SASHA
Skies and Seas Hydrogen-fuels Accelerator Coalition

SAF bill: How the revenue certainty mechanism can unlock UK e-SAF production

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Introduced in May 2025, the SAF bill will establish a revenue certainty mechanism to support UK produced 'sustainable aviation fuel' (SAF). With the SAF mandate putting in place legal requirements to use an increasing proportion of SAF in the fuel mix from this year onwards, alternative fuels will play a role in UK aviation decarbonisation. But current supplies of SAF are limited, significant investments are needed to boost production, and risk for investors is high.

A revenue certainty mechanism – funded via a levy on aviation fuel suppliers – can help to overcome these challenges and stimulate investment into UK produced SAF – in turn supporting not just decarbonisation but also competitiveness and energy security goals. However, not all SAFs provide the same environmental benefits. It is important that the revenue certainty mechanism is targeted to support the fuel that offer the best potential to reduce emissions: e-SAF.

To do this, the SAF Bill must be amended to commit a proportion of its support to e-SAF projects.

Background: The role of SAF in decarbonising aviation

Reducing emissions from aviation is critical to achieving the UK's goal of reaching net zero by 2050. In 2022, domestic and international aviation accounted for 7% of the UK's greenhouse gas (GHG) emissions, with the Climate Change Committee (CCC) projecting that this could rise to as high as 16% of total emissions by 2035. In their most recent progress report, the CCC suggested that continued emissions growth in the sector could put future climate targets at risk.

Sustainable aviation fuels (SAFs) are part of the solution to lowering aviation's emissions. Along with bringing alternative, zero carbon emission propulsion technologies – including battery and hydrogen-electric – to the market, changing the *type* of fuel that existing aircraft use is necessary.

This is where SAFs come in: they are 'drop-in fuels' that can be blended into the fuel mix and used by aircraft operating right now. However, as they are currently in low supply, and are expensive compared to fossil fuels, robust policy and regulations are needed to spur the uptake of SAFs. The UK Government has recognised this by implementing a SAF mandate, which obligates that an increasing amount of SAF is blended into the fuel mix from 2025 onwards.

Not all SAFs are made equally

When burned, SAFs emit a similar amount of CO_2 to fossil jet fuel. This means that the 'sustainability' of SAFs – that is, their potential to reduce emissions – comes from the feedstocks used to produce them over the fuel's full lifecycle. Because of this, SAFs come with significantly varying potential to reduce emissions, availability and impacts on biodiversity, depending on the feedstock. Broadly speaking, SAFs can be categorised into biofuels and e-SAF.

Biofuels can be made using used cooking oils and animal fats (so-called 'HEFA' biofuels) or other forms of waste biomass, such as municipal solid waste.

The feedstocks used for HEFA fuels are already used to decarbonise other industries and come with the risk that virgin oils may be fraudulently reported as used.

Use of HEFA fuels is limited under the UK Government's SAF mandate because of these issues. However, availability of feedstocks for **all** biofuels will be in limited supply. There are also associated risks of biodiversity loss and emissions arising from land-use change if these biomass feedstocks aren't truly from waste sources.

E-SAF, on the other hand, are produced using green hydrogen (made with renewable electricity and water via electrolysis) and a sustainable source of carbon, preferably captured from the air. While renewable electricity demand to produce e-SAF is high, and comes with competing demand for other sectors' decarbonisation, e-SAF has the greatest potential to reduce emissions and these fuels are not associated with the same biodiversity risks as biofuels.

There is a significant risk that relying on biofuels will undermine both climate and environmental goals, while supply constraints could leave the UK reliant on imports, in turn undermining energy security.

Barriers to investing in e-SAF

While the SAF Bill recognises the limitations of HEFA fuels by excluding them from being eligible, **no further differentiation is made between biofuels and e-SAF**.

This is concerning given the additional risks that come with investing in e-SAF: first of a kind projects will have high capital costs to get off the ground, operating costs will be considerable in the immediate term due to eSAF's renewable electricity requirements, and the proliferation of smaller companies looking to produce the fuel can be seen as high-risk by investors. E-SAF producers are also seeing a lack of binding offtake agreements from airlines, in part due to the short contract lengths offered by airlines and the longer ones required by producers for investor certainty.

The UK has a number of e-SAF projects under development, such as SASHA Coalition member Arcadia eFuels' Project Naboo in Teesside, yet none have reached final investment decision. With the amount of SAF production supported through the revenue support mechanism likely to be limited, it is therefore important that a proportion is earmarked for production of e-SAF to overcome these challenges.

Without ring-fenced funding, and depending on qualifying criteria, there is a risk that biofuel projects will be supported at the expense of e-SAF projects given the proliferation of UK biofuel projects in development and the additional barriers that e-SAF producers face. This would put the binding e-SAF targets at risk, with airlines

looking to meet their commitments via fuel imports rather than capturing the economic and energy security opportunities that domestically produced fuels provide.

The industrial opportunity

In the Seventh Carbon Budget, the CCC stated that 13TWh of synthetic fuels will be needed in 2040 to achieve its 'balanced pathway' aligned with net zero by 2050. This presents a significant market opportunity to capture via domestically produced e-SAF – not only driving decarbonisation but also reducing reliance on fuel imports and boosting local economies across the country. For example, it is estimated that for every £1 invested directly in domestic e-SAF facilities, at least a further £1 will be invested in other infrastructure such as renewable electricity generation and carbon capture.

Industry projections also suggest that the UK SAF industry could create up to 60,000 jobs by 2050, with £10bn of gross value added per annum. With a distinct cluster of projects under development in Teesside, the potential for e-SAF production to provide regional economic development is clear.

Policy asks

Robust policy and strong regulatory frameworks are necessary to overcome the challenges facing UK e-SAF production, in turn capturing the opportunities it can bring to aviation decarbonisation, competitiveness and energy security.

To best achieve this, the SAF Bill must be amended to target a proportion of support via the RCM to e-SAF projects, with the goal of supporting at least one e-SAF plant to reach final investment decision by 2026.

The policy framework incentivising e-SAF uptake must also go further, by:

- **Strengthening the e-SAF sub-mandates within the SAF Mandate**. At present, the UK is lagging behind the EU in its ambitions for e-SAF uptake, with the UK mandating only 0.5% e-SAF in 2030. The government must increase the e-SAF mandate to at least 1.2% in 2030.
- **Re-commit to limiting HEFA fuel** through existing commitments like the SAF Mandate cap and staying the course on excluding HEFA projects from support via the revenue certainty mechanism.
- **Ensure that aviation is paying for its pollution** by extending the UK emissions trading system (ETS) to cover outbound international flights, in turn reducing the price gap between fossil kerosene and truly sustainable alternatives. Revenues from an extended ETS could also provide additional industry funding for green hydrogen solutions for aviation's decarbonisation.

UK e-SAF production is an exciting opportunity for the UK. But if the revenue certainty mechanism fails to adequately support its domestic production, there is a real risk that uptake will fall far short and the opportunity of UK leadership missed.

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