

UKPIA RESPONSE TO JET ZERO: FURTHER TECHNICAL CONSULTATION

1. Do you agree or disagree with the range of illustrative scenarios that we have set out as possible trajectories to net zero in 2050? Are there any alternative evidence-based scenarios we should be considering?

Thank you for the clear explanation of the changes that have been made to the modelling assumptions for each scenario. We cannot comment in detail on the aviation metrics on demand, capacity or fuel efficiency; however the assumptions on Sustainable Aviation Fuel (SAF) uptake in the “Continuation of Current Trends” scenario look to be achievable taking account of lower ambition.

The assumptions made in the “High Ambition” and “High Ambition with breakthrough on SAF” do indeed seem to be ambitious. The trajectories being developed must be based on sound science and achievable, while providing some degree of ambition. The pathways should not rely on “silver bullet” technology and be technology neutral.

We would be keen to understand the background to the statement on SAF Uptake - “based on expert judgement, a review of the latest evidence and industry views, including increased ambitions on SAF in the UK and internationally”. It would have been beneficial for this to be based on publicly available information (such as a published report) that has been externally reviewed and understood by wider industry experts. The lack of supporting information on the basis of the assumptions makes it difficult to comment materially on the veracity of them.

We recognise that the “High Ambition” scenario of 50% by 2050 is broadly consistent with the current EU Proposals¹ calling for 63% by volume by the same date.

The significant amount of feedstock required in these two scenarios needs to be viewed as part of the wider transition to low carbon fuels. This needs to be considered as part of the development of the Low Carbon Fuel Strategy being carried out through 2022², as well as part of the BEIS Biomass strategy³. In addition, the use of “Power to liquid SAF” technology needs to be proven at scale and consistent with available low carbon electrical power to form a material part of the Net Zero strategy,

Finally, we agree that the development of battery and hydrogen for aviation needs to be carefully considered as a key part of these scenarios. Different approaches are being taken by the large aeroplane manufacturers, with Boeing⁴. and Airbus⁵ differing on their approaches to the potential of hydrogen in aviation. The use of batteries in aviation also requires breakthroughs in battery technology to achieve an energy density closer to that of aviation fuel⁶.

Given the international nature of the aviation industry, we would encourage the UK to work with international partners including ICAO⁷ and the EU¹ to provide an aligned roadmap on aviation decarbonisation.

¹ https://ec.europa.eu/info/sites/default/files/refueleu_aviation_-_sustainable_aviation_fuels.pdf

² <https://www.gov.uk/government/consultations/low-carbon-fuel-strategy-call-for-ideas>

³ <https://www.gov.uk/government/publications/biomass-policy-statement-a-strategic-view-on-the-role-of-sustainable-biomass-for-net-zero>

⁴ <https://simpleflying.com/boeing-no-hydrogen-focus/>

⁵ <https://www.airbus.com/en/innovation/zero-emission/hydrogen/zeroe>

⁶ <https://www.flightglobal.com/airframers/what-would-it-take-to-power-airliners-with-batteries/145370.article>

⁷ <https://www.icao.int/environmental-protection/pages/SAF.aspx>

Finally reports from organisations such as Concawe⁸ and Fuels Europe⁹ may be useful in informing the trajectories further.

2. Do you agree or disagree with the possible trajectories we set out, which have in-sector CO₂e emissions of 36Mt in 2030, 28Mt in 2040 and 15Mt in 2050, or net CO₂e emissions of 24-29Mt in 2030, 12-17Mt in 2040 and 0Mt in 2050?

The trajectories are aligned with the scenarios outlined. However, as discussed in our response to Q1 some of these trajectories are extremely ambitious in scope and it is difficult to comment further on their basis given the available information.

3. Do you have any other comments in relation to the updated illustrative scenarios?

- Section 3.25 (p24) refers to a significant fall in the cost of SAF coupled with a significant rise in cost of kerosene. Whilst history shows that costs for new products decline over time, the timescale can be in decades. In a similar way, free competitive markets will determine the cost of Kerosene. Therefore, the basis of this statement needs to be considered again in more detail.
- One way to incentivise SAF in addition to a mandate is a change to fuel taxation with lower carbon fuels being taxed at a lower rate than high carbon fuels. This could be considered by the government although we recognise that it may be difficult to implement on a UK specific basis given the international nature of aviation.
- The focus on 2050 provides industry with a long-term pathway when considering investment. However sourcing Biomass for SAF will be in competition from other industry sectors including renewable diesel. An update focusing on the next 5 – 10 years would assist industry in focusing on the immediate targets and allow it to plan accordingly. As we have mentioned the pathway should also be consistent with the BEIS Biomass strategy due for publication later in 2022.
- Similarly, the demand for low carbon hydrogen used in Sustainable Aviation Fuels will be in competition with other sectors, including those used industrially for heating as well as the transport sector with demand in both ground transport and aviation. Therefore, a harmonised strategy for low carbon hydrogen across government needs to be developed using all available technologies.

⁸ https://www.concawe.eu/wp-content/uploads/Rpt_21-7.pdf

⁹ <https://www.fuelseurope.eu/publication/fuelseurope-position-on-regulatory-options-to-promote-a-faster-deployment-of-sustainable-aviation-fuels-saf-in-the-eu/>