BRIEFING

Why allowing "e-HEFA" to count towards the ReFuelEU e-SAF mandate would be a strategic mistake

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The problem

Under the ReFuelEU regulation, jet fuel suppliers face a dedicated sub-mandate requiring a growing share of synthetic aviation fuel (e-SAF), i.e. SAF produced from green hydrogen combined with captured CO_2, starting in 2030.

Despite this obligation being known for years, most fuel suppliers have not developed their own e-SAF production capacity, nor made meaningful investments in, or offtake agreements with, third-party e-fuel producers. This was evidenced by T&E in a report from 2025. As a result, the market is heading toward a potential shortfall of e-SAF supply relative to the 2030 mandate, exposing suppliers to significant non-compliance penalties.

Rather than closing this supply gap through investment, the affected suppliers' emerging strategy is to lobby for a reinterpretation of the regulatory framework itself (see a compilation of industry policy papers at the end of this paper). They claim that a portion of their existing HEFA (Hydroprocessed Esters and Fatty Acids i.e. waste-oil-based biofuel) production should count towards the e-SAF mandate, on the basis that some of the hydrogen consumed during the HEFA hydrotreatment process is "green" (renewable) hydrogen, and could therefore render part of the

resulting fuel volume qualifying as Renewable Fuels of Non-Biological Origin (RFNBO): a "e-HEFA" fuel.

According to our analysis, **this interpretation could allow 5-12% of all HEFA outputs** (produced via conventional HEFA or co-processing routes) **to be reclassified as RFNBO** and help fuel suppliers fulfil their eSAF targets under ReFuelEU to the detriment of “genuine” e-fuels.

Crucially, this is not only an aviation issue. Allowing intermediate renewable hydrogen used in biofuel production to count towards synthetic fuel targets **could also undermine the future deployment of e-fuels in maritime transport.** While Fuel EU Maritime does not have an RFNBO target today, a 2% uptake will be required from 2034. The exact same loophole risks diluting the future maritime e-fuel target before it even takes effect.

Why the ambiguity exists

The claim exploits a genuine gap in the current legal texts. The RFNBO Delegated Acts (specifically DA 2023/1185) states that hydrogen consumed as an intermediate input during fuel production cannot be counted when calculating the RFNBO share of the final output. However, this exclusion is explicitly written to apply only to conventional (fossil) fuel production, not to biofuel production. This is inconsistent with the Low Carbon Fuels Delegated Act, where the equivalent intermediate-hydrogen exclusion applies to both conventional and biofuel production pathways.

Because the RFNBO DA does not explicitly extend the exclusion to biofuels, the question of whether green hydrogen used inside a HEFA or co-processing unit can be counted toward an RFNBO output claim has been left to the interpretation of individual voluntary certification schemes. In light of the Commission's upcoming revision of the RFNBO Delegated Acts, we advise amending DA 2023/1185 to broaden the intermediate hydrogen exclusion so that it also encompasses biofuel manufacturing when determining RFNBO output shares.

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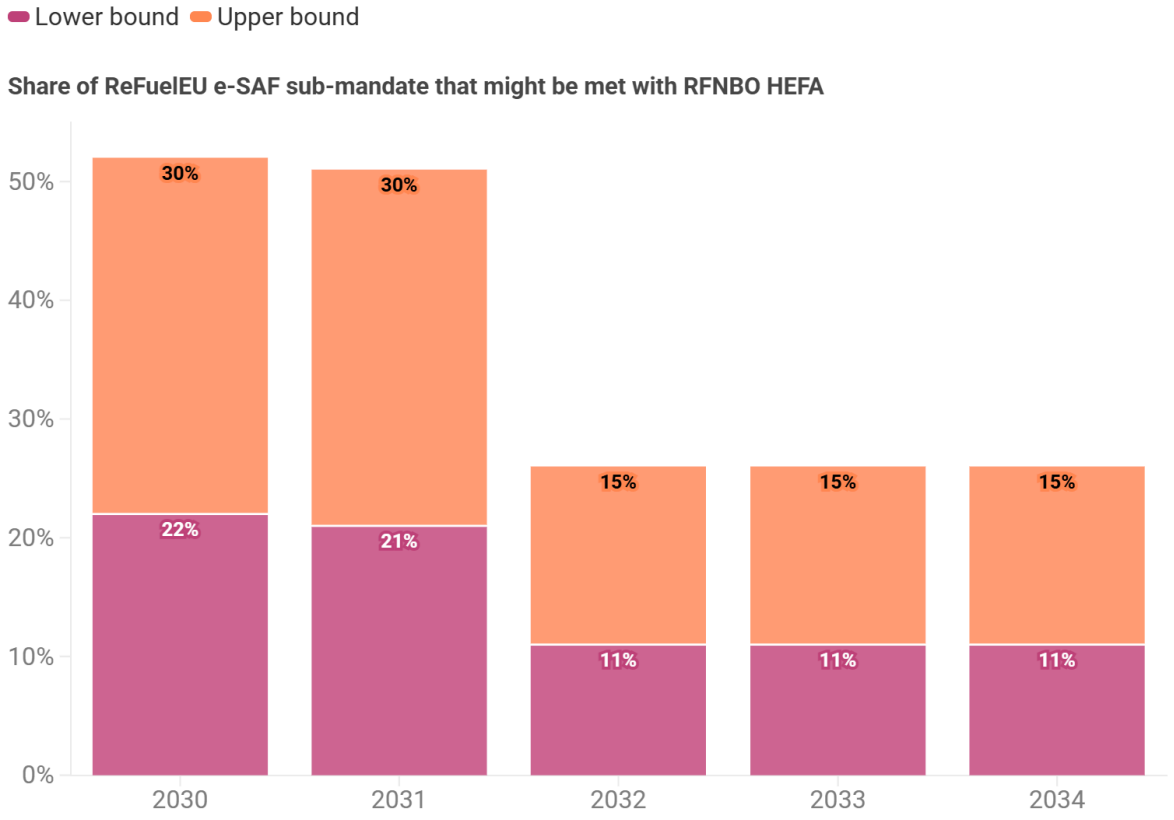
Why allowing "e-HEFA" would be a bad idea

It risks crowding out investment in genuine e-SAF

If 5-12% of the HEFA volume that suppliers produce to meet their conventional biofuel obligations could additionally be counted as e-SAF, this could satisfy a disproportionate share of the e-SAF sub-mandate without any new investment:

- **20-50% of the 2030-2031 e-SAF targets could be met this way;**
- **10-25% of the 2032-2034 targets could be met this way.**

RFNBO SAF produced from waste oil refining could meet between 20% and 50% of ReFuelEU e-SAF mandate in 2030



Source: T&E (2025) • HEFA = Hydroprocessed Esters and Fatty Acids = Waste-oil refining into SAF. Assume that ReFuelEU bio-SAF mandate is met via HEFA pathway until 2034 using external RFNBO hydrogen input. Lower bound corresponds to 5.1% HEFA RFNBO share and upper bound corresponds to 12.2% HEFA RNBO share.

In other words, a large share (potentially up to half) of the near-term e-SAF mandate could be fulfilled simply by relabeling existing biofuel volumes, rather than through the deployment of new, dedicated e-fuel production capacity that the mandate was designed to incentivize. This would create a strong incentive for offtakers to favour e-HEFA, which is significantly cheaper to produce, at the expense of genuine e-SAF projects and other synthetic fuel projects that depend on dedicated mandates to secure sufficient demand and investment.

The price differential could also create opportunities for fuel suppliers to capture additional profits. Because genuine e-SAF is much more expensive to produce, suppliers could sell lower-cost e-HEFA at prices just below those of genuine e-SAF. They could thereby undercut true e-SAF producers while retaining a substantial margin for themselves.

Uncertain short-term impact, but a strong long-term downside

In 2030-31, the immediate impact may be limited, since few HEFA plants currently use green hydrogen on-site, and few final investment decisions (FIDs) have been taken to install electrolyzers (e.g. Moeve).

However, in the long term, plants could increasingly source green hydrogen externally or switch to green hydrogen themselves. What could be a small allowance for e-HEFA in the short term effectively opens Pandora's box, establishing a loophole that will increasingly substitute for genuine e-SAF in the coming decade.

The question policymakers should ask is whether it is worth threatening the long-term deployment case for e-SAF, in order to close only a limited share of the 2030-31 targets, **while primarily enabling higher returns on HEFA investment decisions that have already been made,** i.e. rewarding sunk investment rather than driving new capacity. Policy makers should not give into the temptation to find a cheaper short-term compliance method that will threaten the long-term future of European e-SAF.

Europe currently has a pipeline of approximately 40 dedicated, industrial-scale e-SAF projects and 69 e-fuels projects that could deliver to the maritime sector. Member states are preparing to invest billions of euros through the Early Movers Coalition to support e-SAF projects. Allowing e-HEFA to cannibalize the mandate would effectively turn these investments into stranded assets. Furthermore, the Commission's recent proposal to reshape the ETS SAF allowances shifts support towards e-SAF; if fuel suppliers can exploit the e-HEFA loophole, the financial power of these allowances will be wasted.

A risk for the environmental integrity of the e-SAF mandate

Allowing e-HEFA to count towards the e-SAF mandate fundamentally undermines the environmental objectives of ReFuelEU. The primary purpose of the e-SAF sub-mandate is to drive the scale-up of true power-to-liquid synthetic fuels. E-SAFs offer near-zero lifecycle emissions and are highly scalable because they do not rely on land or limited biological resources.

By contrast, e-HEFA remains strictly tethered to the availability of waste lipids and oils, feedstocks that are already not scalable and fraught with broader sustainability and fraud concerns (such as the verification of imported Used Cooking Oil). Counting the green hydrogen used in the HEFA refining process as e-SAF is effectively an accounting exercise rather than a physical shift in fuel production. It does not introduce genuine synthetic fuel volumes to the market. Instead, it slices up existing biofuel pathways to meet the e-SAF target, diluting the overall greenhouse gas emission reductions the mandate was designed to achieve and keeping European aviation linked to unsustainable and limited feedstocks.

Recommendations

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Align the RFNBO Delegated Acts with the Low Carbon Fuels Delegated Act by explicitly excluding any RFNBO used as an intermediate input in biofuel production, whether via HEFA hydrotreatment or co-processing, from the calculation of RFNBO output.

This single clarification would close the current legal ambiguity, end the inconsistent interpretations by certification schemes, and ensure that the e-SAF sub-mandate continues to drive genuine investment in new e-fuel production capacity rather than allowing existing biofuel volumes to be relabelled as compliance.

02

Uphold dedicated e-SAF sub-target in ReFuelEU and protect the integrity of future synthetic fuel requirements under FuelEU Maritime to ensure regulatory stability. Any non-compliance penalties incurred by fuel suppliers are a direct consequence of their failure to proactively invest and prepare, despite having had ample time and clear regulatory signals.

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Accelerate the deployment of key support mechanisms, like the pilot double-sided auctions of the Early Movers Coalition as a stepping stone toward a wider EU market intermediary, and the ETS SAF allowances.

Further information

Compilation of industry policy papers advocating for the eHEFA route

Company / Organization	Source
Fuels Europe	A Simpler Fairer Framework Fit-to-Compete Key Legislative Fixes for Europe's Fuel Manufacturing Industry (2025)
Shell	ReFuelEU Shell technical paper (2026)
Repsol	EU Aviation Strategy – Public Consultation (2026)
Neste	Reply to the Aviation Strategy Call for Evidence (2026)