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Why airlines' complaints about ReFuelEU don't add up

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Summary

Ahead of the A4E Summit (18–19 March 2026), airlines are expected to call for delays or weakening of the ReFuelEU Aviation SAF and e-SAF targets. This fact sheet sets the record straight: production potential is already in place, and what is missing are committed offtakes to bring it to market. Postponing targets would risk a major European industrial opportunity, slow emissions reductions, and undermine EU support schemes designed to ease cost and competitiveness concerns.

The **ReFuelEU** regulation, adopted in 2023, sets binding targets for the supply of sustainable aviation fuels (SAF) in Europe, including specific sub-targets for synthetic e-SAF. These e-SAF targets start at 1.2% in 2030 and rise progressively to 35% of all jet fuel supplied in the EU by 2050.

Airlines claim that e-SAF supply won't be available in time to meet the ReFuelEU targets. In reality, production potential already exists in Europe (and beyond). **What is missing are committed offtakes to trigger final investment decisions,** a gap that is exacerbated by a lack of commitment from Big Oil. The targets remain achievable if these projects are supported and brought to market.

>2%

Some European airlines already exceed the 2025 SAF mandate blending target of 2%.

2.8 Mt

Potential annual e-SAF capacity from 41 European projects under development by 2032, well above the 1 Mt EU target.

Delaying the targets would not only slow down emission reductions but also threaten the numerous start-ups currently developing Europe's e-SAF industry. **Thousands of jobs and billions in economic value are at risk,** and Europe risks ceding industrial leadership to competitors such as China. At the same time, continuing reliance on imported fossil jet fuel exposes Europe to price volatility and supply risks, as highlighted by the recent energy crisis. Keeping the targets is therefore crucial to secure Europe's industrial opportunity, strengthen its energy security, and accelerate the decarbonisation of aviation.

1.7 Mt/yr	Delaying e-SAF targets would forgo 1.7 million tonnes of annual CO_2 savings (2030–2034).
€20-30 bn	Meeting the 2030 target with domestic e-SAF production could generate €20-30 billion in economic output.
100,000	Scaling up e-SAF could support 100,000 long-term jobs across Europe by 2050.

Concerns over ticket prices and competitiveness are largely overstated. Airlines posted record profits in 2025 despite the mandate already being in effect, and the projected impact of e-SAF on fares remains moderate. Moreover, EU support mechanisms, including the SAF allowances and the forthcoming market intermediary, are designed to further mitigate cost pressures and ensure a smooth transition to alternative fuels.

4%

The impact of the overall SAF mandate on average ticket prices is limited to 4% by 2030.

€3

Approximate ticket price increase for a short-haul flight with 1.2% e-SAF (roughly the price of a coffee).

€1.5 billion

The amount of subsidies airlines are granted until 2030 to help cover their extra fuel costs.

Why is e-SAF a more strategic choice for Europe than biofuels?

- **More scalable than biofuels.** While waste-based biofuels are limited by the availability of used cooking oils, animal fats, and other residues, e-SAF can be produced at much

larger volumes using renewable energy and captured CO_2. This makes it a solution capable of meeting Europe's long-term aviation fuel demand.

- **More sustainable**. E-SAF avoids the indirect land-use change effects associated with biofuels, which can drive deforestation and have questionable lifecycle emissions.

- **More sovereign and resilient.** Europe can produce e-SAF domestically at scale, whereas a large share of current waste-based SAF feedstocks are imported: in 2024, **69% of used cooking oils and animal fats for SAF in Europe came from outside the EU.** Scaling up e-SAF will strengthen Europe's energy sovereignty and supply resilience.

While waste-based biofuels have a role to play, e-SAF is essential for the long-term decarbonisation of aviation. The EU recognised this by establishing specific e-SAF sub-targets under ReFuelEU, and more recently reaffirmed its importance in the STIP. Because e-SAF is currently more expensive and less technologically mature than waste-based SAF, it requires targeted support to scale up and reach commercial viability.

01

Debunking supply concerns

Airlines often claim that Europe won't have enough SAF, in particular e-SAF, to meet the ReFuelEU targets. In reality, the mandate is working as it should, with significant production potential both in Europe and abroad. What is missing are committed offtakes to trigger final investment decisions and bring projects to market.

>2%	Some European airlines already exceed the 2025 SAF mandate blending target of 2%.
3.5 Mt	Projected European bio-SAF production in 2030 exceeds the EU target of 2.5 Mt.
2.8 Mt	Potential annual e-SAF capacity from 41 European projects under development by 2032, well above the 1 Mt EU target.

1.1 The bio-SAF market is scaling as required

In 2024, sustainable aviation fuels accounted for just 0.6% of total jet fuel use in Europe. Yet the market has expanded rapidly, and there are strong indications that the 2% 2025 target under ReFuelEU Aviation will be met. The UK, which has its own SAF mandate, has already exceeded this level, reaching 2.4% SAF supply in 2025. This shows that mandates have the desired effect: they drive supply and demand.

Several major airline groups are also moving ahead of regulatory requirements.

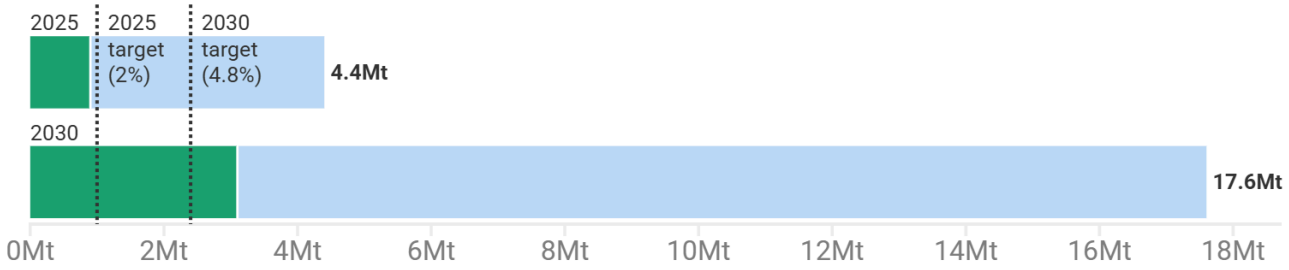
The Air France-KLM group reported SAF use of 2.9% in 2025, while International Airlines Group (IAG) reached 3.3%, both well above the 2% benchmark. According to T&E's SAF Observatory, Air France-KLM has already locked in a ~5% SAF share (related to its global fuel consumption) by 2030, matching the 2030 bio-SAF target. More broadly, at least eight European airlines (IAG, Air

France-KLM, DHL, Ryanair, Virgin Atlantic, Finnair, Scandinavian Airlines and Wizz Air) have pledged to go beyond the EU's mandatory targets by 2030.

Looking ahead to 2030, global SAF production is projected to reach around 18 million tonnes, including approximately 3.5 million tonnes in Europe.
This comfortably exceeds the roughly 2.5 million tonnes required to meet the 2030 EU target. Taken together, current performance and forward projections indicate that bio-SAF supply is scaling in line with regulatory expectations.

ReFuelEU 2030 bio-SAF target can be met with current European production capacity

Projected bio-SAF production capacity **in Europe** and **globally**, in megatonnes



Source: T&E (2026) • 2030 projections are based on Sky NRG (2025). Production capacity estimate for 2025 includes plants in the US, South Korea, China, Europe and Singapore.

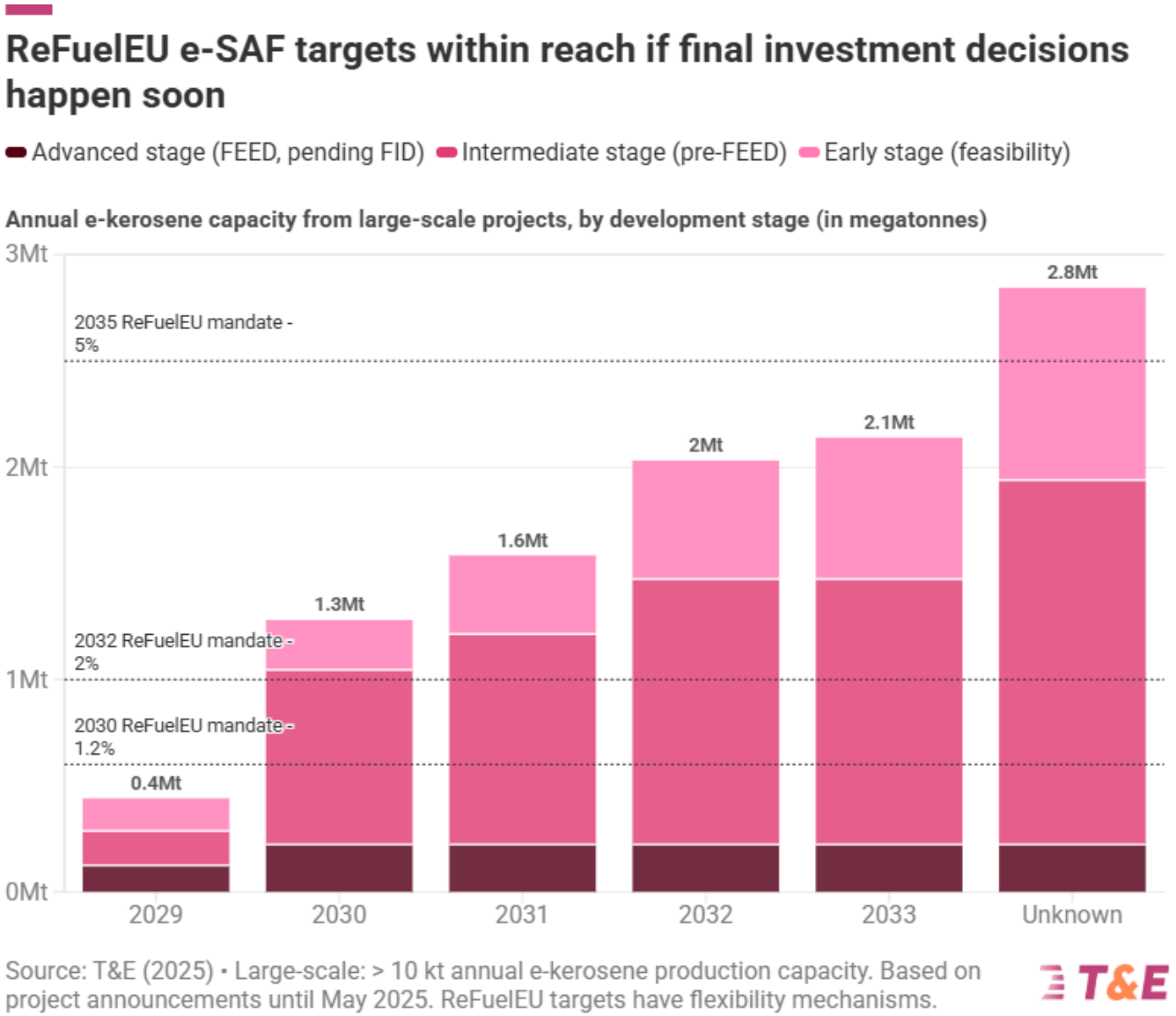
1.2 E-SAF targets remain achievable if offtakes materialise

Europe currently leads globally in e-SAF project development, with 41 large-scale projects under development representing a potential 2.8 million tonnes of annual capacity, nearly three times the volume required under ReFuelEU Aviation by 2032. This demonstrates that industrial ambition and technical capability are firmly in place.

However, no large-scale project in Europe has yet reached a final investment decision (FID). Only one plant is currently operational: the Ineratec facility in Frankfurt, producing around 2,000-3,000 tonnes per year. The main barrier is not technology, but a lack of firm, long-term offtake agreements to unlock financing. Meanwhile, progress is being made elsewhere: Infinium reached FID last year for a plant in Texas, and IAG bought e-SAF from US start-ups (Infinium and Twelve).

The clock is ticking for European projects, but the 2030 e-SAF target (particularly the minimum 0.7% sub-target) remains achievable if offtakes materialise in the next 12-18

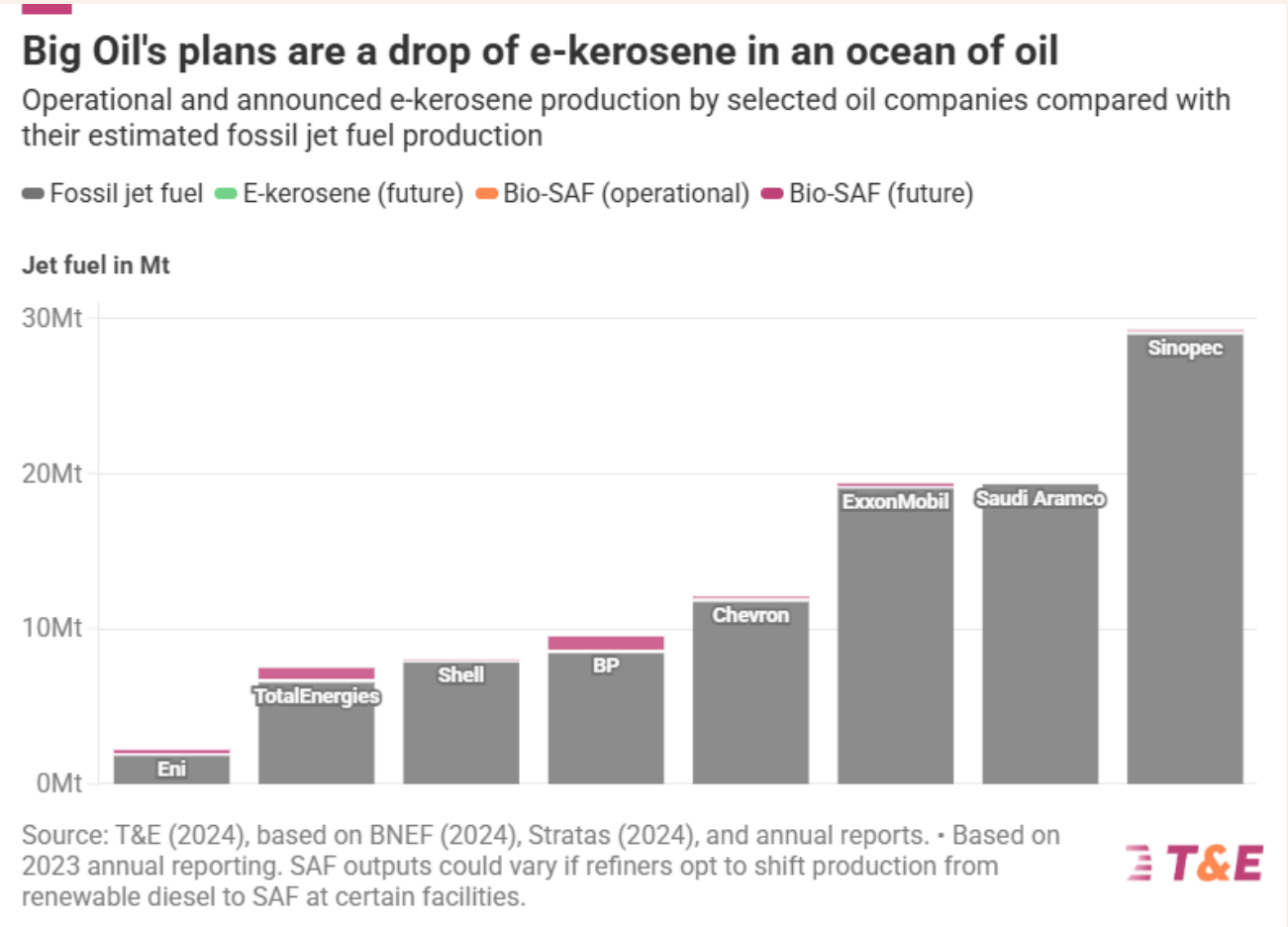
months. The announced pilot double-sided auction for e-SAF could provide the push needed to help first-mover projects reach FID and keep Europe on track.



Instead of attacking the e-kerosene mandate, efforts should focus on scaling up production. The mandate is the backbone of the business case for e-fuel producers. Weakening or postponing it would create a self-fulfilling prophecy: without demand certainty, projects will stall, and supply will indeed fall short by 2030.

The Big Oil problem

While much focus is on airlines, it is actually fuel suppliers that are the obligated parties under ReFuelEU. The oil majors control almost every drop of jet fuel sold in Europe, yet are lagging behind when it comes to replacing it with sustainable alternatives. Despite their very large investment capacities and decades of profits from aviation fuel, they are barely producing any SAF and have no commercial plans for e-kerosene.



- **No e-SAF projects or commitments.** Most industrial e-SAF projects are led by start-ups. Big Oil has not developed its own projects, nor has it committed to buying or investing in existing ones. Shell pulled out of the HySkies e-SAF project with Vattenfall in Sweden in July 2024. Vattenfall cited “a different belief in timelines”.

- **Scaling back biofuel operations.** In the biofuel space, Big Oil is also retreating. Both Shell and BP have halted their Rotterdam SAF projects, limiting domestic production opportunities and weakening the pipeline of available fuel.

- **Control of jet fuel infrastructure.** Big Oil often owns and controls access to critical jet fuel infrastructure in Europe, and can block or hinder new producers and suppliers creating a significant competition bottleneck.

- **Risk passed to airlines.** Suppliers frequently surcharge airlines for SAF, transferring the financial and regulatory compliance risks to carriers instead of taking responsibility themselves.

02

The consequences of postponing the targets

Delaying the e-SAF targets would slow emissions reductions while shifting demand toward greater volumes of biofuels, increasing the risk of reliance on cheap and potentially dubious imports. Most critically, it would undermine the business case for emerging e-SAF projects, threatening thousands of jobs and Europe's chance to lead a strategic new industry.

1.7 Mt/yr	Delaying e-SAF targets would forgo 1.7 million tonnes of annual CO_2 savings (2030–2034).
€20-30 bn	Meeting the 2030 target with domestic e-SAF production could generate €20-30 billion in economic output.
100,000	Scaling up e-SAF could support 100,000 long-term jobs across Europe by 2050.

2.1 Delaying e-SAF targets will slow aviation emissions reductions

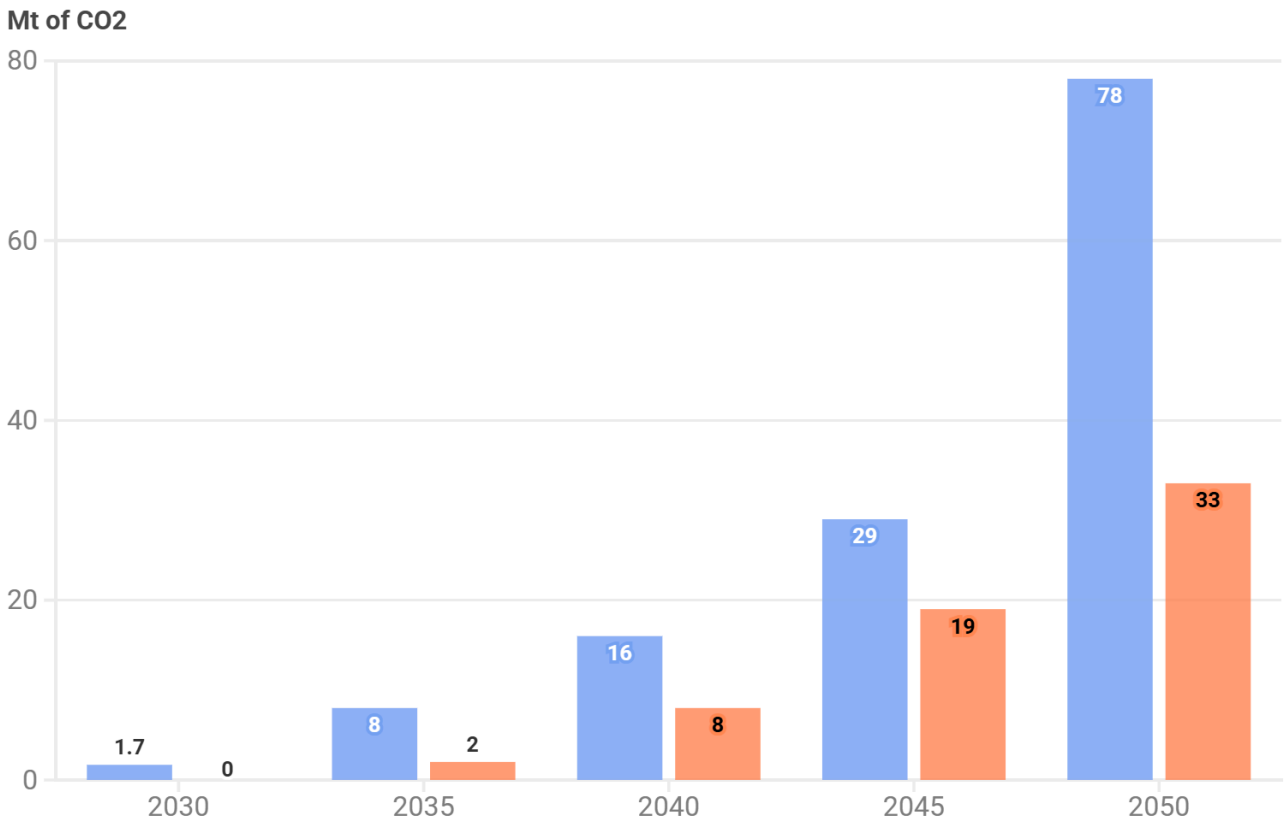
Delaying the e-SAF targets, e.g. by five years, would slow aviation's emissions reductions[1]. If the overall SAF targets are reduced accordingly, the e-SAF volumes initially planned for the early 2030s would largely be replaced by fossil jet fuel. As a result, Europe would forgo around **1.7 million tonnes of CO_2 savings every year between 2030 and 2034**, amounting to **8.5 million tonnes of additional emissions** over this period, roughly equivalent to the **annual emissions of about 7 million passenger cars** at today's average CO_2 performance.

[1] T&E assumes a 5-year delay to the eSAF target, although requests for a delay of the targets could result in an earlier or later kick in of the mandate, or worst still, a complete end to the European eSAF mandate.

Under this scenario, the first meaningful emissions savings from e-SAF would only occur in 2035, reaching just 2 million tonnes of CO_2 reductions, instead of the 8 million tonnes expected under the current trajectory. The impact compounds over time: by 2050, cumulative emissions savings from e-SAF would fall **from 360 million tonnes under the current framework to just 186 million tonnes** if the targets are postponed by five years, **nearly cutting the climate benefit of e-SAF by half.**

Delayed targets reduce e-SAF uptake and emissions savings

Annual CO_2 savings from e-SAF under **current** vs. **5-year delayed** targets **if missing e-SAF is replaced by fossil fuels**



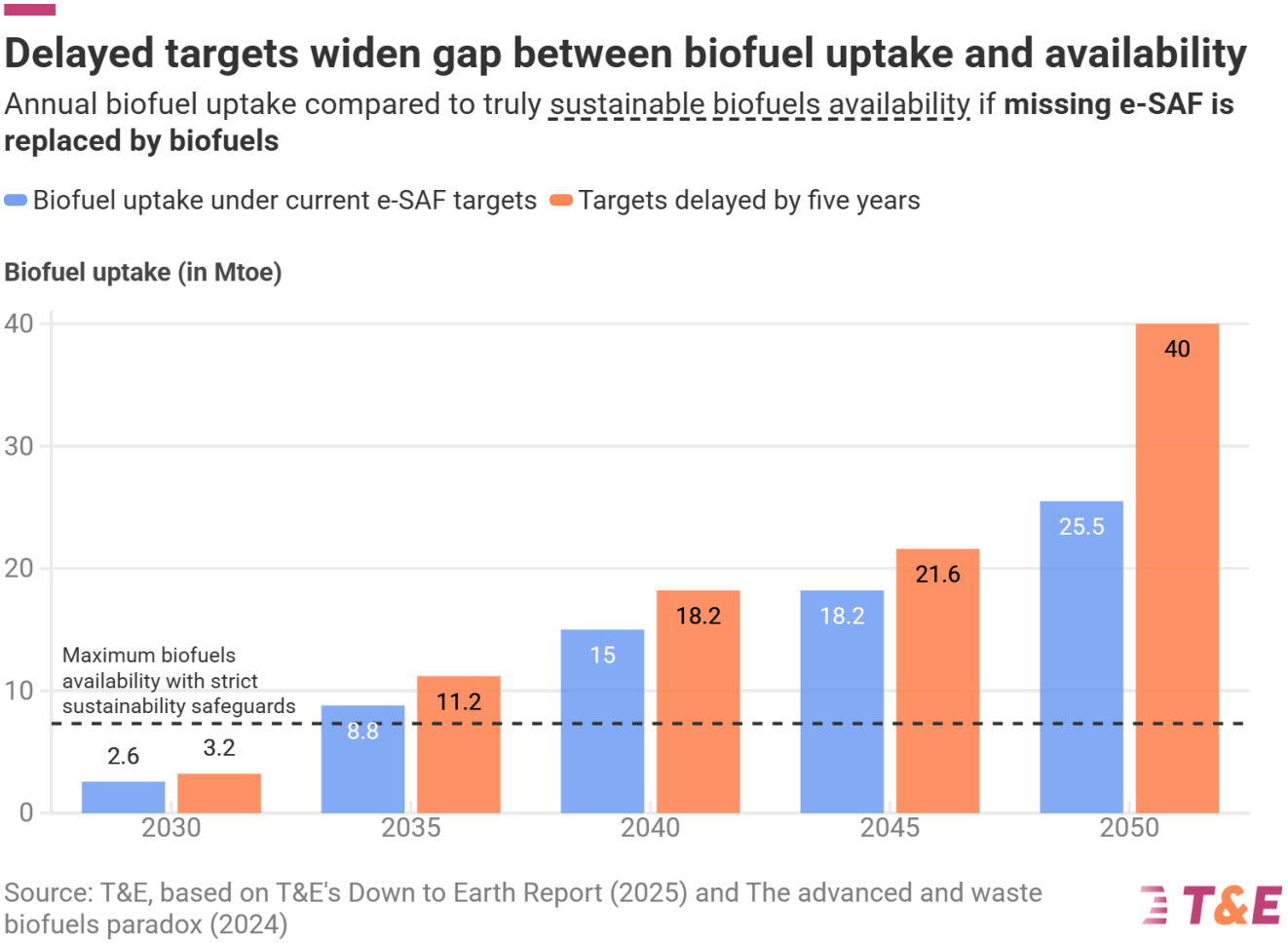
Source: T&E, based on T&E's Down to Earth Report (2025) • Assumes each e-SAF target is delayed by five years (no e-SAF before 2035) and therefore overall SAF targets are reduced.

Each year of delay reduces Europe's potential emissions savings, increasing reliance on fossil fuel imports and slowing progress towards aviation climate goals.

2.2 Postponing e-SAF targets could increase reliance on biofuels and risky imports

Postponing the e-SAF targets while keeping overall SAF mandates unchanged could shift demand from e-SAF to bio-based SAF. In the scenario examined here, it is assumed that total SAF blending requirements remain unchanged but the missing e-SAF volumes are replaced by bio-SAF instead of fossil jet fuel, unlike the scenario studied in the previous section where delayed e-SAF volumes were substituted with fossil kerosene.

Europe's current bio-SAF targets are already **higher than the estimated domestic sustainable supply** (including used cooking oils, animal fats, and municipal solid waste) leaving a structural gap between demand and available resources. **If e-SAF targets are delayed, this gap would widen, forcing greater reliance on questionably sustainable biofuels,** such as fuels produced from agricultural or forestry residues, or imported waste oils and fats. Many of these feedstocks carry a high risk of fraud or unsustainable sourcing, threatening both the environmental integrity of SAF and Europe's credibility in enforcing sustainability standards.



Source: T&E, based on T&E's Down to Earth Report (2025) and The advanced and waste biofuels paradox (2024)

Beyond sustainability concerns, **this scenario would weaken Europe's energy sovereignty,** making the continent increasingly dependent on imported biofuels from third countries rather than building a homegrown, strategic e-SAF industry.

Delaying e-SAF targets risks not only replacing genuinely sustainable fuels with questionable imports, but also undermines Europe's energy independence and control over its clean-fuel supply.

2.3 Delaying e-SAF targets will undermine European e-SAF companies and jobs

Postponing e-SAF targets, even by a few years, would put most European start-ups developing e-SAF at serious risk. Many of these companies rely on predictable policy signals to secure investment and scale production. Without clear demand in the near term, projects are likely to stall or fail, **threatening Europe's ability to take the lead in e-SAF technology and develop a home-grown industry.** In contrast, well-capitalised state-backed companies in other regions, particularly China, could be ready to enter the market as soon as the targets take effect, leaving Europe behind. China has recently announced a new national hydrogen strategy that explicitly includes support for synthetic fuels such as e-SAF, signalling strong public backing for the sector.

The economic stakes are substantial. An upcoming ERM analysis commissioned by T&E shows that meeting the 2030 e-SAF targets with domestic production would generate **more than €20 billion in economic value**, and once facilities are operating, the sector could contribute up to **€1.5 billion in annual economic output.** By 2050, scaling up e-SAF could deliver **over €30 billion in annual output** and **support more than 100,000 long-term jobs,** with additional benefits from renewables roll-out increasing these numbers by another 75%. E-SAF deployment also drives **skilled employment**, creating thousands of opportunities for engineers, technicians, and renewable energy specialists.

Beyond jobs, domestic e-SAF production strengthens **Europe's energy sovereignty**. By producing fuels at home, Europe reduces its reliance on imported kerosene and crude oil, enhances energy resilience, and captures the full economic value of a strategic energy transition. Scaling e-SAF also produces **co-products** such as e-diesel and e-naphtha that can decarbonise other sectors, and accelerates the rollout of renewables and hydrogen, amplifying the benefits across Europe's industrial system.

Delaying e-SAF targets risks killing Europe's emerging e-SAF industry, sacrificing thousands of jobs, billions in economic value, and the opportunity to lead the global clean aviation transition.

03

Debunking cost and competitiveness concerns

Sustainable aviation fuels remain significantly more expensive than fossil jet fuel, particularly in the case of e-SAF. However, the impact of SAF mandates on ticket prices is expected to remain limited and manageable for passengers. At the same time, concerns about competitiveness and carbon leakage are often overstated, while airlines already benefit from public support and additional EU measures are being prepared to help scale up SAF.

4%	The impact of the overall SAF mandate on average ticket prices is limited to 4% by 2030.
€3	Approximate ticket price increase for a short-haul flight with 1.2% e-SAF (roughly the price of a coffee at the airport).
€1.5 billion	The amount of subsidies airlines are granted until 2030 to help cover their extra fuel costs.

3.1 SAF is expensive, but the impact on ticket prices remains modest

Sustainable aviation fuels are notably more expensive than fossil kerosene, particularly in the case of e-SAF. In 2025, official EU price references indicated that **bio-SAF produced from waste oils was sold on average at around three times the price of fossil jet fuel**, while **e-SAF was estimated to cost eight to ten times more to produce** than conventional kerosene.

However, the impact on ticket prices remains limited because SAF targets are introduced gradually and fuel represents only part of airlines' overall costs. Under ReFuelEU, suppliers must blend 2% SAF from 2025, rising to 6% in 2030, with a dedicated e-SAF sub-target of 1.2% in 2030 and 2% in 2032.

As a result, the expected impact on passengers remains manageable. Our analysis suggests that the overall SAF mandate could increase ticket prices by **around 4% on average by 2030**, with about 75% of that increase linked to the e-SAF share of the mandate.

In practical terms, the cost increase per ticket triggered by the SAF mandates remains limited. For example, **a 1.2% e-SAF blend in 2030 would raise the fuel costs per passenger of a long-haul flight by around €15, and a short-haul flight by around €3[2] (roughly the price of lunch and coffee at the airport).** When the 5% e-SAF target enters into force in 2035, ticket prices could increase by around €60 on long-haul flights and €11 on short-haul flights. Airlines may not distribute these additional fuel costs evenly across ticket categories, but the overall impact per passenger should still remain relatively modest.

Same as having lunch and coffee at the airport

Average fuel cost increase per passenger from meeting the 2030 ReFuelEU e-SAF targets

Source: T&E modelling based on OAG (2025). Average costs per passenger for a one-way flight on the routes Barcelona-Berlin and Paris-New York. Including annual efficiency gains of 1.1%.

When the bio-SAF component of the mandate is also included, the total impact rises to **around €24 for long-haul flights and less than €5 for short-haul flights by 2030,** and €85 and €16 respectively by 2035.

[2] Long-haul flight: ~6,000 km (e.g., Paris CDG – New York JFK); short-haul flight: ~1,500 km (e.g., Barcelona BCN – Berlin BER).

Looking further ahead, the cost trajectory will depend heavily on how quickly e-SAF production scales up. Maintaining the current mandate trajectory is essential to drive early investment and industrial scale-up, which are expected to reduce costs over time. **Delaying the targets could slow this process and risk higher costs for airlines and passengers when blending requirements increase in the 2040s.**

It is important to note that fossil jet fuel prices are highly volatile and can fluctuate significantly due to geopolitical events. For example, the spot price of jet kerosene recently surged by around 140% following the conflict in Iran, illustrating how rapidly conventional aviation fuel costs can rise. In comparison, the gradual introduction of SAF blends adds a relatively small and predictable cost component to ticket prices.

SAF will cost passengers less than a coffee per short-haul flight in the early years of the mandate.

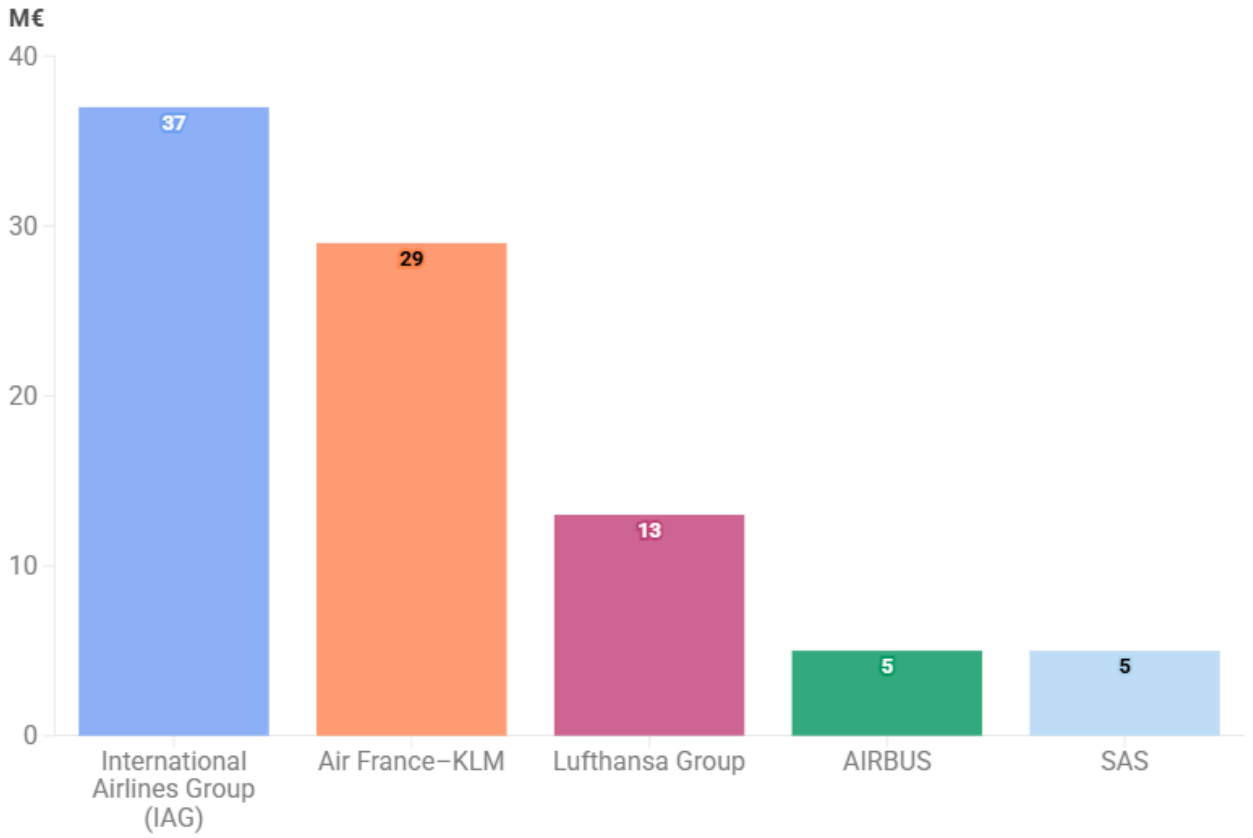
3.2 Public support already helps lower SAF costs and more support is on the way

Public support mechanisms are already helping airlines absorb the cost of sustainable aviation fuels. Under the ETS, **SAF is "zero-rated"**, meaning airlines do not have to surrender carbon allowances for the emissions associated with SAF. In addition, the EU created a dedicated pool of **20 million SAF allowances,** worth roughly **€1.5 billion,** to be distributed to airlines between 2024 and 2030 to help cover the price difference between SAF and fossil kerosene.

The mechanism is already providing substantial support. In 2024, the European Commission allocated 1.3 million SAF allowances worth around €100 million to 53 airlines, covering a substantial share of the SAF costs of some major airline groups. For example, this support accounted for around 40% of the SAF used by International Airlines Group, roughly 50% for Air France-KLM, and **even close to 100% for Lufthansa Group**. The mechanism could be extended as part of the upcoming ETS review, and with targeted adjustments it could provide even stronger incentives for the most expensive fuels, particularly e-SAF.

European airlines receive 100M€-worth of ETS allowances for their 2024 SAF purchases

Top 5 beneficiaries of EU SAF allowances in 2024 (in M€)



Source: T&E (2025) based on European Commission (2025).

Additional support may also come through new market mechanisms.

- In the Sustainable Transport Investment Plan (STIP), the European Commission announced plans to establish an **EU-wide SAF market intermediary** that could run **double-sided auctions**. Under this system, SAF producers would bid the price at which they are willing to supply fuel, while airlines would bid the price they are willing to pay. The intermediary would bridge the gap between the two by allocating public support to cover the difference, reducing costs for airlines while giving producers the revenue certainty needed to invest in new capacity.
- A **pilot auction** supported by a coalition of Member States is already being prepared and could take place by early 2027 at the latest.
- In the UK, the government is introducing a **Revenue Certainty Mechanism (RCM)** for SAF, designed to guarantee producers a stable price through contracts that cover the gap between production costs and market revenues. Such mechanisms help de-risk investment in new SAF plants while keeping fuel prices manageable for airlines.

Airlines are not facing SAF costs alone: EU policies already provide financial support, with additional market mechanisms on the way.

3.3 Competitiveness and carbon leakage concerns are often overstated

European airlines frequently warn that SAF mandates could undermine their competitiveness. However, as shown above, the impact of SAF on ticket prices remains relatively limited. In addition, **non-European airlines are also affected**, since they must refuel at European Economic Area (EEA) airports and therefore face the same impact of SAF blending requirements in Europe.

Some stakeholders argue that higher ticket prices could encourage passengers to transfer via airports outside the EEA or choose destinations beyond the EEA, leading to so-called "**carbon leakage.**" While this risk exists in theory, available evidence suggests that its scale is very limited. A 2023 study by T&E found that carbon leakage linked to the Fit for 55 measures, namely ReFuelEU and the EU ETS, would represent **only around 3% of the total emissions reductions achieved by these policies by 2035.**

Moreover, aviation demand is expected to continue growing despite the introduction of these measures. Even with the Fit for 55 policies in place, **passenger traffic through EEA airports is projected to be 24% higher in 2035 than in 2018**. This suggests that moderate ticket price increases linked to SAF deployment are unlikely to significantly alter overall travel patterns.

Finally, the sector's recent financial performance further weakens the argument that climate policies threaten airline viability. Several major European airline groups, including Air France-KLM and IAG, reported **record profits in 2025,** despite the SAF mandate already being in force.

Evidence shows that SAF mandates have limited impact on airline competitiveness and only marginal carbon leakage risks