Independent Transport Commission Call for Evidence
Air Futures: What are the strategic choices for aviation capacity in the UK?

Response from the Aviation Environment Federation, 31.10.12

The Aviation Environment Federation (AEF) is the principal UK NGO concerned exclusively with the environmental impacts of aviation. Supported by individuals and community groups affected by the UK's airports and airfields or concerned about aviation and climate change, we promote a sustainable future for aviation which fully recognises and takes account of all its environmental and amenity affects. As well as supporting our members with local issues, we have regular input into international, EU and UK policy discussions. Last year we acted as the sole environmental and community representative on the Government's South East Airports Taskforce. At the UN we are the lead representative of the environmental umbrella organisation ICSA which is actively engaged in the current talks aimed at agreeing global climate measures for aviation.

1. Is there a need for greater aviation connectivity and capacity in the UK, and of what type?

As we consider it important that questions about the UK's connectivity are not conflated with questions about airport capacity, our answer is split into two parts.

Airport capacity

The concept that the UK is facing an urgent airport capacity crisis is a myth. Here, we provide two pieces of evidence that lead, we believe, to this conclusion.

Ever-decreasing demand forecasts

The latest forecasts of passenger demand were published by the Government in August 2011 and show a significant reduction in expected future levels of demand compared with the previous forecasts, produced as recently as 2009. In fact, this should come as no surprise. The aviation forecasts have been revised four times since 2003 and each time downwards.

In the heady days of the Air Transport White Paper, the Government's belief, based on its passenger forecasts, was that even though it would be wrong (for environmental reasons) to adopt a 'predict and provide' policy to airports in which all demand was met, new runways were nevertheless needed at Heathrow, Stansted, the Midlands and Scotland in order to cope with expected growth. The latest forecasts, by contrast, indicate that despite no new runways having in fact been built, there would be sufficient airport capacity, even in the South East, to cater for all passenger demand until nearly 2030. Even if no new runways were built anywhere in the UK, less than 3% of potential air traffic would be squeezed out by 2030. ('Constrained demand' at 2030 is 335mppa, compared with unconstrained demand of 345mppa.)

We published a detailed analysis earlier this year[1] indicating that even the latest forecasts are probably still too high, as they assume a resumption in economic growth at around 2% pa or above and continuing indefinitely, and no increase in oil prices (despite evidence of increasing demand and increasingly difficult and expensive approaches to extraction). Our current understanding based on conversations with Government officials is that, indeed, when the forecasts are next reviewed they will drop still further as economic recovery has not taken place as quickly as anticipated.

The numbers of unconstrained passengers are shown below, in tabular and graph form, with the previous forecasts (January 2009 and November 2007) for comparison.

Year	Passengers in millions Aug 2011 forecast	Passengers Jan 09 forecast	Passengers Nov 07 forecast
2005		228	228
2010	211	260	270
2015	240	315	335
2020	275 (65, 30%)	365	385
2025	310	410	440
2030	345 (70, 25.5%)	465	495 (501 in 2003 Air Transport White Paper)
2035	380		
2040	425 (80, 23.2%)	589	
2045	475		
2050	520 (95, 22.3%)	737	

Note - Numbers in brackets are the growth over the decade concerned, expressed as an absolute number and a percentage.

[1] http://www.aef.org.uk/uploads/AEF_Passenger_Forecasts_analysis_1.pdf
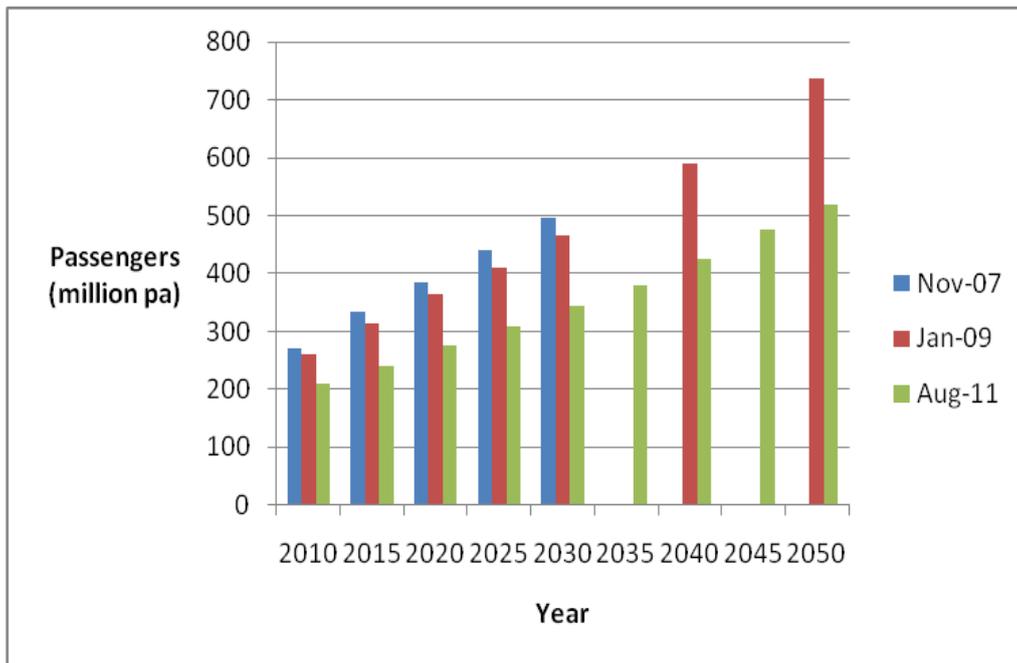
Government forecasts have recently come in for something of a battering. The aviation forecasts are certainly fallible, as indicated by the number of times they have been adjusted since 2003. But they are rigorously produced and improvements to the assumptions have been made over time so the official figures can serve as a useful check against the often wildly exaggerated forecasts by airports, produced to support business plans and please shareholders.

Aviation and UK climate policy

AEF believes that a close reading of the advice of the Committee on Climate Change in relation to aviation, together with analysis we have undertaken for WWF-UK on existing UK airport capacity, suggests that there is already sufficient airport capacity in the UK to cater for the maximum level of aviation growth that would be possible without breaching the Climate Act.

Background

The UK's Climate Act 2008, like the Kyoto Protocol and successor global climate agreements, omitted emissions from aviation and shipping on the basis of difficulty in attributing them appropriately to nation states. Nevertheless, the Act included a clause requiring the Government to review the situation in 2012 and either to include these emissions or to explain to Parliament why they should continue to be left out.

In the same year – 2008 – the EU agreed that from 2012 emissions from all flights entering or departing from the EU would be included in its Emissions Trading System. Though this has prompted opposition from many states outside Europe, it has also stimulated renewed discussion at the UN's ICAO (nominated under the Kyoto Protocol to tackle emissions from international aviation) about possible global measures. The equivalent body for shipping, IMO, has also made some progress in that it has now agreed minimum efficiency standards for ships.

Latest CCC recommendations to Government

In April 2012, the Committee on Climate Change, created under the 2008 Climate Act and charged with advising Government on whether aviation and shipping should be included in the UK's carbon budgets from 2012, recommended that there were no longer good reasons to exclude either sector, arguing that data generated as a result of aviation's inclusion in EU ETS, together with the IMO shipping efficiency targets and projections, now make inclusion possible. CCC also advised that the Government should assume for planning purposes that international aviation emissions in the UK are no higher in 2050 than they were in 2005, in other words no higher than 35 MtCO2e. A detailed consideration of this advice is provided in an AEF briefing paper[2] published in May this year.

The recommendations in fact tie in closely with analysis produced by CCC in 2009[3] in response to the then Government target for UK aviation emissions to be no higher in 2050 than in 2005. CCC concluded that under such a target, growth in the sector was possible, but not at the level that was then forecast. Taking into account likely technological improvements, more efficient air traffic management, carbon pricing up to £200/tCO2 and the introduction of some aviation biofuels, passenger numbers could grow by around 60% of 2005 levels by 2050, said the Committee, but not by the 115% that could arise without additional policy measures.

At the time, CCC were basing their airport capacity assumptions on the 2003 White Paper and therefore assumed new runways at Edinburgh, Heathrow and Stansted. The DfT's 2011 forecasts for passenger demand and CO2 emissions, being published after the Coalition Government announced effective suspension of the 2003 White Paper for national policy purposes, assumed no new runways. Nevertheless, as a result of alternative assumptions about how readily demand transfers from one airport to another (as well as slightly different assumptions in relation to fuel efficiency and biofuels), the DfT forecasts for both passenger numbers and CO2 emissions were remarkably similar to CCC's. Even assuming no new runways anywhere in the UK, and with passenger numbers predicted to grow by just 2% per year, DfT forecast an increase in passenger numbers of 123% over 2005 levels (as against CCC's target-compatible 60%), with emissions increasing to 49 MtCO2 rather than then target of 37.5 Mt.

Implications for airport capacity considerations

To better understand the implications for airport capacity of compliance with that target, WWF-UK asked AEF to assess the maximum terminal and runway capacity at UK airports, including both existing capacity and that for which planning permission (or permitted development rights) had already been granted[4]. Based on an airport-by-airport review of all the airports identified in the 2003 Air Transport White Paper as requiring a master plan, and a national aggregation of these figures, AEF's work suggested that sufficient airport runway capacity exists today to accommodate the maximum level of growth considered possible by the Committee on Climate Change at both a national and regional level.

[2] http://www.aef.org.uk/?p=1430
[3]
http://downloads.theccc.org.uk/Aviation%20Report%2009/21667B%20CCC%20Aviation%20AW%20COMP%20v8.pdf
[4] http://www.aef.org.uk/?p=1393

The Liberal Democrats have now adopted policy, based on CCC's advice, that there should be no net increase in runways in the UK. Any new runway capacity that is built would need to be accompanied by the closing of a runway elsewhere. CCC itself is reluctant to be drawn into any of the political debate about runways. Nevertheless, when asked recently about his view of the statement by Tim Yeo MP that as a result of aviation's inclusion in the EU ETS "We could cover the whole of Surrey with runways and not increase emissions by a single kilogramme", CCC's Professor Sir Brian Hoskins said "If the European trading scheme worked in this sector and one built huge airports, those airports would not be used."[5]

Connectivity

Looking beyond aviation

We should not forget that connectivity can take many forms. It can include other transport modes such as rail (with Eurostar and the Channel Tunnel connecting the UK to many western European cities). And it can include options for transport replacement such as videoconferencing. In 2008 WWF-UK interviewed a sample of 100 FTSE 350 companies about their travel practices[6]. They found that:

- Over 70% of companies either had or were developing a corporate policy which encourages green business travel, i.e. use of lower carbon travel choices and alternatives.
- 62% of businesses said they were already reducing the carbon footprint of their business travel
- 89% of companies surveyed expected to want to fly less over the next 10 years
- 89% of companies believed that videoconferencing could improve their productivity
- 77% of companies expected to increase their rail travel.

A follow-up report in 2011[7] looked at changes to business travel and meeting practices within large UK companies during the UK's recession. It found that:

- 47% of respondents had reduced the number of business flights they had taken in the last two years.
- 63% of companies either had a policy in place to reduce business flights or were intending to implement one.
- Of those companies that had cut their flying, 85% did not intend to return to 'business as usual' levels of flying.

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[5] GLA Health and Environment Committee meeting 16th October 2012
http://www.london.gov.uk/moderngov/ieListDocuments.aspx?CId=256&MId=4617&Ver=4
[6] WWF, *Travelling Light: why the UK's biggest companies are seeking alternatives to flying*
http://www.wwf.org.uk/what_we_do/campaigning/one_planet_mobility/new_report__travelling_light/
[7] WWF, 2011 *Moving on: why flying less means more for business*
http://www.wwf.org.uk/how_you_can_help/get_your_business_involved/one_in_five_challenge/

- 91% agreed with the statement 'Reduced flying and greater use of alternatives are now important parts of our corporate responsibility agenda.'

This may be part of the explanation for why, contrary to the picture painted by the aviation industry in terms of its own importance for business connectivity, both the number of trips taken from the UK abroad for business, and the proportion of flights taken by business, has in fact fallen in recent years[8].

Aviation connectivity

We would not deny that good air links to other parts of the world are important. The draft Aviation Policy Framework notes in Chapter 2 that:

> The UK is currently one of the best connected countries in the world. We are directly connected to over 360 international destinations.[26] Using available airline seat kilometres as a connectivity metric, only China's and the USA's aviation networks are more extensive than the UK's, and Germany and France are in fifth and eighth place respectively….

> London is an exceptionally well served capital city: its five airports (Heathrow, Gatwick, Stansted, Luton and London City) together serve more routes than any other European city.

In fact, however, direct flights are only part of the picture and in looking at how we maintain excellent connectivity in future, it should not be assumed that increasing the number of destinations served by direct flights from the UK is the only – or even the best – way to achieve this.

The truth is that there will never be more than a very small proportion of city-to-city or airport-to-airport pairs that have direct connections. To travel between the great majority of pairs will always involve a change of plane. This is not always a disadvantage, however. It can lead to a more frequent and cheaper service between cities than a direct low-volume service would because, when a journey involves a change, the individual legs of the journey are typically high frequency, competitive routes. It is already possible to travel from any UK airport to any other airport in the world suggesting that in fact, we have full connectivity.

We are not aware of any evidence showing that the UK cannot compete if a business traveller has to change plane. BAA and other organisations with a particular interest in Heathrow expansion commissioned a report[9] from Frontier Economics, published in September 2011, to make the argument that growth at Heathrow Airport is critical to ensuring that the UK does not lose out on access to Emerging Market destinations. It concluded that "UK businesses trade 20 times as much with Emerging Market countries that have a direct daily flight to the UK as they do with those countries that do not." It is not clear, however, whether these flights initiate trade or are offered in response to demand where strong trade links have already been established or are emerging.

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[8] February 2012 Health Protection Agency *Global and UK Travel Trends 2010* http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1317132797054

[9] *Connecting for Growth* http://www.frontier-economics.com/europe/en/news/1163

i.   Is there a need for greater 'hub' capacity or not?

The UK's connectivity must be seen in a wider context than that of a hub airport. Where it is proven that direct routes can be supported only by a hubbing operation, route prioritization and a detailed analysis of how alternative modes can relieve the pressure on existing slots and deliver passengers efficiently to the airport should be considered. Specifically in respect of Heathrow, our July 2011 analysis of airport capacity for WWF-UK demonstrates that there is still scope for Heathrow to grow within its existing limits and remain a successful hub airport.

Hubs and connectivity

For those passengers flying to or from an airport in South East England, the fact that it operates as a hub as well as a terminating airport is of little relevance. Meanwhile, for those who do not live or work in South East England but want to do business abroad, having a hub airport in the UK is unimportant. There is no generalised advantage for someone flying from, say, Aberdeen to change plane at Heathrow or a Thames estuary airport compared with changing at Helsinki or Hong Kong.

There may well be a benefit for certain airlines or airport operators if passengers change plane at a particular (South East England) airport. However, this is a completely different matter to benefits for passengers or general UK economic benefits arising from business travel. Similarly, Heathrow's hub operations may help improve connectivity for people flying between other countries, but this should not be a primary aim of UK aviation policy. Virgin Atlantic, for example, recently announced a new service from Delhi to New York's JFK via Heathrow, following the success of its Delhi-Newark route which also connected at Heathrow. In direct contradiction of the concept that direct routes are always preferable, Stephen King, Virgin's general manager in India said: "Our increasing share to Newark shows that passengers prefer breaking the journey in half, stretching their legs and indulging in some duty-free shopping. We're looking forward to making this new service to JFK a success."[10]

The argument made by supporters of hub airports is that, by attracting foreign passengers who are not terminating in the UK, they make the demand for potential (direct) routes larger. They can therefore make a route viable which it would otherwise not be. We have seen little evidence to support this claim, however. In fact, while Heathrow's passenger numbers have steadily increased over time, even under its movements cap, the number of destinations it serves has actually decreased.

Hubs and direct economic benefits

It is regularly asserted that by not expanding Heathrow or creating a new hub airport in the South East, passengers will choose to hub elsewhere for example at Paris or Schiphol. Even if this was true, however, would it matter? It is important to note that the UK gains little direct economic advantage from transfer passengers, who pay no Air Passenger Duty and whose

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[10] http://www.southalltravel.co.uk/news/India/90402225/Virgin-Atlantic-to-Start-Flight-from-Delhi-India-to-JFK.html

spending in the UK amounts, as noted by David Cameron when in opposition, to little more than a cup of coffee at the airport[11]. Meanwhile, attracting foreign passengers to change planes at a hub airport in South East England justifies the selection of larger aircraft which subject communities to proportionately more noise and pollution.

ii. Is the need limited to South-East England or more widespread?

The only airport anywhere in the UK where there is a potential shortfall between demand and capacity over the next two decades is Heathrow. Nevertheless it is worth noting, in addition to our comments above in relation to airport capacity, that passenger numbers at the airport continue to increase year on year as a result of a trend towards use of larger aircraft. It should also be noted that, as described in chapter 4 of the Government's Draft Aviation Policy Framework, "Heathrow has a significantly greater noise impact per flight than any other major European airport." Any increase in capacity at Heathrow would thus carry a huge environmental penalty.

2. Over what timescales do we need to solve our aviation needs, both in the short and the longer term?

As described above, AEF's view is that climate change considerations suggest that there should be no increase in aviation capacity between now and 2050.

3. What would be the implications of failing to provide additional capacity?

We consider that this question is expressed in unnecessarily negative terms. A decision to make best use of existing capacity rather than increasing it would bring real environmental benefits, as considered below.

4. What are the key criteria for determining environmental acceptability of any development?

AEF considers that the aviation sector should operate within environmental boundaries determined by society's collective demands for clean air; for homes, schools and workplaces that are not spoiled by intrusive noise; and for effective action on climate change. This principle applies as much to existing airports as to any proposed development. AEF's views in terms of an acceptable environmental framework can be summarised as follows. We would be happy to provide more detail on any of these issues.

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[11] Evening Standard, 16th June 2008

In relation to climate change:

- Global measures should be agreed to tackle aviation emissions. AEF is actively participating in the UN discussions to try to progress this agenda, but it is heavily politicised and historically progress has been frustratingly slow.
- Inclusion in the EU Emissions Trading System represents, in the meantime, a good first step towards bringing the sector into line with climate goals; the UK and EU should resist pressures to weaken or abandon the current provisions.
- In the UK, aviation must be included in the Climate Act and carbon budgets.
- The Government must be realistic about the part that aviation will need to play in achieving long term emissions reductions. The Committee on Climate Change states that the Government's vision for UK aviation should be based on the assumption that actual UK aviation emissions (without trading) will be no higher in 2050 than in 2005; they are currently forecast to be considerably higher than this. AEF believes that this level of ambition represents the very minimum that should be expected of the sector. In several ways we regard it as undesirably generous to aviation as:
  a. it would be 4 Mt per year higher than the UK's share of the EU ETS cap for aviation – 31 Mt CO2e.
  b. it would represent 120% growth compared with 1990 levels, as against the 90% cuts expected from most other sectors of the economy, many of which are far less discretionary than air travel.
  c. There is no safety net for non-CO2 impacts as aviation's non-CO2 impacts – principally NOx and water vapour – are not accounted for in the Kyoto 'basket' of greenhouse gases. Climate scientists have yet to agree on the ideal metric to take account of aviation's non-CO2 impacts but existing research strongly indicates that aviation emissions are around twice as harmful in terms of global warming as CO2 alone.

In relation to noise:

- The Government should determine in quantitative terms the noise limits within which the aviation industry should operate.
- Exposure to environmental noise has significant health impacts including stress and heart attacks. The long term aim should be for no-one to live in areas exposed to noise at levels deemed harmful to health by the World Health Organisation[12].
- In relation to annoyance, it is clear from work undertaken by the UK Government[13] as well as from a number of studies elsewhere in Europe[14], that for any given level of average aircraft noise people are more annoyed now than they were in the past, and that annoyance from aviation is heavily influenced by the number of noise events. We see no

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[12] See WHO *Guidelines for Community Noise* 1999 http://www.who.int/docstore/peh/noise/guidelines2.html and WHO Europe *Night Noise Guidelines for Europe* 2009 http://www.euro.who.int/__data/assets/pdf_file/0017/43316/E92845.pdf
[13] Department for Transport 2007, *Attitudes to Noise from Aircraft Sources in England*
[14] These are summarised in *Good practice guide on noise exposure and potential health effects*, Technical report No 11/2010, European Environment Agency

justification for the Government's refusal to adjust downwards its figure for the onset of significant community annoyance: 57 dBA Leq.

- Currently noise management at the three 'designated' airports – Heathrow, Gatwick and Stansted – is by the Government. The case should be considered for similar or comparable intervention at other airports where the noise impact is similarly severe.

In relation to air pollution:

- The Government should ensure that NO2 emissions in the Heathrow area, which remain in breach of EU legal limit values, are effectively tackled.
- Aside from compliance with EU law, the Government should review its approach to air pollution at airports in light of recent research[15] estimating that that "UK airport emissions cause about 110 early deaths per year today," with the figure predicted to rise by 170% by 2030.

5. If more capacity is needed, what are the main options to solve this and what are the issues they raise?

N/A

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[15] Barrett S et al, October 2012, *Air quality impacts of UK airport capacity expansion*
http://lae.mit.edu/wordpress2/wp-content/uploads/2012/10/LAE-2012-010-R-v1.pdf
[15] http://www.heathrowairport.com/static/Heathrow/Downloads/PDF/air-quality-strategy_LHR.pdf