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BARONESS BLOOMFIELD OF HINTON WALDRIST
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21 September 2022

Dear Viscount Hanworth,

I am writing to thank you for your contribution to the Committee Stage debate on Part 2 of the Energy Bill on Wednesday 7 September and to follow up on your question in relation to carbon-neutral synthetic aviation fuels.

For information, sustainable aviation fuel (SAF) describes low carbon alternatives to fossil-derived aviation fuel, which can be blended into conventional jet fuel without requiring significant aircraft or engine modifications. When fully replacing kerosene, SAF use achieves on average over 70% greenhouse gas emissions savings on a lifecycle basis. It also reduces sulphur dioxide and particulate matter emissions, and potentially other non-CO₂ impacts of aeroplanes, including contrails. Synthetic fuel, or “power-to-liquid”, describes a specific type of SAF derived from hydrogen and captured carbon directly from the atmosphere or a point industrial source. These fuels can achieve close to 100% greenhouse gas emissions savings when using green hydrogen.

In July 2022, DfT published a government response to a consultation that stated the intention of introducing a mandate requiring at least 10% of jet fuel supplied to the UK to be SAF. By prescribing mandatory SAF use, we seek to generate demand for SAF, provide an incentive to SAF producers (in the form of a tradable credit) and signal to investors the vital role the government believes the technology will play in the UK.

The DfT's response also set out high level sustainability criteria that fuel would have to meet in order to be eligible in a mandate. This included setting out an intention to allow nuclear energy in the production of power-to-liquids, which is considered likely to be an important power source in SAF production. The requirements surrounding hydrogen are complicated by the fact that hydrogen can potentially be used in several different ways to produce SAF, including as a feedstock or as a process input in fuel production. To help ensure the mandate delivers fuels with the highest sustainability credentials, the response also stated that where hydrogen is used as a feedstock, it would need to be low carbon.

The Department plans to consult further on the SAF mandate in the autumn to address more fully the practicalities of administering the mandate. This would include more detail on how the sustainability criteria could be applied such as the definition of low-carbon hydrogen and rules around the use of nuclear energy.

You can be reassured that DfT recognises that power-to-liquid fuels have long-term potential due to their feedstock availability and high GHG emissions reductions and therefore view them as a key technology within our aviation decarbonisation approach. There is potential to include a power-to-liquid sub-target in a mandate that will help to accelerate the technological and commercial development of these fuels. In addition, the £165 million Advanced Fuels Fund funded by DfT was launched on 19 July 2022 to drive our new ambition to have at least five commercial SAF plants under construction in the UK by 2025. The grant funding aims to support projects looking to develop large scale advanced fuel production facilities in the UK. The fund has a sub-pot of £22m intended specifically to support projects that use point source or direct air capture CO₂ as their main carbon source in fuel production.

With regard to other technologies, DfT published the Jet Zero Strategy in July 2022, setting out the Government's vision and approach for the aviation sector to reach net zero (or "Jet Zero") by 2050 focusing on the rapid development of technologies in a way that maintains the benefits of air travel, whilst maximising the opportunities decarbonisation brings for the UK.

Given the nascent nature of some technologies, such as electric and hydrogen aircraft, we do not yet know the optimal technological mix for achieving Jet Zero. Therefore, through the Jet Zero Strategy, we have committed to reviewing our approach every five years, to monitor the UK's emissions reduction pathway. This means we will be able to adapt our Strategy if necessary.

I hope you find this letter helpful. I will also place a copy in the House library.

A handwritten signature in black ink, appearing to read "Diana Bloomfield". The signature is written in a cursive, flowing style.

BARONESS BLOOMFIELD OF HINTON WALDRIST

Viscount Hanworth
House of Lords