Written evidence submitted by HACAN to the Transport Select Committee inquiry into Airlines and airports: supporting recovery in the UK aviation sector

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1. Executive Summary

1.1 Technological improvement leading to greenhouse gas emissions reductions must not be allowed to compromise efforts to reduce noise and emissions deleterious to local air quality.

1.2 Noise pollution is the second largest environmental threat to health in Europe. The total number of people exposed to aircraft noise is expected to increase by 2050.

1.3 Improvements in engineering can now only deliver incremental improvement in noise performance, potentially seeing a 1 decibel reduction every 10 years.

1.4 Aviation industry has a historically poor record of delivering on the targets they set themselves.

1.5 Potential reductions in emissions via operational efficiency gains to 2050 are insufficient to match the projected growth of aviation.

1.6 Alternative aviation fuels generation require significant investment from industry and/or Government to be competitive with kerosene – first plants could cost £600-700m.

1.7 Offsetting is not a credible policy mechanism as it does not stop aircraft emissions from being released into the atmosphere.

2. Introduction

2.1 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.

2.2 Our members believe that the aviation unrestrained demand / supply model is distorted because the industry does not fully pay its environmental costs in terms of noise and emissions. These costs are born by local residents in terms of exposure to noise and the wider population in terms of local and global emissions.

2.3 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.

[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

2.4 There is a risk that technological solutions to carbon reduction may have adverse effects on levels of noise experienced by communities; for example, large scale electric aircraft may be significantly heavier and thus create even more noise than existing aircraft, particularly on arrival.

2.5 Existing Air Navigation Guidance states that up to 4,000ft the Government's priority is to minimise noise and the number of people impacted and that above 7,000ft the priority is to reduce emissions.[3] However, 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.

3. Industry Progress on Noise

3.1 There were big improvements in reducing aircraft noise between the late 1960s and the late 1990s – new planes were around 15dB quieter. However, the improvement since 2000 has been limited.

3.2 Whilst individual aircraft have become less noisy there are hundreds of thousands more flights in the skies above the UK today than in previous decades. At Heathrow alone, the figure rose from 225,000 per annum in the 1970s to 475,861 in 2019, significantly increasing the individual number of noise disturbances caused.

3.3 The Sustainable Aviation Noise roadmap reveals that any further improvement delivered by UK aerospace manufacturing will be incremental. The report estimates (based on historical trends) that the rate of noise reduction will be around 0.1 decibels per annum.[4]

3.4 Disturbance from aircraft noise has negative impacts on the health and quality of life of people living near airports and under flightpaths. The CAA Survey of Noise Attitudes - SoNA (2017)[5] found that the public is becoming more sensitive to aircraft noise, to a greater extent than noise from other transport sources, and that there are health costs associated from exposure to this noise.

3.5 SoNA (2017) also found that 9% of people are highly annoyed when the average is 54 decibels. In geographical terms around Heathrow that goes as far as about Clapham to the east and about 2 miles past Maidenhead to the west.

3.6 2019 analysis on noise forecasts from the CAA (CAP 1731) anticipates that by 2050 the geographical area exposed to noise around all UK airports may shrink but that the total number of people exposed to aircraft noise will increase.[6]

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[3] DfT (2017) Air Navigation Guidance.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/587669/air-navigation-guidance-on-airspace-and-noise-management-and-environmental-objectives.pdf

[4] https://www.sustainableaviation.co.uk/wp-content/uploads/2018/06/SA-Noise-Road-Map-Report.pdf

[5] https://publicapps.caa.co.uk/docs/33/CAP%201506%20FEB17.pdf

[6] https://publicapps.caa.co.uk/docs/33/CAP1731AviationStrategyNoiseForecastandAnalyses_v2.pdf

3.7 Communities have a resonable expection that improvments in the noise level they experience will continue whilst green house gas emissions are reduced.

4. Sustainability

4.1 The International Air Transport Association (IATA) has an aspirational target to deliver 2% operational efficiency per annum which is insufficient to meet Paris Agreement targets.[7] Conversely, a report by the International Civil Aviation Organisation (ICAO) in 2019 assumed long-term overall efficiency gains, even under the most optimistic scenario, of 1.37% per annum. This includes improvements associated with both technology and operations.[8]

4.2 These potential efficiency gains do not come close to matching the projected and desired growth (5% per annum) from the aviation industry, and are insufficient to reduce emissions from the current level.

4.3 Pidcock and Yeo (2016), show that carbon emissions from international aviation will still represent 12% of the 205Gt remaining global CO_2 budget in 2050, even if technological and operational efficiencies are maximised and the total demand for conventional jet fuel is met with alternatives. This may rise to 20% should alternative jet fuels not become available in sufficient quantities. [9]

4.4 Peeters et al (2016) conclude that,

> *"conclude that technology myths require policy-makers to interpret and take into account technical uncertainty, which may result in inaction that continues to delay much needed progress in climate policy for aviation."*[10]

4.5 Further, Hassan et al (2018), highlight that despite environmental targets set by IATA, the achievability of meeting all those targets is extremely low (0.3%) for the expected demand growth rates in the US.[11]

4.6 In its Transport Outlook 2017, the International Transport Forum (ITF) encourages countries to support research and development in conjunction with the implementation

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[7] ICAO(2019) https://www.icao.int/environmental-protection/pages/climate-change.aspx

[8] ICAO (2019) Environmental Trends in Aviation to 2050. https://www.icao.int/environmental-protection/Documents/EnvironmentalReports/2019/ENVReport2019_pg17-23.pdf

[9] Pidcock & Yeo (2016). *Analysis: aviation could consume a quarter of 1.5C carbon budget by 2050.* Retrieved from: https://www.carbonbrief.org/aviation-consume-quarter-carbon-budget

[10] Peeters et al (2016). Are technology myths stalling aviation climate policy? Transportation Research Part D 44 (2016) 30–42. https://doi.org/10.1016/j.trd.2016.02.004

[11] Hassan, M., Pfanender, H., & Mavris, D. (2018) Probabilistic assessment of aviation CO2 emission targets. Transportation Research Part D 63 (2018) 362–376. https://www.sciencedirect.com/science/article/pii/S1361920917300548

of "avoid (travel) and shift (mode)" policies to influence demand through behavioural change (ITF, 2017).[12]

4.7 Government should require airlines to adopt short-term emissions reductions targets which are in line with the Paris Agreement. It must be clear how those targets will be met, without relying on offsets, or other measures which do not sufficiently reduce climate impacts. They should not encourage unrealistic optimism by the aviation industry about its ability to deliver low carbon aircraft, particularly given its poor track record.

4.8 ITF's 2021 Outlook[13] calls for countries to implement more ambitious carbon reduction policies, stating that existing policies will result in transport emissions increasing. They suggest that measures to shift demand to more sustainable modes where possible, enhanced vehicle efficiency and improved fuel technologies must all play a role. They also state that increasing the price of carbon intensive transport will encourage a shift to low-carbon alternatives.

4.9 The accounting in relation to greenhouse gas emissions demonstrating targets are being met (or otherwise) must be transparent and available for public scrutiny.

5. Industry Progress on Emissions

5.1 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%. 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.

5.2 A report commissioned by the UK Department for Transport to look into the feasibility of commercial SAF plants in the UK found that there is significant technology risk, high capital costs and uncertainty on the monetary value of policy support. The study concludes that first-of-a-kind commercial plants could cost between £600m - £700m.[14]

5.3 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.

[12] ITF(2017). ITF Transport Outlook 2017. OECD Publishing, Paris. https://www.oecd-ilibrary.org/transport/itf-transport-outlook-2017_9789282108000-en

[13] ITF (2021), IT Transport Outlook 2021. OECD Publishing, Paris. https://read.oecd-ilibrary.org/transport/itf-transport-outlook-2021_16826a30-en#page1

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

5.4 Lu (2018) notes that it is not until biofuel price is around 8-11% higher than the traditional fuel that the use of biofuel becomes more economical than traditional fuel.[15] Thus, whilst alternative jet fuels may play a role it is not yet clear how significant this role might be in terms of decarbonisation.

5.5 The UN's Sustainable Development Goal 12 (SDG.12)[16] on responsible consumption and production has been mainly approached by the aviation sector from a technological perspective. However, many of these technological efficiencies introduced over the years would have taken place regardless of the sector's climate commitments and as a result of cost-reduction strategies and compliance with local regulations.

5.6 SDG.12 urges governments to adopt regulatory and policy measures to phase-out fossil-fuel subsidies so as to reduce the environmental externalities of wasteful consumption. However, there are no initiatives from ICAO, its Member States or the industry to address these targets and they are not mentioned in their official reports.

5.7 At the start of 2020, ICAO's governing body agreed that only six offsetting programmes were eligible to be considered within CORSIA, one of which is the Clean Development Mechanism (CDM). The European Commission has already reported that 85% of the offset projects under the CDM failed to reduce emissions.[17] Thus, offsetting is not a credible mechanism for achieving emission reductions.

[15] 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

[16] https://www.un.org/sustainabledevelopment/sustainable-consumption-production/

[17] https://www.transportenvironment.org/press/eu-publishes-damning-report-emissions-offsets-calling-question-eu%E2%80%99s-aviation-climate-strategy