6 million tonnes (Mt) by 2050. Further benefits include improved energy security related to a cut in reliance on fossil energy imports from third countries, emergence of SAF technologies in significant quantities, lower SAF prices, and net job creation in the EU.

The projected [costs](#) of the two preferred policy options are an increase in the costs of €14.6 billion and €20.3 billion, respectively, relative to the baseline up to 2050, largely driven by an increase in jet fuel costs; an estimated increase in air fares by around 8.1-8.2 % by 2050 as a result of higher fuel costs; and an increase in reporting costs for airlines of €0.34 billion up to 2050. For SAF producers, the investment needs over the 2021-2050 period are estimated at around €10.4-10.5 billion, with an estimated 104 to 106 additional SAF plants required to be built in the EU by 2050. Authorities are projected to incur an increase in administrative costs of €264 million for Member State authorities and €2.7 million for EU authorities.

Annexes to the IA provide further details, including details on the [stakeholder consultation](#), further details on [measures contributing to reducing the climate impact of aviation](#) and [possible 'flanking' measures](#), and details on the SAF [certification process](#), [production routes](#) and [production costs](#). Further analysis of the IA can be found in the EPRS [initial appraisal](#) of the IA.

The changes the proposal would bring

The Council and the Parliament reached a provisional agreement on the Commission proposal, by force of which they introduced changes to the proposal's original text, now formally approved by both institutions and published in the Official Journal of the EU (for details, see the section on 'Legislative process' below).

The [regulation](#) proposed by the Commission aimed to set minimum obligations for all fuel suppliers to gradually increase the share of sustainable aviation fuels in the fuel supplied to operators at EU airports. The Commission proposed setting the minimum share of SAF supplied at each EU airport at 2 % in 2025 and 5 % in 2030, increasing to 20 % in 2035, 32 % in 2040, 38 % in 2045, and 63 % in 2050.

Within the SAF requirement, a sub-obligation was envisaged for synthetic aviation fuels;⁹ these would increase from 0.7 % in 2030 to 5 % in 2035, 8 % in 2040, 11 % in 2045, and 28 % in 2050.

The proposal defined SAF as 'drop-in' aviation fuels (fuels substitutable for conventional aviation fuel) that are either synthetic aviation fuels, [advanced biofuels](#) produced from feedstock such as agricultural or forestry residues, algae and bio-waste,¹⁰ or biofuels produced from certain other feedstocks with 'high sustainability potential' (used cooking oil, certain animal fats)¹¹ that comply with the [sustainability and greenhouse gas emissions criteria](#).¹²

With a view to preventing fuel tankering practices (refuelling the aircraft with more jet fuel than necessary for the flight so as to avoid refuelling partially or fully at a destination airport where aviation fuel is more expensive), the proposed regulation established the obligation for aircraft operators to ensure that the yearly quantity of aviation fuel uplifted at a given EU airport is at least 90 % of the yearly aviation fuel required ([Article 5](#)). This provision was introduced with the aim of ensuring that the amount of fuel taken before a departure from an EU airport corresponds to the amount of fuel needed for the flight departing from that airport, while complying with the fuel safety rules.¹³ The Commission argued that tankering practices need to be addressed in the new regulation, as they are detrimental both to EU efforts to reduce environmental impacts from transport and to the level playing field. On the one hand, increased weight due to a larger amount

of fuel than needed for a flight would increase fuel consumption and related emissions. On the other, these practices – which are expected to grow because of higher aviation fuel costs for airlines – can result in a competitive advantage for some operators that are able to refuel at favourable prices at their home base.

Furthermore, the proposed regulation set reporting obligations for both aircraft operators ([Article 7](#)) and fuel suppliers ([Article 9](#)), and introduced financial penalties for them if they fail to comply with the obligations ([Article 11](#)).

Advisory committees

For this legislative procedure, consultation of the European Economic and Social Committee (EESC) and the European Committee of the Regions (CoR) is mandatory. The EESC adopted an opinion ([TEN/744-EESC-2021](#)) during its plenary session on 20 October 2021. While supporting the general direction of the Commission's proposal, the EESC suggests a number of changes. It urges the Commission to ensure that the initiative can be implemented without creating distortions. The opinion points out that non-EU airlines could in the future have a competitive advantage, as the proposed rules cover all operations of all EU airlines, while non-EU airlines would only be covered to the degree that they include services from an EU airport. It suggests that the Commission place greater emphasis on achieving coordination of international regulatory measures. It also stresses that due consideration should be given to the interdependency of all 'fit for 55' proposals with an impact on aviation. Regarding targets for SAF, the EESC suggests that the Commission should review the balance between advanced biofuels and e-kerosene, recommending more ambitious targets for e-kerosene.

National parliaments

The subsidiarity deadline for national parliaments' reactions was [5 November 2021](#). The Joint Committee on Transport and Communications of the Irish Houses of Oireachtas issued a [reasoned opinion](#) concluding that the proposal does not comply with the principle of subsidiarity. Meanwhile, the Joint Committee for EU Affairs of the Spanish Cortes Generales adopted a [resolution](#) stating that the proposal is in accordance with the subsidiarity principle.

Stakeholder views

While supporting many elements of the initiative, European [airline representatives](#) made several suggestions relating, for instance, to the development of subsidies and capital grants to address the price differential with fossil fuel, financial support for research, and the scale-up of production in Europe to reduce costs and ensure sufficient supply. They argued that airlines should be given the possibility to decide on which flights to account for the SAF, to prevent them from carrying extra fuel on board if SAF is not available at a certain airport. When defining 'yearly fuel required' and 'aviation fuel uplifted', mandatory fuel amounts prescribed in European Union Aviation Safety Agency (EASA) regulations (e.g. contingency fuel) should be excluded, as these can add up to a significant portion of the total fuel required for a flight. Airline representatives also suggested that the refuelling obligations should reflect the challenges pilots' experience, such as operational restrictions, airspace closure and weather conditions.

The International Air Transport Association ([IATA](#)) has stated that a mandate policy is not its preferred option for increasing the deployment of SAF, particularly if not accompanied by measures such as production incentives, arguing that this may result in higher prices for airlines and consumers.

[Airport representatives](#) have expressed support for the overall ambition level and sub-targets for synthetic aviation fuels, but do not support the provision according to which airports would be responsible for providing infrastructure for the delivery, storage and uplifting of SAF. According to airport representatives, many airport operators neither own nor operate the fuel supply

infrastructure on their sites, and therefore the regulation should reflect the varying responsibilities in this area. In addition, airport representatives do not support the obligation for fuel suppliers to meet the mandate through physical SAF supply at each EU airport, and propose instead to explore how flexibility in physical SAF supply chains can be ensured, for example through a book-and-claim system.

[Waste-based and advanced bio fuels producers](#) have reportedly warned against fencing off certain waste feedstocks for sustainable aviation fuel. The [renewable ethanol industry](#) welcomes the Commission's proposal to implement dedicated legislation for the decarbonisation of aviation, but objects to excluding biofuels produced from food and feed crops, echoing concerns over sufficient supply of feedstock for waste-based vegetable oils and animal fats. [Green transport campaigners](#) welcome the proposal as an overdue step to reduce aviation's climate impact, but propose capping the use of certain waste lipids (feedstocks in Part B of [Annex IX](#) to RED II), a target for advanced biofuels from feedstocks listed in Part A of Annex IX to RED II based on what is sustainably available, and an increased minimum sub-target for e-kerosene. [Hydrogen Europe](#) has argued that setting a maximum GHG intensity threshold would be a better solution than a volume-based minimum share of SAF, with GHG intensity of SAF assessed using a complete lifecycle approach.

Legislative process

The [file](#) was referred to the Parliament's Committee on Transport and Tourism (TRAN), while two other committees – the Committee on the Environment, Public Health and Food Safety (ENVI) and the Committee on Industry, Research and Energy (ITRE) – were associated under [Rule 57](#) of Parliament's Rules of Procedure. The TRAN committee appointed [Søren Gade](#) (Renew Europe, Denmark) as rapporteur. Following Gade's election to the Danish Parliament, [José Ramón Bauzá Díaz](#) (Renew Europe, Spain) was appointed as the new rapporteur in October 2022.

The [first discussion](#) on the file in the TRAN committee took place on 1 December 2021.

The [draft report](#), published on 11 February 2022, was presented in the TRAN committee meeting of [3 March 2022](#). The rapporteur proposed a number of amendments to the Commission's proposal. Overall, more than 400 amendments ([39-470](#) and [471-472](#)) were tabled by Members. They were [discussed](#) in TRAN on 19 April 2022. The vote in TRAN took place at the end of June and the [report](#) was [adopted](#) in plenary on 7 July 2022.

The Council adopted its [general approach](#) (that is, its position for interinstitutional negotiations) on the RefuelEU Aviation initiative on 2 June 2022.

Following interinstitutional negotiations, Parliament and Council negotiators reached a [provisional agreement](#) on the new rules on 25 April 2023.

According to the agreed text, starting from 2025, aviation fuel suppliers must ensure that all fuel made available to aircraft operators at EU airports contains a progressively increasing minimum share of SAF (at least 2 % of aviation fuel by 2025, 6 % by 2030, 20 % by 2035, 34 % by 2040, 42 % by 2045 and 70 % by 2050. Synthetic fuels should constitute a progressively increasing proportion of the fuel mix, which is to reach 35 % by 2050.

The agreed text also introduces a 10-year [transitional period](#) during which aviation fuel suppliers may supply the minimum share of SAF as a weighted average over all the aviation fuel it supplied to EU airports in that year.

The agreed text also includes the obligation for aircraft operators to ensure that [the yearly quantity of aviation fuel uplifted](#) at a given EU airport is at least 90 % of the yearly aviation fuel required, to avoid emissions relating to extra weight caused by tankering practices. Nonetheless, authorities in EU countries are allowed to grant an exemption from the tankering provisions for certain flights in the event of serious and recurrent operational difficulties or structural difficulties in the supply of fuel.

Compared with the Commission proposal, the text also extends the scope regarding airports and aircraft operators, widens the scope of the rules to include most EU airports, and lowers the threshold to include more air carriers than covered by the Commission proposal. The text includes [airports](#) where in the previous year passenger traffic was higher than 800 000 passengers or where the freight traffic was higher than 100 000 tonnes. It also includes [aircraft operators](#) that have at least 500 commercial passenger air transport flights or 52 all-cargo air transport flights in the previous year.

The text also extends the scope of [eligible SAF and synthetic aviation fuels](#) with a view to maximising the potential for scaling up the production of SAF and ensuring sustainability, e.g. by excluding biofuels produced from food and feed crops.

An [environmental labelling scheme](#) is also established, making it possible to measure the environmental performance of flights in order to drive consumers' choices and further incentivise the use of sustainable aviation fuels.

The Parliament approved the agreement on [13 September 2023](#) and the final act was adopted by the Council on [9 October 2023](#). It was signed on 18 October 2023 and published in the Official Journal of the EU on [31 October 2023](#). The new regulation will apply from 1 January 2024. However, Articles 4, 5, 6, 8 and 10 will apply from 1 January 2025.

EUROPEAN PARLIAMENT SUPPORTING ANALYSIS

Claros E. and Soone J., [Sustainable Aviation Fuels](#), infographic, EPRS, European Parliament, March 2022.

Tuominen M., ['Fit for 55' legislative package: ReFuelEU Aviation](#), initial appraisal of a Commission impact assessment, EPRS, European Parliament, December 2021.

OTHER SOURCES

[Sustainable aviation fuels \(ReFuelEU Aviation Initiative\): 'Fit for 55 package'](#), Legislative Observatory (OEIL), European Parliament.

ENDNOTES

- ¹ See the [impact assessment](#) accompanying the proposal for a regulation on ensuring a level playing field for sustainable air transport, SWD(2021) 633, p. 20.
- ² Aviation CO₂ emissions have been covered by the EU ETS since 2012. It currently applies to flights within the EU and the European Economic Area (EEA).
- ³ *ibid.*, p. 19.
- ⁴ *ibid.*, p. 19.
- ⁵ *ibid.*, pp. 19-20.
- ⁶ For more details, see an EPRS [briefing](#) on the proposal.
- ⁷ For more details, see an EPRS [briefing](#) on the proposal.
- ⁸ In RED II, RFNBOs are [defined](#) as liquid or gaseous fuels other than biofuels or biogas, the energy content of which is derived from renewable sources other than biomass.
- ⁹ In the IA, synthetic aviation fuels are [defined](#) as renewable liquid or gaseous fuels of non-biological origin. They are synthetic liquid fuels produced by 1) conversion of renewable electricity through the electrolysis of water to produce green hydrogen, and 2) mixing hydrogen with CO₂ captured directly from air, from biogenic origin or from industrial processes to produce liquid hydrocarbons.
- ¹⁰ As listed in [Part A](#) of Annex IX to RED II.
- ¹¹ As listed in [Part B](#) of Annex IX to RED II.
- ¹² As defined in Articles 29(2) to (7) RED II and certified as provided for in [Article 30](#) RED II.
- ¹³ [Recital 21](#), proposal for a regulation on ensuring a level playing field for sustainable air transport, p. 17.

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