

Environmental Audit Committee: Sustainable Tourism Inquiry

Written evidence submitted by Dr Sally Cairns, University of Leeds, September 2019

Acknowledgements: The author gratefully acknowledges support from UK Research and Innovation through the Centre for Research into Energy Demand Solutions, grant reference number EP/R 035288/1. All ONS data used is subject to crown copyright protection, and licensed under the Open Government Licence v.1.0. Whilst any views expressed here are those of the author, the author is very grateful for information or other inputs from other members of the CREDS centre, Tim Johnson and Cait Hewitt of the Aviation Environment Federation, Carey Newson and Lisa Hopkinson of Transport for Quality of Life, Krissy Roe at Responsible Travel, Anna Hughes from Flight Free UK, Leo Murray 10:10, and Arunima Malik and Manfred Lenzen, University of Sydney.

Summary of submission

1.1. In relation to the terms of reference of the Committee, this evidence is mainly relevant to the questions:

- How can the Government reach its net zero emissions targets through influencing sustainable travel patterns? Is there a role for offsets in sustainable tourism?
- Where should the balance lie between affordable travel and influencing sustainable travel choices? Are taxes and incentives needed?

1.2. In brief, the primary argument made is that, if the Government wishes to improve the sustainability of UK tourism, then, given the importance of travel to overall tourism emissions ([S2](#)), and the lack of technological solutions (see [Annex A](#)), it will have to address the growth in air travel by UK residents and manage demand. In the first instance, this should involve scrapping its policy of airport expansion ([S5](#)), with the use of taxes or other fiscal measures to achieve further behaviour change ([S7](#)), rather than offsets ([S8](#)). By encouraging UK residents to take more holidays at home and/or improving the attractiveness of UK holiday destinations (and associated sustainable access options), the UK economy is likely to benefit (see [Annex B](#)) and the opportunities for those on lower incomes (many of whom do not take overseas holidays) are likely to improve ([S6](#)). Over ten years of research indicates that the general public does not consider an international holiday to be necessary to achieving an acceptable standard of

living, negating arguments that flying is now seen as ‘essential’ for quality of life (S6). Since over a quarter of UK residents’ trips abroad are to the five closest neighbouring countries (S4), exploring the potential for access to these countries by more sustainable means might also be fruitful. It is also argued that there could be more focus on encouraging people to adjust their holiday habits so that they take longer breaks less frequently (S9); that further development of active travel options could bring multiple benefits, including improving the attractiveness of the domestic tourism offering (S10); and that the International Business Events Action Plan should include a focus on enabling people to participate in such events remotely (S11).

1.3. In the later part of this submission, more detailed evidence is outlined in the following sections:

1	This is a very timely and important inquiry, because greenhouse gas emissions from tourism are substantial and increasing	4
2	The travel to a destination is responsible for a very large share of the climate impacts of a tourism trip – particularly when the tourist travels by air. Substantially reducing the greenhouse gas emissions from UK tourism is likely to mean it is necessary to encourage UK residents to take more holidays within the UK, and to improve the lower carbon travel options for accessing all tourism destinations.	5
3	Compared to many other countries, UK residents already make a disproportionate number of international air-based trips, and are responsible for a disproportionate share of the global greenhouse gas emissions from tourism. Addressing growth (particularly in international tourism) would therefore simply bring the UK in line with elsewhere.	7
4	Arguing that supporting aviation-based tourism is necessary to support the economies of developing nations is dubious, given that most UK tourism takes place within Europe. Moreover, many developing countries are vulnerable to climate change and have played a leading role in campaigning for action to combat climate change.	8
5	Having a policy of airport expansion undermines the credibility of asking individuals to change their holiday behaviour, and it is likely to encourage UK residents to undertake more travel overseas, at the expense of domestic tourism.	10
6	Despite rhetoric about ‘affordable holidays’, growing demand for flying is not evidence of social need, nor is it universal across the population. Those on lower incomes are much less likely to be able to afford to take overseas holidays, even with current prices, and most of the growth in flying is coming from particular age bands. Meanwhile, public support for restricting air travel is increasing.	12

7 **The aviation sector currently enjoys substantial tax breaks compared to other forms of travel**, leading to artificially cheap prices, which are driving demand. A variety of mechanisms could be used to address this.15

8 **Carbon offsetting should not substitute for encouraging more sustainable tourism choices**, not least because this approach could increase the barriers to achieving behavioural change.17

9 **The balance between trip frequency and duration needs further consideration as part of encouraging more sustainable tourism**..... 18

10 **Active travel options can form an important part of a holiday experience**. They are likely to be relatively sustainable compared to other, more energy intensive activities, and may also provide benefits for local communities and for subsequent transport choices..... 19

11 The Tourism Sector Deal’s ambition to encourage international business events should recognise that **enabling people to attend international events by telecommunications is likely to be a critical feature of future events**..... 20

Annex A: Aviation and UK climate targets 21

Annex B: Economic implications of outbound tourism 22

Introduction

1.4. This evidence has been prepared as part of research being undertaken at the University of Leeds, as part of the Mobility theme of the Centre for Research into Energy Demand Solutions (CREDS). CREDS is a research centre established in 2018 with a vision to make the UK a leader in understanding the changes in energy demand needed for the transition to a secure and affordable low carbon energy system. CREDS' research is directly relevant to this inquiry, and the author is part of a team focused on long distance travel and aviation. The deadline required for evidence submission has led to some limitations to the research reported here. Caveats are given in footnotes, where appropriate.

1.5. Unless otherwise specified, the United Nations World Tourism Organisation (UNWTO) definition of a tourist is used here, namely a traveller 'taking a trip or a visit to a place outside his/her usual environment for less than a year, and for a purpose other than being employed by a resident entity there'¹. As such, it includes all trip purposes. Since **89% of trips abroad by UK residents in 2018 were for leisure**², and this proportion is increasing over time, a specific focus on leisure trips would be unlikely to materially change results.

1 This is a very timely and important inquiry, because greenhouse gas emissions from tourism are substantial and increasing.

1.6. Given the urgent need to address climate change, tourism is of increasing importance. According to a recent paper in a Nature journal assessing the carbon footprint of global tourism (Lenzen et al, 2018³), **in 2013, tourism represented about 8% of global greenhouse gas emissions, and, between 2009 and 2013, a 30% increase in tourism-related expenditure cancelled out all carbon intensity reductions in the provision of tourism-related goods and services, and caused the carbon footprint of tourism to grow by 14% over the period.** The authors also argue that, over the next five years, annual growth of about 3% in emissions is to be expected in a business as usual scenario. They further comment that, in relation to UNWTO mitigation strategies, their findings *"provide proof that so far these mitigation strategies have yielded limited success. Neither responsible travel behaviour nor technological improvements have been able to rein in the increase of tourism's carbon footprint. Carbon taxes or carbon trading schemes (especially for*

¹ Office for National Statistics (2018) [The UK Tourism Satellite Account \(UK-TSA\): 2016](#). Full definition on p31.

² Office for National Statistics (2018) Travel Trends. Table 3.07 in the [2014-18 dataset](#). Leisure defined as 'holidays' and 'visiting friends and relatives'. Note that in a recent CAA survey of 3,538 UK adults, of those who had flown in the previous 12 months, only 7% reported that the main purpose of their last flight was business - see slide 23 of CAA (October 2018) [UK Aviation Consumer Survey](#).

³ Lenzen M et al (2018) [The carbon footprint of global tourism](#). Nature Climate Change vol 8, pp522-528

aviation services) may be required to curtail unchecked future growth in tourism-related emissions.” (pp526-7)

2 The travel to a destination is responsible for a very large share of the climate impacts of a tourism trip – particularly when the tourist travels by air. Substantially reducing the greenhouse gas emissions from UK tourism is likely to mean it is necessary to encourage UK residents to take more holidays within the UK, and to improve the lower carbon travel options for accessing all tourism destinations.

- 2.1. In 2008, UNEP, UNWTO and WMO published a report summarising the ‘state of knowledge’ about current and future inter-relationships between tourism and climate change, and the potential for adaptation and mitigation⁴. The report included an estimate of the direct emissions from the travel, accommodation and activities undertaken for tourism – with **travel estimated to be responsible for about three-quarters of the direct impact of a tourism trip**⁵. This was a global estimate – in countries like the UK, where air travel facilitates a higher share of tourism trips than average, travel would be responsible for an even greater share of the tourism emissions.
- 2.2. Peeters and Dubois (2010)⁶ provide further information on the underpinning analysis, which is summarised in Table 1 – illustrating the very high level of emissions associated with air trips (not least due to the fact that the trips tend to be long distance).

Table 1: Average direct emissions (in kg CO₂) per tourism trip^{7,8}

	International trips	Domestic trips (in the OECD 90 countries)
Activities	27	11
Accommodation	156	65
Trips made by air	941	384
Trips made by car	159	146
Trips made by other means	33	31

⁴ United Nations World Tourism Organisation, United Nations Environment Programme, World Meteorological Organisation (2008) [Climate change and tourism – responding to global challenges](#), UNWTO & UNEP, Madrid.

⁵ Summary statistics presented in Table 6.1 on p33 of their report.

⁶ Peeters P and Dubois G (2010) [Tourism travel under climate change mitigation constraints](#). Journal of Transport Geography 18, pp447-457, DOI: 10.1016/j.jtrangeo.2009.09.003

⁷ Data extracted or calculated from Tables 1, 4 and 5 of the Peeters and Dubois paper.

⁸ More recent work – such as the Lenzen et al (2018) paper - should enable updated calculation of these values, which would include supply chain emissions and emissions from more aspects of tourism. However, it was not possible to generate ‘per trip’ figures from the published information.

- 2.3. Lenzen et al's 2018 paper is intended to provide an updated version of these calculations whilst also including all of the supply chain emissions of tourism-related goods and services, and taking a wider perspective on what is included (for example, including food consumption and shopping by tourists). Even taking this wider perspective, **for high-income countries** (defined as those with a per capita GDP >US\$10,000) **transport accounts for over half of all the emissions generated by tourists**⁹. Moreover, the authors note that, in their calculations, whilst methane emissions from farming are included, *"we have not included the direct non-CO₂ emissions from aviation... [and] it could be argued that food, shopping and ground transport be counted net of what tourists would have eaten, purchased or travelled had they stayed at home. If only additional emissions were counted with reference to a stay at home scenario, **air travel may well come out as the dominant emissions component.**"* (p524, emphasis added). For UK tourism – where a higher proportion of trips will be by air – this is likely to be strongly the case.
- 2.4. The relative emissions from travelling by air, compared to other means, is also available in other studies. In research for Eurostar¹⁰, a comparison of travelling by train (and, where necessary, ferry), to 6 destinations was shown to reduce emissions by more than 70%. For example, relative per capita emissions for the return journey from London to Paris by Eurostar or by plane were estimated at 22 versus 244 kgCO₂.
- 2.5. According to the 2019 conversion factors published by BEIS¹¹, international travel by rail generates 0.006 kgCO₂-e per passenger km. In contrast, the figure for short-haul economy class air travel is 0.082 - 0.156 kgCO₂-e per passenger km. This suggests that, **for European travel, travelling by air generates 14-26 times more CO₂-e than travelling by rail**. In addition, and very importantly, **air travel is likely to encourage longer trips**, significantly increasing emissions overall.
- 2.6. **Aviation has also been identified as one of the sectors which is least amenable to technological change**, with emissions likely to jeopardise UK climate objectives, as outlined in Annex A.

⁹ Evidence given in Figure 4 of the Lenzen et al (2018) paper, op cit, top two graphs.

¹⁰ Data reported here: <https://www.seat61.com/CO2flights.htm> Site accessed 6/9/19. Some of the data reported to be from 2006.

¹¹ BEIS (2019) Greenhouse gas reporting: Conversion factors 2019.

<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2019>

Data taken from the worksheets on 'Business travel air' and Business travel land'. The range in values for air travel is because values are quoted with, and without, an estimate of the additional radiative forcing effects from non-CO₂ emissions.

- 2.7. It follows that any tourism strategy for the UK aiming to reduce greenhouse gas emissions must find a way to reduce the amount of international travel by air.
- 2.8. Within the UK, it will also be important to encourage and enable the use of more sustainable travel options for accessing tourism destinations, such as rail and coach. In a recent assessment of greenhouse gas emissions by Lake District visitors, it was estimated that 57% of their total emissions were caused by their travel to and from the location¹². Again, according to the BEIS conversion factors, travel by coach and rail is likely to generate significantly lower levels of emissions than travel by cars or domestic air travel¹³.

3 Compared to many other countries, UK residents already make a disproportionate number of international air-based trips, and are responsible for a disproportionate share of the global greenhouse gas emissions from tourism. Addressing growth (particularly in international tourism) would therefore simply bring the UK in line with elsewhere.

- 3.1. It is often argued that it would be unfair to constrain international travel by UK residents, since it would disadvantage them compared to residents of other countries and/or suggest that the UK does not wish to interact with the global community. It is also argued that it is pointless for the UK to do anything, unless countries such as the US or China take action first.
- 3.2. However, this is not supported by international statistics. According to Lenzen et al's 2018 paper, **in terms of the total tourism emissions generated by residents, the UK is 10th in the world. In terms of the total emissions generated by its residents on *international* tourist trips, the UK is probably 3rd in the world**, beaten only the US and Canada. The UK is also the 2nd highest 'exporter' of tourism emissions (when comparing emissions generated by UK residents travelling overseas, compared with emissions generated by visitors to the UK)¹⁴.
- 3.3. Further, recent statistics from the International Air Transport Association suggest that, **in 2018, the UK was responsible for more international passenger trips than any other**

¹² Berners Lee M. (2017) [A new carbon baseline for the Lake District National Park](#). Report by SW Consulting for the LDNPA.

¹³ In terms of kgCO₂-e per passenger km, the figures given are 0.03 for coach, 0.04 for rail and 0.13-0.25 for domestic air travel (depending on whether radiative forcing is included). For an average diesel/petrol car, kgCO₂-e per km are 0.17/0.18, with per *passenger* km figures determined by car loading.

¹⁴ Data taken from Figure S15 in the Supplementary Information associated with the Lenzen et al 2018 paper (op cit) and obtained from personal correspondence with the authors.

country, with a total of 126.2 million. The UK was followed by the US (111.5 million) and China (97 million)¹⁵. On a per capita basis, the UK would clearly far exceed both countries.

3.4. It follows, then, that **were UK airport expansion to stop, international travel by British residents would be capped at a level which is already substantially above the global average**, enabling a relatively high level of engagement with the rest of the world. It also follows that the emissions from international travel by British residents are relatively substantial, in relation to those generated by international travel by other nations.

4 Arguing that supporting aviation-based tourism is necessary to support the economies of developing nations is dubious, given that most UK tourism takes place within Europe. Moreover, many developing countries are vulnerable to climate change and have played a leading role in campaigning for action to combat climate change.

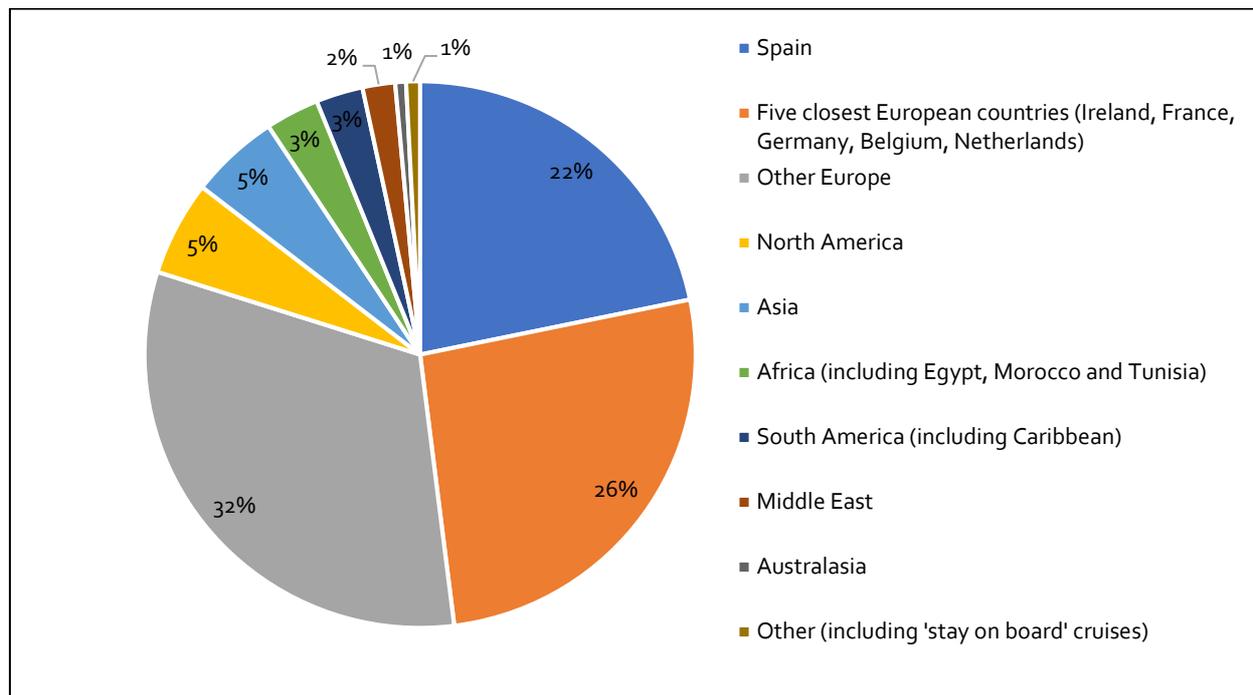
4.1. In discussing UK tourism, it is important to be clear that most trips made by UK residents are to Europe. As shown in Figure 1, **over a fifth of trips abroad by UK residents are to Spain; over a quarter are to the five countries closest to the UK (Ireland, France, Belgium, Netherlands and Germany); and 80%, in total, are to Europe**. It follows then, that improving and promoting more sustainable access options to the UK's closest neighbouring countries might also help to reduce emissions¹⁶.

4.2. Meanwhile, many developing countries whose economies benefit from tourism, or other international activity, have been vocal about the need to constrain international emissions given their vulnerability to climate change.

¹⁵ Adams C (31/7/9) [More British people flew abroad last year than any other nationality, new data reveals](#). The Independent. Data quoted from IATA's World Air Transport Statistics. It has not been possible to examine the primary data source in time for this inquiry.

¹⁶ Further analysis to understand existing mode choices for travel to these countries might be a useful starting point.

Figure 1: Destinations of UK residents' overseas trips in 2018, by main country visited



Source: International Passenger Survey, Table 3.10, all trip purposes, all modes, split based on number of trips.

4.3. For example, in 2018, the UN International Maritime Organisation agreed to a plan to reduce carbon dioxide emissions from shipping. It is notable that the Marshall Islands led the call for action, despite having the world's third largest shipping registry. The Environment Minister, David Paul said his country was "totally reliant" on shipping for trade, but that action on emissions was essential, and "I will not go home to my children, and my country's children, endorsing an outcome from the IMO that fails to face up to the greatest threat of the century"¹⁷.

4.4. In 2014, Peeters and Eijgelaar (2014)¹⁸ specifically modelled the hypothetical effects of restricting travel distances on tourism flows, in order to understand the impacts on poorer countries. They found that impacts were less clear-cut than might be expected, since, in many destinations, reductions in long-haul visitors would be counterbalanced (to differing extents) by an increase in visitors from closer destinations. In terms of direct contribution to GDP, their analysis suggested, in general, LDCs might suffer rather than gain, however their overall conclusion was that: "The total changes in tourism economies vary depending

¹⁷ The Loadstar (2018) [Marshall Islands calls on the IMO to get serious about curbing shipping emissions](#). Article on gcaptain.com website, accessed 9/9/18

¹⁸ Peeters and Eijgelaar (2014) [Tourism's climate mitigation dilemma: Flying between rich and poor countries](#). Tourism Management 40 pp15-26. Emphasis added.

on the cut-off distance but remain below 4% of the global direct tourism GDP. For LDCs, the maximum loss is approximately US\$1.4 billion, which is only 0.076% of the global direct GDP of tourism. Therefore, it is plausible that the sector is able to compensate for such losses, for instance, by investing in less carbon-intensive (domestic, short-haul) tourism or by raising a small fee on long-haul travel to contribute to a special poverty alleviation fund.” They also quote data for the costs of an ‘average climate-related disaster in 2000’ and argue that “*Even if measures to mitigate air transport related emissions prevented only one of the 400 disasters occurring in 2000, such measures would save an amount of economic loss which is an order of magnitude larger than the net tourism sector losses identified.*”

5 Having a policy of airport expansion undermines the credibility of asking individuals to change their holiday behaviour, and it is likely to encourage UK residents to undertake more travel overseas, at the expense of domestic tourism.

- 5.1. According to the Department for Transport (2017) forecasts, **nationally, Heathrow expansion will generate an extra 30 million passenger movements through UK airports each year by 2030 – equivalent to more than one flight for every household.** At Heathrow itself, passenger movements will increase by an extra 46 million (more than a 50% increase)¹⁹.
- 5.2. It is hard to envisage a reasonable basis on which the Government can ask UK residents to reduce their own flying, when it is clear that any personal reductions in air travel will be wiped out by that increase.
- 5.3. Moreover, this increase cannot be justified as essential for facilitating established behaviour, since **this growth will be new trips**, which people will only choose to make because the Government has facilitated the opportunity to do so.
- 5.4. Arguably, the credibility of Government efforts to change behaviour in all sectors will be undermined. According to the Committee on Climate Change, in 2017, UK greenhouse gas emissions per person were estimated to be 7.6 tCO₂e/person²⁰. One return flight from London to New York is likely to generate about 0.67t CO₂²¹, with additional effects

¹⁹ Department for Transport (2017) [UK Aviation Forecasts](#). DfT, London.

²⁰ Committee on Climate Change (2019) [Net Zero: the UK’s contribution to stopping global warming](#). P101

²¹ Figure calculated using the [International Civil Aviation Organisation’s calculator](#), accessed 8/9/19, which suggests 666 kg CO₂ for an economy passenger trip from Heathrow to New York JFK, before taking into account the non-CO₂ effects of the flight.

from non-CO₂ emissions – making the trip equivalent to somewhere between a fifth and a tenth of total annual per capita emissions. Meanwhile, for example, according to the Energy Saving Trust²², on average, turning down a thermostat by 1 degree would save 0.32t CO₂ p.a. per household. Hence, in a context where an increase in aviation is encouraged, arguing for the importance of adopting other energy saving measures may become more difficult.

- 5.5. Further, as elucidated in the Transport Select Committee’s investigation of the Airports National Policy Statement, **the primary effect of expanding Heathrow will be to encourage more outbound trips by UK residents**. According to the Department for Transport forecasts, of the extra passenger movements, whilst 2.3 million will be by foreign visitors to the UK, 8.2 million will be UK residents choosing to make new trips abroad. The remaining 18.6 million will simply be international passengers changing planes.²³
- 5.6. By encouraging more overseas trips, there are likely to be reductions in domestic trips. In 2001, a reverse of this substitution effect was demonstrated, when the al-Qaeda terrorist attacks created a general reluctance to fly – in the following six months, increased spending by domestic tourists provided an unforeseen gain to the tourism industry, outweighing reduced spending by overseas visitors (by about £0.5 billion)²⁴. Similarly, in 2011 and 2012, when overseas trips by UK residents were still at a low point after the 2007 economic crash, overnight trips in Britain by British residents peaked in numbers²⁵.
- 5.7. Given the statistics already quoted about the significance of the journey to the overall emissions of any trip, a switch from domestic to international travel is particularly bad news for sustainability.
- 5.8. Although not the focus of this inquiry, it is also likely to be negative for the UK economy – as further discussed in Annex B.

²² <https://www.energysavingtrust.org.uk/home-energy-efficiency/thermostats-and-controls> - page accessed 8/9/19, data reported to be for a typical 3-bed semi-detached house heated by gas.

²³ House of Commons Transport Committee (2018) [Airports National Policy Statement](#). Third report of session 2017-19, Figure 11, p49.

²⁴ Cairns S and Newson C (2006) [Predict and Decide: aviation, climate change and UK policy](#). Environmental Change Institute, University of Oxford, pp47-49.

²⁵ Data on the annual number of overseas trips by UK residents taken from the International Passenger Survey. Data on trips within Britain, by British residents, taken from the Great Britain Tourism Survey. Comparable data for the latter are currently available between 2007 and 2017.

5.9. Meanwhile, it is unclear why asking people not to make trips that they don't already make is politically difficult, or why measures *other than expansion* should not be prioritised in order to meet objectives such as reducing delays and reliability for air travellers^{26, 27}, or ensuring direct connections to key business destinations²⁸.

6 Despite rhetoric about 'affordable holidays', growing demand for flying is not evidence of social need, nor is it universal across the population. Those on lower incomes are much less likely to be able to afford to take overseas holidays, even with current prices. Most of the growth in flying is coming from particular age bands. Meanwhile, public support for restricting air travel is increasing.

6.1. The UK Minimum Income Standards²⁹, originally developed in 2008 (and since updated annually), define the income that people need in order to reach a minimum socially acceptable standard of living in the UK today. They are used widely in UK policy debate. Items used to create the standards include food, clothes and shelter, but also aim to include everything needed "*in order to have the opportunities and choices necessary to participate in society*". They are generated for different household types, and are based on detailed research and negotiation with groups of members of the public. In 2018, a review of results since 2008³⁰ found that expectations of holidays had remained relatively similar over that period. In general, there was agreement that an annual weekly holiday is needed. However, **across all groups, there was also agreement that it is not necessary**

²⁶ According to the CEO of Heathrow Airport, airspace reorganisation is a critical factor for reducing delays in the south-east – and much of this can take place without airport expansion. [Transport Committee Oral evidence \(5/2/18\) Airports National Policy Statement, HC 548](#). John Holland-Kaye, Chief Executive Officer, Heathrow Airport Holdings Ltd: "*If you are flying into many airports, particularly in the southeast, very often you will be delayed because of congested airspace... Airspace needs to change across the whole of the south-east, not just for Heathrow expansion...*" Q366 and Q433

²⁷ Passenger experience is partly affected by airport management practices, and how close to *any* given capacity an airport chooses to operate. In 2010, the Government approach was specifically to aim for 'better not bigger' airports. Department for Transport and Hammond P (2010) [Better not bigger: Hammond creates south east airports taskforce](#). Press release

²⁸ One of the arguments for Heathrow expansion is that its hub status enables it to offer direct services to relatively obscure places which may be important for business. However, there are currently no mechanisms in place to ensure that any services resulting from expansion will go to emerging business destinations, rather than more lucrative holiday hotspots. Mechanisms to ring-fence capacity for business destinations could arguably be considered with or without expansion.

²⁹ <https://www.lboro.ac.uk/research/crsp/mis/>, page accessed 8/9/19.

³⁰ Davis A et al (2018) [A Minimum Income Standard for the UK: 2008-2018. Continuity and change](#). Joseph Rowntree Foundation, York.

to holiday abroad, and that a break within the UK is sufficient³¹. This evidence contradicts claims that being able to fly overseas is now seen as essential for quality of life.

- 6.2. From a different perspective, a recent paper in the Journal of Sustainable Tourism (Kantenbacher et al 2019³²) explored what people would sacrifice in order to fly on holidays. 2,066 British adults were asked “To what extent would you be willing to give up the following in order to continue being able to fly to your holiday destinations?” Of the items listed, on average, only two (gaming technology and alcohol) achieved a higher score than aviation. The others (buying new clothes, eating meat, buying new domestic appliances, use of a car, TV, mobile phone, laptop/tablet computer) all achieved scores suggesting that people would not sacrifice them in order to fly abroad. Whilst there are some issues with the study³³, it is interesting that flying was not considered a high priority if it involved giving up other things.
- 6.3. **In any given year, about 50% of the population does not fly**³⁴, and this is strongly **affected by income**. More than 35% of households in the top income decile took 3 or more flights in 2016, compared to less than 5% in the bottom income decile³⁵. In contrast, in 2004, the ‘Focus on Social Inequalities’ report indicated that **over a fifth of two-parent families and nearly three-fifths of single-parent families were unable to afford a week’s holiday at all, unless staying with friends or family**³⁶.
- 6.4. A small proportion of the population is responsible for a large proportion of the flights made. Analysis of the 2014 ONS Opinions and Lifestyle Survey of British adults suggested

³¹ Since 2014, there has also been the belief that working age adults need a passport, although this is not in order to travel abroad, but as a form of identification.

³² Kantenbacher J et al (2019) [Consumer priorities: what would people sacrifice in order to fly on holidays?](#) Journal of Sustainable Tourism 27(2), pp207-222

³³ The authors note that a future survey could include options where the sacrifice suggested would be specified to more closely reflect the carbon emissions associated with flying. They also note that the survey did not assess people’s existing behavior – e.g. those willing to give up gaming technology or alcohol may not have been consuming either. Respondents were also asked about their willingness to adopt various forms of behavior, in order to continue to fly. Scores were above neutral for 5 behaviours, including compulsory recycling/composting; installing domestic renewable energy; commuting via public transportation; purchasing an electric vehicle or volunteering for an environmental organization. However, again, the realism of the choices, their equivalence to flying and the survey participants’ existing behavior, were not registered.

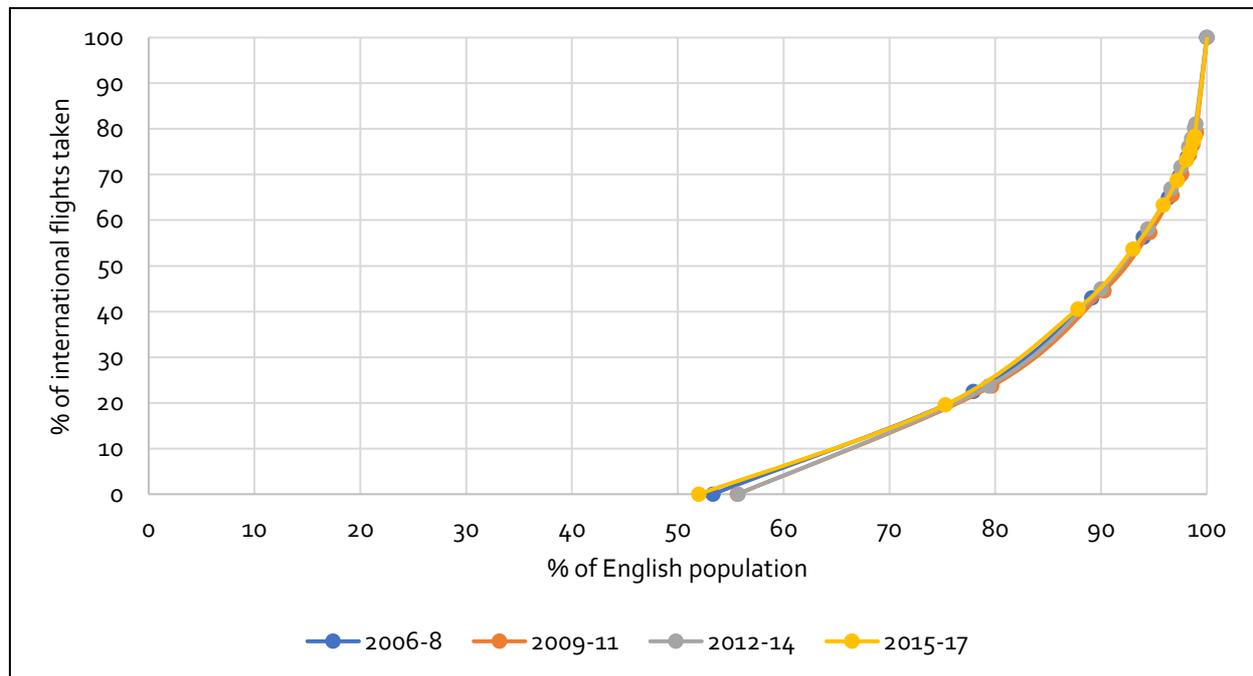
³⁴ Department for Transport Public Attitude Surveys 2005-2017 and National Travel Survey data 2006-2017 [NTSA19022 and NTSA 19024](#)

³⁵ Murray L, Beaver J and Collett-White R (2018) [Runway for the few](#). Fellow Travellers. Data taken from Figure 5.

³⁶ Haezwindt P and Christian V (2004) Chapter 5: Living Standards, in National Statistics (2004) Focus on Social Inequalities. The Stationary Office, London.

that **70% of all flights are attributable to only 15% of the population**³⁷. More recent analysis of the 2018 National Travel Survey finds similar levels of concentration for English residents, with 1% of people being responsible for nearly a fifth of all flights abroad³⁸. Averaged results from National Travel Surveys over time are shown in Figure 2, and indicate a remarkably stable pattern to this distribution. There is also evidence suggesting that the situation is the same in the USA, where 12% of people are reported to be responsible for 68% of plane trips³⁹.

Figure 2: The distribution of international flights taken by English residents



Data taken from the National Travel Survey⁴⁰.

6.5. Analysis of the International Passenger Survey also suggests that most of the recent growth in aviation is only coming from two age segments of the population – those aged 16-34 and 65+ - as illustrated in Figure 3.

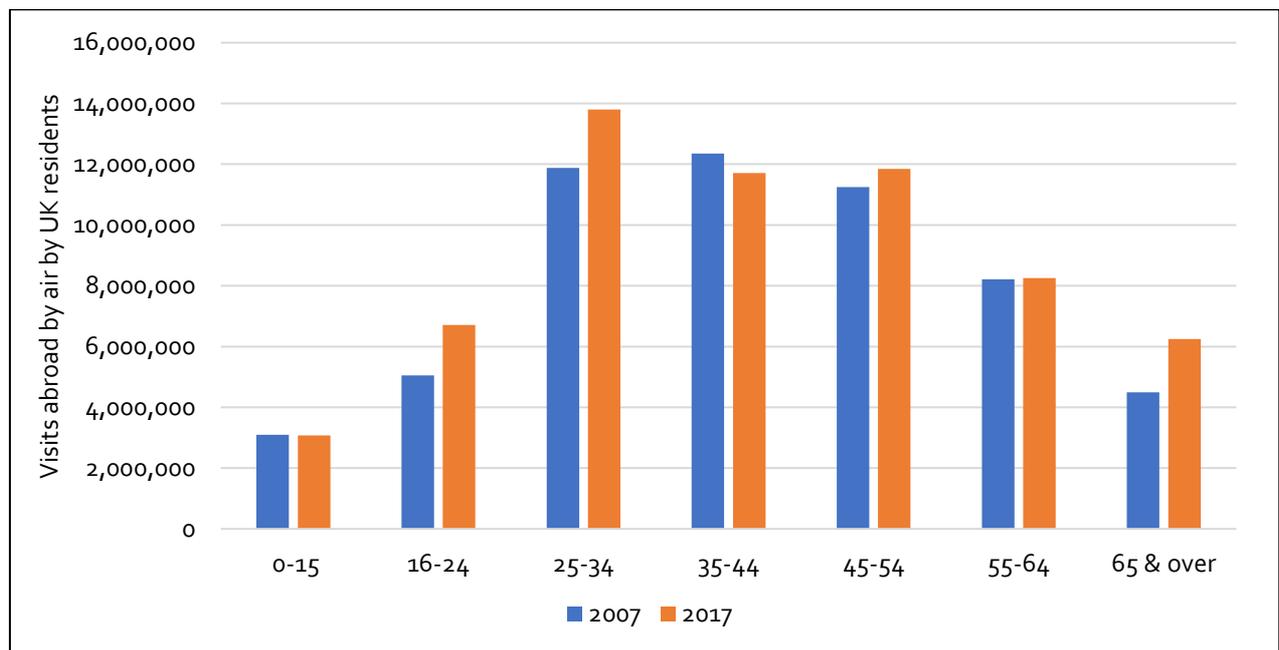
³⁷ <http://afreeride.org/about/> Personal correspondence with the author indicates that this statistic was audited and verified by the fact-checking charity 'Full Fact' in 2016.

³⁸ Kommenda N (25/9/19) [1% of English residents take one-fifth of overseas flights, survey shows](#). The Guardian.

³⁹ Rutherford D (23/9/19) [Should you be ashamed of flying? Probably not](#). The International Council on Clean Transportation.

⁴⁰ Analysis of datasets undertaken for CREDS research programme. Department for Transport. (2019). [National Travel Survey, 2002-2017](#). [data collection]. 7th Edition. UK Data Service. SN: 5340. Crown copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland.

Figure 3: Visits abroad by air undertaken by UK residents – by age band



Data taken from analysis of International Passenger Survey Travepac data, all trip purposes⁴¹.

6.6. There is also evidence that **public support for restricting air travel is increasing**. From a poll of 2,018 adults in August 2019, commissioned by researchers from Cardiff University at the Centre for Climate Change and Social Transformations⁴², it was reported that “two-thirds of people (67%) felt that we should limit air travel in order to address climate change, whereas only 22% felt we do not need to do so”. AirportWatch comment that the proportion in favour of restricting air travel “is much higher than a few years ago” and that results potentially indicate a shift in social attitudes⁴³.

7 The aviation sector currently enjoys substantial tax breaks compared to other forms of travel, leading to artificially cheap prices, which are driving demand. A variety of mechanisms could be used to address this.

7.1. A fundamental factor underpinning the growth of aviation is that the sector enjoys a variety of tax breaks and economic subsidies. Exemption from VAT and fuel tax are well documented, whilst recent research from T&E indicates a range of other potential economic advantages, ranging from public investment in the access links to airports,

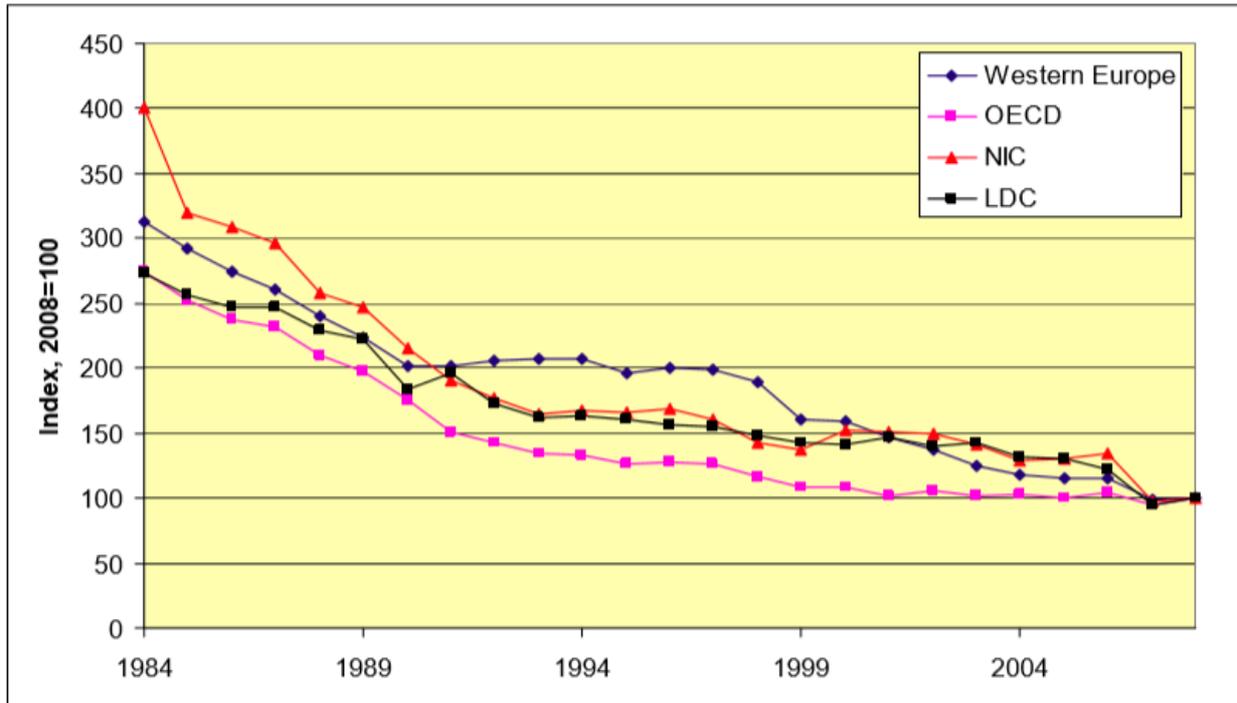
⁴¹ Analysis of [Travepac](#) datasets undertaken for CREDS research programme

⁴² Cardiff University (18/9/19) [Two-thirds of people support limiting air travel to tackle climate change](#)

⁴³ <http://www.airportwatch.org.uk/2019/09/yougov-poll-indicates-about-67-of-uk-adults-appreciate-that-amount-of-flying-should-be-restricted/> Website accessed 30/9/19

through to subsidies for airspace monitoring⁴⁴. The effect is that fares are relatively cheap, compared to other forms of travel. Figure 4 shows the change in air fares over time, to 2011, for UK international leisure passengers.

Figure 4: Indexed real fares, UK international leisure passengers



Graph reproduced from Department for Transport 2011 aviation forecasts, reported to be derived from the International Passenger Survey and Civil Aviation Authority Passenger Surveys, with the Retail Price Index used for indexation⁴⁵.

- 7.2. The importance of price on travel choices is widely recognised. For example, in 2001, a study showed that, between 1989 and 1998, at least 40% of the growth in air travel by British residents to a sample of 20 OECD countries could be attributed to fare reductions⁴⁶.
- 7.3. A variety of mechanisms could be used to bring aviation into line with other sectors⁴⁷. These could include an increase to air passenger duty (APD), the application of VAT

⁴⁴ Bannon E (27/8/19) [A cheap airline ticket doesn't fall from the sky](#). T&E website, accessed 9/9/19.

⁴⁵ Department for Transport (2011) [Data sources for the econometrics in the National Air Passenger Demand Model](#). DfT, London.

⁴⁶ Dargay J and Hanly M (2001) The determinants of the demand for international air travel to and from the UK, ESRC Transport Studies Unit working paper, UCL, London.

⁴⁷ Cairns S and Newson C (2006) [Predict and decide: aviation, climate change and UK policy](#). Environmental Change Institute, University of Oxford.

(particularly to domestic air tickets), the introduction of some form of fuel taxation or emissions charges, and/or the introduction of a frequent flyer levy⁴⁸.

- 7.4. In the first instance, **changes in the value of APD are probably the quickest and most straightforward economic measure to implement**. It is notable, and surprising, that the 2017 Department for Transport aviation forecasts assume no real increase in the value of air passenger duty between now and 2050⁴⁹. APD could be altered, to provide a particular deterrent to domestic air travel; to apply to passengers who change planes in the UK (which might affect forecast capacity requirements); to more closely reflect emissions; and/or with some form of rebate available to avoid penalising occasional fliers. It is hard to understand why the Government is consulting on providing consumer information about the emissions impacts of travel options and/or introducing an offsetting scheme, but is not considering adjusting the economic measure which is already in place.
- 7.5. However, it is critical that a debate about the most appropriate mechanism is not used to avoid recognition of the central problem – that **air fares are artificially cheap compared to other forms of transport, and this is distorting consumer decisions**.

8 Carbon offsetting should not substitute for encouraging more sustainable tourism choices, not least because this approach could increase the barriers to achieving behavioural change

- 8.1. One current proposal is that voluntary carbon offsetting should be used as a way of addressing the emissions associated with international aviation trips (and other travel). There are a number of issues with this as follows:
- (a) There are long-standing concerns about the validity of offsets, in relation to whether any funded change would have happened anyway, will not last or will be counterbalanced by a negative behaviour (additionality, permanence and leakage).
 - (b) There is the danger of legitimising international travel ('it is OK to fly as long as I pay my offset'), when the scale of change required to meet climate change targets means that behaviour change will be required.
 - (c) A voluntary cost (even if 'opt-out' rather than 'opt-in') is likely to generate a free-rider effect. Because everyone knows that some people will not pay it, others will be more reluctant to do so. Meanwhile, those who do pay are likely to feel resentful about the

⁴⁸ <http://afreeride.org/>

⁴⁹ Department for Transport (2017) [UK Aviation Forecasts](#). DfT, London, p79.

lack of a level playing field. In contrast, taxation is never put in place on an optional basis.

- (d) It represents an abrogation of responsibility by government, passing responsibility to the consumer – sending the indirect message that it 'isn't important enough' to address for everyone.
- (e) In combination with a strategy of aviation expansion, the public are sent entirely contradictory signals.

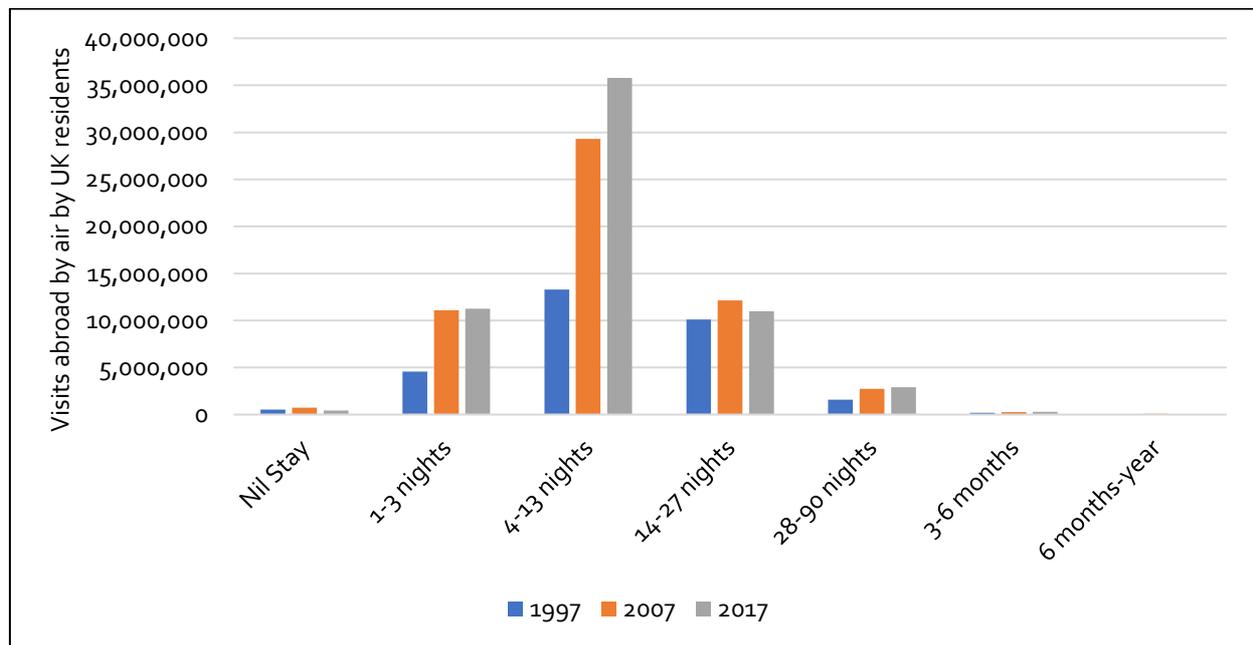
8.2. The Committee on Climate Change has been consistent in its position that the UK should achieve its climate goals without using international carbon credits. Use of offsets has been compared to bailing out a boat without fixing the hole⁵⁰. When combined with a strategy of aviation expansion, it can be likened to bailing out a boat whilst making the hole bigger, or putting warnings on cigarette packets whilst supporting tobacco plantations.

9 The balance between trip frequency and duration needs further consideration as part of encouraging more sustainable tourism

- 9.1. Given the significance of the journey to any tourism trip, the implication is that numerous short breaks will generate considerably more emissions than fewer longer breaks. Interestingly (and perhaps surprisingly) detailed analysis of the International Passenger Survey appears to indicate that, as shown in Figure 5, overall, **the growth in short breaks by UK residents has stabilised** (although exploring trends for different age groups suggests that it is still increasing in the 18-34 age bracket, primarily offset by a decline in the 35-44 age bracket).
- 9.2. This arguably means that **suggesting that people travel 'less often for longer' might be a relatively easy ask**, and generate considerable emissions reductions. Hence, greater investigation of the nature and causes of recent trends, and any impacts from taking longer (as opposed to shorter) breaks would be worthwhile. Given time limitations, it has not been possible to explore any parallel literature about the mental health impacts, or employer views, of different length breaks, although there may be useful insights on these topics.

⁵⁰ Hughes A (2019) The carbon tax. <https://www.flightfree.co.uk/post/the-carbon-tax>

Figure 5: Visits abroad by air undertaken by UK residents – by duration



Data taken from analysis of International Passenger Survey Travepac data, all trip purposes⁵¹.

10 Active travel options can form an important part of a holiday experience. They are likely to be relatively sustainable compared to other, more energy intensive activities, and may also provide benefits for local communities and for subsequent transport choices.

10.1. Active travel opportunities (with relatively low energy requirements) may be one way to appeal to domestic tourists. For example, VisitBritain’s ‘Join the world – Discover the UK’ campaign, aimed at encouraging young people to holiday in the UK, talks of ‘moonlight kayaking in Northern Ireland’ or ‘mountain-biking down Elan Valley in Wales’⁵². The investment in the England Coast Path is partly taking place on the basis that the coastline is already one of the UK’s top attractions⁵³. The National Cycle Network hosts over 340 million leisure trips p.a. (both by bike and on foot)⁵⁴, with electrically-assisted bikes potentially increasing the appeal of cycling to many more people. The National Trust is the biggest host of weekly parkruns⁵⁵. The Isle of Wight has

⁵¹ Analysis of [Travepac](#) datasets undertaken for CREDS research programme.

⁵² VisitBritain (c. 2016) [Join the world – discover the UK](#)

⁵³ Department for Transport (1/9/17) [World’s longest coastal footpath one step closer](#). Press release.

⁵⁴ Sustrans (2018) [Paths for everyone: Sustrans’ review of the National Cycle Network 2018](#) pp18-19 reports that there were 786 million trips made on the network in 2017, and that 44% were for leisure.

⁵⁵ Saul M (2019) [The Great British Staycation](#). Barclays.

used 'Bicycle Island' branding, and associated cycle initiatives, to help increase visitor numbers⁵⁶. Where promoting UK tourism can also help to improve the active travel opportunities for local people – or encourage people to make different transport choices once home - there is the potential for multiple benefits. For example, as part of the evaluation of the Local Sustainable Transport Fund, **in surveys of those who had tried out public transport or active travel options whilst on holiday, 36% of visitors said that they would be more likely to use them once back home⁵⁷.**

11 The Tourism Sector Deal's ambition to encourage international business events should recognise that enabling people to attend international events by telecommunications is likely to be a critical feature of future events.

11.1. As part of the Tourism Sector Deal⁵⁸, the Government published the 'International Business Events Action Plan 2019-2025'⁵⁹, with a pledge to "*support the business events industry in attracting, growing, creating and retaining international business events*". Since trips for such events are only a tiny fraction of all international trips⁶⁰, displacing leisure trips for such activity is arguably justifiable. However, given that climate change is a growing global concern and air travel is a major contributor, any such strategy needs to be future-proofed, by ensuring that people can attend international events by telecommunications (either solely, or as part of a physical meeting). Whilst the action plan does already refer to financial support for broadband connectivity, and reviewing the opportunity for 5G connectivity, **there may be additional measures that could be developed, for example, in relation to technical support teams, virtual meeting rooms etc..** Leading the world in tele-events would arguably be more sustainable both in terms of emissions and in terms of resilience to potential future trends.

⁵⁶ <https://www.visitisleofwight.co.uk/things-to-do/cycling/bicycle-island>

<https://www.islandecho.co.uk/number-of-tourists-visiting-the-isle-of-wight-in-2018-up-5/>

⁵⁷ Cumbria Tourism (2016) [Local Sustainable Transport Fund Visitor Travel Case Study Final Report](#).

⁵⁸ HM Government (2019) [Industrial strategy: Tourism sector deal](#). Open Government Licence

⁵⁹ Department of Digital, Culture, Media and Sport (2019) [The Government's International Business Events Action Plan 2019-2025](#). DCMS, London.

⁶⁰ The Tourism Sector Deal refers to 8.5 million visits to the UK for business in 2017. However, the majority of these will not be for events. Until 2014, the Civil Aviation Authority provided a more detailed breakdown of business travel at each airport. Analysis of this data for Heathrow (from [the CAA Passenger Survey Report 2014](#)) suggests that most business travel is for customer meetings and internal company meetings. In total, in 2014, about 15% of international business passenger movements by overseas residents were to attend conferences, congresses, trade fairs or exhibitions, representing about 2% of all flights at Heathrow. The proportion is unlikely to be higher at other airports, or to have grown since that time.

Annex A: Aviation and UK climate targets

- A.1. According to the Committee on Climate Change's Net Zero report⁶¹ – despite making generous allowances for potential technological changes and more sustainable fuels - **“Agriculture and aviation stand out in our analysis as sectors where there are limited options currently available to reduce emissions... For aviation it reflects the high energy-density required for aviation fuel... A fully zero-carbon plane is not anticipated to be available by 2050, particularly for long-haul flights which account for the majority of emissions... New UK policies will therefore be needed to manage growth in demand... Action is also needed on non-CO₂ effects from aviation”.**
- A.2. This position has been repeated in recent advice from the Committee to the Department for Transport⁶², which states: **“Measures should be put in place to limit growth in demand to at most 25% above current levels by 2050. These could include carbon pricing, a frequent flyer levy, fiscal measures to ensure aviation is not undertaxed compared to other transport sectors (e.g. fuel duty, VAT), reforms to Air Passenger Duty, or management of airport capacity. Research commissioned by the Department for Transport concludes that UK demand management policies in aviation are unlikely to lead to carbon leakage in aggregate... The Government should assess its airport capacity strategy in the context of net zero.”**
- A.3. Prior to the publication of the Net Zero report, the Committee on Climate Change had argued that aviation emissions should be allowed to reach a maximum of 37.5MtCO₂ p.a. by 2050. In order to reach 'net zero', more stringent caps are being discussed (of 30MtCO₂ p.a. or below). However, 2017 Department for Transport passenger forecasts suggested that, even with assumptions about technological improvements and increases in plane size which commentators consider to be highly optimistic⁶³, **current plans for aviation (including Heathrow expansion) would cause aviation to exceed even the original maximum, generating 39.9MtCO₂ in 2050⁶⁴.**

⁶¹ Committee on Climate Change (2019) [Net Zero: the UK's contribution to stopping global warming](#). Quotes taken from pp147-8 and 206. Emphasis added for this report.

⁶² Committee on Climate Change (23/9/19) [Letter to the Secretary of State for Transport: Net-zero and the approach to international aviation and shipping emissions](#). Quotes taken from p14. Emphasis added for this report.

⁶³ The aviation forecasts assume that there will be a 46-48% improvement in fuel efficiency between 2016 and 2050 (DfT 2017 UK Aviation Forecasts. Table 8, page 55). In 2013, the expectation, in line with mid-point technology assumptions used by the UN's International Civil Aviation Organisation, was for a 32% improvement, according to the Aviation Environment Federation (AEF). AEF also note that between the 2013 and 2017 aviation forecasts, the anticipated average number of passengers per plane in 2050 changed from 117 to 141, a major increase. <https://www.aef.org.uk/uploads/2017/12/AEF-comments-on-NPS-reconsultation.pdf>

⁶⁴ DfT (2017) [UK Aviation Forecasts](#). Table 36, p107. Central case forecast.

- A.4. Based on data given in Heathrow’s Preliminary Environmental Information Report, issued as part of their latest consultation, it has been estimated that the creation of the third runway will result in an additional 184MtCO₂-e over the period 2022-2050 (excluding any additional effects from the non-CO₂ emissions of planes)⁶⁵. To put that figure in context, it is equivalent to about 40% of the greenhouse gas emissions of the UK in 2018⁶⁶.
- A.5. It should also be noted that 1990 emissions of CO₂ from aviation were only 15.5MtCO₂⁶⁷. Hence, whilst there has been an overall UK target for an 80% reduction in emissions by 2050 from 1990 levels, aviation has been given limits allowing substantial growth since that time.
- A.6. The need for national action has been reinforced by a recent review⁶⁸ of the likely effectiveness of current and future international policy mechanisms – notably the International Civil Aviation Organisation’s scheme for carbon offsetting and reduction ‘CORSIA’, and the inclusion of aviation within the EU Emissions Trading System. The review concludes that such mechanisms will be inadequate to achieve emissions reductions that are compatible with meeting climate change targets, and that policymakers “*need to work towards putting in place tougher international policy instruments in the long term and simultaneously implement temporary national policy instruments in the near-term*”.

⁶⁵ Wokingham Borough Council (2019) [Heathrow Airport Expansion Consultation – evidence base overview](#). Data taken from Table 7, p34.

⁶⁶ BEIS (undated) [2018 UK Provisional Greenhouse Gas Emissions](#)

⁶⁷ Hopkinson L and Sloman L (2019) [A net zero carbon budget for the whole transport sector](#). Friends of the Earth policy briefing. Figure given in Footnote 7.

⁶⁸ Larsson J, Elofsson A, Sterner T and Akerman J (2019) [International and national climate policies for aviation: a review](#). Climate Policy 19(6), pp787-799

Annex B: Economic implications of outbound tourism

- B.1. The 2018 International Passenger Survey highlights that, in 2018, UK residents spent £45.4 billion on visits overseas, whilst overseas residents spent £22.9 billion on visits to the UK – a difference of £22.5 billion.
- B.2. And yet, earlier this year, ABTA produced a report⁶⁹, based on analysis by Cebr⁷⁰, which argued that interpreting this difference as a tourism deficit is misplaced, and “*the UK economy is the major benefactor of UK outbound travel*”.
- B.3. The Tourism Satellite Accounts⁷¹, which are intended to document the economic contribution of tourism consumption, provide the underpinning for much of the Cebr analysis, and use data from the International Passenger Survey as one of the inputs.
- B.4. A summary of the 2016 UK TSA data is given in Table A1. ‘Domestic outbound tourism’ is defined as expenditure made on UK territory before leaving the country, whilst ‘non-domestic outbound tourism’ is expenditure whilst outside the UK.

Table A1: A summary of the 2016 UK Tourism Satellite Accounts (data in £billion)

	Domestic tourism	Inbound visitors	Domestic outbound tourism	Non domestic outbound tourism
Accommodation, food and beverage services	38.8	9.2	1.7	14.3
Transport (including transport equipment rental)	7.7	4.6	19.6	3.3
Travel agencies and other reservation services	2.2	0.1	1.9	0.1
Cultural activities, sport, recreation, exhibitions, conferences	11.4	0.5	0	5.7
Other consumption	33.3	11.6	9.1	20.1
Total	93.4	25.9	32.3*	43.6*

*If day trip visitors are included, domestic outbound tourist spending was £32.5 billion, whilst non-domestic outbound tourism totalled £43.8 billion. Data has been taken from the TSA summary report already referenced (rather than the raw tables).

⁶⁹ ABTA (2019) [Driving growth: the economic value of outbound tourism](#). ABTA Ltd, London.

⁷⁰ Cebr (2018) [The economic value of outbound travel to the UK economy. Report for ABTA](#) – the Travel Association, London.

⁷¹ Office for National Statistics (2018) [The UK Tourism Satellite Account \(UK-TSA\): 2016](#).

- B.5. In the Cebr report, data on domestic outbound tourism is assumed to be positive for the UK economy and is supplemented in two ways. First, the 'other consumption' figure is doubled, to represent products purchased by people preparing for their holiday before reaching an international departure point (on the basis that the 'other consumption' figure in the TSA table represents spending at departure points, and spending beforehand could be expected to be at least as great). An increase is also included to represent additional benefits from the income of the passport office, the export of conference and exhibition services, the production of international brochures and guide books, and spending on travel insurance. The total figure produced is £43.3 billion (implying that about £1.9 billion has been added for the spending described in the preceding sentence).
- B.6. However, there are several problems with interpreting the TSA data in this way⁷², specifically:
- Spending on 'transport' accounts for £19.6 billion of the benefits from domestic outbound tourism. However, the TSA methodology notes that this is comprised of all fares paid for outbound travel, regardless of carrier nationality, or whether the transaction is with a company registered in the UK⁷³.
 - Cebr report that the £9.1 billion figure for 'other consumption' is derived from a 2005 Morgan Stanley survey of what people spend at airports, and there is a "*clear need to update this work*".
- B.7. Together, these two figures comprise the majority of the reported benefits from outbound tourism for the UK.
- B.8. Further, **if assessing the economic implications of encouraging outbound tourism, a key factor is *the potential impact on the domestic tourism market***. Whilst outbound tourism does lead to some economic activity in the UK, it is logical that, in a context of prioritising domestic tourism, both domestic outbound spending and non-domestic outbound spending might divert to UK tourism destinations. The overall result could be a very substantial gain for the UK economy (as well as substantially reducing greenhouse gas emissions).
- B.9. In this context, it is also relevant to look at the other indicators quoted for UK tourism in the TSA accounts – the number of jobs generated and gross value added for different

⁷² Note that this is not a specific criticism of Cebr, but of the data sources used, and the way in which the data are then used in UK debate.

⁷³ Meanwhile, fares paid to British carriers are included within the inbound transport category, meaning there is the potential for double-counting if all countries use this methodology.

categories of tourist spending. A summary of results is shown in Table A2. In particular, spending on travel (which comprises the largest category of domestic spending for outbound tourists), generates the fewest jobs, and the least gross value added, compared to spending on the other sectors listed. Again, therefore, **prioritising domestic tourism might not only lead to greater domestic spending, but to greater spending in sectors which are more likely to create jobs and add value to the economy.**

Table A2: Data from the 2016 TSA on jobs and gross value added for different categories of tourist spending

	Direct jobs (thousands)	GVA (£billion)	Implied jobs ratio	Implied GVA ratio
Accommodation, food and beverage services	670	19.1	13.4	0.38
Transport (including transport equipment rental)	118	8.5	3.7	0.26
Travel agencies and other reservation services	113	10.9	26.9	2.60
Cultural activities, sport, recreation, exhibitions, conferences	178	5.4	15.0	1.26
Other consumption	464	24.5	8.6	0.45

Data on jobs taken from Table 9 and Table 11 in the ONS report (op cit)

Both the implied jobs ratio and implied GVA ratio have been calculated by dividing the number of jobs, or the GVA, given in this table, by the combined spending figures for domestic, inbound and domestic outbound tourism in Table A1. The ratios give the number of jobs for every £million spent, whilst the implied GVA ratio gives the GVA generated for every £1 spent. Calculations have been done on rounded data, which may have introduced small inaccuracies.