EXPLANATORY MEMORANDUM TO

THE RENEWABLE TRANSPORT FUEL OBLIGATIONS (SUSTAINABLE AVIATION FUEL) ORDER 2024

2024 No. [XXXX]

1. Introduction

1.1 This explanatory memorandum has been prepared by the Department for Transport and is laid before Parliament by Command of His Majesty.

2. Declaration

2.1 Anthony Browne MP, Parliamentary Under Secretary of State for Decarbonisation, Aviation and Technology at the Department for Transport confirms that this Explanatory Memorandum meets the required standard.

2.2 Debbie Stockwell and Claire Swadkin, Deputy Directors for Low Carbon Fuels, at the Department for Transport confirm that this Explanatory Memorandum meets the required standard.

3. Contact

3.1 Douglas Phillips at the Department for Transport (Tel: 07814068408, email: saf@dft.gov.uk) can be contacted with any queries regarding the instrument.

Part One: Explanation, and context, of the Instrument

4. Overview of the Instrument

What does the legislation do?

4.1 The instrument provides for the regulation of aviation fuel in the UK by placing an obligation on the suppliers of aviation fuel to ensure that sustainable aviation fuel (SAF) makes up an increasing proportion of the jet fuel supplied to the UK each year, beginning on 1st January 2025.

4.2 This instrument also amends the Renewable Transport Fuels Obligation (RTFO) Order 2006 to prohibit the issue of certificates for renewable transport fuel where that fuel has benefitted from a support scheme applied anywhere in the world.

Where does the legislation extend to, and apply?

4.3 The extent of this instrument (that is, the jurisdiction(s) which the instrument forms part of the law of) is the United Kingdom.

4.4 The territorial application of this instrument (that is, where the instrument produces a practical effect) is the United Kingdom.

5. Policy Context

What is being done and why?

5.1 Greenhouse gases (GHG) emitted from the production and combustion of kerosene in UK aviation contribute to climate change, leading to severe environmental and

economic damage. UK aviation produced 38.1 million tonnes of CO2 equivalent (MtCO2e) in 2019 and is forecast to be one of the largest emitters by 2050.[1]

5.2 Reaching net zero aviation emissions by 2050, which the Government committed to in the Jet Zero Strategy, will require significant emissions reductions in aviation.

5.3 Compared with kerosene jet fuel, SAF can deliver over 70% GHG emissions reductions over its lifecycle. Blending greater volumes of SAF into the UK aviation fuel mix is therefore a crucial means of achieving net zero aviation emissions by 2050.

5.4 The following critical success factors of the policy have been defined:

- Reduce GHG emissions associated with aviation and contribute to lower emissions across the UK. The measures contained within this legislation will deliver between 11 and 54 MtCO2e GHG emissions reductions in the period 2025 to 2040.
- Encourage investment in the UK SAF industry by providing a long-term demand signal.
- Incentivise innovation in less-commercially developed fuel pathways which have the potential to provide the greatest GHG emissions reductions.

5.5 The Government is introducing a specific obligation on aviation fuel suppliers to blend increasing proportions of SAF into the UK aviation fuel mix ("the SAF Mandate"). If a SAF obligation was contained within the RTFO, road users would likely bear costs for the decarbonisation of aviation. A separate obligation on aviation fuel ensures that aviation users pay for the decarbonisation of aviation and, therefore, adheres to the polluter pays principle.

5.6 The SAF Mandate has two obligations: the power-to-liquid obligation, which can only be discharged through the supply of power-to-liquid SAF, and a main obligation, which can be discharged through the supply of all other types of eligible SAF (with limits on the amount that can be supplied from certain feedstocks). Power-to-liquid (PtL) fuels are made when carbon is made into fuel using a process powered by renewable (except biomass) or nuclear energy. These fuels provide the greatest GHG emissions reductions without dependence on limited feedstocks or encouraging unsustainable land usage change; however, these fuels are not commercially developed and are therefore expensive when compared with other SAF. A separate obligation will create a market for these strategically important fuels.

5.7 The obligation is placed on jet fuel suppliers at the point at which their fuel can only be supplied to UK aviation.

5.8 Each obligation period is one year in length and runs on a calendar year basis.

5.9 The percentage of UK aviation fuel that is obligated in the main obligation and the power-to-liquid aviation fuel obligation each year, can be found in the table in Article 3(7) of this instrument. The obligation increases year-on-year up to 2040. After 2040 the obligation will remain at that level until it is reviewed, and the legislation is updated. This is due to uncertainty in the data and modelling around SAF production capacity, beyond 2040.

5.10 The obligation placed on jet fuel suppliers is calculated by first determining the amount of fossil aviation turbine fuel plus SAF that does not meet the sustainability criteria (in energy) in the calendar year. A percentage is then applied to that amount to

[1] *Final UK greenhouse gas emissions national statistics* https://www.gov.uk/government/statistics/final-uk-greenhouse-gas-emissions-national-statistics-1990-to-2021

determine the obligation amount. The energy obligation will be calculated by first multiplying the mass (kg) of obligated fuel by its energy density (MJ/kg) to determine the amount supplied in terms of energy. This is then multiplied by the percentage target for the respective year. For example, if 15,000,000 kg of fossil aviation turbine fuel was supplied in 2025 and 0 kg SAF that does not meet the sustainability criteria, the obligation would be determined as 15,000,000 kg x 43 MJ/kg x 2.041% = 13.164 TJ. Obligating based on energy, rather than mass or volume, allows the SAF Mandate to account for the energy density of different fuels. Fuels such as hydrogen can contain a greater amount of energy compared to the same mass of kerosene. Using an energy scheme will fairly reward these fuels based on the total energy provided and thereby ensures a level playing field for suppliers of different fuels.

5.11 Suppliers are awarded standard certificates for producing SAF that meets a minimum GHG emissions saving threshold (as determined by the Administrator in guidance) when compared with the fossil fuel comparator. It is the Government's intention to revise this minimum threshold in future years of the Mandate. We will consider the minimum GHG emissions reductions threshold as part of the regular review process covered in section 10.1.

5.12 The number of certificates that a supplier receives for the SAF that they have supplied is determined by multiplying the energy content of the SAF by a carbon intensity factor (i.e. how much GHG emissions reductions the SAF delivers when compared with kerosene jet fuel). This means that the greater GHG emissions reductions that a specific type of SAF yields, the greater the number of certificates that will be awarded to the supplier.

5.13 Suppliers must redeem SAF certificates to meet their obligation or pay the buy-out price.

5.14 Suppliers may also trade the certificates that they receive for other suppliers to use to meet their obligations.

5.15 A supplier may also discharge their obligation through a buy-out mechanism. The main obligation buy-out price is £0.137 per megajoule. This price is set to be higher than the cost of producing and supplying the same unit of SAF under normal market conditions, thus incentivising the supply of SAF. It also protects consumers during periods of high prices.

5.16 The PtL obligation has a separate buy-out price of £0.145 per megajoule. This is greater than the SAF buy-out price for the main obligation to account for its greater costs of production.

5.17 As suppliers are already subject to higher costs through the buy-out mechanism, there will be no additional penalties for not discharging their obligation through the supply of SAF.

5.18 Suppliers are able to use PtL certificates to meet their main obligation but standard certificates may not be used to meet their PtL obligation.

5.19 Hydroprocessed esters and fatty acids (HEFA) is a production process that produces SAF from oils and fats and is currently the only commercial production pathway for SAF, making it the cheapest and most widely available. HEFA is largely made from used cooking oil (UCO) and animal tallow, which fall under the definition of segregated oils and fats, and already play an important role in road transport fuel decarbonisation.

5.20 As global demand grows, there will not be enough of these feedstocks available to deliver net zero aviation emissions. It's important to therefore avoid dependence on them, while ensuring that there is available space in the market for next generation fuels to develop. The Mandate should also avoid diverting all of the segregated oils and fats from their pre-existing uses in helping decarbonise other sectors to ensure the SAF Mandate delivers additional GHG emissions reductions.

5.21 As a result, the SAF Mandate contains a cap on the amount of segregated oils and fats that can contribute towards meeting the main obligation. This is a cap on fuels made from certain feedstocks, rather than the production process itself; however, for ease we refer to it as the HEFA Cap as this is the term understood by suppliers. Suppliers are awarded with certificates for the supply of HEFA SAF; however, a cap is placed on the number of these certificates that can be used to meet a supplier's main obligation.

5.22 The percentage of HEFA SAF certificates that may be used to meet a supplier's main obligation can be found in the table in Article 22 of this instrument. The HEFA Cap will allow the main obligation to be met entirely through the supply of HEFA SAF in 2025 and 2026. From 2027, as the main obligation increases, the proportion of it that can be met through the supply of HEFA SAF will decrease year-on-year until 2040. After 2040, it will remain at the 2040 level until it is reviewed.

5.23 The Secretary of State is the Administrator of the scheme, with responsibility for enforcement and supporting compliance delegated to an administrative unit within DfT that has experience in administering the RTFO.

5.24 This instrument provides the Administrator with the power to issue civil penalties for non-compliance with the SAF Mandate. Penalties can be issued to suppliers for failing to register an account within 28 days of becoming obligated, failing to pay the buy-out price if they have not discharged their obligation, providing inaccurate information to the administrator, or failing to notify the Administrator if they have become aware that inaccurate information has been provided to the Administrator.

5.25 Now that the UK has left the EU, fuels produced and imported from EEA states must be treated the same as those produced and imported from elsewhere. Fuels from outside the UK/EEA are currently not prevented from receiving state support in their country of origin and claiming support under the RTFO.

5.26 The SAF Mandate provides that a supplier is not eligible to apply for certificates where the SAF supplied in the UK has benefited from a support scheme anywhere else. The definition of a support scheme excludes investment aid, tax exemptions or reductions, and tax reliefs. Although the Administrator will not consider such support when considering a supplier's eligibility for certificates, the UK government may take action separately where such support amounts to a prohibited or actionable subsidy under WTO rules.

5.27 This instrument makes amendments to the RTFO to ensure that position on the eligibility of renewable transport fuel which benefits from a support scheme is consistent with the position under the SAF Mandate.

What was the previous policy, how is this different?

5.28 In 2018, the RTFO was expanded to award certificates for producing SAF, but it did not contain an obligation on the supply of SAF.

5.29 The high production costs and consequent high price of SAF relative to traditional kerosene mean that, without an obligation, there is not the demand to incentivise the supply of SAF to UK aviation at the level needed to support net zero goals.

5.30 This instrument removes SAF from the RTFO. From 1 January 2025, fuel suppliers will no longer be awarded RTFO certificates for any SAF produced. Suppliers cannot be rewarded under the SAF Mandate or the RTFO if the fuel or chemical precursor has received support under a renewable energy incentive scheme or UK renewable energy obligation.

5.31 This instrument places an obligation on suppliers of aviation fuel in the UK that requires a proportion of the fuel supplied to come from sustainable sources.

5.32 Unlike the RTFO, the SAF Mandate rewards certificates in proportion to GHG emission reductions.

5.33 To minimise administrative burdens for suppliers, the SAF Mandate has been modelled on the RTFO and will be administered by the same unit within DfT. The two schemes also align on rules regarding the receipt of multiple incentives.

6. Legislative and Legal Context

How has the law changed?

6.1 Sections 124 to 132 of the Energy Act 2004 provide the Secretary of State with the powers to make regulations to establish a renewable transport fuel obligation, including appointing an administrator to manage the obligation; conferring powers and duties on the administrator; and making provisions for determining amounts of fuel subject to the obligation, issuing certificates to be used as evidence to meet the obligation, discharging the obligation by paying a buy-out price and enforcing through civil penalties.

6.2 These powers were used by the Secretary of State to make the Renewable Transport Fuel Obligations Order 2007 (RTFO 2007), as amended, which places obligations on transport fuel suppliers in the UK to supply a specified proportion of renewable transport fuel each year. Under the RTFO 2007, certificates are issued for each litre of renewable transport fuel supplied in the UK, and those certificates may be surrendered as evidence that a supplier has met its obligation; or traded with another supplier to enable them to meet their obligation. The RTFO 2007 was amended by the Renewable Transport Fuel Obligations and Greenhouse Gas Emissions Regulation 2018 to enable suppliers of renewable aviation fuel to be awarded certificates for each litre of that fuel supplied and for those certificates to be counted as evidence towards compliance with their obligations under the RTFO 2007.

6.3 Using the powers in section 124 to 132 of the Energy Act 2004, this instrument establishes a renewable transport fuel obligation for sustainable aviation fuel, requiring suppliers of aviation turbine fuel in the UK to supply a specified proportion of their fuel as sustainable aviation fuel each year. The instrument provides for determining the obligation and the amounts of aviation fuel in terms of amount of energy (in megajoules) rather than in volume (litres); and sets buy-out prices which reflect the differing costs in the production of sustainable aviation fuels. The provisions on the administrator and its powers and duties, and on enforcement (civil penalties) are similar to those in the RTFO 2007.

6.4 The RTFO 2007 is amended so that certificates can no longer be issued for renewable aviation fuel supplied in the UK.

6.5 The RTFO 2007 prevented a supplier from applying for certificates for the supply of renewable transport fuel if that fuel had benefitted from a support scheme. A support scheme was defined in article 2 of the RTFO 2007 and was confined to such schemes "applied by an EEA state, a group of EEA states or the United Kingdom". This permitted those supplying renewable transport fuel supported by schemes applied outside of the EEA or UK to apply for certificates. Article 16 (application for RTF certificates) of the RTFO 2007 also included an exemption for certain EEA or UK support schemes.

6.6 This instrument adopts a revised definition of "support scheme" so that it includes all support schemes wherever they are applied, but excludes investment aid, tax exemption or reductions, and tax relief. It also amends the RTFO 2007 so that the definition of "support scheme" is consistent with the revised definition in this instrument; and omits the exemption in Article 16(6) which is redundant given the exclusions in the revised definition.

Why was this approach taken to change the law?

6.7 A new RTFO order for regulating aviation fuel in the UK is adopted to provide a cohesive framework to establish the necessary obligations for the supply of sustainable aviation fuel in the UK. By placing the obligations and the requirements on how to meet those obligations in a single instrument separate from the RTFO 2007, it avoids the added complexity of including the new obligations on the supply of sustainable aviation fuel within the RTFO 2007 and adheres to the polluter pays principle.

7. Consultation

Summary of consultation outcome and methodology

7.1 The department carried out a public consultation on the principals of the policy changes introduced by this instrument between 23 July and 19 September 2021.[2] A total of 79 responses were received from a wide range of organisations.

7.2 The government response to this consultation was published in July 2022[3] and confirmed DfT's intention to create a SAF Mandate, its high-level ambition and design, the fuel eligibility criteria, interaction between SAF and other domestic and international policy, and the compliance principles. This commitment was supported by 86% of respondents on the basis that it will generate demand for SAF and thereby deliver GHG emissions reductions, kickstart a domestic SAF industry, and increase investor confidence.

7.3 The department carried out a second public consultation on the technical aspects of the policy change introduced by this instrument, between 30 March and 22 June 2023.[4] A total of 104 responses were received from a wide range of organisations.

[2] https://assets.publishing.service.gov.uk/media/60fa8f86d3bf7f045a022512/sustainable-aviation-fuels-mandate-consultation-on-reducing-the-greenhouse-gas-emissions-of-aviation-fuels-in-the-uk.pdf
[3] https://assets.publishing.service.gov.uk/media/6305fca9e90e0729d7707973/sustainable-aviation-fuels-mandate-summary-of-consultation-responses-and-government-response.pdf
[4] https://assets.publishing.service.gov.uk/media/6424782560a35e00120cb13f/pathway-to-net-zero-aviation-developing-the-uk-sustainable-aviation-fuel-mandate.pdf

7.4 The government response to this consultation was published in April 2024.[5] This response confirmed DfT's policy position regarding the trajectory of the main obligation, the buyout price, the cap on HEFA-derived SAF, and the PtL obligation.

7.5 In a 2021 consultation[6], DfT proposed to further limit the opportunity for multiple incentives for renewable fuel and chemical precursors outside the RTFO. The 2021 Government response committed DfT to strengthening existing restrictions to help promote a fair market and limit distortions. In a 2024 consultation, DfT presented a series of policy options on how the Government will address the potential for over-subsidising.[7]

7.6 A hard copy of all documents referred to in this Explanatory Memoranda can be accessed from the Department for Transport, Great Minister House, 33 Horseferry Road, London, SW1P 4DR.

7.7 While there was no political commitment nor statutory requirement to consult with the Devolved Authorities, we have sought their input and consulted with them throughout the development of this policy.

8. Applicable Guidance

8.1 Guidance is being prepared and will be made available before the regulations come into force. This will be able to be accessed at Aviation and the environment - GOV.UK (www.gov.uk) (www.gov.uk/transport/aviation-and-the-environment).

Part Two: Impact and the Better Regulation Framework

9. Impact Assessment

9.1 A full Impact Assessment has not been prepared for this instrument because the SAF Mandate is a Tax and Spend Measure. In line with the Tax and Spend nature of the SAF Mandate, we have published a Cost Benefit Analysis[8] of the policy.

Impact on businesses, charities and voluntary bodies

9.2 The impact on business, charities or voluntary bodies will be dependent on the extent to which they travel and consume kerosene jet fuel or SAF.

9.3 The legislation impacts small or micro businesses who consume jet fuel.

9.4 To minimise the impact on small or micro businesses (employing up to 50 people), and to protect small quantities of fuel supplied for use in research and testing from being obligated, the minimum threshold for registering with the scheme and being set an obligation is 15.9 terajoules of aviation fuel, or 450,000 litres, per annum. For suppliers that supply over 15.9 terajoules of fuel but less than 344 terajoules in an obligation period, we will not obligate the first 15.9 terajoules of fuel supplied they supplied. This minimises unnecessary administrative burdens with negligible impact on GHG emissions reductions. This aligns with current practice under the RTFO,

[5] https://assets.publishing.service.gov.uk/media/662938db3b0122a378a7e722/creating-the-UK-saf-mandate-consultation-response.pdf

[6] https://assets.publishing.service.gov.uk/media/633d46268fa8f52a62b6f76a/government_response_to_the_consultation_targeting_net_zero_next_steps_RTFO.pdf

[7] https://www.gov.uk/government/consultations/renewable-transport-fuel-obligation-addressing-multiple-incentives/outcome/government-response-to-renewable-transport-fuel-obligation-addressing-multiple-incentives

[8] https://assets.publishing.service.gov.uk/media/6629392a3b0122a378a7e723/uk-saf-mandate-final-stage-cost-benefit-analysis.pdf

which has successfully minimised the impacts on small businesses and was initially informed by the RTFO consultation.

9.5 Fossil avgas and fossil hydrogen that meet the technical and sustainability requirements are exempt and not subject to an obligation. The development of low carbon alternatives to these fuels is in its infancy when compared with jet fuel. Therefore, obligating these fuels would place a disproportionate burden on suppliers and users of these fuels. This position will be reviewed as low carbon alternatives develop.

9.6 The impact on the public sector is minimal. The Mandate is aligned with the RTFO and will be administered by a DfT team with extensive experience of administering this type of policy. As the administrator, the Secretary of State will have the power to issue civil penalties for specific infringements of the SAF Mandate and therefore there may be an impact on the courts. Experience of administering the RTFO suggests that the number of civil penalties is likely to be low.

10. Monitoring and review

What is the approach to monitoring and reviewing this legislation?

10.1 This legislation contains a statutory review clause requiring a published review every five years. The first review will take place by 2030.

Part Three: Statements and Matters of Particular Interest to Parliament

11. Matters of special interest to Parliament

11.1 None.

12. European Convention on Human Rights

12.1 The Parliamentary Under Secretary of State for Decarbonisation, Aviation and Technology has made the following statement regarding Human Rights:

"In my view the provisions of the Renewable Transport Fuel Obligations (Sustainable Aviation Fuel) Order 2024 are compatible with the Convention rights."

13. The Relevant European Union Acts

13.1 This instrument is not made under the European Union (Withdrawal) Act 2018, the European Union (Future Relationship) Act 2020 or the Retained EU Law (Revocation and Reform) Act 2023 ("relevant European Union Acts").