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Department for Transport

Closed consultation

Sustainable aviation fuel revenue certainty mechanism: approach to industry funding

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Contents

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Ministerial foreword

This government is committed to delivering greener transport and securing the aviation industry's long-term future. Decarbonising aviation will play an important role in the growth of the sector with opportunities created for new industries and more jobs. The UK sustainable aviation fuel (SAF) industry will play a vital role in supporting both the decarbonisation and growth of the sector.

The revenue certainty mechanism will help producers get the investment they need to ramp up the production of SAF in the UK. A UK SAF industry will support the delivery of emissions reductions through the SAF Mandate (https://www.gov.uk/government/collections/sustainable-aviation-fuel-saf-mandate), help drive growth and can provide good green jobs across the whole of the UK.

This consultation focuses on how the revenue certainty mechanism will be funded.

It outlines our position that the revenue certainty mechanism should be funded by industry and that the preferred approach is to introduce a levy on suppliers of jet fuel. The government is fully committed to working with industry on the design of the revenue certainty mechanism including on how any levy will work in practice.

This consultation builds on the government response to the April 2024 consultation (https://www.gov.uk/government/consultations/sustainable-aviation-fuels-revenue-certainty-mechanism-revenue-certainty-options) and the announcement of the SAF Revenue Support Mechanism Bill in the King's Speech.

It takes another step toward achieving the revenue certainty mechanism and demonstrates the government's commitment to aviation decarbonisation. This is alongside wider policy measures including:

- the SAF Mandate
- work on airspace modernisation
- the recent announcement of a £63 million extension to the Advanced Fuels Fund (https://www.gov.uk/government/speeches/transport-and-growth-update-airport-expansion-and-transition-to-greener-aviation)

The revenue certainty mechanism will help build a UK SAF industry. This represents a significant economic opportunity for the UK which will help make Britain a clean energy superpower.

Mike Kane MP, Minister for Aviation, Maritime and Security

Summary

The government is committed to delivering greener transport and supporting its missions to kickstart economic growth and to make Britain a clean energy superpower.

The aviation sector has an important role to play in meeting the economy-wide 2050 net zero target that will require a range of measures to decarbonise the sector. SAF is central to these plans to drive greener aviation because it can deliver around 70% greenhouse gas emissions savings on a lifecycle basis and be used in aircraft today.

Alongside the Advanced Fuels Fund that has been extended by £63 million, the revenue certainty mechanism for SAF will address barriers to domestic production and help the UK realise the full potential of this technology.

Ahead of introducing legislative provisions in the Sustainable Aviation Fuel (Revenue Support Mechanism) Bill, the government needs to have a clear position on the funding element of the revenue certainty mechanism being implemented. As part of our duty to good policymaking, we have presented the preferred approach in this publication and welcome responses from stakeholders based on their evidence, industry knowledge and views.

We have reiterated our rationale for why the revenue certainty mechanism for UK SAF production should be industry funded. It centres around the polluter pays principle for hard to abate sectors, such as aviation, and the precedents set by other low carbon energy schemes across government.

Analysis illustrating the estimated costs for the contracts has shown how the intervention could require relatively modest amounts of funding. The nature of current and forecasted market dynamics for UK SAF could result in the revenue certainty mechanism being viewed as an insurance mechanism that will not experience significant payments to the producers from the counterparty, particularly in the early years.

The proposed approach to funding the revenue certainty mechanism is through introducing a variable levy on aviation fuel suppliers. This allows the cost to be spread across the supply chain and ensures that it is borne by those benefiting from the supply of fossil aviation fuel. Aviation fuel suppliers will also benefit from the additional SAF production that the scheme will stimulate, helping them to meet their SAF Mandate obligation.

The inclusion of open questions allows industry to share insights and views on how the revenue certainty mechanism should be funded by industry. The Department for Transport (DfT) wants to work closely with industry on the

detailed design of any levy and would expect to consult on the detailed design in due course.

We have clearly outlined the next steps for delivering the revenue certainty mechanism, including the announced bill, and how engagement responses will feed into how a levy could be designed.

Implementing the revenue certainty mechanism

Transport remains at the centre of decarbonisation efforts, accounting for 34% of the UK's greenhouse gas emissions in 2022, when including international aviation and shipping.

Aviation is currently the second largest contributor to emissions from transport but by 2040, it is set to overtake road vehicles as transport's largest emitter.

Government and industry are tackling aviation emissions through a variety of measures, although some technological solutions to reduce aviation emissions, such as zero emission flights, are at a relatively early stage of development and commercialisation.

SAF is therefore one of the most effective ways to reduce aviation emissions right now, as it is available today as a 'drop-in fuel' that does not require modifications to existing aircraft.

The associated greenhouse gas emissions from SAF are on average 70% less than fossil jet fuel on a lifecycle basis. SAF is expected to play a critical role in decarbonising aviation up to and beyond 2050.

The government is clear that it wants to see the UK capture its share of the global SAF market by playing a leading role in development, production and use.

For production facilities, making the leap from lab to commercial scale has proven difficult as smaller demonstration facilities are capital intensive and often unprofitable. Commercial plants can then typically cost £600 million to £2 billion to reach economies of scale and tend to run at a loss during their first years of deployment. First-of-a-kind plants often struggle to secure major investment from equity and debt providers due to a number of associated risks, including revenue certainty.

The government is supporting SAF through the introduction of the SAF Mandate at the start of 2025, as well as providing grant funding through the

Advanced Fuels Fund and the UK SAF Clearing House.

However, some risks to investors for first-of-a-kind commercial production plants remain. These have been identified as:

- there is no clear UK or global market price for advanced, also known as non-hydroprocessed esters and fatty acids (HEFA), SAF
- policy and regulatory uncertainty
- projects competing for finance with other emerging low carbon technologies

The provision of the industry-funded revenue certainty mechanism mitigates these risks to providers of finance, enabling a lower cost of capital and helping projects reach final investment decisions (FID) in the UK.

The scheme will kickstart economic growth and drive the mission to make Britain a clean energy superpower.

Revenue certainty mechanism progress

Strong progress has already been made on the case for and design of the revenue certainty mechanism.

Philip New's independent evaluation, Developing a UK SAF industry (https://www.gov.uk/government/publications/developing-a-uk-sustainable-aviation-fuel-industry), was published in April 2023, alongside DfT's response. A revenue certainty mechanism was recommended as a necessary tool to create a successful SAF production industry in the UK.

DfT published a delivery plan (https://www.gov.uk/government/publications/revenue-certainty-mechanism-for-saf-delivery-plan) in September 2023 for designing and implementing a revenue certainty mechanism for UK SAF production. This included the commitment to introduce such a mechanism and the position that it would be industry funded.

The Energy Act 2023 (https://www.legislation.gov.uk/ukpga/2023/52) received royal assent in October 2023, requiring government to consult on the revenue certainty mechanism within 6 months.

DfT published a consultation on the revenue certainty mechanism for UK SAF production (https://www.gov.uk/government/consultations/sustainable-aviation-fuels-revenue-certainty-mechanism-revenue-certainty-options) in April 2024. It included an assessment of the shortlisted mechanism options.

In July 2024, the King's Speech announced that a bill will be introduced to help support SAF. The government has since confirmed that it will be introduced in this parliamentary session to ensure all required legislation is in place for the revenue certainty mechanism by the end of 2026.

The government has also published a response to the April 2024 consultation. The response confirms that the preferred design option of a guaranteed strike price (GSP) will be progressed. The mechanism involves a private law contract between UK SAF producers and a counterparty (a government agency), setting a price (the 'strike price') that a producer will receive for eligible SAF over a period. Where the reference price exceeds the strike price, the producer pays the difference to the counterparty. Where the reference price is below the strike price, the producer receives a payment for the difference from the counterparty.

This consultation presents the proposals on how the revenue certainty mechanism could be funded. It confirms that the preferred approach is to introduce a levy on suppliers of jet fuel. This is consistent with previous publications that stated industry should fund any intervention.

The remaining sections of this document will set out the rationale for this approach and seek views on the funding mechanism as well as design questions that were not addressed in the first consultation.

The government remains fully committed to working with industry on the design of the revenue certainty mechanism, including further future consultation on how the levy will work in practice and wider support for UK SAF production.

Funding for the revenue certainty mechanism

Industry funding

The government has stated its position that the revenue certainty mechanism must be funded by the aviation industry.

Adhering to the environmental principles, introduced in the Environment Act 2021, ministers and policymakers must where possible follow the polluter pays principle. This sets out that the cost of environmental damage should be borne by those causing it, rather than the person who suffers the effects of the resulting environmental damage, or the wider community.

This approach is also consistent with other schemes where industry is funding support for low carbon technologies. For example, payments under the contract for difference (CfD) scheme for renewable energy are funded through the Electricity Supplier Obligation – a compulsory levy on licensed electricity suppliers.

Industry funding would need to cover the cost of payments issued under a GSP mechanism and the costs incurred by the counterparty to administer the scheme. The remaining sections of this consultation will provide analysis on the possible costs and details on how industry will fund the proposed mechanism.

Levy on aviation fuel suppliers

Rationale for a levy

This section sets out how the aviation industry would fund the revenue certainty mechanism.

The proposed approach is to use a levy to cover the cost of payments to SAF producers and the cost of administering the scheme. This is consistent with existing schemes for renewable electricity[footnote 1] and hydrogen[footnote 2].

Under the proposed revenue certainty mechanism, the costs of the contracts and the total levy amount required will vary over time, linked to the changing price of UK supplied non-HEFA SAF.

Variations are likely to be more significant and frequent in the early years of the scheme when limited volumes of SAF cannot negate external shocks.

By design, a levy can adapt to the changing funding needs of the scheme. The amount can be changed between collection periods and where an interim levy is collected based on forecasts, a reconciliation period allows for adjustments based on actual data.

Illustrative levy process

A forecast will predict the expected scheme costs over a specified period and determine the individual contributions ahead of the collection date. Costs will include a reserve payment to offset minor divergences from the forecast. At the end of the specified period, actual data is used to determine the true costs of the scheme and reconciliation begins.

Where true costs exceed the forecasted cost (plus the reserve), the difference will be requested under further levy payments. Where true costs are lower than the forecasted costs (plus the reserve), the difference will be returned to those paying the levy.

The process set out above remains illustrative. The government will provide further detail on how the levy will work in practice, ahead of any scheme introduction. This will include further consultation and engagement with industry to ensure the levy design is effective and efficient.

Levy design principles

We expect that further development of the levy will, wherever possible, align with the following principles:

- solvency – the funds raised by the levy should provide a robust funding stream to the scheme, allowing for long-term certainty on revenue support
- simplicity – the levy must be simple to deliver to accelerate implementation and minimise the administrative burden
- affordability and fairness – the levy should minimise the cost to end users
- policy coherence – the levy should align with wider government decarbonisation, fuel supply and affordability objectives
- market stability – the levy should not create perverse incentives or destabilise aviation fuel market
- flexibility – the levy should be flexible to future changes in the aviation fuel market
- compliance – the levy should minimise the likelihood of non-compliance

Obligating aviation fuel suppliers

The proposed approach is to place a levy within the industry on aviation fuel suppliers.

The proposed definition for an obligated fuel supplier is consistent with the SAF Mandate – that is, a supplier owning 15.9 terajoules (TJ) or more of aviation turbine fuel (avtur) at the assessment point (the 'duty point') for use in the UK, during a UK SAF Mandate obligation period[footnote 3].

For fuel suppliers obligated to pay the levy, individual contributions would be determined by market share. For example, an aviation fuel supplier that supplies 20% of total UK aviation fuel would be liable to pay 20% of the funding requirement for the scheme. The period for calculating market share and scheme costs will be predetermined.

Proposals have placed the levy on aviation fuel suppliers for the following reasons:

- placing the levy higher up the supply chain on aviation fuel suppliers allows costs that are passed on to be distributed across more of the supply chain – this includes airlines, freight companies and passengers
- aviation fuel suppliers will benefit from the additional SAF production that the revenue certainty mechanism is designed to stimulate, since the SAF

Mandate obligation to supply a minimum amount of SAF is placed on them

- the revenue certainty mechanism will lower project risk and the cost of capital for producers, which will lower the cost of SAF for aviation fuel suppliers.
- the SAF Mandate obligation is expected to fall on around 20 aviation fuel suppliers – reporting requirements will be standardised where possible to reduce the burden for providing information and administering the levy

Prior to introducing regulations for the revenue certainty mechanism, the government plans to engage extensively with industry on further details of how the levy will operate.

This includes:

- how the total amount and individual contributions are calculated
- how the levy will be collected and enforced
- the determination obligated to aviation fuel suppliers

Cost of the revenue certainty mechanism

Under the proposed levy scenario, UK fuel suppliers' costs include the total difference payments from the revenue certainty mechanism – meaning the difference between the agreed strike price and the market price of SAF when the SAF price is lower than the agreed strike price.

This cost is additional to the price of purchasing SAF under the SAF Mandate. These 2 costs have an inverse relationship: for example, as the market price of UK SAF increases, the difference payments that fuel suppliers pay under the revenue certainty mechanism reduce.

In practice, through the revenue certainty mechanism, fuel suppliers see the effective price of the SAF volumes that are covered under the revenue certainty mechanism fixed at the strike price. This means that low SAF prices result in higher revenue certainty mechanism payments for UK fuel suppliers.

Conversely, high SAF prices would lead to lower revenue certainty mechanism costs for the levied industry but higher costs to purchase SAF to comply with the SAF Mandate.

Most importantly, higher revenue certainty mechanism costs would imply a global abundance of SAF and the possibility of reducing the need to sign any additional contracts under the scheme.

If the price of SAF is higher than the agreed strike price, SAF producers will make payments back to the counterparty. The size of the payments equals the difference between the high price of SAF and the strike price.

However, the revenue certainty mechanism can reduce the cost of producing SAF in the UK by providing price stability and reducing the risk for investors, therefore lowering the cost of capital for UK-based plants.

This will support the establishment of first-of-a-kind plants, paving the way for lower-cost plants and more affordable SAF production in the medium term.

Targets for the SAF Mandate assume that some UK-produced SAF is required and the revenue certainty mechanism will help deliver this SAF in a more cost-effective way.

Limiting the cost impacts of the revenue certainty mechanism
The total liability of the scheme can be managed by limiting the support to a pre-determined volume of SAF and agreeing the strike price within contracts.

The revenue certainty mechanism is intended to be time-limited to only provide interim support, while the market price of non-HEFA SAF remains uncertain, to help establish first-of-a-kind plants in the UK and deliver the UK SAF mandate targets.

We will continuously monitor the impacts of the scheme to ensure that these are not disproportionate.

Single plant cost estimates
Future SAF market prices are highly uncertain and therefore it is complex to accurately estimate the costs of the scheme.

If the SAF market price equals the strike price, payments are zero. When the market price deviates from the agreed strike price, costs occur.

This modelling considers a comprehensive set of uncertainties and therefore, we have modelled a wide range of possible SAF prices to account for the nascent status of the industry and the technological challenges.

For an indicative non-HEFA plant that excludes the use of power-to liquids (PtL) and produces 100 kilotonnes (KT) per year over a 15-year contract, the levied industry would incur an estimated average annual cost of up to £100 to £150 million from the revenue certainty mechanism, if the market price is lower than the expected strike price. This amounts to up to circa £2 billion under a 15-year contract. If prices are high, the plant will make payments to the counterparty of up to circa £1 to £2 billion under a 15-year contract.

For context, 100KT per year is approximately one-third of the domestic non-HEFA non-PtL production needed to meet the SAF Mandate in 2030.

The government is acutely aware of the need to ensure that costs of the revenue certainty mechanism are minimised and that it secures maximum value for money. There is no obligation on the government to enter into a defined number of contracts, or to agree contracts at any cost. The government will maintain a close and ongoing dialogue with industry on the options for achieving cost control.

Indicative scenario – contributing to 2035 SAF Mandate volumes

We do not expect the revenue certainty mechanism to cover all domestic production. This is in part because the revenue certainty mechanism is designed as a time-limited policy and also because some projects are expected to be able to proceed without the revenue certainty mechanism.

As an indicative scenario, the revenue certainty mechanism could cover up to the amount of domestic non-HEFA non-PtL SAF needed to meet the SAF Mandate in 2035. This is approximately 70% of the domestic non-HEFA non-PtL production needed to meet the SAF Mandate in full over a 15-year contract.

At the extremities of our price ranges, if the SAF price is higher than the agreed strike price, SAF producers would pay back approximately £7 billion over 15 years. UK aviation fuel suppliers would incur an estimated payment of £10 billion over 15 years when our lowest estimated SAF price is below the strike price[footnote 4].

For context, to reach the 2035 target, we would need approximately 6 plants producing approximately 100KT each per year in 2035, with plants coming online gradually. As the future SAF price remains highly uncertain and prices likely to fluctuate, payments in either direction could be smaller.

For the avoidance of doubt, the above scenario is an analytical assumption made to contextualise the costs, not an agreed policy. Size and timings of the contracts will be agreed at a later stage and we will maintain a close and ongoing dialogue with industry on options for achieving cost control.

For simplicity, we have assumed in our modelling that all non-HEFA non-PtL SAF uses a biomass-to-liquid (BtL) technology with municipal solid waste (MSW) as feedstock. All costs presented here are in real terms.

The size of the payments reported above assumes the price is capped in line with the level of the buyout price, set in legislation for the main obligation at £4.70 per litre.

When the market price for SAF is high, the price of non-HEFA, non-PtL SAF in our scenario exceeds the main obligation buy-out price. In practice, the supply of non-HEFA, non-PtL SAF price is expected to be capped at the

buy-out price as a maximum. As a result, the payment expected from the SAF producer to the counterparty are capped. Any changes to the buy-out prices[footnote 5] in the SAF Mandate will affect these estimates.

Impact on ticket prices
Introducing the revenue certainty mechanism is likely to lower cost of capital meaning producers could sell SAF at a lower market price than in the absence of the revenue certainty mechanism. However, producers and fuel suppliers will incur payments back to the counterparty or by levy payments, depending on the difference between the market price and the strike price of SAF.

Our initial estimates of the potential impact on ticket prices of the revenue certainty mechanism show that the cost per passenger is likely to be limited and in line with the usual market variation of ticket prices. This is likely to be particularly true if we support a limited amount of SAF volume.

Power-to liquid (PtL) SAF
Given estimated UK PtL production costs and the respective SAF Mandate buy-out price for the PtL fuel obligation – set at £5 per litre – our updated analysis has highlighted that UK PtL could face significant challenges to produce in the UK. We will engage with stakeholders on this issue to collect views and keep them informed on any next steps.

Analytical assumptions
The purpose of this analysis is to illustrate the potential price variability and subsequent cost implications.

Accurately estimating future SAF prices is complex. Therefore, uncertainty has been factored in through wide price ranges and several scenarios being considered. Data on SAF production costs and technological development of different SAF pathways are constantly improving and therefore we will continue to refine this analysis as new evidence becomes available.

We built on previous analysis used for the April 2024 consultation and updated costs of production and cost of capital assumptions.

Where possible, the modelling has been aligned with assumptions in the SAF Mandate cost benefit analysis, but bespoke changes have been made to ensure the analysis was fit for purpose to calculate revenue certainty mechanism difference payments. These estimates represent a high-level assessment that could change as the policy design develops and it is important to note that this analysis is not setting the strike price that will be signed off in contracts.

Many important assumptions and caveats have been applied, such as the uncertainty around the mix of SAF fuels, production costs and prices over the period 2025 to 2050.

How to respond

This consultation has closed. If you have any questions about this consultation, email: lowcarbonfuel.consultation@dft.gov.uk

The consultation period began on 3 March 2025 and will run until 31 March 2025. Ensure that your response reaches us before the closing date.

Next steps

Following the King's Speech in July 2024, the government intends to introduce a bill during this parliamentary session to take the necessary legislative powers to implement a revenue certainty mechanism.

Provisions within the bill will provide powers to introduce a levy using subsequent regulations. The government is expecting that all the required legislation for the revenue certainty mechanism is laid by the end of 2026.

The responses to this consultation will be considered when drafting the provisions of the bill and any subsequent regulations. Further engagement with industry is also expected to take place ahead of introducing any legislation. The government remains committed to ensuring that industry have ongoing opportunities to feed into wider designs for the revenue certainty mechanism.

Full list of questions

Q1. Do you agree or disagree on the proposed approach to place a levy on aviation fuel suppliers? If you disagree, why?

Q2. Are there any other suitable options for funding a revenue certainty mechanism through the aviation industry? And why?

Q3. Do you agree with the proposed definition of aviation fuel suppliers?

Q4. How would you like the government to work with industry on the detailed design for a levy?

Q5. What further considerations on the proposed approach would you like to raise at this stage?

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department for Transport.

DfT will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

Data protection

This consultation is carried out by DfT, working with other government departments.

In this consultation we are asking for:

- your name and email, in case we need to ask you follow-up questions about your responses (you do not have to give us this personal information, but if you do provide it, we will use it only for the purpose of asking follow-up questions)

If an organisation we are additionally asking for your organisation’s:

- name, for identification

Your consultation response and the processing of personal data that it entails is necessary for the exercise of our functions as a government department. DfT will, under data protection law, be the controller for this information. DfT's privacy policy (https://www.gov.uk/government/organisations/department-for-transport/about/personal-information-charter) has more information about your rights in relation to your personal data, how to complain and how to contact the Data Protection Officer.

As sustainable aviation fuels policy has many interactions with other government policy and work, to ensure we develop effective policy, we may share your responses with other government departments, such as Department for Energy Security and Net Zero (DESNZ) and Department for Environment, Food and Rural Affairs (DEFRA). We will remove your personal details before we share your response with other government departments.

We will not use your name or other personal details that could identify you when we report the results of the consultation. Any information you provide will be kept securely and destroyed within 12 months of the closing date.

Consultation principles

This consultation is being conducted in line with the government's consultation principles (https://www.gov.uk/government/publications/consultation-principles-guidance).

If you have any comments about the consultation process, contact:

> Consultation Co-ordinator
> Department for Transport
> Zone 1/29 Great Minster House
> London SW1P 4DR

Email consultation@dft.gov.uk

Footnotes

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1. Electricity Market Reform: CFD Supplier Obligation (https://www.gov.uk/government/collections/electricity-market-reform-cfd-supplier-obligation)

2. Funding Mechanism for the Hydrogen Production Business Model (https://www.gov.uk/government/consultations/funding-mechanism-for-the-hydrogen-production-business-model-proposed-design-of-the-gas-shipper-obligation)
3. Each obligation period under the SAF Mandate runs for one calendar year – the first obligation period is 1 January 2025 to 31 December 2025.
4. This covers the 15 years between 2029 and 2043. In practice the later contracts may run beyond this.
5. The SAF Mandate has 2 obligations – the ‘main obligation’ and a ‘power-to liquid obligation’. The power-to liquid obligation is designed to accelerate the development of power-to liquid fuels, which are less reliant on scarce feedstocks and subject to other potential negative environmental impacts. The main obligation includes all other types of eligible SAF.