



# Mandating the use of sustainable aviation fuels in the UK

## Consultation Response

September 2021

### Summary

This paper is Transport & Environment's (T&E) response to the questions posed by the consultation [Mandating the use of sustainable aviation fuels in the UK](#)

T&E is Europe's leading clean transport think tank and campaigning group. It was created over 30 years ago and now has staff in 6 countries, with 63 member organisations across 24 countries. It has had a UK office since 2019. T&E coordinates the International Coalition for Sustainable Aviation, which has observer status at the International Civil Aviation Organisation (ICAO); and is also an active member of the Jet Zero Council's SAF Delivery and Commercialisation groups.

If UK aviation is to have any hope of being net zero by 2050, then a huge ramp-up in the uplift of sustainable aviation fuel (SAF) is required in this country. Despite the fact that the first UK flight partly fuelled with SAF (a Thomson Airways flight from Birmingham to Lanzarote)<sup>1</sup> took off a decade ago, the UK's airlines have effectively not purchased any SAF since. Indeed, [early airlines that purchased significant SAF off take agreements did not include British airlines](#). This classic example of market failure has resulted in no UK SAF production facilities and, at the time of writing, SAF only being supplied to one airport - [Heathrow - that only began receiving supplies in June 2021](#). It is clear that this market failure can only be corrected with government intervention, and it is therefore right that a SAF mandate be applied. This lost decade of inaction needs to be taken into consideration when considering what percentage levels to impose on suppliers in the next SAF mandate consultation.

The UK is a climate leader, and has reduced its territorial emissions by 43% since 1990. However, bucking this trend, UK aviation's emissions have risen 125% since 1990.<sup>2</sup> The UK recently announced that emissions from international aviation and shipping would be included in the UK's carbon budgets from 2033, and therefore, it is imperative to strengthen policy to reduce both carbon and non-CO2 emissions that set the industry on a path to net zero by 2050. These measures should not be restricted to just the SAF mandate, but should also include changes to the UK emissions trading scheme and the implementation of a fossil kerosene tax (something that has been proposed by the European

<sup>1</sup> Sustainable Aviation Progress Report 2013: Available at: <https://www.sustainableaviation.co.uk/progress-reports/archive/>

<sup>2</sup>All figures taken from

<https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2018#history>

Commission), both of which would encourage SAF production and use. Other measures to combat emissions from the sector should also be implemented, such as implementing the moratorium on airport expansion suggested by the Climate Change Committee.

SAF policies have been proposed in both Europe and the USA, and it is now clear that the future of jet fuel will be SAF, and especially e-kerosene, as it is the only SAF type which can be sustainably scaled up to meet the fuel demands of the sector. An ambitious UK mandate with high sustainability criteria that ensures that SAF research, development and production takes place in the UK would ensure that the UK becomes a centre-of-excellence for this critical industry of the future. An unambitious mandate makes it much more likely that future investment, jobs, production plants, productivity and GDP are lost to other countries. Extremely high sustainability standards should be applied to the fuels supplied to meet the mandate from the start: to guide fuel suppliers and investors as to what projects and SAF pathways they should be researching and developing.

T&E agrees that the consultation should be done in two stages: the first stage to confirm sustainability criteria, and the second to confirm specific levels. Having said that, T&E recognises that, because of the difference in cost between SAF and fossil kerosene, profit-maximising airlines will almost certainly not voluntarily buy more SAF than they need. Therefore, the government mandated levels are unlikely to be exceeded and will determine the UK's climate leadership in this area. To be clear, the government is the main driver of UK SAF ambition, not an interested bystander. As proved above, if left to its own devices, the industry will not deliver the sufficiently high SAF levels needed in 2050 to reach net-zero aviation. However, with suitable guidance and requirements, the market will not only cater for the mandated amounts, but will innovate to provide lower-cost, better quality, more sustainable fuels in the future. This guidance and requirements can only come from the government, meaning the mandate decisions made in the next 18 months are crucial. As an example, T&E believes that the SAF mandate should clearly state that in terms of volumes supplied, SAF should be 100% of the total jet fuel market in 2050.

T&E recommends that DfT should work with DEFRA to ensure that all suitable-for-SAF waste is not exported, but instead made available to SAF plants. This would have the effect of increasing gate fees (the fees paid to SAF producers to dispose of the waste, ultimately borne by councils and local authorities), which would a) further incentivise local authorities to reduce the amount of waste produced in the first place, and b) encourage new SAF plants to be built in this country. However, the amount of waste-based SAF that can be made is constrained by the availability of feedstocks. [A 2021 ICCT analysis of European feedstocks suggests that SAF made from waste fats, oils and greases - the most technologically mature SAF pathway - would only be able to meet at most 5.5% of European jet fuel demand by 2030.](#) These waste oils are already partly converted into road fuel.

T&E fully supports the use of waste-based SAF, but all types of waste are resource constrained - that is, there is a maximum upper volume limit on how much SAF can be produced from them. This means that care needs to be taken when designing the mandate to ensure that waste-based SAF volumes are not too high and SAF is derived from true waste.

T&E is concerned that within the consultation there is relatively little mention of e-kerosene. This is the pathway that could be closest to net zero in the near term, provided that the carbon has been captured

from the air and that additional renewable electricity is used to produce the green hydrogen required. E-kerosene is also the only SAF type which can be sustainably scaled up to meet the fuel demands of the sector. The UK's proposal is in direct contrast to the EU's ReFuelEU initiative, which mandates that a certain percentage of fuel supplied must be e-kerosene, produced using green hydrogen. Since the amount of waste-based SAF that can be made is constrained by the available feedstocks, e-kerosene is vitally important to the UK's climate ambitions, and T&E believes it should feature more prominently in future policy.

Furthermore, T&E is alarmed that the document refers to 'low carbon' hydrogen, instead of 'zero carbon' hydrogen. [Recent analysis of government data suggests that using blue hydrogen could create up to 8m tonnes of carbon emissions annually by 2050](#): nonsensical in a climate emergency. Specifying that hydrogen used in SAF has to be produced via electrolysis will boost both the UK's renewables market and electrolyser industries, as well as result in much lower emissions. Since the European Commission specified green hydrogen only within its proposed mandate, international capital looking for opportunities in these areas are unlikely to be directed towards the UK.

The UK should also emulate the European Commission's proposal of implementing a sub-mandate for e-kerosene created by green hydrogen only. In addition, at least some of the carbon utilised should be direct air captured (DAC) carbon. Doing this will provide a demand for DAC, which itself is a critical component of a net zero world and one in which the UK should develop excellence.

Finally, it should be recognised that SAF is not a panacea. Whilst a SAF mandate is essential, truly sustainable aviation fuel would not be hydrocarbon-based and would not cause additional non-CO2 warming, as SAF does. Whilst acknowledging that this consultation is about a specific SAF mandate, government needs to be aware that SAF causes non-CO2 warming effects, albeit to a lesser extent than fossil kerosene. In direct contradiction to the polluter pays principle, these are not currently priced. This is another area where the government should demonstrate climate leadership and bring in specific non-CO2 charges (possibly via an additional charge per submitted UK ETS allowance).

Below are answers to the specific questions posed by the consultation:

### ***A greenhouse gas emissions scheme to reduce the carbon intensity of jet fuel***

#### ***1. Do you agree or disagree that a SAF mandate should be introduced in the UK?***

T&E agrees that a SAF mandate should be introduced. As mentioned in the above introduction, left alone the market will not supply SAF, and therefore the government should step in and correct this market failure. Furthermore, the UK has committed itself to be net zero by 2050, and this includes all emissions from aviation. Not implementing a SAF mandate, at a time when the EU is, would be bizarre and a dereliction of duty.

#### ***2. Do you agree or disagree that an obligation to supply SAF in the UK should sit outside the RTFO?***

T&E agrees that a future SAF mandate should sit outside the RTFO. Since all the costs of a supply chain ultimately have to be borne by the end consumer, it does not make sense to put in place a mechanism where road drivers bear the cost of aviation fuels, or vice versa.

**3. Do you agree or disagree that a GHG emissions scheme based on tradable credits should be preferable to a fuel volume scheme when designing a SAF mandate?**

T&E agrees that a GHG intensity scheme is preferable, since it will encourage fuel pathways that will, all things being equal, reduce the amount of greenhouse gas emissions that will be attributable to UK aviation.

One point to note though. At some future point, a truly ambitious government should be aiming to ensure that ALL fuel used by planes is SAF: ie no fossil kerosene is burnt. This would equal 100% on a fuel volume scheme, but (depending on the type of SAF supplied) may not equal 100% on a GHG intensity scheme. T&E recommends that this volume stipulation is brought in now for the UK's 2050 target. Doing so would give certainty to fuel suppliers that the long-term future is in supplying SAF, and give airlines enough notice that their planes have to be able to run on 100% SAF. [This would also align with the recent announcement from the USA.](#)

**4. Do you agree or disagree that the proposed SAF mandate obligation should be placed on fuel suppliers that supply aviation fuel (avtur) to the UK?**

T&E agrees that the mandate obligates suppliers of avtur. Placing the mandate on the suppliers ensures that all fuel becomes mandated. Placing the obligation on airlines may mean that some fuel is not mandated, as there may be exemptions based on the size of the airline, number of flights an airline takes, or even the end destination of a plane.

This would also align with the EU's recent *Fit for 55* proposals, which proposes applying an EU-wide mandate on fuel suppliers. Furthermore, Norway has already implemented a mandate on fuel suppliers.

**5. Should the obligation apply to all avtur supplied into the UK, regardless of whether this is subject to fuel duty or not?**

Yes, it should. The amount of duty paid by either a fuel supplier or customer should have no bearing on mandate levels.

**6. If the obligation applies to all avtur supplied into the UK, should there be a threshold below which fuel is not obligated, in a certain obligated period? Should this threshold distinguish between dutiable and non-dutiable fuel?**

No. The aim of a mandate is to progressively increase the amount of SAF in the UK's fuel mix. Allowing some fuel into the fuel mix that is not obligated defeats the purpose of a mandate in the first place. A trading scheme can allow companies flexibility as to how they meet targets.

**7. Where do you think the assessment point should be placed for jet fuel not subject to fuel duty, and how is this going to affect the definition of the proposed obligated party (aviation fuel suppliers to the UK)?**

The Assessment point should be at the duty point. This a) is near the consumption point of the fuel itself, and b) fits in with the [current, legally-binding, obligation on fuel suppliers to draw attention to the fact that a supplier's customers may have to pay some duty](#). This therefore ‘future-proofs’ the SAF mandate, as it is entirely possible that duty will be applied to kerosene in the future, especially since the EU has proposed to do exactly that.

To be clear, T&E does not recommend that duty be applied to SAF (or is applied at a zero rate), but does believe that the UK should follow the EU and [apply duty to fossil kerosene, at a rate of 38.64 euro cents/litre](#). This should, at a minimum, apply to all domestic flights and flights to the EU (fuel taxation is allowed under the EU-UK Air Service Agreement) and will prevent the UK being the cause of undue tankering.

### **Fuel eligibility and sustainability criteria**

#### **8. Do you agree or disagree that only certified SAF that meets the DEF STAN 91-091 specification should be eligible under the proposed SAF mandate?**

T&E agrees.

#### **9. Do you agree or disagree with the sustainability criteria set out here? If you do not agree, what alternative or additional criteria would you recommend?**

Broadly, T&E agrees with the proposed sustainability criteria, although believes that two distinct points should be raised:

Firstly, T&E does not support the use of “low carbon hydrogen”, only “zero carbon hydrogen”. Low carbon implies that there will be some GHG emissions during the production lifecycle of the hydrogen. This can be avoided by requiring the hydrogen to be produced via electrolysis (so called “green hydrogen”) using additional, zero carbon electricity only.

T&E also believes that an acknowledgment of the cascading principle is missing. There is no proposed obligation to show that the ‘waste’ feedstock used is a true waste or residue: ie if the waste/residue were not used for SAF, it would need to be disposed of. Many wastes and residues are used by other industries already, or are of value for ecosystem health, such as biodiversity, soil health and water retention capacity, etc. (eg forest residues and straw). SAF suppliers should be required to demonstrate that the (current) commercial market and ecosystem demand for the wastes and residues they intend to use as feedstocks is less than the available supply of those said feedstocks, and that therefore SAF suppliers are only using genuinely unwanted products. This will require the SAF mandate to provide clear criteria for ecosystem needs, next to mandating material use first, before permitting waste & residues to be burned.

#### **10. Do you agree or disagree with the feedstocks set out here and listed in Annex B? If you do not agree, what alternative or additional feedstock(s) would you recommend?**

T&E does not agree with the inclusion of empty palm fruit bunches on the list of potentially eligible feedstocks. That, and the use of another palm industry product, PFAD, should be explicitly ruled out from SAF production from the beginning. PFAD is a co-product of palm oil refining, and is caused by bruising on the original palm fruits. Empty fruit bunches can be used to replace chemical fertilisers (including as

fertilisers for the original palm fruits). PFAD and empty palm fruit bunches, if considered a waste under the UK's SAF mandate, would start going up in value, and consequently increase the economic incentive for growing palm fruits - and therefore increasing the incentives to clear land for more plantations. Explicitly banning PFAD and empty palm fruit residue use from the outset would stop this potential problem from ever happening.

**11. Do you agree or disagree that the baseline lifecycle carbon intensity for aviation fuels for reporting purposes under a UK SAF mandate should be 89 gCO<sub>2</sub>e/MJ? If you do not agree, what should the baseline emission be and/or how should it be calculated?**

No comment.

**12. What should the minimum carbon intensity reduction SAF will need to meet be (subject to the final GHG methodology used)?**

T&E agrees with the proposed 60% reduction, and also believes that the minimum percentage GHG saving should rise over time.

**13. Are there any land use (direct or indirect) or other implications associated with the feedstocks set out earlier that we should reflect in the eligibility criteria and minimum GHG threshold?**

As mentioned in the answer to question 10, T&E believes that waste and residue products from certain types of feedstocks - notably palm fruits (PFAD and empty palm fruit bunches), but in the future potentially from other crops that are causing deforestation (notably soy) should be banned completely. As an example, CORSIA does not attribute ILUC emissions to waste products, including PFAD where classified as waste, despite the fact that land would have been cleared to grow palm fruits in the first place. Clearly this is an anomaly which should not be allowed to feature in a mandate aiming for the highest sustainability criteria, and therefore a complete ban on certain 'waste' products should be implemented from the start.

Other sustainability criteria should include an assessment of biodiversity, water, and soil health impacts.

**14. As more CCUS becomes available and the carbon intensity of fuels can decrease further, should the envisaged minimum carbon emissions intensity threshold be raised up over time?**

Yes. T&E believes that the carbon emissions intensity threshold should be raised in the future. This will be needed to ensure the UK hits its ultimate goal of being net zero by 2050.

As an example, at some future point, any e-kerosene supplied under the mandate should only use DAC-sourced carbon. This means that associated carbon emissions intensity of that fuel would be close to zero. The mandate could 'force' this by steadily reducing the threshold (alternatively, it could simply require this from a certain date).

**15. What GHG methodology should be used to calculate the carbon intensity of fuel?**

No comment.

**16. How should the GHG methodology vary to take into consideration the different fuels, feedstocks, power sources and production pathways?**

No comment.

**17. Do you agree or disagree that SAF that does not meet the proposed eligibility and sustainability criteria should incur an obligation?**

To be defined as a SAF, fuel needs to meet certain obligations. If it does not meet those criteria, then it is not SAF (despite what future fuel suppliers may claim), and therefore it is 'just' standard aviation fuel: it should incur an obligation.

**Overarching trajectory**

**18. Do you agree or disagree that a SAF mandate should start in 2025?**

T&E believes that the mandate should start as soon as practicably possible. Realistically, this is 2024. This could be achieved if the mandate is passed into law relatively quickly. Either 2024 or 2025 gives the fuel industry enough time to prepare for the mandate. Furthermore, those dates also give time for some of the proposed SAF plants in the UK to actually be built.

T&E further recommends that an e-kerosene sub-mandate is applied from 2027.

**19. Do you agree or disagree that the targets should assume a linear growth up to 2035 and an exponential growth after 2035?**

T&E broadly agrees that the number of plants built will follow a linear curve initially, and will then follow an S-curve. However, it needs to be stressed that the main driver of SAF uptake will be policy, unless and until SAF unit costs reduce to less than fossil kerosene unit costs (which includes taxes on kerosene and UK ETS costs). Therefore, the main driver of how quickly new SAF plants are built will be the proposed minimum percentage levels enforced by the mandates that the UK and EU implements.

**20. What scenario do you think represents the best trade-off between ambition and deliverability? What evidence can you provide to support your position?**

All scenarios are deliverable: provided the mandates have suitable penalty clauses for non-compliance, then fuel suppliers will adjust their total volumes delivered to adhere to the required percentage levels. All things being equal, a higher percentage level in any future given year will provide a greater incentive for suppliers to start planning now to source / manufacture more SAF.

More ambitious regulations, alongside forward guidance on future levels will also ensure that investment is channeled towards the best (in carbon lifecycle terms) SAF now. This is similar to historical and future European car CO<sub>2</sub> regulations, which have caused all major manufacturers to invest in and produce electric vehicles - to the extent that the end of new car combustion engines is not just in sight, but has been legislated for.

Furthermore, other countries have already made announcements this year on ambition levels. [The USA recently announced that it will adopt goals of supplying 3 billion gallons of SAF by 2030 \(which is approximately 15% of demand\), and will supply sufficient SAF to meet 100% of aviation fuel demand by 2050. The European Commission has proposed that SAF accounts for 5% of supply in 2030, rising to 63% in 2050.](#) Of the five scenarios proposed in the consultation, only two (D and E) are comparable to the

USA's and EU's proposals. The UK would be a climate laggard should it not announce goals that, at the very least, match these proposals.

**21. Do you agree or disagree that we should include review points in 2030 and 2040, depending on initial mandate levels?**

T&E believes that there should be major reviews of the scheme every five years, but that minor changes could be implemented annually. Major changes would include revisions (upwards) of the percentage targets, whereas minor changes could include changes that strengthen the sustainability criteria of feedstocks. This should result in a series of minor tweaks, with major changes only happening at the major review points proposed.

As an example, T&E recommends that the SAF mandate structure for changes should be based on the RTFO. [Minor legislation was passed that amended the RTFO in 2009, 2011, 2013, 2015, 2018 and 2020](#) (but few of these tweaked targets). Had a five-yearly review period been imposed on the RTFO, then the majority of these small changes could not have happened when they did.

**22. Should the amount of HEFA that can be claimed under the SAF mandate be capped over time? If this is the case, how could the cap work in practice, given the scheme will be based on carbon emissions savings? How should the cap be calculated?**

Yes, the amount of HEFA that should be claimed should be capped. This is for the simple reason that (as mentioned previously) [the amount of HEFA-based SAF that can be made is constrained by the availability of feedstocks](#). Only 5.5% of predicted European demand could be met through HEFA, and that is under 'ideal' conditions: ie that all waste oils are diverted to aviation (which would not be sensible as some waste oil is already diverted to and helps decarbonise the road network). Realistically then, a cap on HEFA should be well below this 5.5% level.

It should be relatively straightforward to cap the amount of HEFA-based SAF a supplier is allowed to deliver to no more than (for instance) 3% of total volumes supplied, whilst keeping the GHG emissions savings mandate in place.

(It should be noted that a shift in HEFA use from road to aviation would result in a better climate change effect. Using HEFA in planes would result in warming savings due to the reduced non-CO2 warming effects.)

**23. How can power-to-liquid fuels innovation and roll-out be accelerated? Should a subtarget and/or a multiplier be introduced?**

T&E firmly believes that a sub-mandate should be applied for power-to-liquid (e-kerosene) fuels. This would match the EU's proposals, and would provide certainty that e-kerosene would be produced, whereas using a multiplier would not. [The European Commission has proposed that an e-kerosene mandate starts from 2030, with 0.7% of total volume supplied, progressing to 28% of total volume supplied by 2050](#). Germany has also proposed an e-kerosene mandate, which equals 0.5% of total jet fuel supplied in 2026, 1% in 2028, and 2% in 2030. Neither specifies what the source of the carbon should be. Applying a sub mandate would therefore match Germany and the EU's intentions, making commercial decisions easier to make.

Importantly, both mandates specify that only green hydrogen can be used. The UK should also match this, to ensure there is no chance of any ‘fugitive’ emissions from the hydrogen production process. Furthermore, the UK should show more ambition than the European proposals and also legislate that a minimum percentage of mandated e-kerosene should be produced using (UK produced) direct air captured (DAC) carbon. This minimum percentage should grow over time. DAC is an essential future industry: one in which the UK should aim to be global leaders.

It is clear that hydrogen will be one of the major fuels of the future, and, with its large offshore wind resources the UK is well-placed to capitalise on this via electrolysis. Furthermore, the early policy signals that an increasing sub mandate would send would ensure that UK industry innovates and builds a major part of the future global energy system.

There are no commercial e-kerosene plants in the UK. Therefore, since the first plant will be both considered an investment risk and a future critical piece of infrastructure, it should qualify for the UK Guarantees Scheme: a scheme that offers infrastructure projects access to debt finance, now managed by the UK Infrastructure Bank. Any e-kerosene SAF plant should match the [bank’s investment principles](#), and therefore should be of interest to the bank. Furthermore, the Department for Transport should actively make current RTFO suppliers aware of this scheme, and the UKIB should actively invite applications from potential e-kerosene suppliers to participate in this scheme. Previously, the guarantee eliminated any risk a commercial bank had of lending to the companies behind the e-kerosene plant, which in turn lowered the capital costs of the project. This guarantee should mean that building work on UK e-kerosene plants can start a lot faster than otherwise.

**24. How can SAF produced through pathways other than HEFA and power-to-liquid be accelerated?**

The UK Guarantees Scheme mentioned above applies to all ‘first of a kind’ schemes, and therefore any and every new SAF pathway production plant should qualify.

***Interactions with other domestic and international policy***

**25. Do you agree or disagree that SAF GHG emissions reductions should be claimed only once under different schemes?**

T&E agrees with this.

**26. How could the UK ETS, CORSIA and proposed SAF mandate be used together to continue to incentivise uptake, while preventing double counting of emissions reductions?**

Whilst burning SAF results in tailpipe emissions, T&E believes that it should be treated differently under the UK ETS. Airlines should be incentivised to purchase SAF above and beyond the levels stipulated under the UK SAF mandate. Any SAF purchased (and subsequently burnt in a plane) by airlines that is additional to a fuel supplier fulfilling their obligations under the mandate should not have to incur ETS allowance obligations. The airline and fuel supplier should be required to prove that the SAF is additional, and an airline should be required to surrender allowances for SAF that are not additional to the mandate.

Some will question why any SAF should be required to surrender allowances, but the fact remains that burning SAF in a plane results in warming. Whilst the non-CO2 effects of SAF are likely to be slightly lower than that of fossil kerosene, the carbon emissions will be the same. Keeping the ETS in place for mandated SAF will therefore incentivise airlines to move towards zero emission aircraft faster than otherwise. SAF does have better lifecycle emissions than fossil kerosene though, so rewarding progressive airlines that purchase additional SAF should be done through the ETS.

CORSIA should be discounted for the purposes of the UK SAF mandate. The proposed mandate falls on fuel suppliers, whilst CORSIA applies to airlines. Furthermore, CORSIA only covers emissions over and above 2019 levels and the scheme stops in 2035. [A European Commission study found that the scheme had major flaws, including the fact that the scheme will have an oversupply of credits, meaning that the unit price per credit will be low \(less than a Euro\) and not serve as a disincentive for airlines to reduce emissions.](#)

**27. Do you agree or disagree that SAF that has been produced on the back of industrial plants or clusters which have received competition funding from government can be claimed under the proposed UK SAF mandate?**

T&E agrees with this.

**28. Do you agree or disagree that SAF should no longer be rewarded under the RTFO when and if a SAF mandate is in place?**

T&E agrees with this.

**29. What provisions should the UK SAF mandate include to reduce the risk of tankering even further?**

T&E does not believe that a voluntary scheme will be effective in reducing tankering. A [2019 Eurocontrol think paper estimated that full tankering already occurs on 15% of flights within Europe, and partial tankering on a further 15%](#). A [2019 BBC Panorama investigation](#) revealed that British Airways caused an extra 18,000 tonnes of carbon emissions through the practice in 2018. Why should airlines that already engage in this practice change their habits and reduce their profits when they are not required to?

T&E believes that the UK should follow the [European Commission's proposals](#) and include a provision requiring airlines to uplift from the UK at least 90% of the jet fuel they require to reach their end destination. This is an innovative proposal specifically designed to stop tankering, which will strengthen the effectiveness of the EU's scheme. The UK should copy this rule (and in the process help set a precedent that could then be rolled out globally).

### **Delivering SAF to the market**

**30. Do you consider a more comprehensive policy framework beyond a SAF mandate is required to build a successful UK SAF sector?**

As mentioned above, T&E believes that the UK Guarantee Scheme - a policy mechanism explicitly designed to de-risk the large capital costs of an infrastructure project - should be utilised with a number of UK SAF plants. This will ensure that the initial set of plants actually get built.

Beyond that, penalties for non-compliance need to be set high enough that it is simply in fuel suppliers interests to source and blend SAF into the fuel mix, instead of paying a penalty.

Further measures could be considered. Since SAF from abroad will incur transportation costs, then UK-produced SAF should be competitive in the short term. T&E recognises that, since the UK SAF industry is a brand new industry, it is inherently more risky to investors. Contracts-for-differences would guarantee a price for every unit of fuel produced, but other options could be pursued. Most simply, suppliers could be sub-mandated to supply a proportion of UK produced SAF, or face penalties.

One simple measure that could be put in place quickly is an offtake agreement between government and SAF suppliers. The Ministry of Defence is already a significant purchaser of fuel ([over 400m litres in 19/20](#)), and [the Royal Air Force has ambitions to be net zero by 2040](#).

**31.If you believe this is the case, how can this policy framework be designed? Please provide any evidence you may have available to support your answers.**

[T&E has previously set out details of how a CfD for SAF could be designed.](#)

**32.Should buy-out be allowed? If so, how should the buy-out price set to encourage actual supply of SAF and delivery of carbon savings? How should the buy-out evolve over time?**

T&E believes that a buy-out, or penalty price should be set at a high level. This level must be in excess of the gap in price between fossil kerosene and the most expensive eligible SAF, to eliminate the risk that a supplier would make a calculated decision to pay the penalty, rather than comply with the rules.

In its proposed implementation of the Renewable Energy Directive, Germany has put forward a non-compliance penalty of €70 per Gigajoule for compliance with its e-kerosene mandate. [Previous analysis commissioned by T&E](#) shows that the production costs of e-kerosene in the near term are likely to be €3,000/tonne, which is very close to the €70 per Gigajoule. The UK SAF mandate penalty rate should therefore be in excess of this figure.

Furthermore, penalties for persistent non-compliance should also be explored. These do not necessarily have to be monetary: instead they could involve restrictions on volumes allowed to be delivered. If they are monetary, they do not have to be set price penalties. Instead, they could (for instance) be a set percentage of a fuel supplier's turnover. Regardless, they need to be set at a level that stops persistent non-compliance.

It will always be true that, provided a fuel supplier has delivered some SAF, they will be able to adjust the volumes of fossil kerosene they deliver to achieve the required percentage in any given year. Any time a supplier is fined for non-compliance means they will have made an active decision to pay the penalty costs and supply additional fossil kerosene. All things being equal, this results in a loss of carbon savings, directly caused by the fuel supplier.

**33.What penalties should be introduced in addition/alternatively to a buy-out to ensure sustainable SAF, that meets the proposed criteria, is supplied?**

See above.

## ***Scheme practicalities, reporting and verification***

### ***34. Do you agree or disagree that a mass balance approach should be the only chain of custody system permitted under the proposed SAF mandate?***

A mass balance approach is considered more thorough than a book and claim system, and therefore T&E agrees that it should be the only chain of custody system permitted.

### ***35. Where do you think the chain of custody will need to end? Please refer to any evidence to support your position.***

No comment.

### ***36. Do you agree or disagree that obligated suppliers will need to report annually information on the aviation fuel supplied to the Department for Transport, regardless of whether they claim SAF credits?***

T&E believes that SAF data should be open, transparent, and easily made publicly available, on a monthly basis - and ideally on a real-time basis. Commercially sensitive information should not be required.

### ***37. Do you have views on what information obligated fuel suppliers should report?***

T&E believes that all jet fuel suppliers should be required to regularly report the following information. This should include, but not be limited to:

- The total volume of aviation fuel supplied at each airport / pipeline location
- The total volume of sustainable aviation fuel supplied at each location
- The type of sustainable aviation fuel supplied, which should itself include:
  - The lifecycle emissions of the SAF(s)
  - The geographical origin of the SAF(s) (production plant and country)
  - The origin of feedstock(s) (company and country) and conversion process(es) of the SAF(s)

### ***38. Do you have views on the reporting calendar?***

T&E believes that monthly reporting should be implemented, and the data made publicly available.

### ***39. Do you have views on what the timescale for submitting claims and the information/evidence required by this process should be?***

As above, T&E believes this should happen on a monthly basis. Claims should be submitted at the same time (or very shortly afterwards) as the SAF is supplied past the duty point.

### ***40. Should certification provided by voluntary schemes count as evidence of compliance with the sustainability criteria of the SAF mandate? If so, do you think this step should or should not be mandatory?***

No comment.

### ***41. What information should the obligated party provide, either through verifiers or other means, to demonstrate compliance with the sustainability criteria?***

Obligated suppliers should be required to provide the information provided in the answer to question 37 directly to the department for transport. This information should be able to be verified, although T&E has no opinion on the verification mechanism.

**42. Do you agree or disagree that claims for credits under the SAF mandate should be verified? If so, should these be verified to a 'limited' or 'reasonable' assurance?**

As above, all claimants should be prepared to verify the integrity of their claims.

**43. What data related to the SAF mandate should DfT make publicly available? How often should this information be published?**

As mentioned previously, T&E believes that all non-personable and non-commercial data should be publicly available, on as close to a real-time basis as is practicable. This is for the purposes of transparency and accountability, and should be done for the benefit of external parties that may wish to use the data (including, but not limited to journalists, data providers, and NGOs).

## **Further information**

Matt Finch  
UK Policy Manager  
Transport & Environment  
matt.finch@transportenvironment.org  
0044 7881 812398