

Unite the Union response to the joint consultation of the UK Government, Scottish Government, Welsh Government and Department of Agriculture, Environment and Rural Affairs for Northern Ireland Proposed amendments to support effective operation of the UK Emission Trading Scheme (UK ETS) by addressing a number of residual technical issues identified during the development and legislation of the scheme.



1 Introduction

1.1 This submission is made by Unite, the UK's largest trade union with over 1 million members across all sectors of the economy including manufacturing, financial services, transport, food and agriculture, construction, energy and utilities, information technology, service industries, health, local government and the not for profit sector. Unite also organises in the community, enabling those who are not in employment to be part of our union. This response is sent on behalf of our members in on behalf of a quarter of a million members in transport especially including tens of thousands in Civil Aviation, Aerospace and in refineries /chemical processing.

2 Consultation Questions

1/ Do you have any comments on the proposed Greenhouse Gas Emissions Trading Scheme (Amendment) Order 2021, or on the specific proposals therein?

2.1 On the changes to introduce a limit on the liability for the UK ETS on emissions from hospitals, small emitters and all UK aircraft operators (within the meaning of GGETSR 2012), Unite would recommend that the limit to the liability should not be set to high too low. The creation of a limit on the liability does not provide an incentive to reduce emissions where it is technically possible. Whilst the financial cost to small emitters and aircraft operators may result in increased operational costs these costs could be offset with reductions in other industry based charges. In the case of aviation a reduction in Air Passenger Duty could offset the additional cost.

2.2 Unite would suggest that the only time when an account should be suspended is where the business is no longer operational. Sadly this has frequently occurred in previous years in the aviation industry due to a combination of factors including the highest levels of aviation industry based taxation in the world, the lack of government support and the precarious situation the industry has ever faced caused by a global pandemic. The impact on the industry has caused a major decline in the available financial investment into factors that can reduce emissions.

2/ Do you have any comments on the proposed Greenhouse Gas Emissions Trading Scheme (Amendment) (No. 2) Order 2021, or on the specific proposals therein?

2.3 The emissions from the aviation industry and its impact on the environment is large dependent on a number of factors beyond the industries control including the weather, the

outbreak of hostilities, the outbreak of a health crisis, etc. which can drastically impact passenger and freight volumes, but also the routes taken between A and B. The routes allocated by air traffic control need to avoid to avoid military airspace areas major storms, volcano's and other natural disasters. Aircraft type can also have a major impact how much fuel is burnt with heavier payloads on the older aircraft causing the combustion of more fuel. But importantly the impact on the environment can also be impacted by the altitude flown at during the flight and especially the fuel used.

- 2.4 Sustainable aviation fuels (SAF) can now be derived from domestic waste (which would normally end up in landfill), old tyres and other sources of carbon (even carbon extracted from the atmosphere). These alternative fuels might only cause the emission of carbon which would end up in the atmosphere anyway, in the form of methane or black carbon if burnt in incinerators. Measured over a 20-year period, methane is between 84-86 times as powerful as carbon dioxide (CO₂) and hence converting these alternative raw materials to synthetic crude and then to aviation fuel could help retain a number of critical oil industry jobs as well as reduce the volume of carbon that is extracted from the earth and deposited in the atmosphere.
- 2.5 Using Direct Air Capture (DAC) it is even possible for the aviation sector to operate on a fuel that is carbon negative¹. SAF also has a higher calorific value and hence less is needed to on any flight (reducing consumption by 1.1% for every 1% increase in contained chemical calorific value). SAF does not contain any sulphur and hence is far cleaner burning reducing ultrafine particulate concentrations and hence reducing the tendency for condensation trails to turn into increased cloud cover. The only problem is the volumes produced.
- 2.6 The oil and gas industry is obviously going to be hit hard by the move away from traditional fossil fuels. Whist jobs on oil and gas rigs are at risk this may not mean that all jobs in the sector are in danger of disappearing. Government investment or stimulus into alternative fuels especially technologies like DAC CO₂ to SAF could provide a way to support the industry. This technology could in theory provide net zero or even carbon negative SAF, saving jobs in refineries where the synthetic crude derived from the Fisher Tropsch process.
- 2.7 At present the demand is far outstripping supply giving the UK numerous opportunities to become a world leader in the supply of SAF. The opportunity to invest in this technology has been around for over 5 years ago, when both Virgin Atlantic and British Airways approached the government for support to start rival projects. The global lack of supply does mean that the price for SAF is far higher than for normal aviation fuel but airlines are willing and are now being encouraged to use SAF through changes in legislation that will encourage an ever increasing volume percentage to be used until the aircraft are burning only SAF.
- 2.8 Unite is therefore concerned that when applying the calculations over the volume of Carbon released into the atmosphere that a representative amount is applied which takes into account above all else the fuel blend used. Unite would oppose any suggestions by

¹ See for example the Carbon Engineering technology <https://carbonengineering.com/air-to-fuels/>

environmental campaigns to also add any factors to take account of the radiative forcing caused by aviation particulate and non- GHG emissions.

- 2.9 The Aviation sector has faced the largest single industrial downturn in its history as illustrated by the below graph of Global passenger traffic evolution from 1945 to 2021² and has always been operation on a thin margin at best on some routes. Flights between the UK and Australia for example are a loss maker but are maintained to enable the swift passage of air freight between the two commonwealth nations, whilst the link between Heathrow and New York is the source of much of the airports and airlines wealth. During the pandemic with air corridors closed, therefore, the industry has been haemorrhaging capital without much in the way of UK government support, unlike rival airlines and airports in other nations. Early hopes by the industry that they would see a 'V' shaped recovery have largely been dashed with a Niké swoosh shaped recovery more the likely recovery path.
- 2.10 Unite therefore asks that the government reduces Air Passenger Duty (APD) taxation on the industry and in proportion to the volume of SAF used and makes calculations not simply based on the distance that type of aircraft has flown but provides reductions for the industry's use of SAF on that flight. Unite believes that such actions will encourage a greater level of investment by the industry into SAF thus reducing the industries carbon footprint.
- 2.11 Unite calls for the money raised from the payment for carbon credits to be utilised to help the industry become more sustainable. The WMO report to the IPCC and UNFCCC has made it clear that the next ten years will be critical in the battle against climate change. According to the report we would only have a 50% chance of keeping global temperature rises below 1.5 °C if we limited the total amount of CO₂ released to just 500 GtCO₂ +or – 220 GtCO₂ due to the impact of non CO₂ emissions³. Consequently the need to act is now as it will take time to bring on-line the chemical plants needed to bring about this transformation in the source of fuels to SAF from normal fossil fuel sourced kerosene. This has not stopped Virgin Atlantic investing in such a project to offset its emissions⁴.
- 2.12 Unite believe that the margins of error are too large in this report and it is possible that as a result it may already be too late to prevent the Paris accords 1.5 °C limit being breached without some action to reduce the volume of CO₂ present⁵. Unite supports the use of a DAC technology using waste heat from industrial processes where possible as part of a wider sequestration effort. The Climeworks 'Orca' project which will open soon expects to be capable of extracting 4,000 tonnes of CO₂ per annum from 8 tractor trailer sized collectors⁶, highlighting the scale of the challenge needed to provide a margin large enough to have a chance of remaining within 1.5 °C of warming through the use of DAC technology alone.
- 2.13 Again the issue is funding the construction of both the DAC but also the Carbon Capture, Utilisation and Storage (CCUS) pipeline to deposit the carbon from whence it came. If this

² As can be seen in appendix one below.

³ https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf

⁴ <https://www.virgin.com/about-virgin/latest/virgin-atlantic-works-towards-a-greener-future>

⁵ See Appendix B

⁶ <https://e360.yale.edu/features/the-dream-of-co2-air-capture-edges-toward-reality>

captured CO₂ is used in combination with Green hydrogen to produce synthetic crude ⁷ as highlighted earlier it could save thousands of UK jobs as they transition from fossil fuels to sustainable alternatives.

- 2.14 Unite believes that despite suppressed passenger demand for flights, held back over the additional price of tests and potential quarantine procedures, it could take years for the industry to fully recover to 2019 levels of passengers. Consequently the additional burden of carbon credits, APD and more expensive fuels may be enough for airlines to fold as happened with Norwegian. Consequently, Unite calls on all moneys raised from the sale of carbon credits to aviation be hypothecated for use in developing less expensive sustainable alternatives that can reduce the industries long term carbon costs.
- 2.15 Unite supports the CORSIA proposals to eventually have a global aviation emissions trading scheme, at which time Unite hopes all existing schemes elements that incorporate aviation emissions trading will be incorporated under the one umbrella. Given current political tensions, however, Unite is not convinced this will occur any time soon.

3 Summary

- 3.1 Unite supports the proposals to include aviation in the UK ETS but cautions that the inclusion should allow for the volume of SAF used as opposed to the total carbon released. Burning any drop in substitute fuel will produce some emissions but if the production of SAF results in negative carbon emissions these should be deducted from the total carbon cost.
- 3.2 Unite calls on the government to support the production of SAF as the additional cost of carbon credits will negatively impact any investment capital into mitigation or carbon footprint reduction technology. Investment in SAF technology could also make the UK a world leader in this product and save thousands of jobs lost from the oil and gas industry allowing for their transition into a more sustainable future.
- 3.3 Unite also calls for a reduction in APD to help the industry recover from the COVID -19 crisis and assist it financially stay afloat once the additional cost of carbon credits is applied. Unite calls for moneys raised from the sale of carbon credits to be hypothecated for use in developing less expensive sustainable alternatives that can reduce the industries long term carbon costs.

⁷ See the Proposals by Carbon Engineering <https://youtu.be/CwhFE4ofmAc>

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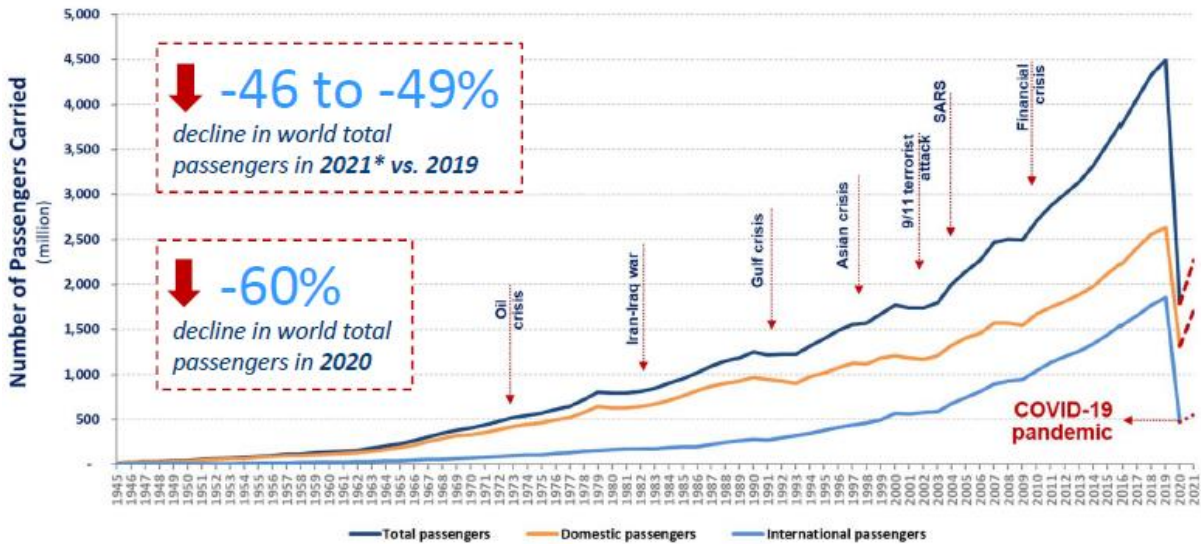
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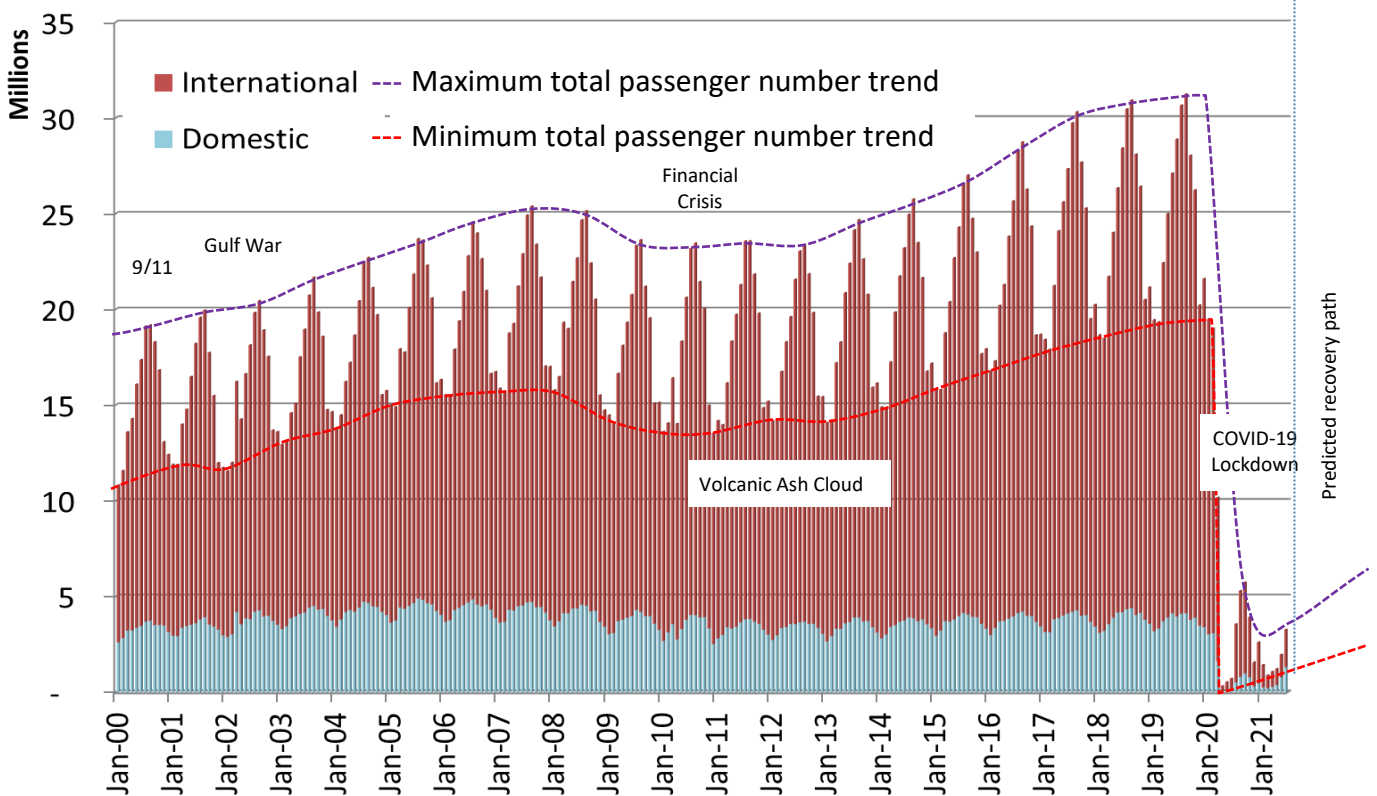
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Appendix 1 Passenger Numbers and the impact of COVID-19

Global Passenger Numbers



UK Passenger Numbers since 2000



Unite believe it may take the best part of the next 6 years to see passenger numbers return to the levels seen in 2019, but the industry in that time will need to innovate to survive and still invest in new sustainable technology.

Appendix B Estimates of historical CO₂ emissions and remaining carbon budgets.

Global warming between 1850-1900 and 2010 -2019 (°C)	Historical cumulative CO ₂ emissions from 1850 to 2019 (Gt CO ₂)
1.07 (0.8-1.3; likely range)	2390 (± 240; likely range)

Approximate global warming relative to 1850-1900 until temperature limit (°C ⁸)	Additional global warming relative to 1850-1900 until temperature limit (°C)	Estimated remaining carbon budgets from the beginning of 2020 (GtCO ₂) Likelihood of limiting global warming to temperature limit ⁹					Variations in reductions in non-CO ₂ emissions ¹⁰
		17%	33%	50%	67%	83%	
1.5	0.43	900	650	500	400	300	Higher or lower reductions in accompanying non-CO ₂ emissions can increase or decrease the values on the left by 220 GtCO ₂ or more
1.7	0.63	1450	1050	850	700	550	
2.0	0.93	2300	1700	1350	1150	900	

⁸ Values at each 0.1 °C increment of warming are available in Tables TS.3 and 5.8 of the IPCC report.

⁹ This likelihood is based on the uncertainty in transient climate response to cumulative CO₂ emissions (TCRE) and additional Earth system feedbacks, and provides the probability that global warming will not exceed the temperature levels provided in the two left columns. Uncertainties related to historical warming (±550 GtCO₂) and non-CO₂ forcing and response (±220 GtCO₂) are partially addressed by the assessed uncertainty in TCRE, but uncertainties in recent emissions since 2015 (±20 GtCO₂) and the climate response after net zero CO₂ emissions are reached (±420 GtCO₂) are separate

¹⁰ Remaining carbon budget estimates consider the warming from non-CO₂ drivers as implied by the scenarios assessed in SR1.5. The Working Group III Contribution to AR6 will assess mitigation of nonCO₂ emissions.