



Sustainable  
Development Commission

Briefing paper

# CONTESTED EVIDENCE

The case for an independent review of aviation policy



# The future of air transport has become one of the great debates of our times, generating vastly differing views on aviation policy in general, and airport expansion in particular.

To tackle this issue head on, the Sustainable Development Commission (SDC), together with the Institute for Public Policy Research (IPPR), embarked on a 12 month engagement process involving industry, businesses, NGOs, academics, citizens' groups and government departments. It uncovered very significant levels of disagreement between these groups, not only in terms of their overall positions, but in their views on the evidence on which decisions about the future of air travel are being based. This briefing paper summarises the key areas of dispute. The views of the SDC and IPPR are set out in our joint report, based on this dialogue, called *Breaking the Holding Pattern – a New Approach to Aviation Policy Making*.<sup>1</sup>

The public debate on aviation is intensely polarised, leading many people to believe that the choice is simply “fly or don’t fly”. This obscures more complex, open-ended questions, such as the question of what proportion of our future carbon budget do we wish to use for flying, as opposed to heating homes, powering appliances, producing food or other forms of travel?

It can be argued that this polarisation is inevitable; that no better consensus about how to use evidence in policy making will emerge and therefore, that a strong government simply has to go ahead and make decisions about airport expansion in the knowledge that this will alienate one or other sector of the community. We do not accept that this point has yet been reached, for three reasons:

**1**

**Having led a structured dialogue with over 40 organisations for a year, we are clear that there has been remarkably little opportunity for real deliberative debate about the fundamental issues – such as the relative importance of aviation in the battle to cut carbon emissions, or the extent to which alternatives to flying genuinely do emit less CO<sub>2</sub> and are a realistic substitute. Consultation on specific proposals, such as the expansion of Heathrow, do not constitute the sort of broader public debate about the role of aviation that has been evident in other policy areas such as pensions and healthcare.**

**2**

**The context itself has changed markedly since the 2003 Air Transport White Paper was produced. Climate change science has advanced significantly, and the Stern Review has framed the debate on the economic case for early action. The Department for Transport has since published the Air Transport White Paper Progress Report (2006)<sup>2</sup> and an update on *Air passenger demand and CO<sub>2</sub> forecasts*,<sup>3</sup> which go some way towards addressing criticisms of the original white paper, although the conclusions on airport expansion remain unchanged. It forecasts that aviation will account for 29% of all UK combined emissions (including international flights) based on a target for 2050 to reduce carbon dioxide emissions 50% below 1990 levels. The Climate Change Act will set carbon budgets, and the Climate Change Committee has been asked to report on whether, and if so, how, emissions from international aviation and shipping should be included. If the 2050 target is increased to a reduction of 80% compared to 1990 levels then, on the basis of those projections, aviation would account for over 70% of UK emissions.**

**The economic downturn and soaring fuel prices have hit the number of business and leisure flights, and public attitudes to flying are more ambivalent given security issues, the Terminal 5 debacle, and the opening of St Pancras International.**

**3**

**In the areas of renewable energy and the upgrading of existing housing stock, the government seems increasingly prepared to admit that it doesn’t have all the answers. It has been prepared to concede that the approach up to now has not delivered sufficient change, and that it will take more consensus and collaboration between government, business and citizens to create a sea change in the rate of action. By contrast, the public debate about aviation policy looks immature, and could benefit enormously from a different approach.**

<sup>2</sup> [www.dft.gov.uk/pdf/about/strategy/whitepapers/air/aviationprogressreportsection/aviationprogressreport](http://www.dft.gov.uk/pdf/about/strategy/whitepapers/air/aviationprogressreportsection/aviationprogressreport)

<sup>3</sup> [www.dft.gov.uk/pgf/aviation/environmentalissues/ukairdemandandco2forecasts/airpassdemandfullreport.pdf](http://www.dft.gov.uk/pgf/aviation/environmentalissues/ukairdemandandco2forecasts/airpassdemandfullreport.pdf)



## Our proposals

**The Precautionary Principle states that if there is a possibility that an action or policy might cause severe or irreversible harm, in the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who advocate taking the action.**

**With so much evidence in dispute, we believe that the burden of proof lies with those who are in favour of increasing the use of flying, and that the case has not yet been sufficiently demonstrated.**

This is why we have suggested that the Government should commission an independent review to compile an updated evidence base on the economic, social and environmental benefits and costs of UK aviation, on which future aviation policy will be

based. We believe that such a process should be led by a trusted and independent chair and steered jointly by a stakeholder group from government, business, NGOs and citizens' groups.

The review should involve two stages:

**1**

Updating and filling gaps in the evidence base relating to the economic, social and environmental impacts of UK aviation.

**2**

A deliberative dialogue with the public and key stakeholders, setting out policy options to stimulate a national debate, as with pensions or healthcare.

An immediate review would be timely, as it would be able to inform forthcoming decisions on airport expansion and the development of the new *National Policy Statement on Airports*. It could also be the means to stimulate further action in areas

where broad agreement already exists between stakeholders, such as on integrated transport, technological innovation and the promotion of alternatives to business travel.



## The public and policy context

**As citizens, many of us hold deeply contradictory views about aviation. We enjoy the benefits of flying in terms of business travel or holidays, visiting distant relatives, or the availability of foods from around the world. But we are also worried about the impact on climate change and the noise, pollution and road congestion caused by airport expansion.**

The framework for aviation policy in the UK is currently set out in the 2003 Air Transport White Paper. This will be supplemented by a new document, the *National Policy Statement on Airports (NPS)*, under the Planning Bill, which will provide an overarching assessment of the UK's aviation needs and, once approved, will be used by the new Infrastructure Planning Commission in making decisions about individual proposals for

airport expansion on the basis of their local impacts. The NPS will be debated in Parliament and will go out for public consultation, and is required to comply with the EU Strategic Environmental Assessment Directive.

Other crucial issues are the consultation on a new form of Air Passenger Duty, and the inclusion of aviation in the EU Emissions Trading Scheme, the terms of which are nearly finalised.



### Flying Matters

In her response to the SDC/IPPR report *Breaking the Holding Pattern*, Michelle Di Leo, director of aviation industry lobby group Flying Matters, said: "The Air Transport White Paper was based on 13 months of public consultation and 500,000 responses. If that doesn't represent thorough consultation, I don't know what does." The Department for Transport echoed this statement: "given that the government has conducted a widespread debate over the last six years, deferring a decision in favour of a further three-year debate, as this report suggests, is not a serious option."

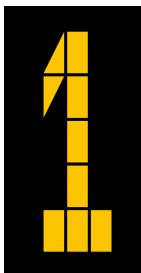


### Sustainable Development Commission

However, the SDC notes that even the Dft's own paper, *A Report on the General Public Responses to the Government's Consultation*<sup>4</sup> admits that the 26,000 letters and emails, and 300,000 campaign responses and petition signatures about airport expansion in the South East, were "very largely opposed to the building of a third runway" at Heathrow, showed "clear opposition to the development of a second runway" at Gatwick, and showed "strong opposition to the building of any further runways at Stansted, with very few respondents in favour."

Thorough consultation will be essential if the new National Policy Statement is to be robust, and the proposal for an Independent Review is about the approach and methodology for engaging the public rather than a means of creating further and unnecessary delay.

# Four areas of contested evidence



## The extent to which aviation contributes to climate change



Aviation's contribution to climate change is variously described as being relatively insignificant or so fundamental that – unless it is tackled swiftly – it will make meeting climate change targets impossible. This disagreement is based on at least four issues:

- The scientific uncertainty about the impact of aviation emissions on the atmosphere
- Differences in the basis on which CO<sub>2</sub> emissions from aviation are presented
- Varying assumptions about the future share of emissions that aviation is likely to contribute
- The appropriate way to cost this damage.

Some of these disagreements derive from differences regarding calculations: whether to use figures on global, UK or personal emissions, current or forecast future levels of CO<sub>2</sub> emissions, aviation as a proportion of a global CO<sub>2</sub> target or of a UK carbon budget.

There are also disagreements about the science itself and how it should be taken into account in policy-making. Although there is fairly good understanding of aviation's CO<sub>2</sub> impact, less is

known about other emissions such as the effects of nitrogen oxides (NO<sub>x</sub>), contrails and cirrus cloud formation. The Intergovernmental Panel on Climate Change (IPCC) estimates that aviation's total climate impact (the Radiative Forcing Index) is around 1.9 times that of its CO<sub>2</sub> emissions. This excludes the potential impact of cirrus cloud enhancement, for which there is even greater scientific uncertainty. Some argue for a greater multiplier if that is taken into account.

## DIFFERENT PERSPECTIVES

### TYNDALL CENTRE FOR CLIMATE CHANGE

The Tyndall Centre says "If the aviation industry is allowed to grow at rates even lower than those being experienced today, the EU could see aviation accounting for between 39% and 79% of its total carbon budget by 2050, depending on the stabilisation level chosen. For the UK, the respective figures are between 50% and 100%."<sup>5</sup>

### INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)

Aviation is a global business, says IATA, and from a global perspective, "Aviation is responsible for 2% of global carbon dioxide (CO<sub>2</sub>) emissions" and "12% of CO<sub>2</sub> emissions from all transport sources, compared to 74% from road transport". Even taking into account the non-carbon impacts of aviation, it says, "The best estimate of aviation's climate change impact is about 3% of the total contribution by human activities. This may grow to 5% by 2050."<sup>6</sup>

The cost of climate change impacts is both complex and contested. In their 2002 guidance to Departments, Defra and the Treasury set out a range for the Social Cost of Carbon, with a midpoint of £70/tC (£19/tCO<sub>2</sub>) for emissions in 2000 rising at £1/tC per year. In 2006 the Stern review set out a range from \$110-312/tC (£23-£65/tCO<sub>2</sub>)<sup>7</sup> – a factor of three variation between lower and upper costs. The lower cost is based on the assumption that the world will stabilise atmospheric concentrations of CO<sub>2</sub> (thus avoiding some of the most costly negative consequences), and the higher cost assumes that it will not. In 2007, after the Stern Review, updated Defra guidance recommended use of a Shadow Price of Carbon of

£19/t CO<sub>2</sub> (£70/tC) for emissions in 2000 and rising annually by 2%.

In preparing its assessment of the expansion of Heathrow, the Department for Transport followed guidance from Defra and the Treasury and estimated the climate costs of expansion at around £5bn on the period from opening (2020) to 2080.

The way these figures are used is vitally important and the Environment Committee of the London Assembly in their evidence to the consultation on the expansion of Heathrow called for a halt to consideration of expansion until there is an independent review of the carbon pricing methodology.<sup>8</sup>

5 [www.tyndall.ac.uk/publications/working\\_papers/wp84.pdf](http://www.tyndall.ac.uk/publications/working_papers/wp84.pdf) p6

6 [www.iata.org/whatwedo/environment/climate\\_change.htm](http://www.iata.org/whatwedo/environment/climate_change.htm)

7 Based on an exchange rate of \$1.309/£ implicit in Stern

8 [www.london.gov.uk/assembly/reports/environment/heathrow-response.pdf](http://www.london.gov.uk/assembly/reports/environment/heathrow-response.pdf)



## The economic costs and benefits of aviation



This is perhaps the most contentious of all the four issues. Whilst aviation's contribution to climate change is viewed as the most urgent 'cost', the UK economy is deemed to receive its biggest benefit.

However, this paper does not attempt to deal with one very major economic issue – the extent to which expansion at Heathrow is essential to retain its role as an international “hub”, and the costs and benefits thereof. This is because it was explicitly agreed that

issues surrounding the Heathrow expansion itself would be “off limits” in the dialogue – this was a prerequisite for securing full and open participation on the wider sustainability issues.

### DIFFERENT PERSPECTIVES

#### OXFORD ECONOMIC FORECASTING

In its 2006 report *The economic contribution of the aviation industry in the UK* OEF estimated that “the wider economic benefits of full implementation of the White Paper runway proposals would generate additional GDP of over £13 billion a year in today's (2006) prices by 2030”<sup>9</sup> through jobs, tourism, and trade.

#### STOCKHOLM ENVIRONMENT INSTITUTE

However, the Stockholm Environment Institute's (SEI) report for Friends of the Earth, *Generated User Benefit and the Heathrow Expansion: understanding consumer surplus*<sup>10</sup> queries the methodology on which claims of high net benefit are based. Projected oil costs used in these analyses now appear over-optimistic. SEI point out that:

“As of July 14, 2008, futures for light, sweet crude oil (a good indicator of investors' current opinions about likely future prices) were trading at about \$140 a barrel for December 2016, the furthest distant future available. The market for oil futures for the period August 2008 to December 2016 never drops below \$140 a barrel”.

SEI's report counts Air Passenger Duty not as a plus but as a neutral, as it transfers money within the UK rather than adding to the total value. The report concludes: “Benefits of expansion are over-estimated by high future income elasticities for airfare, the inclusion of interliners and foreign travellers in user-generated benefits, low fuel and non-fuel prices, high fuel efficiency, the assumption of no additional investment in rail transit and high values assigned to passenger's waiting time.”

Aviation clearly brings economic benefits, but it also imposes social and environmental costs. There is controversy about the extent to which these costs have already been internalised through taxation.

At present, the main internalisation mechanism is the Air Passenger Duty (APD), and consultation is now underway on proposals for its replacement

in 2009 by a new duty payable **per plane** rather than **per passenger** which, it is argued, will encourage more planes to fly at full capacity. There is currently no tax on aviation fuel, VAT on aviation transactions or duty paid on consumer goods sold to non-EU citizens, and duty free sales to UK citizens at airports reduce the income to the Exchequer.

9 [www.oef.com/Free/pdfs/Aviation2006Final.pdf](http://www.oef.com/Free/pdfs/Aviation2006Final.pdf) p2

10 [www.sei.se/pubs/consumer\\_surplus\\_heathrow.pdf](http://www.sei.se/pubs/consumer_surplus_heathrow.pdf)

These are all a subsidy for aviation. However, and in marked contrast to many other forms of transport, the aviation industry pays for much of the costs of infrastructure.

The impact of the European Union Emissions Trading Scheme (EU ETS) on aviation emissions from 2012 is as yet unknown. The size of the overall cap for traded sectors, combined with the projected growth in aviation emissions, will mean that at least in the short term the aviation sector will have to buy some allowances to emit CO<sub>2</sub>. This will only cover direct CO<sub>2</sub> emissions without applying the radiative forcing factor.

A more fundamental issue is the proportion of the global carbon budget (towards which countries must eventually converge), which should be devoted to emissions from aviation and its future distribution. If we accept that there are legitimate needs for more flights for many millions of people in developing countries, it is likely to follow that countries such as the UK will have to accept major reductions in the use of aviation. Unless there is a global trading scheme which includes aviation (and shipping), the inclusion of aviation in the EU ETS will be at best only a partial solution.

## DIFFERENT PERSPECTIVES

### THE EUROPEAN LOW FARES AIRLINE ASSOCIATION

Whilst supporting the inclusion of aviation into the EU ETS, ELFAA is critical of “the plethora of so-called “environmental” taxes being imposed by Member State Governments on aviation”. “In the UK, for example, current Air Passenger Duty generates sufficient revenue to off-set aviation emissions more than four fold” it says, identifying what it sees as two major weaknesses of environmental taxes on aviation: that they rarely relate to the actual environmental impact of particular airlines, and that revenue is not ring-fenced to fund research to reduce aviation’s impact on the environment. The ELFAA hopes that Governments will be discouraged from imposing what it calls “further unnecessary and unjustified ‘environmental’ taxes”.<sup>11</sup>

### ENVIRONMENT AUDIT COMMITTEE (EAC)

The Environmental Audit Committee has a very different view. It says air passengers should face “a significant increase” in taxes, including a new charge for the longest flights, to help combat climate change. They state: “We are puzzled as to why the Treasury has not been bolder in communicating the benefits of green taxes in order to win greater public acceptance for them,”<sup>12</sup> and note that higher “green taxes” would cut demand for air travel, help conserve resources, and raise money that could be used for environmental projects. Aviation is “very lightly taxed”, it claims, with a 29 percent cut in real terms between May 1997 and February 2007.<sup>12</sup>

Another contested area relates to tourism. Aviation enables inward tourism to the UK and allows UK residents to fly to holidays abroad, but there is disagreement on the nature and scale of the

resulting tourism impacts – at global, national and regional levels – and the extent to which they are substituting for other forms of development.

11 [www.elfaa.com/ELFAAPressRelease\\_ETS\\_160408.pdf](http://www.elfaa.com/ELFAAPressRelease_ETS_160408.pdf)  
12 [www.publications.parliament.uk/pa/cm200708/cmselect/cmenvaud/149/149.pdf](http://www.publications.parliament.uk/pa/cm200708/cmselect/cmenvaud/149/149.pdf) p10

## DIFFERENT PERSPECTIVES

### FRIENDS OF THE EARTH (FOE) AND TRAVELOGDE

FoE says “The UK runs a massive economic deficit from air travel. Foreign visitors arriving by air spent nearly £11 billion in the UK in 2004, but UK residents flying out spent £26 billion abroad.”<sup>13</sup> This means an overall economic loss to the UK economy, and hits English tourist attractions and rural economies. Travelodge agrees, and accuses the budget airlines of “squeezing the life out of the British holiday.”<sup>14</sup> It says that the economic deficit has grown from £4 billion to £20 billion, partly from the growth in regional airports. For every two foreign visitors that are coming into this country for a holiday, five UK residents are going the other way.

### THOMSON

The travel company, Thomson, says that this is a myth. In the ‘mythbuster’ section of their sustainable tourism, they state that: “Aviation

supports the tourism industry which is the 5th largest industry in the world. Tourism generates nearly £25.3bn annually to the UK economy whilst the UK aviation industry contributes £11.4bn and employs over 180,000 people. Reducing the amount people fly would substantially reduce the economic benefit to the UK economy as well as substantially impacting overseas destinations such as Cyprus whose travel and tourism industry account for 23% of its GDP and nearly 30% of total employment.”<sup>15</sup>

### The Cooperative Travel

In the summer of 2008, The Cooperative Travel became the first major travel retailer in the UK to reject the building of the planned third runway at Heathrow. Mike Greenacre, Managing Director of The Co-operative Travel, said “Ultimately, a line in the sand has to be drawn for new runways in the UK.”<sup>16</sup>

An emotive debate was sparked off by the Soil Association’s proposals to set new conditions on farmers and wholesalers, who use air freight, yet want to continue to be certified as organic. The amount of food flown to Britain more than

trebled between 1992 and 2006. More than 60 per cent of this food travels in the hold of passenger aircraft.<sup>17</sup> Although only 1 per cent of organic food is air freighted,<sup>18</sup> industry is concerned that the move could set a precedent against air freighted food.<sup>19</sup>

## DIFFERENT PERSPECTIVES

### THE SOIL ASSOCIATION

The Soil Association has decided that it should only certify air freighted organic food if it delivers genuine benefits for farmers in developing countries. To do this, it will have to meet the Soil Association’s own Ethical Trade Standards or the Fairtrade Foundation’s standards. Anna Bradley, chair of the Soil Association’s Standards Board said: “It is neither sustainable nor responsible to encourage poorer farmers to be reliant on air freight”. The Soil Association argues that the vast majority of the farmers who export organic produce to Britain are not small growers but foreign-owned multinationals who would not be damaged by a ban but would have to improve their trading terms.<sup>20</sup>

### THE CO-OP

The Co-op argues against the policy, saying that air freight is a relatively small part of the total environmental impact of a product. It claims that measures such as those proposed by the Soil Association risk increasing poverty in parts of Africa and elsewhere that rely on aircraft for access to markets. It says “We believe it doesn’t make sense, at the most fundamental level, for the Soil Association to focus on air freight, when the environmental impact of meat and dairy products and use of forced heating in glasshouses [which the Soil Association acknowledges incur high carbon footprints] are not subject to an equivalent level of scrutiny and public discussion.”<sup>21</sup>

13 [www.foe.co.uk/resource/briefings/regional\\_tourism\\_deficit.pdf](http://www.foe.co.uk/resource/briefings/regional_tourism_deficit.pdf) p2

14 [www.parliament.the-stationery-office.co.uk/pa/cm200708/cmselect/cmcmums/13/8012904.htm](http://www.parliament.the-stationery-office.co.uk/pa/cm200708/cmselect/cmcmums/13/8012904.htm) Q397

15 <http://destinations.thomson.co.uk/devolved/sustainable-tourism/tourism-transport.html>

16 [www.thenews.coop/news/Retail%20Societies/1410](http://www.thenews.coop/news/Retail%20Societies/1410)



## The potential role of cleaner aircraft and of alternatives to flying



In 2002, the Advisory Council for Aeronautical Research in Europe (ACARE) set out a series of targets for improving aviation technology by 2020.<sup>22</sup> These include:

- developing technologies to reduce the environmental impact of aviation with the aim of halving the amount of carbon dioxide (CO<sub>2</sub>) emitted by air transport
- cutting specific emissions of nitrogen oxides (NO<sub>x</sub>) by 80%, and halving perceived noise
- reducing soot, water vapour and particulates emissions.

The ACARE targets are not controversial in themselves. Indeed, they are broadly welcomed. The dispute is over how likely these targets are

to be met and therefore the extent to which they should be assumed in making decisions about airport expansion.

### DIFFERENT PERSPECTIVES

#### FLYING MATTERS

In a letter sent to MPs, and re-produced with commentary on the Plane Stupid website, Flying Matters says that technological improvements are vital to sustainable aviation, and that considerable financial and resource investments are being made across the industry to achieve this. They cite research via ACARE in green engine technologies, alternative fuels, novel aircraft/engine configurations etc. The aerospace sector spends more than £2.5 billion a year in funding this research and development, and the rewards of this investment, it says, are already paying off – the latest aircraft achieve a minimum of 20 per cent improvement in fuel efficiency over mid-generation aircraft and more than 40 per cent over old-generation aircraft.<sup>23</sup>

#### PLANE STUPID

Plane Stupid has a very different view. In its commentary on the letter, it argues that whilst the development of a prototype 'green plane' is worthwhile, it will do little in the short term to help meet CO<sub>2</sub> targets for two reasons. The first is the cycle of investment – by 2020 only 36% of the existing world passenger fleet will be retired. The second is that plans for massive aviation growth far out-strip any efficiency gains, with CO<sub>2</sub> emissions by aircraft forecast to double.<sup>23</sup>

#### GERMAN ENVIRONMENT MINISTRY

A recent study for the German Environment Ministry, concluded that efficiency improvements will not dramatically affect the performance of the German air fleet until after 2045. Although more efficient engine features are now available, improvements beyond 10 per cent are not in sight and new, more efficient planes now going into service would not be a major part of fleets until 2017.<sup>24</sup>

17 [https://statistics.defra.gov.uk/esg/indicators/d410\\_data.htm](https://statistics.defra.gov.uk/esg/indicators/d410_data.htm)

18 [www.soilassociation.org/web/sa/saweb.nsf/d39dda83e1f3c019802570ad005b4516/3a1c3d1cc0d10bff8025737f002d919b!OpenDocument](http://www.soilassociation.org/web/sa/saweb.nsf/d39dda83e1f3c019802570ad005b4516/3a1c3d1cc0d10bff8025737f002d919b!OpenDocument)

19 [www.balpa.org.uk/BALPA-Camp/AviationEnv/Pub/BALPA\\_REPORT%20with%20final%20footnote%20corrections.pdf](http://www.balpa.org.uk/BALPA-Camp/AviationEnv/Pub/BALPA_REPORT%20with%20final%20footnote%20corrections.pdf)

20 [www.soilassociation.org/web/sa/saweb.nsf/d39dda83e1f3c019802570ad005b4516/3a1c3d1cc0d10bff8025737f002d919b!OpenDocument](http://www.soilassociation.org/web/sa/saweb.nsf/d39dda83e1f3c019802570ad005b4516/3a1c3d1cc0d10bff8025737f002d919b!OpenDocument)

21 [www.thegrocer.co.uk/grt\\_article.aspx?articleid=109866](http://www.thegrocer.co.uk/grt_article.aspx?articleid=109866)

22 [www.acare4europe.org/docs/es-volume1-2/volume2-03-environment.pdf](http://www.acare4europe.org/docs/es-volume1-2/volume2-03-environment.pdf)

23 [www.planestupid.com/?q=blogs/2007/12/6/flying-matters-versus-climate-change-bill](http://www.planestupid.com/?q=blogs/2007/12/6/flying-matters-versus-climate-change-bill)

24 Aircraft improvements "insignificant until 2045" Article, ENDS Europe Daily 28/05/08 [www.endseuropedaily.com/articles/index.cfm?action=month&m=5&y=2008](http://www.endseuropedaily.com/articles/index.cfm?action=month&m=5&y=2008)

In principle, choice is good. For example, a faster and more efficient rail system and access to high quality video-conferencing, should provide attractive alternatives to flying in some circumstances. There are, however, very different views about the extent to which these alternatives will be realised, whether they are, in fact, less damaging, and whether they will be taken up by those currently flying. The point is significant for two reasons:

- Part of the economic case for airport expansion rests on the assumption that more people will travel as a result. If more of this latent demand can be met in other ways, then the economic case for aviation expansion is weakened
- The case for the alternatives depends on them having fewer, primarily environmental, costs. Environmental performance needs to be measured on a specific route by route basis. Longer flights, for example, may be more efficient per km because take off and landing is a smaller proportion of the total, but less efficient because of the volume of fuel carried. Network Rail is now to undertake a feasibility study on five new high speed rail routes in the UK. This creates a rather different picture of potential alternatives to domestic flights than the one evident when the Heathrow debate began.

## DIFFERENT PERSPECTIVES

### WWF AND THE RAIL MARITIME AND TRANSPORT UNION

WWF says that alternatives will reduce flying. In its interviews with businesses, it found that 89% expect to fly less over the next 10 years, and 85% said that videoconferencing can help them reduce their flying.<sup>25</sup>

RMT agrees. Its report, *Who Says There Is No Alternative?*,<sup>26</sup> suggests that tens of thousands of new jobs would be created and air pollution levels would fall if the level of investment planned for Heathrow airport was instead available for new high speed rail lines. The report says that well over a third of flights from Heathrow are short-haul, that more than 20% go to destinations already served by a viable rail alternative, and that another one in five are to places where rail is the potential alternative. The RMT argues that where high-speed rail links have been opened there has been a significant switch from air to rail, and warns that the UK is in danger of being left behind as countries like Spain reap what they see as the benefits of massive rail investment.

### BRITISH AIR LINES PILOTS ASSOCIATION (BALPA)

Balpa disagrees. It argues that aviation has become a scapegoat for global warming when it is no worse than many of the alternatives. Its research report *Aviation and the Environment* (2007)<sup>27</sup> acknowledges that, on average, trains are less polluting than aircraft per passenger per kilometre. However, passengers making journeys over 800 kilometres or by the new generation of high speed trains now in use on mainland Europe would be responsible for emitting more carbon dioxide than if they had flown the same distance. Shipping and cars are the biggest source of air pollution – “Yet no-one is calling for restrictions on high speed train travel or for an end to ocean cruises” it says “and no-one is calling for any dramatic cutback in car travel, the biggest polluter of all transport modes”.

25 [www.wwf.org.uk/travellinglight](http://www.wwf.org.uk/travellinglight)

26 [www.rmt.org.uk/Templates/Internal.asp?NodeID=107759&int1stParentNodeID=89732](http://www.rmt.org.uk/Templates/Internal.asp?NodeID=107759&int1stParentNodeID=89732)

27 [www.balpa.org.uk/BALPA-Camp/AviationEnv/Pub/BALPA\\_REPORT%20with%20final%20footnote%20corrections.pdf](http://www.balpa.org.uk/BALPA-Camp/AviationEnv/Pub/BALPA_REPORT%20with%20final%20footnote%20corrections.pdf)



## The local noise and pollution impacts of airports



The EU Air Quality Framework Directive requires all member states to stay within set limits for air pollutants and there is no dispute that aviation expansion should be within these limits. Aircraft and road vehicles at and around airports emit a number of pollutants, particularly nitrogen dioxide (NO<sub>2</sub>), as well as fine and ultra-fine particles, which impact on human health and the environment.

Some limits are already in force; those for others – such as NO<sub>2</sub> – will be in place by 2010. Air quality monitoring and modeling has shown that the area around Heathrow is of particular concern, with NO<sub>2</sub> concentrations already above forthcoming EU limits.

The Government has made it clear that major new airport developments cannot proceed if there is evidence that this would result in breaches of EU air quality limits. The dispute is whether the measures proposed by government to reduce pollution will work, particularly since many are out of its direct control.

### DIFFERENT PERSPECTIVES

#### DEPARTMENT FOR TRANSPORT

In its consultation document *Adding Capacity at Heathrow*,<sup>28</sup> the DfT says the expansion of Heathrow will not exceed NO<sub>2</sub> limits. This claim is based on the offsetting of increased aircraft movements by technological improvements in aircraft design, changes to the mix of aircraft using the airport, and a reduction in car-related emissions.

#### ENVIRONMENT AGENCY

The EA says that the evidence presented by DfT is insufficiently robust to allow these conclusions to be drawn. It claims that the assessment of air quality pays insufficient attention to the range of possible future scenarios for road traffic around the airport, meteorological variability, climate change, background air quality and atmospheric quality. It notes a lack of “firm plans and agreed measures”.<sup>29</sup>

Limiting noise from aircraft is considered as part of the planning approval process for airport expansion. Modern aircraft are generally less noisy than their predecessors. In 1974, around two million people

experienced noise levels of 57 decibels or more around Heathrow. Today, this number has been reduced to 300,000 people, but increased numbers of flights threaten to reverse this trend.<sup>30</sup>

28 [www.dft.gov.uk/consultations/closed/heathrowconsultation/consultationdocument/](http://www.dft.gov.uk/consultations/closed/heathrowconsultation/consultationdocument/)

29 [www.ies-uk.org.uk/news/Heathrow%20Response%20v2.pdf](http://www.ies-uk.org.uk/news/Heathrow%20Response%20v2.pdf) p3

30 [www.airportwatch.org.uk/news/detail.php?art\\_id=933](http://www.airportwatch.org.uk/news/detail.php?art_id=933)

In an attempt to ensure that its policies command the widest possible confidence, the Government commissioned a major study into aircraft noise in 2001. The resulting study, *ANASE – Attitudes to Noise from Aviation Sources in England*, was published in 2007.<sup>31</sup> The study was carried out by a team of international experts led by MVA Consulting.

It found that for the same aircraft noise, people are more annoyed in 2005 than they were in 1983, and that the number of aircraft noise events significantly affects levels of annoyance. The research was peer reviewed, and disagreements arose about the extent to which the study was sufficiently robust to be used to inform government policy.

## DIFFERENT PERSPECTIVES

### HACAN CLEAR SKIES

This group claims that full findings of the ANASE study make it impossible to expand Heathrow. In the 2003 Air Transport White Paper they say, the Government committed to stop expansion at Heathrow if the area within the 57 decibel cut-off point were to exceed the size it was in 2002. The ANASE Report has now found that the 57 decibel cut-off point would appear to underestimate the onset of community disturbance.<sup>32</sup>

### CAA AND BUREAU VERITAS

Stephen Turner (Director of Acoustics at Bureau Veritas) and Peter Havelock, Head of Environmental Research and Consultancy Department at the Civil Aviation Authority, were involved in peer review of the ANASE findings. They expressed strong concerns over the robustness of the ANASE study in relation to the measurement of annoyance (while other peer reviewers focused on the section of the report that attempted to place a cost on aircraft noise). The reviewers counselled against using the findings to inform government policy.<sup>33</sup>

31 [www.dft.gov.uk/pgr/aviation/environmentalissues/Anase/](http://www.dft.gov.uk/pgr/aviation/environmentalissues/Anase/)  
32 [www.hacan.org.uk/news/press\\_releases.php?id=203](http://www.hacan.org.uk/news/press_releases.php?id=203)  
33 [www.dft.gov.uk/pgr/aviation/environmentalissues/Anase/nonspeerreview.pdf](http://www.dft.gov.uk/pgr/aviation/environmentalissues/Anase/nonspeerreview.pdf)



## Conclusion



During the next few months, the Department for Transport will be producing a *Sustainable Transport Strategy*. We believe that this is an excellent approach which has the potential, if done well, to take a fundamental, systems based, technology-neutral look at the mobility needs of the UK. Aviation must be viewed as part of this broader system, set alongside transport alternatives and other ways of meeting the needs of citizens which require less travel per se.

At the same time, the government is under pressure to make a decision about the expansion of Heathrow and other airports, and quickly to develop the National Policy Statement on Airports. It is argued by many that further delay will damage business and the economy. Others say, equally vociferously, that to expand airports now is to lock UK aviation into a model of unsustainability. Who is right? In the SDC we believe that as things stand it is impossible for the government to assess whether further airport expansion could be justified within a sustainable transport policy and carbon limits.

This huge tension – between the need to make tactical decisions now and the need to get the overall strategic direction of aviation policy right – is very difficult for the government to manage. That is why we believe that an independent review will help, not hinder, clear decision making by:

- **Setting out where there are gaps in the evidence base, how they can be filled, by whom and by when**
- **Identifying where existing evidence is contested, and the extent to which methodologies can be refined and conflicting assumptions about use of data be reconciled**
- **Through deliberative public engagement, establish more consensus on the appropriate way forward given the uncertainties thus revealed.**

Acknowledging the many legitimate reasons for our desire to fly, without taking a disproportionate share of our future carbon budget, is a difficult challenge for any Government. This approach will, we believe, make that task a little more achievable.



**Sustainable**  
Development Commission

[www.sd-commission.org.uk](http://www.sd-commission.org.uk)

### **England**

(Main office)

55 Whitehall

London SW1A 2HH

020 7270 8498

[enquiries@sd-commission.org.uk](mailto:enquiries@sd-commission.org.uk)

### **Scotland**

Osborne House

1 Osbourne Terrace, Haymarket

Edinburgh EH12 5HG

0131 625 1880

[Scotland@sd-commission.org.uk](mailto:Scotland@sd-commission.org.uk)

[www.sd-commission.org.uk/scotland](http://www.sd-commission.org.uk/scotland)

### **Wales**

Room 1, University of Wales

University Registry, King Edward VII Avenue

Cardiff CF10 3NS

029 2037 6956

[Wales@sd-commission.org.uk](mailto:Wales@sd-commission.org.uk)

[www.sd-commission.org.uk/wales](http://www.sd-commission.org.uk/wales)

### **Northern Ireland**

Room E5 11, OFMDFM

Castle Buildings, Stormont Estate,

Belfast BT4 3SR

028 9052 0196

[N.Ireland@sd-commission.org.uk](mailto:N.Ireland@sd-commission.org.uk)

[www.sd-commission.org.uk/northern\\_ireland](http://www.sd-commission.org.uk/northern_ireland)