Written evidence submitted by Transport and Environment (AAS0035)

This paper is Transport & Environment's (T&E) response to the questions posed by the call for evidence: *Airlines and airports: supporting recovery in the UK aviation sector.*

T&E is Europe's leading clean transport think tank and campaigning group. It was created over 30 years ago and now has over 80 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. T&E therefore is only qualified to comment on the sustainability section of the call for evidence:

The Committee invites written submissions addressing any or all of the following points:

- *The aviation sector's progress on reducing emissions to support the Government's aim to achieve net zero greenhouse gas emissions by 2050; and*
- *Maintaining a competitive UK aviation sector while ensuring the UK can achieve net zero greenhouse gas emissions by 2050.*

UK aviation has a disastrous emissions record. In 2019, UK-departing flights (domestic and international) were responsible for emitting 38.4 MtCO2, which was the highest annual total ever. If this were included in the UK's territorial emissions, it would equal 7.8% of total emissions. Furthermore, this does not show the true climate impact of aviation, as it is estimated that non-CO2 warming effects caused by planes emissions cause two thirds of aviation's total impact. UK-departing flights were responsible for 4% of aviation's global emissions:[1] the third highest absolute amount globally, behind the USA and China. In 2019, British Airways alone emitted as much CO2 as all the vans on the UK's roads combined. In short, UK aviation has never meaningfully reduced emissions. Despite warm words

and pledges from the industry, total annual emissions have risen every year and only the pandemic has changed this trend.

It is abundantly clear that, if left to its own devices, UK aviation will not decarbonise by itself. For example, despite the first UK flight partly fuelled with SAF (a Thomson Airways flight from Birmingham to Lanzarote)[2] taking place a decade ago, the UK's airlines have effectively not purchased any SAF since. No British airlines were amongst those that had significant initial SAF off take agreements, because SAF is more expensive than fossil jet fuel. This market failure has resulted in no UK SAF production facilities and, at the time of writing, SAF only being supplied to one airport - Heathrow - which only began receiving supplies in June 2021.

The market failure can only be corrected with government intervention and specifically regulation. As part of "building back better", policies are needed that reduce the climate impact of UK aviation and cap emissions at 2019 levels. It is a step in the right direction to implement a SAF mandate but this alone will not deliver the required emissions reductions or controls on flight numbers. What is currently missing are regulations in other areas: regulations that will cause airlines to start flying zero emission planes, any regulations that price carbon emissions from long-haul aviation, or any regulations that price non-CO2 emissions from any UK departing planes (by applying a price to these emissions, airlines will try and find a way to reduce these costs, and therefore reduce these emissions). Airlines will not voluntarily start requiring themselves to fly zero emissions planes, or start voluntarily paying for emissions, so clearly more regulation from the Government is needed.

The UK Government needs to step in and regulate the sector to put it on an appropriate emissions trajectory. At the moment, current industry commitments (contained in the 2018 Sustainable Aviation roadmap) propose measures that still have the industry emitting 25.8 millions of tonnes of carbon in 2050: well over half of current levels. Questions need to be asked as to why this is, when other sectors of the economy are being

required to be zero emission in 2050, or before. UK aviation has the tools to get to zero emissions, but seemingly not the will.

The UK Government has announced it will have a SAF mandate, and has started the consultation process as to the exact rules and regulations around this. The mandate should have high sustainability criteria: that is, fuels that are allowed to be considered as a SAF should not cause undue other knock-on environmental effects. It should also announce that, by 2050, all of the fuel supplied for planes in the UK in 2050 should be SAF. In other words, fossil jet fuel would be banned by this date. Furthermore, the mandate should set a sub-mandate for ekerosene using green hydrogen. This is fuel that is made via electrolysis of water to create hydrogen, which is then combined with carbon. To ensure maximum sustainability standards, this fuel should use zero carbon electricity only, combined with carbon captured directly from the air. Perhaps most importantly, the mandate should ensure that some indigenous SAF is produced.

Implementing these standards and measures from the beginning of the mandate would ensure that the UKs electrolyser, renewables and direct-air-capture industries would receive a boost. These are all critical industries of the future: ones on which the UK should want to be global leaders.

As mentioned, there are no requirements for airlines to use zero emission planes. These planes are in their infancy, but industry observers expect there to be such planes in commercial use in the middle of the decade. [One survey of the European Regions Airline Association members expected battery electric aircraft to enter service post 2022, hydrogen electric aircraft to enter commercial service post 2023 and hybrid electric aircraft to enter commercial service post 2025](). The UK Government should speed up the uptake of the industry by initially requiring airlines to fly some of their domestic UK routes using such aircraft from 2030, and ultimately require all domestic routes to use zero emission aircraft only from a certain future date (T&E recommends 2040, [which is the same target as proposed in Norway]()).

Enacting these regulations would shift R&D money towards zero emission flight. Currently, UK aerospace spends £1.7bn annually on R&D, and the vast majority of this does not go on zero emission aircraft. Implementing requirements for UK aviation to use some zero emission aircraft would send the right signal that these planes are the future, and would shift private R&D spending accordingly. Again, the UK should want to be world leaders in the design, development and production of zero emission planes, as this is yet another industry of the future. Indeed, [investment bank UBS estimated that the future hybrid-electric airplane market could be worth $178bn](#).

Finally, the vast majority of emissions do not incur a penalty for them being emitted, despite the problems such emissions cause. UK airlines do not pay any fuel duties on the kerosene they uplift, meaning that any driver that has ever filled up their car has paid more fuel duty than British Airways, Ryanair or Easyjet has *ever* paid. The UK emissions trading scheme only covers carbon emitted on UK-departing flights to the UK and Europe, and in 2021 the airline industry was given allowances that cover 4.4million tonnes of emissions for free. Airlines undertaking long-haul flights are not under the remit of the UK ETS, and therefore do not pay anything for the carbon they emit. Finally, no airline, ever, has paid for the non-CO2 emissions they produce, despite the climate impact of this being three times greater than that from CO2 emission alone. In short, the polluter pays principle is simply not being applied to this sector. Questions need to be asked as to why the sector gets such special treatment.

Emissions from international aviation will be included in the nations carbon budgets in future years. To stop aviation from 'blowing the budget', and to allow the sector to start actually reducing emissions, more robust policies need to be enacted now. Policies can be put in place that encourage investment in future industries. This would truly build the overall aviation sector back better, supporting the UK aviation's recovery by prompting some new industries and changing the direction of others. Not enacting suitable policies would have the exact opposite effect: research would

centre in other countries, international capital would go elsewhere and - crucially - the UK's aviation sector would become less competitive.

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Endnotes

[1] P.6 - https://theicct.org/sites/default/files/publications/ICCT_CO2-commercl-aviation-2018_20190918.pdf

[2] Sustainable Aviation Progress Report 2013: Available at: https://www.sustainableaviation.co.uk/progress-reports/archive/