

ReFuelEU Aviation: T&E's trilogue recommendations

An overdue first step to reduce aviation's climate impact

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Context

Aircraft rely exclusively on fossil jet fuel to operate, which explains why growing passenger numbers have rapidly increased emissions from the sector. Carbon pricing and a modal shift are important, but it is only when we swap fossil jet fuel for truly sustainable advanced fuels (SAFs) that emissions from flying will fall. Such a switch can address both CO₂ and non-CO₂ effects but to differing degrees. To date, no effective measures have been put in place at the European level to achieve such a switch. The ReFuelEU Regulation proposal changes that. The proposal introduces an obligation on jet fuel suppliers to blend a growing share of SAFs (biofuels and synthetic aviation fuels) into fuel provided at major airports in the EU.

Targets

- The Council has remained close to the Commission's initial proposal on the blending targets, starting with 2% in 2025 and increasing to 63% in 2050. It has, however, increased the 2030 target from 5% to 6%. The Council has also proposed that Member States can apply their own higher minimum shares.
- The Parliament went further than the Council and the Commission positions by increasing the ambition of the synthetic aviation fuel targets. They proposed a 2025 0.04% synthetic fuels target and a higher 2% 2030 target (up from the Commission and Council's 0.7%). By including renewable hydrogen and electricity in the SAF definition they were also able to propose more ambitious targets for 2040, 2045 and 2050, increasing the targets to 85% SAF (with a 50% synthetic fuel share) in 2050.

T&E recommends that: A 2025 0.04% mandate and a 2030 2% mandate. The 2030 sub-target of 0.7% is too low to have an incentivising effect on the market since, as [analysed by T&E](#), this is much lower

than what companies have already announced they will produce (enough to meet 3.69% of jet fuel demand in 2030). E-kerosene is the only fuel type that can be sustainably scaled up to meet the fuel demands of the sector, so ambitious synthetic fuel targets are especially important. That is why the Parliament's more ambitious 2040, 2045 and 2050 synthetic fuel sub-targets are also key. Furthermore, if SAF targets increase then synthetic fuel targets should also increase to avoid placing too much reliance on biofuels. Finally, flexibility for Member States to introduce higher national targets should not be granted at the expense of higher EU-wide blending targets.

Ensuring the sustainability of SAF

- The Commission's proposal went some way towards selecting the right types of SAF by focusing on advanced biofuels (Part A of the RED's Annex IX) and synthetic aviation fuels (i.e. e-kerosene produced from green hydrogen and CO₂). It also included used cooking oil and animal fats categories 1 and 2 (part B of the RED's Annex IX).
- Both the Parliament and Council proposals widened the feedstocks that could be used for SAF. The Council's proposal to allow biofuels produced from non-Annex IX feedstocks (as defined in Article 2, second paragraph, point 40) risks flooding the market with biofuels from other sectors and locking in unsustainable practices, even with the 3% cap proposed. The change in definition significantly weakens the sustainability of ReFuelEU, as it opens the door to feedstocks that have competing uses and would therefore cause displacement emissions. These include:
 - **Palm Fatty Acid Distillate (PFAD):** A by-product of the palm oil refining process. PFADs would be associated with GHG emissions exceeding that of jet kerosene. Furthermore, there would be enough PFADs available globally to meet the entire 5% SAF target in 2030 (minus the 0.7% PtL subtarget), meaning this feedstock is associated with very high emissions could flood the market.¹
 - **Soapstocks and its derivatives:** Since soapstocks are also oily in nature and can be used in livestock feed, we can expect that they would be replaced with palm oil and that their indirect emissions would be similar to PFADs.² There would also be enough soapstock and its derivatives to meet the entire 2030 target.
 - **Intermediate crops:** Planted before or after the main crop. They create a major loophole as, according to the ICCT, intermediate crops can include winter corn and soybean from Brazil, essentially allowing food and feed crops to be used.³
 - **Molasses:** By-products from the processing of sugar cane and sugar beet into sugar and are already being used for animal feed and in the yeast sector.⁴

¹ ICCT (2022) <https://theicct.org/wp-content/uploads/2022/10/refueeu-definitions-trilogue-fs-oct22.pdf>

² ICCT (2022) <https://theicct.org/wp-content/uploads/2022/09/refueeu-definitions-trilogue-sep22.pdf>

³ ICCT (2022) <https://theicct.org/wp-content/uploads/2022/09/refueeu-definitions-trilogue-sep22.pdf>

⁴ T&E (2022)

<https://www.transportenvironment.org/wp-content/uploads/2022/07/ReFuelEU-TE-Plenary-recommendations.docx-2.pdf>

- **Animal fats category III:** By-products from the animal slaughter process that are already being used for the manufacture of oleochemicals (e.g. soaps, cosmetics), pet food and animal feeds.⁵
- Both Parliament and Council have included measures to limit the use of biofuels produced from feedstocks not in Annex IX of RED. For Council this is a 3% cap and Parliament a sunset clause, which limits use of these feedstocks until the end of 2034. The cap is to be preferred over a sunset clause because it is a clear, consistent quantity that reduces the risk of large volumes of unsustainable fuels dominating the market in the long-term if there is political pressure to extend their use beyond 2035. However, a 3% cap is too high (even higher than the 2% 2025 SAF target) and therefore needs to be lowered to at least 2%.
- Finally, the Council's proposal includes 'low carbon fuels' which have life-cycle GHG emissions savings of at least 70%. However, allowing low-carbon fuels as they are currently defined would mean SAF could be produced from blue hydrogen, which is produced from natural gas and coal. According to ICCT, hydrogen made from fossil fuels cannot deliver high GHG savings, even when using carbon capture technology.⁶

T&E recommends that: The Council supports the Parliament's position to exclude sustainable aviation fuels made from intermediate crops, palm fatty acid distillate, all palm and soy-derived materials, and soap stock and its derivatives.

Addressing aviation's non-CO₂ effects

Non-CO₂ effects (including persistent contrails as well as nitrogen oxide, water vapour and oxidised sulphur species emissions) count for over two-thirds of aviation's total climate impact. Despite the urgency of mitigating these effects, Fit for 55 has failed to include any measures to address them.

However, the ambition of ReFuelEU can be broadened to include addressing these effects. The EASA report on non-CO₂⁷ explained that by reducing aromatics and sulphur in conventional fossil fuels, which can be achieved by a process called hydrotreating, these non-CO₂ effects can be reduced. Presently, there are no regulatory measures in place to reduce the levels of aromatics and sulphur in aviation fuel.

⁵ Ecofys (2016)

<https://ec.europa.eu/energy/sites/ener/files/documents/Annex%20II%20Case%20study%202.pdf>

⁶ ICCT (2021)

<https://theicct.org/publication/life-cycle-greenhouse-gas-emissions-of-biomethane-and-hydrogen-pathways-in-the-european-union/>

⁷ European Union Aviation Safety Agency (2020)

https://www.easa.europa.eu/sites/default/files/dfu/201119_report_com_ep_council_updated_analysis_non_co2_climate_impacts_aviation.pdf

Eventually mandating producers of fossil jet fuel, which will remain the bulk of jet fuel supply for some time, to reduce aromatic and sulphur levels, would immediately reduce the non-CO2 effects of aviation and also bring air quality benefits to areas around airports.

T&E recommends that: An MRV is agreed on to monitor the level of aromatics, naphthalene and sulphur in jet fuel. Council should also support the Parliament's proposal in Recital 21(a) for the Commission to present a report by 1 January 2025 addressing possible measures, and binding legislation if appropriate, to optimise the aromatic content in fuel. For further information see our [non-CO2 FAQ](#).

Supporting zero-emission aircraft

It is important that ReFuelEU adopts a holistic approach and supports the development of zero-emission (ZE) aircraft such as hydrogen and electric propulsion in the medium run. As such, fuel suppliers should be encouraged to supply green hydrogen or enter into joint-ventures with zero-emission aircraft manufacturers. Such joint ventures should be recognised for compliance under ReFuelEU. Europe is already home to an increasing number of ZE aircraft start-up companies. It's important that Europe supports such initiatives, which can provide a sustainable growth opportunity for the EU's important aeronautical industry.

T&E recommends that: Council supports the Parliament proposal to include renewable hydrogen and electricity in the sustainable aviation fuel definition. The aim of this would be to increase the range of options to meet the synthetic fuels sub-target, in a spirit of technological neutrality, and to send an important policy signal that Europe is serious about these technologies. Secondly, we recommend that the Council supports the Parliament's proposal in Article 6 to ensure the rollout of airport infrastructure commensurate with the uptake of ZE aircraft. The aim would not be to equip every EU airport with infrastructure by 2030, but rather to ensure that airports accompany the deployment of these technologies as they develop and do not become a barrier.

Further information

Matteo Mirolo
Aviation Policy Officer
Transport & Environment
matteo.mirolo@transportenvironment.org
+32(0)4 84 32 00 45