Radical Transport Policy Two-Pager #5

Curbing aviation with a Frequent Flyer Levy and aviation fuel duty – a fair tax package

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To meet our climate targets, we must end unfair aviation subsidies and introduce a frequent flyer levy and aviation fuel duty, with benefits for the public purse and the majority of people.

Aviation subsidies are unfair to the majority of people

Aviation is a heavily subsidised industry primarily serving the richer members of society. In the UK, a staggering **70% of flights are taken by 15% of the population**[1], while at least half of the population take no flights at all in each year[2]. Most flights are not made for business: over 7 out of 10 flights are now for leisure[3]. Three quarters of this air travel is by members of the ABC1 social classes[4]. This relatively small proportion of wealthy individuals who fly very frequently are responsible for a disproportionate share of the impact of flying.

Yet flyers benefit from significant tax breaks that are not available to other forms of transport. Flights are exempt from VAT and there is no fuel duty levied on aviation fuel[5]. These generous tax breaks cost the Exchequer over £10 billion per year[6]. Air Passenger Duty (APD), which generates £3 billion a year[7], does not compensate for this loss of revenue and is levied at too low a rate to curb demand for flying[8]. There is no reason why aviation, particularly domestic flights, should be given such special treatment from the UK government. These subsidies are unfair to the majority of people, who fly infrequently or not at all, yet may well be the recipients of aviation noise or air pollution.

Aviation could become responsible for half of the UK's carbon emissions

These subsidies also matter because they stimulate demand for one of the most damaging forms of transport in terms of climate impact[9,10]. Deeper and faster carbon reductions than those currently targeted[11] will be needed to limit global warming in line with the Paris Agreement[12]. This requires CO_2 emissions to fall to net zero by 2050 or before, requiring deep emissions reductions by all sectors[13]. Yet rather than cutting emissions the government is still planning to allow international aviation emissions to **more than double** compared to 1990 levels[14]. As a result, the aviation industry is at risk of consuming around a half of the total UK carbon budget by 2050[15] compared to 7% in 2016[16].

This over-generous carbon allowance for aviation unfairly penalises other sectors since higher levels of aviation emissions will require deeper emissions cuts elsewhere. In addition, aviation causes a range of 'non-carbon' impacts at altitude which, though still uncertain, could possibly double the climate change impact or worse[17,18].

Airport expansion and predicted passenger growth are not compatible with our carbon targets

The UK is already falling far short of what is needed to meet our legally binding 2050 climate targets. Rather than taking heed of expert warnings to act with urgency to close the policy gap[19], government is unwisely planning to expand airport capacity, encouraging people to take more flights, an issue partly dealt with in a separate radical policy paper[20]. If plans for airport expansion go ahead, and passenger demand continues to grow unchecked, this will seriously undermine the UK's ability to comply with the Paris Agreement[21].

The growth in air passenger demand must be curbed

The government position[22] is that carbon emissions from international aviation are best tackled through the International Civil Aviation Authority (ICAO)[23]. However, progress by ICAO has been painfully slow

and the scheme currently proposed is woefully inadequate[24,25] and based on discredited offsetting schemes which fail to deliver carbon reductions[26,27]. Given the failure of international measures to address the growing climate impact of aviation, it is essential the UK takes responsibility for its share of emissions. While greater uptake of alternative fuels and efficiency improvements are essential, they will also be insufficient[28,29]. To meet the goals of the Paris Agreement and avoid catastrophic impacts of climate change will also mean constraining demand for flying through fiscal measures[30].

To meet our carbon targets efficiently and equitably, the UK's aviation sector needs to make its fair share of emission cuts. This will require a halt to airport expansion and a reduction in air travel demand through a Fair Tax Package:

Stop unfair subsidies for wealthy flyers: introduce a Frequent Flyer Levy

There is scope for the Government to increase the rate of APD[31] or replace APD with more effective and more progressive forms of tax. For example, a Frequent Flyer Levy[32] could help address the disproportionate impact from wealthy individuals who fly very frequently. The levy would be zero for the first return flight and increase progressively for each subsequent flight in each year (for example, one possible scenario is £20 for the second flight, £60 for the third, reaching £420 by the ninth flight)[33]. Everyone currently flying would still be able to afford to fly for occasional holidays, or for family reasons. This would be more socially equitable by making the wealthy frequent flyers pay proportionately more, is politically deliverable[34] and would help reduce the levels of frequent flying[35]. It could also raise an estimated £7 billion a year for the Exchequer by 2020[36]. Levels could be adjusted according to observed impacts.

Stop unfair subsidies for fossil fuels: levy aviation fuel duty

There is nothing in international and EU regulations preventing a tax on aviation fuel for domestic flights and many countries, including the US, Japan, the Netherlands, Norway and Switzerland, already levy aviation fuel tax on domestic flights[37,38]. An analysis of the impacts of a fuel tax on domestic flights in Japan found that it had reduced CO_2 emissions from aircraft[39]. Applying fuel tax to UK domestic flights only would generate estimated revenue of around €247 million (£219 million)[40]. Greater carbon emission reductions would be achieved if aviation fuel tax were applied on all flights *within* Europe, which is currently permitted by EU law[41]. It is estimated this would raise €9.5 billion per annum, of which €1.6 billion (£1.4 billion[42]) would be for the UK[43]. This and other fossil fuel transport taxes have received strong backing from eminent economists[44].

It has been argued that unilateral action on aviation will simply displace the carbon elsewhere, for example through airlines 'tankering' (bringing in fuel from other countries)[45]. Yet it would be logistically difficult for airlines to do this and there is no evidence that domestic kerosene taxes have led US and Japanese airlines to go to Canada and Korea respectively to tank up[46]. Government's own analysis suggests increased aviation taxation would be effective in reducing carbon[47].

Benefits for the tourism industry and rural/outlying areas

This additional tax revenue for the UK (and Europe) could be used to fund more beneficial travel measures. For example, some of the revenue from the combined taxes could be used to improve sustainable travel to outlying regions and rural areas, by reopening branch rail lines and providing frequent, high quality rural bus services. As well as the additional revenue from a fairer tax package, holidaying in the UK could become more popular for UK residents, regenerating the economies of many British seaside and rural areas[48]. This could help close the gap between the money spent by British people holidaying abroad and that spent by overseas visitors while in the UK: a trade deficit on tourism of around £20 billion in 2017[49].

The current situation is socially unfair and is failing to ensure that aviation contributes its share towards action on climate change. It is time to end the generous tax breaks for fossil fuels and frequent flyers and bring in a fair tax package comprising fuel duty and a frequent flyer levy.

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[1] Data on international flights from responses to the National Travel Survey 2006-2008 using the mid-point of the range of flights taken. Results of analysis in Devlin, S. and Bernick, S. (2015) Managing aviation passenger demand with a Frequent Flyer Levy. New Economics Foundation: UK. https://neweconomics.org/2015/06/a-fairer-way-to-fly, accessed 31/12/18.

[2] Based on data from the Office for National Statistics which shows that in 2014, 52% of all respondents took no flights at all, 22% took 1 flight, 11% took 2 flights and 15% 3 or more. Number of flights by frequent flyers ranged up to 60 a year. Data provided by Leo Murray, personal communication by email 04/04/18.

[3] The proportion of passengers travelling for leisure has increased since 2011 from 69% to 72%, while business passengers dropped from 22% to 19% of all passengers, with international transfers representing the remainder. Department for Transport (2017) UK Aviation Forecasts 2017. www.gov.uk/government/publications/uk-aviation-forecasts-2017

[4] Based on data from the Office for National Statistics. A Free Ride website. http://afreeride.org/about/, accessed 31/12/18.

[5] Unlike petrol and diesel, aviation fuel is exempt from fuel duty. This dates back to Article 24 of the Chicago Convention – the agreement drawn up in 1944 which established the International Civil Aviation Organisation (ICAO), at a time when the aviation industry was in its infancy. It does not actually prohibit the taxation of aviation fuel, but has led to a large number of bilateral air service agreements that do prevent taxation of aviation fuel. Since 2003 EU states can waive the exemption on fuel used for domestic flights and, subject to mutual agreement, on fuel used for flights between Member States by any EU carrier. Cairns, S. and Newson, C. (2005). Predict and Decide. Aviation, climate change and UK Policy. Report for Environmental Change Institute. www.eci.ox.ac.uk/research/energy/downloads/predictanddecide.pdf

[6] Analysis for the Aviation Environment Federation proposed a fair tax package of around £9 billion based on aviation fuel duty (£5.7 billion), VAT (£4 billion) and duty-free (£0.4 billion) minus the revenue from APD (£0.9 billion). Sewill B. (2003) The Hidden Cost of Flying. http://www.aef.org.uk/downloads/HiddenCost.pdf

[7] Revenue from Air Passenger Duty (APD) was £3,352 million in 2017/18. Statista. United Kingdom (UK) HMRC air passenger duty receipts from fiscal year 2000/2001 to fiscal year 2017/2018 (in million GBP). Available at: www.statista.com/statistics/284345/air-passenger-duty-united-kingdom-hmrc-tax-receipts/

[8] Air passenger numbers in the UK more than doubled between 1990 and 2017 from 102 million to 284 million. Department for Transport (2017) Table TSGB0201 (AVI0101) Air traffic, United Kingdom airports: 1950 to 2017. Available at: www.gov.uk/government/statistical-data-sets/tsgb02, accessed 31/12/18.

[9] Air travel was found to have the highest climate impact for freight travel and the highest impact for short term warming for passenger travel. Borken-Kleefeld J. *et al.* (2010) Specific Climate Impact of Passenger and Freight Transport. *Environ. Sci. Technol.,* 2010, 44 (15), pp 5700–5706. https://pubs.acs.org/doi/full/10.1021/es9039693

[10] Tyers, R. (2017) It's time to wake up to the devastating impact flying has on the environment. The Conversation, 11 January 2017. Available at: https://theconversation.com/its-time-to-wake-up-to-the-devastating-impact-flying-has-on-the-environment-70953, accessed 31/12/18.

[11] The Climate Change Act set a legally binding target for the UK to reduce its greenhouse gas emissions by at least 80% from 1990 levels by 2050. This includes international aviation. However this target predates the 2015 Paris Agreement on climate change which aims to limit warming to "well below" 2°C with an aspirational target of no more than 1.5°C above pre-industrial temperatures. This requires net zero greenhouse gas emissions by 2050. The Committee on Climate Change is expected to report back in early 2019 with its advice on the range of UK emissions that will contribute towards this and how this can be delivered by key sectors.

[12] The Intergovernmental Panel on Climate Change (IPCC) has recently concluded that limiting warming to 1.5°C above pre-industrial levels will require rapid and deep emissions reductions in all sectors. IPCC (2018) Global Warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. October 2018. http://www.ipcc.ch/report/sr15/, accessed 31/12/18.

[13] It is acknowledged that aviation is more challenging to decarbonise and therefore negative emissions strategies will be needed to meet a net zero target. IPCC (2018) Global Warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. October 2018. http://www.ipcc.ch/report/sr15/

[14] In 1990 greenhouse gas emissions from UK aviation (domestic and international flights) were 17.0 million tonnes CO_{2eq}. Unlike other sectors which have to reduce emissions by an average of 80% compared to 1990 levels, aviation is allowed to increase its emissions by a hugely generous 140%, to 37.5 million tonnes by 2050 (equivalent to its 2005 emission levels). Committee on Climate Change (2009) Meeting the UK aviation target – options for reducing emissions to 2050.

https://www.theccc.org.uk/publication/meeting-the-uk-aviation-target-options-for-reducing-emissions-to-2050/ The Committee on Climate Change are due to update their advice on aviation emissions in Spring 2019.

[15] Based on new runways and passenger numbers of 480 million by 2050. Evans S. (2016) Analysis: Aviation to consume half of UK's 1.5°C carbon budget by 2050. Article for Carbon Brief, 24 October 2016. Available at: www.carbonbrief.org/analysis-aviation-to-consume-half-uk-1point5c-carbon-budget-2050

[16] In 2016 greenhouse gas emissions from UK aviation (domestic and international flights) were 35.5 million tonnes CO_{2eq}. International aviation is not included in the UK's total reported greenhouse gas figures, but if it was, aviation would be equivalent to around 7% of total UK emissions. Department for Business, Energy and Industrial Strategy (BEIS) (2018) Final UK greenhouse gas emissions national statistics: 1990-2016. www.gov.uk/government/collections/final-uk-greenhouse-gas-emissions-national-statistics#2018, accessed 31/12/18.

[17] These include emissions of NOx and contrails (condensation trails) which have additional impacts on the heating of the planet. Azar C. and Johansson D.J.A. (2012) Valuing the non-CO_2 climate impacts of aviation. *Climatic Change*, 111: 559. Available at: https://link.springer.com/article/10.1007/s10584-011-0168-8

[18] Lee D. (2018) The current state of scientific understanding of the non-CO_2 effects of aviation on climate. Report for Department for Transport, December 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/763262/non-CO2-effects-report.pdf

[19] The UK is not on course to meet its fourth (2023-2027) and fifth (2028-2032) budgets with two-thirds of potential emissions reductions from existing policies at risk of under-delivery in 2030. Committee on Climate Change (2018) Reducing UK emissions – 2018 Progress Report to Parliament. 28 June 2018. www.theccc.org.uk/publication/reducing-uk-emissions-2018-progress-report-to-parliament/

[20] This contends that the business case for a third runway at Heathrow is flawed and the environmental case rests on hugely optimistic assumptions. Cairns, S. and Newson, C. (2018) Reality Check: Why politicians should reject the third runway. Transport for Quality of Life Radical Transport Policy Two-Pager #2 www.transportforqualityoflife.com/u/files/180406_Heathrow_reality_check.pdf

[21] The Government's forecasts suggest international aviation emissions will increase to between 39.2 - 39.9 million tonnes CO_2 by 2050 with a new runway at either Heathrow or Gatwick, or 37 million tonnes CO_2 without expansion. Department for Transport (2017). UK Aviation Forecasts. www.gov.uk/government/uploads/system/uploads/attachment_data/file/674749/uk-aviation-forecasts-2017.pdf There have been doubts cast on these forecasts which are significantly lower than previous forecasts. For example the constrained forecast of 37 million tonnes CO_2 is a significant reduction from the 2013 forecast of 47 million tonnes CO_2 by 2050. It is suggested the latest forecasts are based on overly optimistic technological improvements and unexplained increases in numbers of passengers per aircraft. Aviation Environment Federation (2017) Comments on the revised draft Airports NPS, 19 December 2017. www.aef.org.uk/uploads/2017/12/AEF-comments-on-NPS-reconsultation.pdf

[22] The government proposes to negotiate for a long-term goal for international aviation through ICAO but will consider appropriate domestic action. Department for Transport (2018) Aviation 2050. The future of UK aviation. Consultation, December 2018. www.gov.uk/government/consultations/aviation-2050-the-future-of-uk-aviation, accessed 31/12/18, pp70-75.

[23] Because carbon emissions produced by international aviation are released in international airspace, ICAO was charged through the 1997 Kyoto Protocol (article 2.2) with developing policies towards mitigating their emissions. United Nations Framework Convention on Climate Change (UNFCCC) (undated) Emissions from fuels used for international aviation and maritime transport (international bunker fuels). https://unfccc.int/topics/mitigation/workstreams/emissions-from-international-transport-bunker-fuels

[24] In 2016, ICAO proposed a market-based mechanism, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). Under CORSIA, countries' airlines are given allowances to emit carbon, and if they exceed their allowances then they must buy offsets from other sectors. CORSIA will introduce a pilot scheme in 2021, when participating airlines will have to purchase carbon credits for emissions above 2020 levels on certain routes. It will become mandatory in 2027. Hodgkinson D. and Johnson R. (2016) New UN deal on aviation emissions leaves much to be desired. The Conversation, 10 October 2016. https://theconversation.com/the-new-un-deal-on-aviation-emissions-leaves-much-to-be-desired-66768

[25] Under CORSIA, airlines burning kerosene could have reduced obligations to buy carbon offsets simply because the refinery producing the oil was running on renewable electricity. Transport & Environment (2018a) 'Green' fossil fuels to be allowed under latest weakening of UN aviation CO2 scheme. News release 2 July 2018. www.transportenvironment.org/news/%E2%80%98green%E2%80%99-fossil-fuels-be-allowed-under-latest-weakening-un-aviation-co2-scheme, accessed 04.01.19.

[26] CORSIA was approved in June 2018 and proposed a reduction in international aviation emissions by 2050, largely based on carbon offsetting schemes. However, there are currently enough carbon offsets on the market to meet the projected demand for carbon offsets up to 2035. Pavlenko N. (2018) ICAO's CORSIA scheme provides a weak nudge for in-sector carbon reductions. Blog for International Council on Clean Transportation, 6 August 2018. www.theicct.org/blog/staff/corsia-carbon-offsets-and-alternative-fuel, accessed 31/12/18.

[27] Transport & Environment (2017) EU publishes damning report of emissions offsets, calling into question EU's aviation climate strategy. News release, 18 April 2017. www.transportenvironment.org/press/eu-publishes-damning-report-emissions-offsets-calling-question-eu%E2%80%99s-aviation-climate-strategy, accessed 04.01.2019.

[28] Technical/operational measures to reduce carbon include improvements to aircraft technology, alternative fuels and more efficient operational procedures. But even if all of these were to be successfully implemented, the gap between traffic growth-rates and emissions reduction-rates will remain, and requires behaviour change to reduce demand for air-travel. Grote, M., Williams, I. and Preston, J. (2014). Direct carbon dioxide emissions from civil aircraft. *Atmospheric Environment*, 95, pp. 214-224. Available at: https://eprints.soton.ac.uk/368576/

[29] Battery electric aircraft are likely to contribute only a modest amount to reduced emissions over the next 20 years and are currently beyond the capabilities of long haul flights which form the majority (>70%) of UK aviation emissions. Beevor J. (2018) Electric dreams: the carbon mitigation potential of electric aviation in the UK air travel market. Report for Fellow Travellers. https://s3-eu-west-1.amazonaws.com/media.afreeride.org/documents/Electric+Dreams.pdf

[30] Transport & Environment (2018b) Roadmap to decarbonising European Aviation. Report October 2018. https://www.transportenvironment.org/sites/te/files/publications/2018_10_Aviation_decarbonisation_paper_final.pdf

[31] It has been argued that increasing air passenger duty probably offers the simplest and fastest way to reduce emissions from aviation and could be implemented swiftly. Cairns, S. and Newson, C. (2005) Op cit.

[32] A Free Ride website. Available at: http://afreeride.org/about/

[33] Devlin, S. and Bernick, S. (2015) *Op Cit.*

[34] Surveys show that people want the government to do more about aviation emissions and the majority (56%) agreed that a frequent flyer levy would be fair. 10:10 Climate Action (2019) Public attitudes to tackling aviation's climate change impacts. Briefing, January 2019. https://1010uk.org/flying

[35] These levels of levy would constrain demand in accordance with the government's allowance of a 60% increase in passenger demand by 2050. Reducing demand further in accordance with the Paris Agreement would likely require higher levels of tax.

[36] Devlin, S. and Bernick, S. (2015). *Op cit*.

[37] Seely, A. (2012) Taxing Aviation Fuel. House of Commons Research Paper SN00523. http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN00523, accessed 31/12/18.

[38] Transport & Environment (2018b) *Op. cit.*

[39] Gonzalez, R. and Hosoda, E. B. (2016). Environmental impact of aircraft emissions and aviation fuel tax in Japan. *Journal of Air Transport Management*, 57, pp 234-240.

[40] Analysis by Transport & Environment. Andrew Murphy, personal communication by email, 19 March 2018.

[41] The EU Energy Taxation Directive (ETD) permits taxation of kerosene for domestic aviation and permits two or more member states to introduce kerosene taxation for fuel used on flights between those states provided this is agreed bilaterally. It is also possible in future for taxation to be introduced on a bilateral basis with non-EU countries. Transport & Environment (2018c) Roadmap to decarbonising European aviation. October 2018. https://www.transportenvironment.org/publications/roadmap-decarbonising-european-aviation, accessed 31/12/18.

[42] At an exchange rate of 1 euro to 0.89 pounds sterling, 31 December 2018 exchange rates.

[43] If fuel tax (0.33€/L) were applied to all flights within Europe it is estimated it would raise €9.5 billion a year for EU Member States with €1.6 billion from the UK alone. Transport & Environment (2018c) Dirty Transport as a New Own Resource. How taxing diesel, jet fuel, and air tickets can help fix the EU budget and tackle Europe's biggest climate problem. www.transportenvironment.org/sites/te/files/publications/2018_02_TE_Own_resources_position_paper_final.pdf

[44] Letta E. (2018) Reinforcing the EU Budget with a Fossil-Fuel Contribution. Letter from 19 economists, Jacques Delors Institute, to President Juncker, European Union. 20 February 2018. http://institutdelors.eu/publications/reinforcing-the-budget-with-a-fossil-fuel-contribution/?lang=en, accessed 31/12/18.

[45] Dray L. *et al.* (2018) The Carbon Leakage and Competitiveness Impacts of Carbon Abatement Policy in Aviation. Report for the Department for Transport by Air Transportation Analytics Ltd and Clarity Ltd, November 2018. https://www.gov.uk/government/publications/aviation-2050-the-future-of-uk-aviation-consultation-sustainable-growth-carbon-reports

[46] Andrew Murphy and Bill Hemmings, Transport & Environment, personal communication, March 2018.

[47] The analysis showed that displacement of carbon or 'carbon leakage' associated with passenger behaviour (i.e. increasing ticket prices) is usually negative i.e. a decrease in emissions from UK aviation is matched by a decrease in emissions from non-UK aviation. Dray L. et al. (2018) op. cit.

[48] In a model which limited flying distances to 1500 km, it was found that a number of tourist destination countries, such as the UK, would benefit as fewer residents would spend their holidays abroad and people from neighbouring countries visited instead of making long haul flights. Peeters, P. M. and Eijgelaar, E. (2014). Tourism's climate mitigation dilemma: Flying between rich and poor countries. *Tourism Management*, 40, pp 15-26. Additional UK data, Paul Peeters, personal communication by email 20/03/18.

[49] UK residents spent £44.8 billion on visits overseas in 2017 while overseas residents spent £24.5 billion on visits to the UK. Office for National Statistics (2018). Travel Trends 2017. www.ons.gov.uk/peoplepopulationandcommunity/leisureandtourism/articles/traveltrends/2017, accessed 31/12/18.