**HACAN response to DfT Sustainable Aviation Fuels Mandate Consultation**

**September 2021**

## Introduction

HACAN (Heathrow Association for the Control of Aircraft Noise)[1] is a campaigning organisation formed in the 1970s to give a voice to residents under the Heathrow flight paths. We are a regional body covering London and part of the Home Counties.

According to the European Environment Agency, noise pollution is the second largest environmental threat to health, causing 12,000 premature deaths a year.[2] The harmful effects of noise include heart disease, annoyance and sleep disturbance.

There is a risk that technological solutions to carbon reduction may have adverse effects; for example, large scale electric aircraft may be significantly heavier and thus create even more noise than existing aircraft.

It is also not clear what the impact of Government Net Zero policy and the prioritising of carbon reductions will have on dealing with noise emissions and other non-CO2 emissions in the future.

## Reducing the carbon intensity of jet fuel

Sustainable Aviation Fuel (SAF) production today is still less than 1 percent of overall jet fuel supply despite being pitched by the industry as the panacea for decarbonisation. In 2010, the aviation industry pledged to source 10% of fuels from sustainable sources in 2020. Yet by 2018, the industry had managed to source a grand total of 0.002%.

The current global targets for approximately 50% alternative jet fuel use in 2050 would require three new bio-jet fuel refineries to be built every month for the next 30 years. Today there are just two facilities – the market is not delivering at the pace required.

The Climate Change Committee (CCC) advises that we shouldn't plan for aviation biofuel to exceed 10% of total aviation fuel use by 2050.[3] The International Energy Association (IEA) Sustainable Development Scenario (SDS), anticipates biofuels reaching around 10% of aviation fuel demand by 2030, and close to 20% by 2040.[4]

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[1] www.hacan.org.uk

[2] EEA (2020) Healthy environment, healthy lives: how the environment influences health and well-being in Europe. https://www.eea.europa.eu/publications/healthy-environment-healthy-lives

[3] https://www.theccc.org.uk/wp-content/uploads/2013/04/Aviation-factsheet.pdf

[4] https://www.iea.org/commentaries/are-aviation-biofuels-ready-for-take-off

However, the price of biofuel is again crucial. Lu (2018) discovered a cost benefit ratio of more than five has been shown for biofuel usage, suggesting that this is not economical compared with traditional fuel. The results show that it is not until biofuel price is just around 8-11% higher than the traditional fuel that the use of biofuel becomes more economical than traditional fuel.[5] Thus, whilst alternative jet fuels may play a role it is not yet clear how significant this role might be in terms of decarbonisation.

A report commissioned by the Department for Transport to investigate the feasibility of commercial SAF plants in the UK found that there is a pool of UK and international developers that could build such plants. However, there is significant technology risk, high capital costs and uncertainty on the monetary value of policy support, meaning that this industry needs to overcome a number of key barriers before it can be viable. The study concludes that first-of-a-kind commercial plants could cost between £600m - £700m.[6]

Clarity is needed with regard to how much investment industry or Government is willing to commit to enable the production of alternative aviation fuels to be scaled up and sold at a price that is competitive with kerosene.

It is difficult to make a strong case for public investment in such risky initiatives that benefit one sector when there are many pressing demands for public capital that could more effectively address the decarbonisation challenge.

**Fuel Eligibility and sustainability criteria**

There are unresolved issues around the definition of 'sustainable' for Sustainable Aviation Fuels (SAF) as there is not a single internationally agreed definition of SAF, nor is it clear how emissions in production are accounted for. There is an assumption of benefit of waste being turned into fuel as opposed to be left to rot (thus generating methane), however jet fuel from waste could still generate similar levels of carbon emissions as kerosene. In order to achieve net zero both the methane and carbon emissions need to be avoided.

Large-scale production of alternative jet fuels could also aggravate the environmental impacts linked with intensive agriculture of dedicated bioenergy feedstocks (Novelli, 2011)[7], and

[5] Lu, C. (2018) When will biofuels be economically feasible for commercial flights? Considering the difference between environmental benefits and fuel purchase costs. Journal of Cleaner Production Volume 181, 20 April 2018, Pages 365-373. https://doi.org/10.1016/j.jclepro.2018.01.227

[6] https://www.e4tech.com/uploads/files/final-report-aviation-abdc-feasibility-study-issue-v1-0.pdf

[7] Novelli, P. (2011) Sustainable way for alternative fuels and energy in aviation (SWAFEA), report prepared for the European Commission's directorate general for mobility and transport. https://www.icao.int/environmental-protection/GFAAF/Documents/SW_WP9_D.9.1%20Final%20report_released%20July2011.pdf

result in an absolute increase of carbon emissions from international aviation (Staples et al., 2018)[8]. The proposed approach does not appear to take this into account.

In many cases the CO2 or greenhouse gas emissions in the production process of some alternative fuels are considerable and are not being considered in computations. The "Net Zero" computation *must* include the greenhouse gas emissions incurred in making the fuels as well as the combustion process itself. Given the variety and location of potential feedstocks for SAF production it is vital that transport emissions are considered and included in the carbon accounting.

**Overarching trajectory**

We do not agree that the SAF mandate should start in 2025, it should begin in 2022 given the urgency of the climate crisis.

In our view 2030 is too late before a SAF-specific review is undertaken. An initial review should be taken by 2025 at the latest and then on an annual basis thereafter to ensure that both the proposed policy framework and the industry is delivering as required. There should be regular updates and complete transparency in the use of alternative fuels, their emissions on combustion and production

**Interactions with other policy**

SAF GHG emissions reductions should be claimed only once and should not be rewarded under the RTFO once the mandate is in place.

The approach proposed in the consultation appears limited to ensuring that the Department for Transport's different SAF policies don't reward the same tonne of CO2 reduction twice. However, it does not address how to avoid double counting across the rest of the economy. This is crucial given the likely competition for alternative fuels from across industry, manufacturing and other transport modes.

**Delivering SAF**

SAFs are being touted as the big solution for aviation decarbonisation, which creates a false impression that airports like Heathrow can continue to expand without worrying about the climate impacts. However, SAFs may only provide a tiny and expensive solution without significant government investment and intervention the market.

[8] Staples, M.D., Malina, R., Suresh, P., Hileman, J.I., Barrett, S.R.H., 2018. Aviation $CO_2$ emissions reductions from the use of alternative jet fuels. Energy Pol. 114 (C), 342–354. https://doi.org/10.1016/j.enpol.2017.12.007

Any mandate on SAF must task the industry with investing and delivering. There should be no way for emitters to "buy out" of the obligation otherwise the targets will not be met.

**Reporting and Transparency**

A system of reporting GHG reduction specific to SAF should be developed in tandem with their introduction. Reporting must be transparent, traceable and understandable by the lay person. Trust between industry and communities is often undermined by accounting practices that favour manufactures and disguise the true nature of for example, the source of the feedstock.