Evidence to the Airports Commission from the Aviation Environment Federation

Comments on Discussion Paper 01: Aviation Demand Forecasting

15.3.13

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. In 2011 we acted as the sole community and environmental 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.

The role of passenger forecasts and the move away from 'predict and provide' as a policy approach for aviation

Passenger demand for aviation should not, in our view, dictate airports policy. We have been pleased, therefore, that during the past decade the Government has moved from an overt 'predict and provide' policy to one of assessing a range of desired outcomes from transport. As noted in the Government's 2003 WebTag guidance: "The Government's White paper *A New Deal for Transport: Better for Everyone* (DETR, 1998) sets in place the policy context for dealing with transport and highlights the complexity of transport problems and the interaction with other policy areas… The White paper framed the move away from 'predict and provide' solutions to transport problems and put at the core an integrated transport policy."[1]

It is questionable whether the 2003 White Paper on Aviation was in fact successful in making this transition. The Environmental Audit Committee's third report, for example, writes "Despite protestations to the contrary, it is abundantly clear that the aviation White Paper adopts a "predict and provide" approach. The DfT has forecast future demand and then provided the framework to meet practically all of it. It is actively promoting growth on the scale envisaged, and indeed the urgency with which it is requiring airport operators to implement expansion plans bears this out." Notwithstanding many references to environmental commitments, argues the EAC, "The balance the Government has in fact struck is skewed decisively in favour of aviation."[2]

[1] DfT, June 2003, TAG Unit 1.1 Introduction to Transport Analysis
http://www.dft.gov.uk/webtag/documents/overview/unit1.1.php
[2] Select Committee on Environmental Audit, third report, March 2004, Introduction
http://www.publications.parliament.uk/pa/cm200304/cmselect/cmenvaud/233/23305.htm

By 2009 there were signs that this and similar criticisms were beginning to be heeded, with the government announcing that aviation could in future grow only within the constraint that the sector's emissions in 2050 would need to be no higher than in 2005. This target (and the subsequent advice of the Committee on Climate Change that to meet it, aviation policy would need to be revised) suggested a fundamental shift in approach.

Before the government could respond to this advice, the general election brought in a new team of ministers. The current Government appears to agree, however, that aviation policy must in future be framed within firmer climate limits than has been the case in the past. The ministerial introduction to the 2011 Aviation Scoping Document stated "The previous government's 2003 White Paper, *The Future of Air Transport*, is fundamentally out of date, because it fails to give sufficient weight to the challenge of climate change. In maintaining its support for new runways – in particular at Heathrow – in the face of the local environmental impacts and mounting evidence of aviation's growing contribution towards climate change, the previous government got the balance wrong. It failed to adapt its policies to the fact that climate change has become one of the gravest threats we face."

The key task for the Airports Commission is, in our view, how to put into practice the policy of addressing aviation capacity questions within a framework of appropriate environmental limits. We will set out in more detail our views on what implications these environmental impacts may have when the Commission publishes the relevant papers, and raise them here only to highlight our view that consideration of airport capacity should not be overly dominated by forecasts of demand.

In the case of noise and local air pollution, detailed consideration of likely impacts will be required in addressing whether any particular proposal for aviation expansion is potentially acceptable. In the case of climate change, the relevant question is more fundamental: how much aviation capacity at a national level can be accommodated within our climate change commitments? The groundbreaking 2009 study referred to above from the Committee on Climate Change addressed head-on the question of whether all forecast passenger growth could be accommodated within a specified climate constraint. Its unequivocal conclusion was that while in the most likely scenario a 60% growth in passengers could be compatible with the climate target, this "allowable demand increase is far below what would result if demand were unconstrained by carbon prices or limits on airport capacity. Deliberate policies to limit demand below its unconstrained level are therefore essential if the target is to be met." [3]

Section 3.35 of Discussion Paper 01 states "On the basis of the 2009 projections, , the Committee on Climate Change (CCC) deemed that UK aviation emissions would account for around 35% of total allowed UK greenhouse gas emissions in 2050 to meet an 80% emissions reduction target. The latest DfT projections would be expected to have implications for the CCC's conclusions, potentially meaning that aviation emissions would account for a lower proportion of the UK's total allowable greenhouse gas emissions in 2050."

[3] Committee on Climate Change, December 2009 *Meeting the UK aviation target – options for reducing emissions to 2050*: Chairman's Foreword

It is very important to be clear, however, that while the first sentence provides an accurate quote from page 35 of the CCC's 2009 report, the Committee has never said that 35% would be an *acceptable* share of 2050 emissions for aviation to take up. On the contrary, the 2009 report was based on an assumption that aviation emissions would not exceed 37.5 Mt CO2 – less than 25% of the 2050 carbon budget, and while the question of whether a gross national emissions target for aviation should be retained remains open, in all their preceding and subsequent work, including the setting of the legislated carbon budgets 1-4, CCC have assumed that aviation will take up no more than around 25% of national emissions by 2050. This would still, in our view, give aviation very lenient treatment compared with other sectors.

The relevance of unconstrained and constrained forecasts

The Commission states in section 1.9 of Guidance Document 01: "It is clear that we need a baseline view of the likely demand for flights in the future, both on an unconstrained basis, and within the context of the Government's policies, including, in the context of the Climate Change Act, anything it might conclude or decide about climate change, before we can make sensible decisions on capacity."

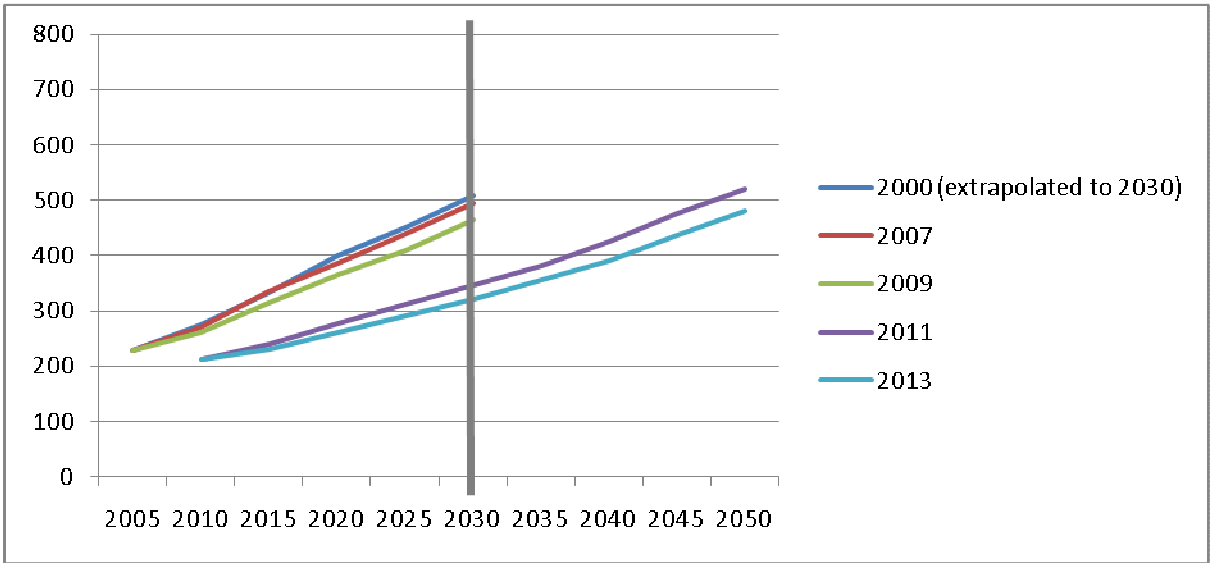
While the Government decided in December last year not to formally include aviation and shipping in currently legislated budgets, it both endorsed the current approach of the Committee on Climate Change in creating headroom in the budgets to allow aviation and shipping to be included in future and stated in its parliamentary report that: "Government reaffirms its overall commitment to the 2050 target and recognises that emissions from international aviation and shipping should be treated the same as emissions from all other sectors, in order to reach our long-term climate goals." It is very hard to conceive of a situation in which treating aviation and shipping the same as emissions from other sectors with respect to the legislated long term goal of an 80% emissions reduction on 1990 levels would not require constraint on the sector's absolute growth levels. It is therefore not very clear to us what further decision the Commission expects from Government before deciding whether or not climate change represents a necessary constraint on aviation growth.

Any consideration of the unconstrained demand forecasts should therefore be accompanied by a clear recognition that while potentially informative as an academic exercise, it is extremely unlikely that unconstrained growth could in fact be compatible with environmental commitments. A demand management approach to aviation does not compromise the wishes of the public; rather it recognises that individuals' desire to travel must be balanced against collective demands for environmental standards. The public expects living and working environments that are neither ruined by intolerable noise nor hazardous to health as a result of air pollution, and it was public demand that led to the creation of the Climate Act (the Act having originated as an Early Day Motion, and being one of only four in history to have been signed by more than 400 MPs, following public campaigning.)

The Commission asks a number of specific questions, and the remainder of our response is structured around these. We have not sought to answer all questions.

To what extent do you consider that the DfT forecasts support or challenge the argument that additional capacity is needed?

Our view, as indicated above, is that passenger demand should not be the ultimate determinant of airport capacity. To the extent, however, that it is a relevant consideration, we note that the forecasts provide a weaker case for airport expansion than they have ever provided since the government first produced them. The graph below illustrates how the DfT's unconstrained demand figures have changed over time: on each occasion since 2000 that the numbers have been revised, they have fallen, with previous expectations of high demand having failed to materialise.



DfT forecasts of unconstrained air passenger demand 2000 - 2013

The Commission's Guidance Document 01 states that "Aviation demand forecasts have been adjusted downwards, partly attributable to the recession, but also to higher oil prices and taxation." We are not aware of any evidence, however, that taxation is responsible for the downgrading of forecasts. Figure 8.2 of the latest DfT forecasts document explains the "change in central forecasts compared to the 2011 publication in terms of the contributions of each of the updated inputs, expressed as a percentage of the total overall change for that year." A footnote states that effects attributed to changes in APD are negligible, explaining why APD does not feature on the graph. No tax is levied on aviation fuel, leaving us confused about the basis for the Commission's comment on taxation.

Forecasts from 2012-2030

The latest DfT forecasts indicate that by 2030, only 1.6% of passenger demand will be squeezed out as a result of capacity restrictions, with excess demand for Heathrow resulting spilling over to other South East airports in the interim (unconstrained demand, based on central forecasts for maximum use, is predicted as 320 mppa by 2030, versus 315 mppa with existing capacity, both rounded by DfT to the nearest 5 mppa).

As business travel is less price-sensitive than leisure travel (with an elasticity, DfT indicates, of - 0.2 versus - 0.7), the proportion of business travel lost would be much less than 1.6%. Some of this would be interchange traffic where business people are simply travelling through the UK, bringing minimal economic benefit to the country. And in cases where business air travel transferred to rail (bearing in mind that a significant proportion of business flights are intra-European), no 'connectivity' would be lost.

We consider it possible that the forecasts are still too high (as detailed below). If this were to prove the case, and they were to continue the historical pattern of being downgraded, it seems likely that there would be sufficient capacity to meet all demand – both business and leisure – until at least 2030.

Forecasts from 2030-2050

Beyond 2030, the forecasts become considerably less certain as DECC oil price predictions are unavailable after this date. The model therefore assumes that oil prices, predicted to increase steadily from 115 US dollars/barrel in 2012 to 135 dollars/barrel in 2030, remain constant at that level between 2030 and 2050. We consider it very likely that this assumption results in an over-estimatation of passenger demand beyond 2030. One of the two key reasons given for the downgrading in demand forecasts between 2009 and 2013 (including the very significant drop in 2011) is that oil price had been underestimated by DECC.

Clearly the Commission will want to look beyond 2030 in its consideration of options for future airport capacity. We strongly urge, however, that any such consideration be heavily caveated on future reassessment of air passenger demand, as well as environmental factors. Meaningful figures will be possible to generate only when oil price projections become available (and even then should be treated with caution given the historical trend for falling demand forecasts). At present, we consider that the passenger forecasts provide only a weak case for airport expansion.

What impact do you consider capacity constraints will have on the frequency and number of destinations served by the UK?

AEF does not consider that serving a wide range of destinations with direct flights should be pursued as an end in itself, and we welcome the consideration given to the role of indirect flights in the Commission's recently published paper on aviation connectivity and the economy. We are not aware of any evidence indicating that the UK cannot compete effectively if some business journeys involve a change of plane, nor any evidence showing convincingly that trade growth follows provision of direct air links rather than the other way round. It will therefore be important for the Commission to consider critically the value of direct flights as against those involving a change – whether in the UK or elsewhere. 'Connectivity' should not simply be equated with the number of destinations served by direct flights.

Even if connectivity through direct air links were considered to be particularly valuable, however, it appears to us that the relationship between aviation activity and number of destinations served is

far from straightforward, with airports serving those destinations it is most profitable to serve, regardless of their desirability to policymakers.

During the past decade, for example, Heathrow – the UK's hub airport and the focus of much discussion about business connectivity – has reduced the number of destinations served while increasing its throughput considerably as indicated in the chart below.

Year	Passengers (million per annum)	Air Transport Movements (thousands)	Destinations served
2001	61	458	202
2011	69	476	200

Heathrow activity based on figures from CAA (2011 being the latest year for which annual statistics are currently available)

We were interested to note that Table 4.2 of the Commission's forecasting paper indicates that the number of destinations served by the UK would in fact be higher if airport capacity were constrained than it would be in the absence of constraints. As London airports are widely used by people travelling from elsewhere in the UK (including UK passengers using Heathrow as a hub), the loss of direct routes from London forecast in the chart as a result of capacity constraints should not, in our view, be overplayed, if these routes are available from other airports.

How effectively do the DfT forecasts capture the effect on UK aviation demand of trends in international aviation?

It is our understanding that the model does not account for passenger demand forecasts outside the UK, and we note that the forecasts document states explicitly that "Transfers of international passengers at … overseas hubs who do not originate in or visit the UK are not currently included. No capacity constraint is assumed at these overseas hubs."

How could the DfT model be strengthened, for example to improve its handling of the international passenger transfer market?

What approach should the Commission take to forecasting the UK's share of the international aviation market and how this may change in different scenarios?

We answer these two questions together. It seems possible to us that the DfT forecasts do not fully capture the impact of capacity constraints on passengers flying into the UK, changing plane, then flying out. We are not convinced, however, that this is a significant drawback as it is unclear to us why the UK should feel a responsibility to meet the demands of these passengers. Equally, we have seen no evidence that the UK would lose out economically if UK business travellers had to change planes at a hub other than Heathrow.

Just a few years ago, many people including senior politicians were doubtful about the importance of a hub airport. As recently as June 2008, David Cameron wrote the following in the Evening Standard[4]:

> [Gordon Brown's] economic case for Heathrow expansion is unravelling day by day. It's based on making Heathrow an even bigger "hub" airport, with a massive increase in the number of transfer passengers. As Bob Ayling, former chief executive of British Airways, has said: "This is a classic exercise in misguided central planning." Forget for a minute that the economic value of transfer passengers is hotly disputed - after all, they often spend only the price of a cup of coffee in the UK. The real issue is the "hub" model itself, which contributed to the bankruptcy of almost every US airline and Sabena in Europe too. Why? Because passengers are people, not statistics. They react to airport delays, missed connections and lost luggage with their feet and don't come back. And after the recent fiasco of Terminal 5, there must be severe doubt about whether the Government and BAA are even capable of managing the expansion of Heathrow to cope with more than 700,000 flights a year by 2030.

By November 2012, however, after a period of intense lobbying by airport operator BAA, the Government had set out the terms of reference for the Airports Commission, including a specific requirement for it to 'identify and recommend to government options for maintaining the UK's status as a global aviation hub'. There has been no explanation given of how the Government reached the apparent conclusion that in fact the UK's economic wellbeing rests on our maintaining our hub 'status'. Research into the economics of the hub model was due to have been sought and examined as part of a Government 'call for evidence' following publication of the Draft Aviation Policy Framework but this work was abandoned with the setting up of the Airports Commission.

We can understand why, in addressing these terms of reference, the Commission feels compelled to consider the extent to which the UK can compete for transfer passengers with other developing global hubs. We very much hope, however, that the Commission will also be willing to look beyond the emphasis on 'hub status' which is the current political vogue to consider whether there may be other – better – ways of maintaining the UK's excellent connectivity, and what role our airport system may have to play in this.

The conflating of discussion about hub airports with discussion about 'connectivity' appears to us to have arisen as a backlash against two valid observations being made several years ago by those in public life who were questioning the desirability of a third Heathrow runway. The first is simply that, as noted by Cameron, the direct economic benefit of transfer passengers is minimal, not least as they pay no APD. The second is that falling GDP growth together with higher than expected oil prices mean that traditional models used to assess the economic benefit to be generated by a third runway would look very different if carried out today. The previous government had argued that a third runway would generate £5 billion for UK economy. When the New Economics Foundation reran the Government's model in 2010 using updated forecasts of economic growth and oil prices, and adding in modest costs for environmental and community impacts, they concluded that building the runway would in fact result in a £5 billion loss to the UK.[5]

[4] http://www.standard.co.uk/news/comment-i-wont-back-gordons-great-heathrow-con-6928482.html
[5] NEF 2010 *Grounded: a new approach to evaluating Runway 3*
http://www.neweconomics.org/publications/grounded

How well do you consider that the DfT's aviation model replicates current patterns of demand? How could it be improved?

Do you agree with the source of the input data and assumptions underpinning the DfT model?

Do you agree with the choice of outputs modelled?

Do you consider that the DfT modelling approach presents an accurate picture of current and future demand for air travel? If not, how could it be improved?

We answer these four questions together. Despite our various criticisms, it is our belief that the DfT model provides the most robust forecast of travel demand that is currently available, and that the use of an econometric model with income, size of the economy and ticket prices as key factors is reasonable. We consider, however, that it continues to make optimistic assumptions, particularly in relation to the price of oil and rate of economic growth, possibly resulting in over-estimates of future passenger demand.

In June 2012 AEF published a detailed commentary on the August 2011 forecasts[6]. In it, we argued that alternative, but far from extreme, assumptions in relation to economic growth, oil prices and taxation could result in big differences to the passenger forecasts, noting that the economic growth assumptions seemed unrealistically high and oil prices unrealistically low. Both these factors had been revised in the direction we advocated by the time of the 2013 forecasts with the result that the demand figures were lower, though the revisions were more modest than those we had advocated.

In our 2012 analysis we estimated that:

- a reduction of 1% per annum growth of GDP compared with the 2% forecast would have reduced the 2030 forecast by 19% from the central estimate (well below the 'low' estimate)
- the central forecast would be reduced by 10% if oil prices were 67% higher than in the central case (the same figure was generated by DfT for a 'highhigh' scenario following an AEF request)
- if fuel were taxed at the same rate as petrol (or APD were increased to a level at which it represented a proxy for such taxation), the forecasts may be reduced by as much as 25%.

We have not yet completed a similarly detailed analysis of how the 2013 forecasts may differ with alternative assumptions. We can, however, make the following observations.

Given the ongoing challenges posed by peak oil, climate change and land shortage among other issues, we consider that the economic growth forecast may still be too high. The range used for sensitivity testing has increased since the previous forecasts, following our criticism, but we consider than +/- 0.5% is still inadequate.

As noted above, given the lack of DECC figures for oil prices beyond 2030, the forecast continues to assume a flatlining of oil price from 2030 to 2050. This seems extremely unlikely, given continually increasing demand for oil and the exhaustion of easily won supplies.

[6] http://www.aef.org.uk/?p=1423

Finally, we continue to consider that there is little justification for tax exemptions enjoyed by aviation in relation to fuel and VAT. Although the 2013 forecasts indicated that the latest increase to APD had a minimal effect on passenger demand, if aviation taxation were to be increased to the level of parity with road vehicle fuel tax, passenger demand would be very substantially reduced, even if the tax were to operate as a replacement for the carbon costs currently assumed. We note that changes to APD (or comparable changes to ticket prices through taxation or other measures) could substantially alter patterns of passenger demand, as illustrated by the recent paper published by HMRC *Modelling the effects of price differentials at UK airports*[7].

We suggest, therefore, that the Commission should, in its assessment of passenger forecasts, consider a wider range of figures than those presented by DfT. In addition we believe that DfT's central forecast probably remains too high. As noted above, there are reasonable grounds to suggest that passenger demand will be lower than that forecast by DfT. Very high economic growth, lower oil prices and even lower aviation tax, meanwhile, seem unlikely.

Is the DfT model suitable to underpin an assessment of the UK's aviation connectivity and capacity needs?

The passenger forecasts seem in our view to serve two main functions. The first is that by modelling demand over time at individual airports they can in many cases help to insert some realism into the over-inflated forecasts produced by individual airports seeking to boost confidence among their shareholders. The growth figures quoted in historic airport master plans have in many if not most cases proved to be wildly out of step with reality.

Secondly, the forecasts give an indication of how passenger demand may grow at a national level, allowing comparison with the kind of passenger demand likely to be compatible with our climate change obligations. The CO2 forecasts now produced by DfT alongside the passenger forecasts help to spell this out. As we will address in our submission on climate change, the CO2 level predicted in the central demand forecast for 2050 (the lowest ever since 2000) remains 9.5 million tonnes above the level that is likely to be compatible with the UK's long term climate goal.

As discussed at some length at the beginning of this submission, demand forecasts tell us only a limited amount about UK *need*. Where there social and environmental demands exist alongside those of individual passengers it is the responsibility of Government to look at ways of managing demand appropriately.

[7] October 2012 http://www.hmrc.gov.uk/research/report188.pdf