

Airports Commission  
Public Evidence Session :  
Aviation and Climate Change  
9 July 2013

**Session 1:**  
**Welcome and Opening Remarks**

**Sir Howard Davies**  
**Chair, Airports Commission**

**I. Preamble**

Good morning, ladies and gentlemen, and welcome to sunny Manchester. We are here because, for the first time in about 40 years, I was able to come to work from my childhood home, which is unusual. Manchester is always like this: the weather is permanently sunny and it is nice for you to have the opportunity to experience it in this fantastic building. Thank you for turning up.

**II. Introductions**

Let me say a little about how we are going proceed this morning. First of all, however, let me introduce the Commission team:

- Immediately to my right, Geoff Muirhead, a very well-known figure in Manchester, running Manchester Airport for many years
- Immediately to my left, Ricky Burdett, Professor of Urban Studies and Sociology at the London School of Economics.
- Julia King, to his left, is the Vice Chancellor of Aston and worked for Rolls-Royce at an earlier stage in her career.
- John Armitt will be well-known to many people: Olympics, Network Rail, and currently doing some work on how we make infrastructure decisions in a rather more effective way in this country.

**III. Agenda**

The way we plan to proceed this morning is to have three opening presentations, which will be from the Aviation Environment Federation (AEF), WWF, and Sustainable Aviation. I will introduce the people in a second. We will then have some questions thrown at them by members of the Commission to try to tease out the arguments and explore some of the differences of emphasis that we know we will hear. We will then open things up to those of you who have come and who want

to get your views on the public record. We hope that there will be plenty of time for that. That is roughly the choreography, but I am hoping that it will end up being a bit more of an interactive session than that, because I am sure that everybody's objective is the same: to try tease out where the differences of view are and see what might need to be done to try to illuminate the issues more effectively.

#### **IV. Process Update**

Before we launch in, however, let me just say where the Commission is in its process. We were tasked with doing two things, the overall remit being to answer what needs to be done to sustain the UK's position as an aviation hub. We were asked to produce two reports: an interim report later this year, which will look at ways in which existing capacity could be more effectively used; we will also, at that time, have to reach a view on our overall impression of the evolution of demand and capacity, and what new capacity, if any, is needed. We will also, at that time, try to produce a shortlist of plausible development options, because we have asked those airports that wish to expand their facilities to put in proposals to us by next week, in fact, and we will be exploring them over the summer and autumn to see which of them look plausible. That is where we are in the process.

We have so far issued five consultation papers:

- One on demand, which I am sure will be referred to today.
- One on connectivity, which is also a subject matter for today; in other words, the relationship between air connectivity and economic growth, and which direction the causation goes.
- We have produced a paper on climate change, which will also be a subject for today, which looks at the framework within which we have to think about policies on transport and how we fit aviation into a climate-change framework.
- A fourth one on hubs: what is a hub and trying to look forward to the future and trying to guess what aviation might look like in the future, the extent to which it is going to be a question of very large hub airports or whether we will see the development of more point-to-point traffic and how we, therefore, think about what capacity needs there are.
- The fifth one, published only last week, was on noise: how people measure and monitor noise and what the prospects are for the reduction of noise, given new technology etc. We have not had responses to that paper yet, since it was published only last Thursday.

These papers were designed to open up the debate, and I am very pleased to say that I think we have succeeded in doing that. We have had a large number of responses to the first four papers already, and certainly those responses have deepened our understanding of the issues and, I think, have informed the public debate in what we regard is a helpful way. We are very committed to an open and consultative process in order to try to build a greater degree of consensus than currently exists about what we should do on airports and airline connectivity. That, then, is where we are.

We might now start off with the presentations. The first one will be from Tim Johnson, Director of AEF. Tim has a variety of international roles with the International Civil Aviation Organisation (ICAO). He is an adviser to the Department for Transport (DfT) and plays a very active role in

various committees on environment protection etc. He used to work for Defra on aviation issues. I think, without further ado, Tim, over to you.

## **Climate change and UK Airport Expansion**

**Tim Johnson**

**Director, AEF**

### **I. Preamble**

Thank you very much, and good morning. Although I am going to present, I would like to introduce my colleague Cait Hewitt, who was largely responsible for the content of our submission that we made to the Airports Commission. I do not really need to go over what AEF is in detail but, for those of you in the audience and on the Commission who we have not met, I would just like to say that we are national organisation. We represent the community groups and some local authorities around the UK's airports and airfields. We have a very keen interest in both this capacity debate and the climate-change debate. We recently served on the South East Airports Taskforce and have been following the international negotiations on aviation's response to climate change since 1998. Hopefully, we try to bring those two elements together in our response to the questions that you set in your consultation and in today's deliberations.

### **II. Aviation Emissions in the UK**

It is fair to say that the UK has taken the debate on aviation and climate change very seriously, perhaps not surprisingly. If you look at cumulative emissions from international aviation over the last 25 years, the UK ranks second only to the US in terms of total volume. I think everyone within the aviation industry, and most governments, recognise the scale of the challenge that we face in the need to address that. When you find yourself at the top of that emissions ranking, you have an obligation to lead that debate, and I think we have certainly done that over the last 10 years.

Our starting point in this is that we have to make, as a nation, an 80% reduction in our CO<sub>2</sub> emissions below 1990 levels by 2050 – a target that is committed to in the Climate Change Act. It is recognised and reinforced by the Committee on Climate Change (CCC) that you have to take international aviation emissions into account in working out how you will get to that endpoint. Many of you will know that, in 2009, they asked a very specific question about how UK industry could set about doing that. They concluded that that was possible only if aviation kept its emissions at 2005 levels. It was possible to do that only if you constrained demand to about 60% beyond what it is today. That really takes into account their realistic view of what alternative-fuels technology and operations will deliver moving forward.

We certainly not only recognise that figure as a credible piece of work, but we also find the Department's own forecasts reinforce that. Certainly when you look at the constrained scenarios that the Department modelled, without new runways, they feel that the number of new passengers that would be provided for would exceed that figure and, in fact, would go up by 93%. We feel

that, if we are going to make our climate-change obligations nationally and take into account international aviation emissions from the UK, the only way to do that is to effectively not provide for more new runways. The amount of growth already in the system and allowed under that permissible target is effectively catered for by the existing capacity that exists, not just at a national level but within each of the regions.

### **III. Will Additional Industry Effort Affect this Analysis?**

There are a couple of questions that you could pose about whether that is a realistic objective, one of which is to say that perhaps the CCC's and DfT's analyses are overly cautious. Figures have been produced by the industry's Air Transport Action Group (ATAG), which represents the four sectors: the airlines, the airports, the manufacturers and the navigation service providers. Its view is that the alternative fuels and technology, especially in the latter periods towards 2050, take you down to about 50% below 2005 levels, albeit on a net basis. We have here an industry view that challenges the CCC, and I think the question we have to ask ourselves is: how realistic is it?

We are very supportive of NGOs and of in-sector reductions. We want the technology and operations to come through, but we do not want this to be mistaken for a picture that says this will happen just because the potential exists. We have been very clear when we have been discussing with industry that, while we are supportive of these in-sector reductions, you should not portray this in a way that underplays the additional effort required not just by industry but by governments and the markets to make this come about.

### **IV. ICAO Report Found that Policy Pressure Can Significantly Reduce Emissions**

What I am going to explore in the next couple of minutes is that where we are currently is very far away; the reality is very different from the potential. ICAO's independent experts have looked at the improvement in the average aircraft efficiency that has taken place within the industry since 1960 through to today. These experts are nominated by states and the industry as being authoritative voices. The independent experts look at the potential for technological and fuel-burn improvements in the future.

In terms of where we are currently and what the market is providing for, this is where the potential lies. We can get there, but the independent experts concluded you will get there only if you have significant regulatory or market pressures to get there. Neither of those factors exists at the moment. ICAO is in the process of developing an aircraft CO<sub>2</sub> standard but it is not going to be a standard that drives technology, but rather one that follows. The reason for this is that, while there is an important challenge in climate change that has focused the industry's minds, other things come into play too: they want payload and range improvements. Given the balance that they are aiming for, you are not getting the full potential that exists in the marketplace.

### **V. Potential versus Likely Scenarios**

Work was done locally by Manchester Metropolitan University. We asked it to look at and update the CCC's work, and to look at what the potential is for alternative fuels at the moment. In terms of the emissions reductions available purely from technology and operational improvements, if you use the 2005 baseline as a benchmark for where the UK should be aiming for, the technology and operational improvements alone leave you with a shortfall of about 915 million tonnes globally. If

you had in the potential for alternative fuels – and, again, do not confuse the penetration rates in the market with emission savings, and both this study and the CCC assume that it will be in the region of a 50% carbon-lifecycle saving – you get the green bar, which takes you down to here.

Even if you factor in regional market-based measures (MBMs), like the EU Emissions Trading System (ETS), you get this next wedge, but you are still left a long way from delivering the 2005 baseline. While we are very encouraging of industry performance and would like to work towards that, we just do not think that the market or the regulatory structure is right to realise that potential in full. Therefore, we think the CCC's conclusion that there is a constraint – you need to have some form of demand constraint – while not our starting point is certainly the endpoint that we reach in our analysis.

Is 2005 a reasonable benchmark? I think it is one that we have accepted but one that we regard as extremely lenient, for several reasons. First, if you even stabilise at 2005 levels, UK aviation emissions, as a share of UK total emissions currently at 6%, would be 25% by 2050. It is also fair to point out that 2005 stabilisation still represents a 120% increase in emissions since 1990, which is the benchmark for the economy target. It does not include the non-CO<sub>2</sub> effects. If the Commission was alive to the fact that, while it was not in a position to make a recommendation on non-CO<sub>2</sub> effects, as and when that information becomes available it could have a very dramatic impact on what happens to the benchmark.

## **VI. International Action**

The only other way that you could think of the UK not needing to constrain growth and not provide new runways is if there is an international solution. As we said in our introduction, this is another area where we have worked extremely hard over the last 15 years to try to bring this about, and we continue to work very hard, particularly this year, with an ICAO Assembly, towards getting a global MBM.

There are, however, two or three things to say about it. First, we have the EU ETS and we know what it strives to do. As many of you will know, the international opposition to it has led to a proposal to stop the clock for a period of 12 months on flights going to and from the EU, but not intra-EU flights. Whatever happens at ICAO's Assembly this year, it is very unlikely that the EU ETS will come back in its current form. We are looking at significantly reduced geographical scope, potentially with significantly less coverage than it has at the moment.

One of the reasons stop the clock was put on the table was to allow the ICAO time to negotiate and introduce a global measure. At this point, it is something that we very much want, but there are different political dynamics between the developing world, which is very nervous about taking on a global commitment at least before their own obligations under the United Nations Framework Convention on Climate Change (UNFCCC) obligations are resolved in 2015, and the US, which feels that, historically, an MBM has not been necessary. Getting that agreement this year is probably beyond us. We may possibly get a roadmap out to 2016. Unfortunately for you on the Commission, that means that, when you come to make your final report, you will not know what that international framework looks like or whether it has been successful, and we would take the cautious approach of saying that, until these things are in place, it is better to err on the side of caution.

## **VII. Conclusion**

In closing, it is worth saying that the carbon markets, generally, provide short-term options but, as many people have already warned, their availability towards the tail-end of the period that we are discussing is highly questionable. Carbon prices are likely to rise significantly and, as the CCC has advised, it is probably better to approach the aviation problem from the point of view that this is about making in-sector reductions in the long term rather than relying purely on international agreements in the carbon markets.

In terms of the thrust of the paper that we submitted to the Commission, we think that, irrespective of an international strategy, there will, over the longer term, be this increasing focus on in-sector reductions. We think the economy-wide reductions leave little room for offsetting emissions. We also think that, in terms of realistic projections of in-sector gains, while the potential exists, the market and regulatory conditions do not. Therefore, the conclusion that comes out of that is that, in order to meet the targets nationally and to take account of aviation provision, we can do that in a way that creates certainty only if we constrain demand. If you look at a constrained-demand situation, we stress the point that we think that the existing capacity already exists to meet that level.

### **Sir Howard Davies**

Thanks very much, Tim – a very clear exposition of the policy framework within which we operate, and I am sure we appreciate your sympathy for our difficulty in the timing of our decisions and recommendations in terms of what is going on internationally.

Let us move straight on to Jean Leston from WWF. Its logo is a cute little panda but it does an awful lot of work in this area, with its One in Five Challenge, and has also sent some very well argued submissions to the Commission, with loads of footnotes, which is always a good test of whether or not things are serious. Jean used to be a journalist but now has a respectable job as part of the WWF Climate Change team.

## **Aviation and Climate Change**

**Jean Leston**

**Transport Policy Manager, WWF**

### **I. Preamble**

I also have a background in business. I want to introduce Tom Viita, who works for our Public Affairs team. WWF brings quite a different dimension to this debate. Our mission is to safeguard the natural world – that is what we do. That means tackling the key threats to the natural world, such as climate change. Aviation matters to us simply because it is the most carbon-intensive form of transport on the planet, sadly. It gets us there a lot more quickly but has four times the carbon footprint of rail per kilometre, and produces 50 times more CO<sub>2</sub> than a video conference. Not only

is it fast growing but, as Tim has also mentioned, the ability to mitigate in-sector is far less than the growth rate of the industry, and also the non-CO<sub>2</sub> impacts double the warming effects at altitude. It is, then, a very hard-to-treat sector, and we recognise that. That is why the focus of our work is to ensure that aviation policy and UK capacity decisions are consistent with honouring our UK, EU and UNFCCC climate commitments.

The other big other area we work on is alternatives to business flying, which is what my presentation is going to focus on today. It is also important to note that we are not against flying but we want to see constrained rates of aviation growth within environmental limits – that is our overall position.

## **II. The Urgency of Climate Change**

It is always good to think global and act local. One of the areas where we work is the Himalayas, which helps to illustrate the urgency of climate change. We are helping local communities there to adapt to the effects of climate change, which is happening in the Himalayas far more quickly than just about anywhere else. Already local people are experiencing reduced crop yields, more extreme weather and, at 2°C, which is the beginning of the dangerous level of climate change, they will experience more flooding from glacier melt, as well as food shortages and biodiversity impacts – the poor snow leopards are not going to have much of a place to live anymore.

The latest World Bank report, *Turn Down the Heat*, which came out a couple of weeks ago, said that we are on track to reach 2° of warming within 20-30 years, which is the timeframe within which you are trying to consider your capacity needs. That is the world we are looking at. The Commission has an incredibly difficult job, but the one certainty about the future, we believe, is that it is not going to be like anything like the past. We cannot use business-as-usual levels of flying to help guide our decisions into the future. We need to take concerted action now, according to the International Energy Agency (IEA), which also says that we are on track for 4° warming by 2100 and, in addition, warns that, if we continue to build high-carbon infrastructure at current rates, by 2017 we will have locked in enough additional emissions to make 2° inevitable. Airport expansion is taking us one step closer to that climate cliff-edge.

## **III. Airport Expansion versus Climate Targets**

Tim has already talked about the relationship between airport expansion and our UK climate targets. One further thing to point out is that the fifth progress report from the CCC, which came out a couple of weeks ago, shows that we are already at serious risk of not achieving our third and fourth carbon budgets, so major expansion would exacerbate that problem.

Tim has also shared his wedge analysis of where in-sector abatement could come from. Again, we support industry efforts to improve efficiency and, indeed, we are supportive of biofuels within the context of doing everything first to increase efficiency but also to take demand management seriously, and use biofuels for residual levels of flying. We question, however, whether offsetting credits and biofuels will both be available in the quantity that the industry needs. Availability of those two things, then, is the big issue as far as we are concerned.

#### **IV. Moving On: Why Flying Less Means More for Business**

I would now like to share with you some of our work with business, and point out, first of all, that the common framing of this debate is that business needs airport expansion in order to be competitive. I want to share some compelling evidence that shows that this is not necessarily true, and that companies do have choices in how they stay connected. The recession has prompted a lot of companies to completely reconsider the way they meet and travel. It has been one of these disruptive events that has forced companies into behaviour change, and that has become embedded. What is happening in business now, we think, is going to continue. We do not think there is going to be a bounce back to businesses' usual levels of flying.

Let me share with you a couple of pieces of research that we have done. We did a report in 2011 with FTSE 500 companies. The key things here are that about half of companies have cut their flying significantly over the last two years, by an average of 19%. You could say, 'Well, they would, wouldn't they?' in which case why are they so convinced that they do not want to go back to business-as-usual levels of flying? 85% say they do not want to go back to the bad old days. 92% say they also believe it is entirely possible to fly less and remain competitive and profitable as an organisation, and 83% say their long-term plans are also to reduce flying over the next 10 years.

#### **V. One in Five Challenge**

That was our widespread research; let me take you into our experimental laboratory, which is the One in Five Challenge, which is a guided programme and awards scheme that we have run for a few years with some of the UK's top companies, representing over 300,000 employees and half a million flights. The One in Five Challenge is all about reducing your corporate flying by 20% within five years. Already, three quarters of our challengers have achieved that award and, even after achieving the award, have opted to stay with the scheme, because they are finding the discipline of belonging to such a scheme so important that they want to continue to bring down their flying.

It is not about winning your panda and going away; they are finding this to be a long-term valuable effort within their organisations. Household names belong to the scheme, including BSKyB, Vodafone, Lloyds Bank, BT and Microsoft. The results have been quite extraordinary. What has wowed us is how much they can cut even within a single year. Lloyds Bank cut its flying by 26% in a single year, and BT by 23%. There are an awful lot of unnecessary flights out there. This is a small sample in statistical terms, but it is an important proof of concept that companies are embracing a whole new way of working that relies much more on technology than business-as-usual flying.

That brings us to the point of the Department's, we believe, massive underestimation of the potential of video conferencing and other technologies to replace flights. In their estimates, it could replace, in the best case, 10% of flights, or, in the worst case, add 5% to flights, so video conferencing is seen as a complement rather than a replacement. Our experience with business positively refutes that, and we believe that video conferencing could easily replace 30% of business flights, which is a conservative estimate. We have other research that shows it could replace up to 55% of business flights, under the right conditions. Rather than investment in additional runways, we would like to see public investment in the rail network and high-speed broadband, which is the best way to support business connectivity in the future.

## **VI. Businesses Will Not Suffer from Constrained Capacity**

We do not think businesses will suffer from constrained capacity, first of all because we are already so well connected. Companies can get to where they want to go, now and in the future. We did some work, which may be mentioned in the next section, with Airport Watch on international connectivity for business. We looked at flights from Heathrow to key emerging markets such as South Africa, the Middle East and Asia. We lead in terms of more flights to key business destinations in these regions including Hong Kong, the gateway to China. There is no doubt that we need more routes to some emerging markets in China and Latin America, but we think that that can be done within our existing capacity, and we are not aware of any convincing evidence that shows that business is leaving in droves to get to destinations that they cannot reach from the UK. A lot of these arguments are very anecdotal, which is not the way to determine policy.

Finally, we do not believe that additional connectivity necessarily guarantees growth, which was a finding from our latest report, *The Economics of Aircraft Expansion*, conducted by CE Delft. It did a literature survey of all available academic evidence which showed a correlation but no causation between connectivity and economic growth, particularly for developed countries. The better connected a city is, then, the less the guarantee of additional economic growth from adding additional connectivity. You can treat connectivity in different ways – that is a big part of our argument.

We believe that there is ample capacity to grow, using the same figures as Tim has already discussed – the environmental limits established by the CCC. Even at Heathrow, we would argue that growth is possible through the use of larger planes and higher passenger loading, as well as better use of existing capacity for priority routes. We believe that flights with lower economic value and fewer transfer passengers should be moved to other London airports that have more spare capacity – in some cases, ample spare capacity – for the next several decades. The Commission did some pioneering work to try to quantify carbon leakage, which we think is commendable. We think the analysis falls down on a number of points, but, in particular, we think that the assumption that our EU competitors will continue to have unconstrained airport capacity is highly unlikely.

## **VII. Conclusion**

In closing, I want to leave you with a rather sad photo of Ciudad Real, built as an overflow airport to Madrid Barajas. It was opened in 2008 but abandoned in 2012, partly due to an overestimation of passenger demand, as well as the economic collapse. They got it badly wrong in terms of a passenger-demand forecast. We hope the Commission will urgently consider the climate implications of major airport expansion in the UK. We can allow aviation to grow within environmental limits and add more routes to emerging markets by using available capacity better, but aviation is not the only way to stay connected. Business is already reducing and will continue to reduce its reliance on flying. Is adding more runways for the sake of UK plc really necessary? We do not think so. The worst possible outcome would be to build far more capacity than we need in an increasingly carbon-constrained world, resulting in a stranded asset for generations to come. That is the thought I will leave you with. That is not the vision of the future that anyone in this room wants to see.

**Sir Howard Davies**

Thank you very much. We will go straight on to the third of our three presenters this morning, Matt Gorman, Chair of Sustainable Aviation, which is a coalition of airlines and aircraft- and engine-manufacturers committed to finding ways of achieving greener and quieter flying. In real life, he is Sustainability Director for Heathrow.

## **Climate change and UK Airport Expansion**

**Matt Gorman****Chair, Sustainable Aviation****Jonathan Counsell****Deputy Chair, Sustainable Aviation****I. Preamble****Matt Gorman**

Thank you and good morning, everyone. I want to take the opportunity to introduce my co-panellist Jonathan Counsell, Head of Environment for British Airways. He is also Deputy Chair and about to take over the Chair at Sustainable Aviation. It is worth saying upfront that we are clearly here today representing Sustainable Aviation, which is a national industry group, and setting out our views on climate change at a national level. We are not here to talk about runway-specific issues and implications for particular airports.

**II. Sustainable Aviation Signatories**

Let me say a bit about Sustainable Aviation upfront. I am going to talk about the carbon roadmap that we have developed, and hand over to Jonathan to pick up on some aspects of that too. In broad terms, we describe ourselves as a unique coalition and we think it is the first time in the world that the four sectors that make up the aviation industry – airlines, airports, aircraft- and engine-manufacturers and air-traffic controllers – have come together to set out a formal long-term strategy for those parts of the industry. We launched in 2005. We set long-term goals. We have a rolling two-year work programme that sets targets for us to deliver. We report regularly on our progress. Our overall goal is to develop and implement solutions for cleaner, quieter and smarter flying.

**III. CO<sub>2</sub> Road Map**

As I said, our role today is to look at climate change and to present the Sustainable Aviation view of carbon emissions out to 2050 at a UK level. It is worth highlighting that upfront. Some of what we will say will pick up on some of the themes that Tim's presentation did. Some of the graphs will look different, partly because these are UK-focused rather than global pictures. Before I talk

specifically about aviation, carbon and the roadmap, it is worth saying something upfront about climate change. We acknowledge, as an industry, that it is the big global environmental challenge facing our sector. It applies to any business sector. The UK, in setting an 80% target to cut carbon emissions by 2050, has effectively set itself on a path to transforming the economy and to decarbonising it over the next 40 or so years. Clearly, the aviation industry, alongside others, needs to play its role in meeting that challenge, which is something that we are committed to do. The carbon roadmap, which is where we will focus our comments today, really sets out our views, as an industry, on how we think that that can be achieved.

To talk you through the overall framework, as I am sure that this is something that we will come back to, we started in 2010 and took the DfT's central forecasts from 2011 – slightly different from the update in 2013, but we do not think it makes a material difference to the overall analysis. If we grew at the levels that the DfT was forecasting – about 2.5 times passenger growth out to 2050, but simply using today's frozen technology – emissions would rise in parallel to that growth in traffic.

We then said, 'We do not think that is going to happen', and there is a range of steps that industry is taking with support from policymakers and regulators to reduce emissions. We said that there were a series of operational and air-traffic-management efficiencies that we expected to see over the period, amounting to 9% of emissions in total over the period. That is more efficient aircraft operations on the ground but particularly more efficient airspace management, in both European and global airspace, where there are some significant opportunities to improve. We then looked at aircraft technology and divided that into two categories. The first was imminent aircraft technology: the next generation of aircraft that are just entering service now or about to enter service, and their performance characteristics are well known. Examples would be the A380, the super-jumbo that entered service five or six years ago; the 787 just entering service now; and the A350, due to enter service in the next three years. What then predicted not just the fuel-efficiency characteristics of those aircraft but how they would be deployed into the UK fleet: how quickly airlines would buy and start using them over that period.

Future aircraft is the next generation of aircraft technology, which we predict will come on-stream at different points, depending on the size of aircraft, around 2025 for narrow-bodied aircraft, through to around 2040 for the successor to something like the A380 and the very-large-aircraft category. We looked head and predicted the fuel efficiency of those aircraft, building on both historic performance-improvement trends, where we have seen around 1.5% on average as an annual figure in the industry. We also looked at what kind of step-change technologies we thought would be possible over that period for each of those aircraft types and, again, predicted how they would enter the fleet.

Finally, in terms of sustainable alternative fuels, we see significant potential moving forward. This marks a change from earlier work and a similar publication that we produced four or five years ago, whereby we have seen significant development in biofuels in terms of the technological certification in the range of test projects that are underway to develop biofuels for deployment in the aviation sector. We assume that, by 2050, biofuels make a significant contribution to reducing emissions.

I am going to hand over to Jonathan to say a little about carbon trading. The headline conclusion is that we can accommodate significant aviation growth in the UK – at about a 2.5 increase in traffic – while keeping emissions at around today's levels in absolute terms. I think that we recognise, however, that keeping emissions in absolute terms around the same, at a time when the UK and

global societies have committed to long-term reduction targets, in itself is strong and good progress but not sufficient; hence the role for carbon trading.

#### **IV. MBMs**

##### **Jonathan Counsell**

Thank you, Matt, and good morning, everybody. Before I talk about MBMs, I want to say that aviation is fully committed to playing its part in the global reduction of CO<sub>2</sub> emissions. We have globally agreed targets at industry level: carbon-neutral growth from 2020 and a 50% reduction in net emissions by 2050.

We fully believe that we will need MBMs to enable us to achieve those targets. We support the principle of carbon pricing to incentivise that next generation of technology. Importantly, we believe it has to be a global MBM. We are globally trading industry and we need to avoid the issues of competitive distortion and carbon leakage, so it has to be a global scheme.

There has been some good progress, particularly through our industry association, the International Air Transport Association (IATA). At their recent AGM in June, a resolution was agreed with some key principles around how we will operationalise carbon-neutral growth from 2020 and, fundamentally, some principles around how we allocate those costs to individual airlines – important points of detail that will enable us to deliver that carbon-neutral growth from 2020.

It is, of course, not industry but governments that regulate, so we rely on progress through the ICAO process. I accept some of Tim's caution around the speed of progress at ICAO. ICAO has had the mandate from the UNFCCC since 1997, but I think we would all agree that, in the last two years, there has been significantly greater progress than in the previous 14 at ICAO, and the industry has been very close to supporting that activity. We are reasonably optimistic that we will continue to make progress at this year's General Assembly. We are not going to get a fully binding, signed-up global deal at the ICAO General Assembly in September, but we will get progress. We are looking for a reaffirmation of the commitment to carbon-neutral growth from 2020 and, importantly, a commitment to a roadmap to deliver a single MBM for aviation to enable delivery of carbon-neutral growth in 2020. Those, then, are the things that we would expect from the General Assembly this year.

In conclusion, what we are saying is that we are fully committed to reducing our emissions. We believe MBMs will play a critical role. There is good progress from the industry and we look forward to progress from ICAO.

#### **V. Conclusion**

##### **Matt Gorman**

To wrap, in terms of the UK industry projection of the period between now and 2050, we can accommodate significant growth while keeping absolute emissions at around today's levels, making a further contribution towards the global industry goal that Jonathan outlined of a 50% net reduction through carbon trading. There are a number of steps that the industry can take and is taking to help deliver against this roadmap, through developing operational procedures and new technologies, supporting progress at ICAO and developing biofuels. There are also a number of

steps for Government to take to help support industry progress in all of those areas, which we may pick up on in the questions. The key challenge for us as an industry that we need to be able to demonstrate that we can achieve and that we are confident that we can is that we can decouple growth in air traffic, with all of the benefits that brings, from growth in emissions, so bringing the benefits while, at the same time, meeting environmental limits, which is something that we recognise that we need to do and believe we can do.

## **Panel Questions**

### **Sir Howard Davies**

Thank you very much. That sets out the parameters of the debate very well. My colleagues will want to throw questions at you, so let me kick off with one from me.

Jean, in terms of trying to bring this back down to airport capacity, you accept that there will be a need for additional flights to new destinations. You say that flights should be moved around in order to make use of existing capacity and, in your paper, you talk about reforming slot-allocation. I must say, in our work, it is not clear to us how that can be done in the legal framework that we currently have, where, indeed, the trend has been rather away from any kind of strategic allocation of slots and to purely MBMs. How do you see that being achieved?

### **Jean Leston**

I appreciate that a lot of these decisions are made at EU rather than UK level. I have to say that this is not an area where I have great expertise. I know that there are Secretary of State powers, to some extent, to review things like bilateral agreements and to make decisions about slot-allocation. I may have to ask Tim to step in here, if he has anything more to add.

### **Tim Johnson**

I think it has been a longstanding objective of the UK to move towards slot-auctioning. It is just that, as you say, the legal constraint has not made that something that they have been able to negotiate at an EU level. For a variety of reasons, other countries are beginning to show interest. Whether that is still the situation in five, 10 or 15 years' time is hard to say, but I think we would certainly see slot-auctioning at congested airports and moving in that sort of direction.

### **Sir Howard Davies**

You are, then, lined up with UK repatriation of powers.

### **Tim Johnson**

It would help.

**Professor Dame Julia King**

I want to probe Matt particularly, as well as others, on the technology issues. I was interested in understanding a bit more about what future aircraft technologies you are assuming. They are starting to come in from the 2020s, so they need to be around now in the labs. What are your key assumptions in future aircraft technologies?

**Matt Gorman**

I will divide it into the three categories that we have looked at: narrow-bodied or short-haul aircraft; twin-aisle or medium- to long-haul aircraft; and very large aircraft. We have assumed a range of dates for those entering into service, just to set the scene: narrow-bodied from around 2025; twin-aisle aircraft from 2035; and very large from 2040. There are, then, a range of stages in development. I will say a bit about technologies in a second; I am just framing where we have come from. The overall rate of fuel-efficiency improvement for each of those continues at around 1.3% a year, but there is around a 15% step change when those new types are introduced.

The kinds of technologies will vary for each of those types, but we have looked at aircraft/airframe technologies such as new and lighter materials and new and more efficient airframe designs, and also engine technologies, such as thermal efficiency and higher bypass ratios in the future. By the time you get out to the late 2020s and beyond – and the 2030s/2040s for the larger aircraft – I do not think we can sit here today and say exactly what that technology will look like.

**Professor Dame Julia King**

Are you assuming open-rotor for the narrow-bodied aircraft?

**Matt Gorman**

Yes.

**Professor Dame Julia King**

Are you, therefore, assuming that there can be some compromise between noise and emissions? Would a higher noise level be acceptable to achieve lower emissions?

**Matt Gorman**

That is a good question. Open-rotor is one of the technologies that is possible for narrow-bodied. The design decision on whether that is the successor for the current narrow-bodied aircraft has not yet been taken. It is certainly something that is being actively studied. That is one option. For large aircraft types, we would be looking at different airframe configurations and, potentially, blended wing bodies out to the 2040s and 2050s.

**Professor Dame Julia King**

If we are thinking about blended wing bodies as we move towards 2050, are there implications for the airports we should be building?

**Matt Gorman**

That is a good question. I am conscious that I have not answered your open-rotor question, which I will briefly, and I will come back on the airport one.

**Professor Dame Julia King**

The question I would like to hear an answer on is whether you think we should compromise noise for emissions. We know there are a lot of technology options where you can improve one or the other. It is a question that I would be interested to hear views on from all of the group.

**Matt Gorman**

My view would be we can achieve a lot of progress on reducing both emissions and noise, and that is what the industry has done historically. It is true that there are some design trade-offs and choices, and probably the open rotor is one of the starker ones in terms of ability to deliver significant fuel efficiency but not quite as much on noise. That is one technology that is being looked at. In reality, I think it will be a combination of technologies, both airframe and engine, that the manufacturers are studying and considering for that next generation of aircraft.

My own view – and speaking, in part, as the operator of a big airport – we are clearly interested in noise. I think the challenge for the industry, and part of the value of a group like Sustainable Aviation is that it provides a forum to have the debate, is for us collectively to be able understand the tradeoffs and help decide ourselves as well as to advise governments, which ultimately need to take the decision, what the best balance is. I do not think we yet have a clear answer as to what that trade-off looks like for these different aircraft types, but I do think technology offers significant opportunities to improve on both.

**Professor Dame Julia King**

The implications of blended wing bodies and the more futuristic delta-wing-type shapes are potentially wider runways or taxiways.

**Matt Gorman**

This is something we are beginning to look at. This would be from the late 2030s/2040s onwards, so it is a relatively long-term prospect. You are right, however: as a business that invests in the long term, we need to understand that, certainly from an airport perspective. It is something that we are beginning to look at but, again we do not have a definite answer. I think it is easy to look at particular technologies and ask ‘Will the future look exactly like that?’ A range is being studied at the moment.

**Professor Dame Julia King**

If you are looking at building new airport capacity, however, you are looking at that kind of timeframe.

**Matt Gorman**

Yes, and that is a question that we are beginning to study. It is worth saying something about the production of the roadmap, just so people are clear on where it has come from. It was produced by the leading players in the industry. That includes ourselves as airports, but particularly airlines and manufacturers. In this case, Rolls-Royce in particular played a leading role in putting together the assumptions in the report. We have set out in detail in the report the range of fuel-efficiency reductions that we think are possible. We have picked what we think is a reasonable central case. There is some potential to go further. Equally, there are scenarios where we do not go quite as far, and our challenge is to keep that under review and keep actively driving progress towards that. It is, however, all set out in detail in the report.

**Professor Dame Julia King**

Given that you need significant technology change to deliver the roadmap, with some really radical potential changes in technology, what can we do to pull that technology through more quickly?

**Matt Gorman**

I will give you an overall view; Jonathan, from an airline perspective, will have views on this as well. I think the overall message is that fuel costs for the airline industry, and the aviation industry generally, are already a significant driver, so that is already driving significant progress in technology terms. The manufacturers are responding to that and the airlines are clearly working very closely with them to continue to drive progress. In the long term, we anticipate fuel costs remaining high and continuing to provide a driver. The regulatory framework in providing a carbon cost adds a further driver towards that technological development. The other role for Government is in supporting research and development, and we were certainly very pleased to see significant Government support for the UK aerospace research and manufacturing sector that was recently announced, which will continue to allow us to develop.

**Professor Dame Julia King**

You are talking about some technologies coming in from the 2020s. We do not have a carbon-price signal at the moment. What else can we do? In terms of your timescales, we need some additional drive to pull those technologies through, so where else would you look?

**Jonathan Counsell**

We have talked about aircraft technology, but I think there are huge opportunities in air-traffic control, particularly with projects like Single European Skies, with the potential to improve carbon emissions by up to 10% in Europe. There is a lot that governments can do to help push through the progress there. We have talked about biofuels. In the roadmap it is 30% penetration and 60% lifecycle, which gives us the 18% improvement, but we need government support there, primarily in creating a level playing field versus biodiesel. In the UK, as in the rest of Europe, there are incentives to produce biodiesel but not to produce biojet. The US and the Netherlands have recognised this, and they have levelled that playing field, recognising that it would be difficult to make investments in biojet facilities without that levelling. That, then, is one immediate thing that Government can do, and we are looking forward to the renewal of the Renewable Energy Directorate next year to achieve that levelling of the playing field.

**Matt Gorman**

I am not necessarily sure that we have no carbon-price at the moment; I would describe it as a very weak carbon-price signal. That is an important point. Let us look at the EU ETS: I think I am right in saying that it is the single most complex piece of environmental legislation ever introduced globally. It would be unreasonable to expect that the ETS, albeit it several years into operation, will be completely perfect. It still needs to be improved, but I still think that, fundamentally, emissions trading as a signal for sending the right carbon price is the right tool. It drives the market to find the most efficient way of taking carbon out of the economy. Air travel is not the enemy – carbon is. Let the market find the right way to get it out. We need to continue to support efforts to make the EU ETS both economically efficient but also environmentally credible and, ultimately, to find a global solution, which we have talked about.

**Professor Dame Julia King**

Do other people have thoughts about whether it would ever be acceptable to compromise on noise in order to reduce CO<sub>2</sub>?

**Cait Hewitt, Deputy Director, AEF**

I am happy to comment on that. I also want to comment very briefly on this question about technology improvements, because there was a suggestion in your presentation, Matt, that some of the figures you are presenting in the Sustainable Aviation roadmap give a different picture from some of those referred to by Tim, because of the fact that it is a UK picture.

I do think that it is important for us to remember that the Sustainable Aviation roadmap reaches conclusions that are unusually optimistic when you set them against those of both the CCC and, indeed the DfT, which projects that, going forward, taking into account likely improvements in air-traffic control and likely biofuel take-up – which they project will be very low within aviation for all kinds of reasons that we could talk about – annual carbon-efficiency improvements from aviation are going to be around the 1%-per-year mark, or possibly a little lower than that. In the period between now and 2020, it is forecast that aircraft efficiency might worsen slightly.

We need to keep that in mind and remember that, as Tim has said, DfT's projections are that, even taking account of likely improvements in aircraft technology, as well as air-traffic control and biofuels, we are set for an increase in overall emissions that exceeds that which the CCC deemed to be compatible with the UK's climate strategy.

On the question of balancing noise and emissions concerns, I am very glad you raise it. Today, we are talking about climate change but, as Tim has said, the AEF is a membership body. We represent communities around airports in the UK, and it is true to say that, for our members on the ground, noise remains absolutely the top priority. If the focus for the Commission is in reaching conclusions that will have value politically, it is worth bearing in mind that, when we are talking about airport expansion, ultimately political decisions will be taken. Therefore, that impact on, frankly, voters on the ground is something that it is quite right for politicians to be alive to.

I think that any technological proposal in relation to ways to tackle emissions from aviation, if that resulted in any kind of noise penalty, would be very strongly opposed by people on the ground. That applies, as Jean alluded to, not just in the UK but at many European airports, where there has been strong opposition to airport expansion, on the basis of noise concerns.

**Tim Johnson**

As a postscript to that – and not about noise emissions, which I think is a case without fact behind it – we have always viewed emissions as the issue that will shape the general growth of the industry, but it will be noise that determines the capacity issues, and we have to deal with both simultaneously. One postscript to your analysis of the technology role is that the focus is on what new innovation is coming in. You also have to keep in mind the existing technology and how you get old technology out. Bear in mind that the fleet is not going to remain static. It is not question of getting 5% new aircraft and retiring 5%. The fleet is growing, and aircraft that are produced and rolling off the production line today will still be flying, in all probability, in 2040 or 2050. The new technology is coming in on top of what the existing fleet is already doing, so you have to look at both ends of the spectrum and ask yourself the question about what happens to old technology and the impact that that has.

**Geoff Muirhead**

You were saying, Jean, in your presentation that the infrastructure investment in aviation that is currently ongoing will mean that, by 2017, we will have a 2° rise in global temperatures. Did I hear that correctly?

**Jean Leston**

Those are the figures of the IEA: that, if we continue to build high-carbon infrastructure at the rate we are now, by 2017 we will have used up all of the additional emissions that will ensure we reach 2°.

**Professor Dame Julia King**

That, of course, includes power stations. It includes continuing to build the same kind of coal-fired power stations and things like that. It is not dominantly aviation. We have to keep a balance.

**Jean Leston**

Yes, that is absolutely true. It is all energy infrastructure, which also includes energy-using infrastructure, so it does include airports, but not just airports.

**Geoff Muirhead**

It is an interesting thing about how you use statistics. I am always fascinated by how a report always comes out in favour of the thoughts and ideas of the people who have commissioned it. Perhaps we could find a better way of going forward. My question, however, is: if that is the case and is locked in, where and how does the UK, within that global framework, find the right balance? Would whatever we are talking about make any difference at all, or any real impact, unless there was a global impact for this?

**Jean Leston**

It absolutely matters what the UK does. We were the first country to introduce mandated climate legislation, and several other countries have followed our example: China, Korea, Mexico,

Australia and Denmark are the ones that come to mind. We do have a legitimate role as world climate leaders. WWF happens to think that it is possible to balance our connectivity and economic requirements with continuing to exhibit climate leadership. We think it possible to get that balance right and ensure a race to the top rather than a race to the bottom.

I assume, from your question, that you are wondering if there is a danger that we are going to be acting unilaterally. It is not surprising that we got there first and that, because of our climate legislation and our capacity issues, we are having to figure out how we reconcile future capacity requirements with our UK, EU and international climate commitments. We got there first.

That is not to say that other countries are not going to face the same realities very shortly. It is worth pointing out that our EU competitors have at least a rigorous a set of climate commitments as we do: Germany has a 40% reduction commitment by 2020; the Netherlands, a 30% reduction commitment. We are all signed up to the EU 20% reduction by 2020 package, which includes international aviation. We are all signed up to the EU roadmap by 2050, which is a pathway for an 80-95%, which includes international aviation. The reality, then, is going to dawn – it has not yet in many countries – because we are all facing a carbon-constrained future.

### **Geoff Muirhead**

You also talked about the opportunity for business to trade differently going forward and that that would have a larger impact on business travel. You talked about 30% of business flights. Do you mean 30% of business passengers?

### **Jean Leston**

Yes, passengers – sorry.

### **Geoff Muirhead**

There is a very big difference.

### **Jean Leston**

I think I said business flying, which means passengers taking flights for business purposes..

### **Geoff Muirhead**

Within that framework, do you see a different distribution in terms of the way in which the aviation industry will work? The vast majority of people, as I understand it at the moment, are either leisure or visiting friends and relatives (VFR) type traffic. That will not be able to be reduced through conferencing or whatever.

### **Jean Leston**

In the best possible world, I do not think we are going to be having virtual holidays. Certainly, the potential for technology to replace flying is primarily a business issue, although you can argue that, to a very limited extent, Skype and mobile video conferencing could replace a bit of family flying on the margins, but not to any serious extent.

**Geoff Muirhead**

Do you think that that sort of trend will change the status of these major hubs because there will be less business traffic, or will it have no impact?

**Jean Leston**

I cannot see that it is going to have a significant effect on hub distribution or specialisation. It is going to be a straight, across-the-board reduction. There will always be a need to fly and have face-to-face meetings for establishing contacts and client relationships. All those initial contacts are probably best done face-to-face, so you are going to need to fly to wherever you need to go for those. For routine meetings and internal meetings, however, those are the types of meetings that companies are already replacing with conferencing technologies.

To add to this, business spends a huge amount on travel: £17.5 billion a year according to Office for National Statistics (ONS) figures. For a lot of companies, flying represents a significant percentage of their opex as well as their corporate carbon footprint. If they want to look good to investors and to bring their costs down, they are taking carbon out of their businesses in lots of other ways, including flying. I think the drivers will continue beyond the recession. I think conferencing technology, if introduced under a strict travel policy, has tremendous potential to replace flying, but not to particular places. It is just an across-the-board cut.

**Geoff Muirhead**

Within that context, aviation economics does require a very significant amount of business travel for viability. If that is going to reduce dramatically, what does that mean in terms of the way in which the aviation industry may develop going forward?

**Jean Leston**

I would love to hear the answer to that question further down the table, but a very high percentage of airline revenue – 60% or more – come from premium business travellers.

**Jonathan Counsell**

Our perspective on video conferencing is that it absolutely has a role to play. Of course, we do not encourage people to make unnecessary journeys. I guess the debate is whether you believe it is complementary or substitutive. On balance, we believe that it is complementary. Connectivity breeds connectivity. Everyone thought email would replace mobile phones but it did not; they both encourage each other. The evidence from organisations suggests that that is what is happening, so we agree with the DfT comments in that regard. What our customers are telling us is that, if you are doing a deal and want to build a relationship with a new organisation or establish a project, you have to do that face-to-face, not through video conferencing. Intra-company deals and conversations lend themselves, so I think there is a role for the technology there, but I do not see it seriously replacing growth in business travel in the future. The CCC likely scenario agrees with that assumption out to 2050.

**Geoff Muirhead**

Does anybody have any thoughts that they would like to offer up in respect of transfer traffic and its impact generally in terms of boosting demand?

**Matt Gorman**

I have plenty of thoughts but I am not going to offer them today because I am here representing Sustainable Aviation. I am sure my chief executive will represent them very eloquently tomorrow when he speaks to you in London.

**Cait Hewitt**

I suppose the question is primarily an economic one. We have certainly argued, not so much in our climate submission but in other submissions, that it is an important question for the Commission to consider objectively the extent to which air-transfer traffic does or does not contribute to the UK economy. There is nothing worse environmentally about a transfer flight than any other flight. If the focus of the UK were to be on transfer traffic, that would suggest that we had a responsibility for a lot more long-haul flying than might be the case if there was a higher proportion of leisure travel.

**Geoff Muirhead**

Tim, you talked about the need to manage aviation going forward, and regulatory and other types of interventions. What do you mean by that? What sort of interventions are you talking about?

**Tim Johnson**

You can approach this in two ways. You want to regulate the emissions. I talked about the opportunity internationally to develop an aircraft CO<sub>2</sub> standard. That is not something that, in the short term, drives this industry. In coming decades, however, as you increase the stringency of that, particularly if you take the brave decision that you become technology-leading rather than technology-forcing, providing you give industry suitable timescales in which to react to those decisions, you can drive and regulate for emission reductions there.

I think the endpoint is one that, even allowing for the fuel suppliers' own limited analysis of where alternative-fuel provisions are likely to come from in the future for aviation, you are left with the position that the CCC was at: that, if you have a target in mind and an affordable budget, these alone will not get you there. At that point, you need to look at the number of people who travel, and I do not see it ever being politically popular for any government to limit, per se, the amount of flying per head. You can send the right market signals, and I think there are large numbers of ways in which you can price aviation accordingly that will send those signals. Perhaps that is the way it will develop.

**John Armitt**

Jean, could I pick up a point? I am not sure whether you mentioned it in your presentation, but certainly your final point in your paper is the need for the UK to have higher passenger loadings. For example, departure flights from Heathrow are 74% lower than Paris, Frankfurt and Amsterdam.

Does that not argue for more transit? Essentially, the airlines get higher passenger loading through the connecting passengers and transits, which then leads into the argument about the hub and the benefits of the hub to create that. In a sense, it just seemed to me that it was odd that you were promoting that in the sense that you were saying there was an argument for more transit flights if the UK is going to get its passenger loadings right.

### **Jean Leston**

I hope you are not misunderstanding what I am saying. I think we need a hub – there is no doubt about it. We need a hub, and transit passengers have a valuable role to play, but we do not need an expanded hub. That is the position that we are taking. One thing that we think would increase average passenger loading would be per-plane tax rather than Air Passenger Duty (APD), and it is disappointing that Government has not gone for that idea. We think that makes a lot more sense. They argue that it cannot be done: take it up with Treasury.

We think that, if there is going to be constrained capacity, inevitably that is going to help make aircraft more efficient in terms of loading and in terms of concentrating on most profitable routes within key UK trade corridors. We think having constrained capacity will be a virtuous circle in terms of helping to get all of these things working together, including increased loading.

### **John Armitt**

You also said that the past is no good lesson for the future. I would argue that, in many respects, the opposite is the case: that the one thing that does not change is human behaviour, and particularly human emotional behaviour. We are potentially facing a 15-20% growth in population by 2050. I would have thought it reasonable to assume that those people are, essentially, going to behave in the same way as their parents and grandparents. Is that not inevitably going to lead to a significant increase in demand for travel from the UK, whether that is people doing business or, indeed, as is the case for the majority of flights, people are travelling for leisure and to visit friends and relations, particularly given which elements of our society that increase is going to come from?

### **Jean Leston**

Increased UK population is one of the only factors that is going to continue to increase flying, but at a much lower rate than previously. If you think of why the UK level of flying has skyrocketed since 1990, it has effectively been because of the introduction of low-cost flights. Cheap flights account for 50% of flight increases. The DfT's analysis is that we are hitting market maturity. There is no such thing as a cheap flight, given oil prices, increasing tickets and more and more add-ons. The cost of cheap flying is no longer so cheap. That is one factor. Another factor is how many holidays people can take. Already, even if you believe that we can keep the costs of flying down, people still have a time cap in terms of holidays.

The market is hitting maturity, oil prices are going up, and there is every likelihood of more aviation taxation being introduced. There is currently a consultation paper from the EU which is reopening the whole issue of duty on jet fuel and VAT on air tickets. Any of these things could have significant impact on demand. Aviation in the past has been coupled to growth; we think that is decoupling. The DfT forecasts have been downgraded for the next few years but still assume 2% growth per annum to 2030, which we think is also pretty ambitious.

**Tim Johnson**

The key point there, however, is that, while the UK population is going to go up, no one on our side has advocated that the number of passengers in the UK will not go up. We said emissions should stabilise, not passenger numbers. Allowing for all the technological and operational improvements, even recognising the carbon limitations, you are going to get potentially a 60% increase. A 60% increase is higher than UK pop growth, so, if anything, the propensity for the UK population to fly will go up, and we already have one of the highest in the world. I think these figures are accounted for in the DfT scenarios.

**Ricky Burdett**

In the context of climate change, we have not talked very much about the role of surface transport. Is that because you generally do not feel that, effectively, replacement of, say, short-haul flights by surface transport will really impact on climate-change issues at all, let alone behavioural shifts?

**Cait Hewitt**

AEF, together with a number of NGOs, would very much welcome opportunities for short-haul flights within Europe to be transferred, where possible, onto the rail network, because, as Jean has suggested, emissions per passenger kilometre are significantly lower from rail than from air. Having said that, the reason why perhaps none of us have spoken more about that issue today is because, if you are looking at the overall emissions challenge to UK aviation, the very large proportion of emissions arise from long-haul travel. That is why, particularly when there is a focus on south-east airports and the role that hubs can play, it is really the long-haul travel that quickly becomes the most significant contributor to the problem.

**Matt Gorman**

I would agree with what Cait said: the primary source of emissions is long-haul, and it is clearly more difficult to see that kind of modal substitution that you have outlined for long-haul journeys. The CCC, in its 2009 report, looked at this and saw some opportunity for modal shift, but relatively limited. We would certainly say that aviation and airports should be well integrated within the transport network and, if that is the case, there is certainly some opportunity for substitution. If my own airport was seamlessly integrated into high-speed rail networks, we would certainly expect to see some substitution of nearer short-haul journeys in the UK feeding into the hub. The word 'seamless' is important. It needs to be a good product proposition for the customer: you can check in your bags the whole way through, you do not need to worry about lugging them up and down train stations and so on, and it is a seamless proposition. Even then, however, it would be near-UK journeys. It is still a bit difficult to see a transfer journey from Aberdeen via London to somewhere necessarily switching to rail, because the time penalty would certainly be too big.

**Tim Johnson**

The more interesting question is not so much the emissions saving, but the slots saving. Potentially, if you went down that route for domestic and near-European, it is the number of slots that it releases in a capacity [inaudible], and it might be a question for other panellists.

## **Comments from the Floor**

### **Participant, Plane Stupid**

Maybe I am just not catching the –

### **Sir Howard Davies**

I was really intending these to be comments. If there are issues that we need to pick up, we will pick them up at the end.

### **Participant**

In try to clarify my understanding, the thrust of aviation at the moment is three things. We are going to get savings by new technology and, on the basis that we have had new technology every year since the Wright Brothers but have not yet once technology reducing emissions. Every year, since new technology has been introduced over the last 100 years, we have seen emissions going up. Maybe I am missing something. Maybe you can explain to me why, all of a sudden, new technology will suddenly reverse that trend.

The other thing is the biofuel issue. Biofuel Watch put the challenge to Tesco to explain how biofuels could be sustainable. Tesco were completely and utterly unable to support their argument and subsequently dropped their entire biofuel marketing campaign. Again, I would ask the aviation industry to maybe advice Tesco on where they went wrong, because they still seemed to think that they were able to sort it out. Even the Rand Corporation have dropped the idea of biofuels supporting the US military.

We then talk about carbon trading. All of a sudden, we get the situation where biofuel will be pushing up the price of staple foods and, at the same time, carbon trading is going to make life an awful lot harder for those on the lowest rungs of the income. Again, I would ask the aviation industry: how many more inner-city riots will they be prepared to accept as life gets tougher and tougher for those people at the bottom of the income ladder?

Finally, by the end of this decade, we are on target for our CO<sub>2</sub> emissions in the atmosphere to be above 450 parts per million. At that point, we go into runaway climate change and there is no recovery. The question to John Armitt, then, when he suggests that things will not change and that people will not change, and that, in 2050, people will still be going on holiday, is: where to, when the planet is boiling and the economy has collapsed? People will change very rapidly in the face of the challenges that we are moving towards, and we really do not seem to be tackling those with anywhere near the voracity with which they are coming over the horizon to us at this point in time.

### **Clara Paillard, PCS Union**

PCS represents 250,000 members in the Civil Service and other associated public services. These include 2,000 members in the aviation industry working in the CAO, BAA and NATS. PCS has a policy of opposition to airport expansion on environmental grounds, and we support a publicly owned, integrated transport system that utilises rail, bus and air to provide a public service to get people from a to b in the safest way possible and with the least impact on the environment. This

includes a big role for rail services at EU level. Such a transport system needs a body of well paid and trained staff dedicated to delivering the service, including jobs specifically aimed at planning, implementing and monitoring to ensure that environmental impacts are minimised. This is in line with the One Million Climate Jobs campaign that PCS supports and which argues that we could create a million jobs and reduce 85% of our emissions, all for £18 billion. I invite you to read this report.

We do not believe that such aims can ever be achieved through the current market-orientated arrangements. In aviation, safety and the environment are secondary to the profit margins of the major airlines that try to influence Government policy in their own interests. This results in cutting jobs to the minimum to help increase profit margins. We believe that the role played by aviation in climate change requires more employment to ensure safety and environmental friendliness. We do not believe that expansion aspirations in main UK airports will produce a growth in job opportunities. In fact, the industry will seek to expand and cut job numbers at the same time, regardless of the impact on the environment.

Multiple aircraft competing for the same routes is total nonsense and will only increase environmental damage. We will see the same thing as with bus and train-service competition, which excludes people who aim to travel in economic locations. We do acknowledge the stake taken by the industry to reduce its environmental impact but we should point out that such efforts are made in the context of an ever-expanding industry, so they concentrate on CO<sub>2</sub> emission-reduction per flight rather than overall.

To conclude, PCS's position is about having the political will to take the necessary steps to safeguard our planet for future generations. Aviation is a growing contributor to the threat posed by climate change. We recognise that a decision needed to reduce the environmental impact of aviation requires a step away from ideological commitments to a free market, and we need to embrace a public-service ethos. With the Government we currently have and the power of corporations, such a shift will not be easy, but we believe this is your role and it is imperative that this industry is run in a way that prioritises service, safety and the environment above profits.

### **Peter Sanders, Stop Stansted Expansion (SSE)**

I would like to make a few comments about non-carbon emissions in the light of what Tim said. The present position of the DfT is that it cannot predict the impact of non-carbons emissions on climate change, so is not going to take them into account. That seems to us to be quite irresponsible. Tim has said that, when we do have this information, it may well have a very dramatic effect. I know that the Airports Commission wants to put forward a very authoritative report that will really stand the test of time, so the possibility that Tim opens up is that the Commission will produce a very well considered report, and then we get this new information which will make a radical necessary, or even sweep the report off the table completely. I think we need to know two things: first of all, when will we have this information about non-carbon emissions; second, what stance will the Airports Commission take?

### **Jeff Gazzard, AEF**

I wanted to make some comments on the panel's questions. I liked John Armitt's question and I loved my colleague's reply: a very smart question and a very smart reply about population growth. I too am going to read something out. Professor King asked about context, Geoff Muirhead asked about context, and context is very important. We have heard from Sustainable Aviation about the

number of wedges and the number of promises, and the potential of biofuel [inaudible] do you want to fly or do you want to eat? Let us move on from that.

One of the things that NATS says is the target for their contribution to the air-transport wedge is that, since 2008, they became the first air-traffic-control service in the world to set real-life fuel-efficiency and emission-reduction targets. The UK's air-navigation service provider (ANSP) has reported, from May this year, that 800,000 tonnes of CO<sub>2</sub> has been saved over a five-year period. This represents a reduction in the order of a quarter of a million tonnes in fuel burnt by aircraft [inaudible] and saving airlines around £116 million, or, as we increasingly have to say these days, \$242 million, in fuel costs. That is a lot, but there is no context.

The context is that, in 2011 alone, UK civil-aviation emissions alone were 34 million tonnes. With the greatest respect, I welcome that kind of saving and investment, but it is not exactly a planet-saving amount. When you see these wedges and these forecasts, then, it is context that is all important. How they are performing, where are the real-life examples of what biofuel is doing, and where are the real life examples of what ANSPs can provide? We have heard from Sustainable Aviation that they are looking forward to a 10% saving, which is a very valuable contribution, but it is not very much Geoff Muirhead said [inaudible].

What we are looking for is how wedges are chipping away. The One in Five – Jean Leston's fantastic WWF UK campaign – can deliver. It is only one in five. People can do that, if they really try. If they add another one in five by taking rail around Europe in short- and medium-haul terms, that can make a contribution. If Manchester City Council would just go around the UK by train, all of these environmental wedges can match climate-technological, operational, biofuel and all the other wedges in Sustainable Aviation's [inaudible]. We have to have these reductions. Despite what Kevin said and despite Professor King's comments, you have to have some faith in technology to deliver [inaudible].

To turn the question around, to John Armit's point, if the best the industry can deliver sensibly is a 1-2% efficiency gain annually, and that is probably downhill with the wind behind it, that is the kind of growth that is allowed under the CCC scenarios in a carbon-constrained economy. It is, then, not no growth in transport passengers, and it is not businessmen flying this, but this horrible cliché of the 1980s: 'a little bit less than it otherwise would have been.' As much as the industry puts this effort into explaining to us all, as it does very clearly, apart from altering the figures in the represent as they come out to make it better, chipping away at these things is the way to do it.

I spoke the other day to the newly appointed head of Boeing [inaudible] and I asked him the very simply question: does anybody know the biggest user of video conferencing in the world? It is Boeing. As I said to him, if you are outsourcing the construction of fuselages here, and empennage there, you would not be daft enough to fly your engineering teams around the world to attend a meeting. They have 400 videoconferencing theatres around the world – not desktops or crappy things in a corner, but theatres. Equally, to the point that a couple of the panellists have made, they are not in the business of not manufacturing and selling aircraft, so solving that conundrum is what you are trying to do.

Your evidence and this kind of session and the papers that you put out are exactly on-target. Most of the responses that people have put in, despite their partiality, are worth reading, but this is the overriding issue: it is not about being able to fly around the world, but about how you get aviation [inaudible] carbon-constrained economy.

**Marc Hudson, *Manchester Climate Monthly***

Could I ask Sustainable Aviation to bring up its roadmap slide? Before I come to that, I do often find myself agreeing with Geoff Muirhead, but when he talks about reports being produced that give the result that the commissioners of them want, I agree with him, but I am thinking of reports by Manchester Airport Group and Manchester City Council etc; he perhaps is not.

I do not see a label on your  $x$  axis. I presume '2010' to '2050' gives us the year, but what is your  $x$  axis? What are numbers '1.5' and '2.5'?

**Matt Gorman**

1 is the level of emissions in 2010.

**Marc Hudson**

As measured in tonnes?

**Matt Gorman**

No, as a base line to compare it to future emissions. I can find the exact figure but it was whatever it was in 2010.

**Jonathan Counsell**

It is 33 million tonnes of CO<sub>2</sub>.

**Marc Hudson**

As a general principle, can I just say that, when you are presenting a graph to commissions who are very busy, and members of the public who have taken time to come here, it is just good manners to put an  $x$  axis. On the general point, I see nothing going back to 2005 or 1990, which are some of the base lines that we need to be looking at. This colourful graph, which makes, as another presenter said, optimistic assumptions, is full of 'We are going to save this much on fuel and this much on carbon-trading', which does not even exist yet, detracts from the intelligence of the commissioners and of the people in this room. I would really like to see some basic standards of information presentation so that the Airports Commission does not waste its own time and that of others.

**Dr Ruth Wood, Sustainable Consumption Institute**

To deliver on UK and global climate targets, there is significant evidence that we need to start reducing emissions annually, year on year, now in all Annex 1 countries and all sectors, which has to include aviation. It is brilliant that there is technology on the horizon that can help us fix this, but there is going to be a time lag until that comes into place. The length of that time lag is very uncertain. It is not reliant on industry goodwill, but on a whole host of other factors. We cannot simply rely on technological optimism to deliver these futures.

Our argument would be that any past expansion which facilitates emissions growth above and beyond what is compatible or can be reconciled with the Climate Change Act, and avoids dangerous climate change, will likely become a stranded asset in the future. I would also add a note of caution around an over-reliance on biofuels for delivering some of these savings. Firstly, they need to be sustainable. If you look at many other sectors of the economy that are also trying to reduce their emissions, they are also relying on biofuels. At the moment, it is very unclear and uncertain as to whether is enough biofuel resource in the world to support the demand that everyone else, let alone the aviation industry, has. I would err on the side of caution on that.

### **Anthony Rae, Friends of the Earth**

Our evidence is somewhat different to what you have had. It is about the nature and quality of the process that you should be following. It can be argued that the reason why the 2003 process reached its conclusion and had to be withdrawn within seven years is because of process failure, so we have put some points to you.

Our position is similar to the CCC's: that the UK aviation-capacity envelope has to be fitted within the UK emissions envelope, so that the latter provides a boundary constraint for the former. We have put, in our evidence, four questions to you: first, is it unambiguously clear to you that your remit requires you to fit the capacity envelope within the emissions envelope? The DfT should have given you very clear guidance on that; we do not think that they have and, therefore, it now falls to you to satisfy yourself on that question.

Second, do the other parties – and particularly those promoting proposals for airport expansion – also expect that requirement? We think that you should set out some criteria and they should be asked to respond to that.

Third, if you do accept the remit to fit capacity within emissions, what is the size of the emissions envelope that you should be working to? That is asking you, effectively, to go through the process again that the CCC did to review what that could be.

I would just like to read to you one interesting point that I realised when listening to a presentation by Professor Paul Ekins at Tyndall Manchester just the other week, when he pointed something we had not noted before. In the recent MARKAL modelling by UKERC, taking the other sectors' emissions reductions from 80% to 85%, which is what the CCC requires, requires a very large expansion of nuclear generation. Going from 80% to 85%, then, requires a very large expansion of nuclear, which, in turn, will add a very substantial cost. That is another reason why it is worth your while looking through and asking and answering that third question.

Finally, what is the methodology that you intend to use to go through the process of fitting the capacity within the emissions envelopes? There, what we have said in our evidence is that, regrettably, your consultation paper is ambiguous as to the methodology you intend to use to relate emissions and capacity, whereas CCC 2009 was unambiguously clear.

The larger point remains this: that, at the moment, the Commission has not set out in its consultation paper what the methodology you intend to use to relate capacity and emissions is, and whether you intend to import the unchallenged CCC 2009 methodology or not. This criticism was accepted when we put it to Sir Howard at the NGO meeting with him in April. Therefore, your primary task now is to identify your preferred methodology for fitting the two together, for the benefit of all parties. We would suggest that you then need to consult on it in view of its absolutely

critical to the outcome of your work, and that you are then able to proceed within the framework that it establishes. The CCC letter of 3 July to you offers to come and discuss those issues with you and the Commission, if that would be useful, and we would urge you to accept that offer.

**Sir Howard Davies**

I am sure we will do that. Thank you for your comments. I will give a very quick opportunity to any of the three who wish to respond briefly.

**Cait Hewitt**

Perhaps just to make a very brief final comment, in all of this let us not lose sight of the fact that, while we have talked about the UK Climate Change Act and UK targets, these are climate targets that are replicated, and that every G8 country has signed up to an 80% reduction in emissions by 2050. We do not think it realistic to think that the UK would be the only one taking these concerns forward. Whereas it may feel that this is a particular challenge for the UK, we certainly see it coming for other countries, and it is important to keep that in mind in the question of balancing environmental concerns and economic ones.

**Sir Howard Davies**

Thank you very much to the AEF, WWF and Sustainable Aviation for exposing themselves in this way and accepting to be with us today. Thank you to those who commented and those who did not. If anyone did not have the opportunity but has something to say, please submit it to us directly. Thank you all very much, and we will reassemble in 25 minutes.

## **Session 2:** **Welcome and Opening Remarks**

**Sir Howard Davies**

**Chair, Airports Commission**

Thank you very much for being disciplined and getting back here on time so we can keep to our timetable. We now have the second session, which is on demand and connectivity. Most people were here for the first session, so my introductions are going to be extremely brief. We are working towards an interim report at the end of this year. We have issued a series of papers, one of which was on demand and one of which was on connectivity, and the relationship between the connectivity of the UK in terms of air and economic growth. We want to use this session to tease out the arguments about that, which I hope you will find are quite lively.

We have three different witnesses who are going to present to us initially:

- Brian Ross from SSE, an economist who has also done a lot of work on demand and on the arguments surrounding the relationship between airline connectivity and economic growth.

- Nicola Walker, Head of Infrastructure and Environment at the CBI, supported by Mark Dittmer-Odell, an economist at the CBI.
- Mark Tanzer, Chief Executive of ABTA, which also clearly has an interest in this matter.

We will have three opening presentations, followed by some cross-examination by my colleagues if they have any points that they wish to pick up, and then we will invite comments from the floor.

## **Air Connectivity and Economic Growth**

**Brian Ross**

**Economic Adviser, SSE**

### **I. Preamble**

Thank you, Chair, and good morning, everyone. Two brief points of introduction:

First of all, I am not here to do any special pleading on behalf of SSE; I will be presenting things from a UK perspective.

The second point is also to with perspective. I might be so bold to suggest that the reason why we are all here is perhaps a tribute to the effectiveness of the aviation industry's lobbying machine. In the spring or summer of 2010, there began a tremendously successful campaign lasting two years to convince the media, the public at large and politicians that the UK was facing an airport-capacity crisis. I would submit that that is somewhat exaggerated, so my presentation is really intended to try to put a sense of perspective on that claim.

### **II. DfT Aviation Forecasts**

First, in terms of historical perspective, the 2003 Air Transport White Paper predicted demand of 500 million passengers by 2030. The latest forecasts suggest it will be 320 million by 2030, so it is a downgrade of 180 million. The Government's response to the demand of 500 million was to suggest that the UK needed four new runways. The maximum capacity of those four runways would have been, at most, 180 million passengers a year. In effect, then, we have taken out the demand and the four runways. Faced with the current demand forecasts, the logical policy response, consistent with the analysis that underpinned the Air Transport White Paper, would be to conclude that we do not need any additional runways. It is most interesting that most of the industry and trade associations welcomed the Air Transport White Paper, yet the same people are now often saying that we have a capacity crisis.

There are also many who would question whether the demand for air travel is artificially inflated. I really do not want to get into the tax argument too heavily, but it is a matter of fact that airlines do not pay fuel duty or VAT. Compared to road transport, APD would need to be four times higher to get fiscal equity, which would make quite a significant difference to demand.

To what extent is demand artificially inflated by the generous tax breaks? We asked the DfT about 18 months ago to model the impact of a doubling of APD, and the result was a 6% reduction in the 2030 demand forecast – rather less than 6% on business travel and rather less on inbound tourism. The highest percentage was on outbound.

Still on the theme of whether we are facing a capacity crisis, it is important to note that the UK has more runway capacity than Germany, France, Spain or Italy. We have more runway capacity than Japan, which has twice our population and twice our GDP, and is also an island trading nation. In an overall UK context, then, there is certainly not a capacity crisis.

If we look at the five London airports and the 12 biggest regional airports, Heathrow is 98% filled in terms of air transport movements (ATMs), which is the correct way to measure it. Manchester has lots of capacity and Gatwick has 17% etc. Overall, by 2030, without new runways, the UK will have the capacity to handle 6.7 million ATMs – about three times the demand forecasts. These numbers are adapted from a table in the CCC 2009 report, where it made an assessment, and we have simply updated that assessment to 2012.

We have about three times the capacity that we need to meet the 2030 forecast; going to 2050, who knows what happens then? On the basis of the numbers, however, we have about twice that we need to achieve that. That is just in terms of ATMs. I mentioned that Heathrow was virtually full, at 98%, but it is capable of handling an extra 20 million passengers a year, and every prospect of being able to do that through steadily increasing the average size of aircraft over the next 10 or 15 years.

### **III. The DfT's ATM Forecast is Too High**

We do not have too much quarrel with the DfT's passenger forecast of 320 million, which seems to be pretty well founded. We do, however, take issue with the DfT when they then convert that into ATMs. For the last 20 years, on average there has been almost a 2% improvement a year in the numbers of passengers per passenger-aircraft movement. For virtually the next 20 years, the DfT says it will be only a 0.2% improvement. We simply do not understand why we should believe that there will be such a slowdown in the increase in passengers by aircraft movement. It is a function of the size of the aircraft plus how successful you are in terms of filling it – the load factor. Both of those parameters have been increasing over the last 20 years.

Indeed, when you look at the types of things that are likely to happen over the coming years – new aircraft types are larger; long-haul is expected to grow more quickly than short-haul, and High Speed 2 (HS2) might take out some domestic air travel, which has the lowest passengers per aircraft movement – it is unfathomable why the DfT believe that there will be this dramatic slowdown. If you had just 1% growth in the number of passengers per passenger-aircraft movement, between now and 2030, instead of needing 2.7 million ATMs, which is what the DfT says, you would need 2.3 million.

### **IV. Business Travel Continues to Decline**

So much of the argument seems to be centred on the need to cater for business travel. Again, perspective is required. In 1995, 32% of all UK air travel was for business; by 2000, it was down to 24%; and, for the last year for which we have figures – 2011 – it was down to 20%. That is proportionate. In absolute terms, the number of international business flights by UK residents has fallen by 20% –tribute to the Panda campaign, I suppose – in absolute terms. These days, only one

in every eight overseas flights by a UK resident is for business purposes: seven out of eight UK residents going abroad are going for leisure, including visiting friends and relations.

## **V. Meanwhile the Tourism Deficit Has Moderated**

Industry speaks about the importance of air travel to the UK economy. Frankly, some would argue that it is much more important to the Spanish or Irish economies in terms of the benefits that they get from UK residents travelling overseas. In fairness, the tourism deficit has moderated in the last five years. It ballooned, in fact, from the mid 1990s, for about 10 or 12 years, almost exactly matching the rise in low-cost or budget air travel. It has moderated in the last few years for whatever reason – recession, market maturity etc. Even though it has moderated, it was still 15 billion last year. These figures, incidentally, are purely on air travel; I know that ABTA has done numbers that relate to all UK tourism, including by road, rail and ferry. Outbound air travel, both in terms of numbers of people and in terms of expenditure, is twice as big as inbound travel.

## **VI. A Nation of Holidaymakers?**

Napoleon once described the British as a nation of shopkeepers; if he were around today he would probably define us a nation of holidaymakers, because we do have a propensity to travel more for leisure purposes than almost any other nation on earth. For all everyone speaks about the importance of Heathrow to UK business, we flew more people to Miami last year than to the whole of China; more people to Nice than to either Beijing or Shanghai. Gatwick flew almost 50 times more people to Spain than to Brazil, China, Russia and India combined.

From Stansted, there are no long-haul flights; indeed, there are no flights to any of Europe's main business destinations, including Paris, Brussels, Zürich or Frankfurt, but you can fly every day to Torremolinos, Tenerife, Alicante and Benidorm. As many will know, Stansted has lots of spare capacity. If there was genuine market demand – and I read all these reports from the CBI and others saying that we desperately need more flights to China – there is nothing to stop there being more flights to China. Stansted could take 100 flights to China tomorrow, and has the capacity and the planning permission to do that. I am not encouraging you, but I simply say it as a matter of fact.

Acknowledging that there is pressure on capacity at Heathrow, there may be other ways to deal with, and the possibility of differential rates of APD is an obvious option to look at that.

## **VII. Is London Really Losing Out?**

One of the Commission's discussion papers quoted from the Cushman & Wakefield study. The most recent study it published was in 2011 – it did not do one in 2012. It shows London streets ahead of Paris, Frankfurt and Amsterdam as the best city in Europe to do business. The score was 0.84, way ahead of Paris at 0.55. That is the position it has held since they started doing these studies back in 1990. For 22 consecutive years, London comes out top. Not only that: companies were asked specifically about transport links, and which were the top three cities in terms of transport links with other cities and internationally. There is no change in the top five cities, but the gap between London and second-placed Paris widened further. London was the only city in the top five to see its score improve, with perceptions of Paris, Frankfurt, Amsterdam and Brussels all weakening over the years.

## **VIII. Summary of Key Points**

- When considering runway capacity, it is not all about passengers, but about the number of ATMs. That is what counts for runway capacity.
- It is highly significant that there were fewer ATMs at UK airports last year than there were in 2001, despite there being 22% more passengers. This, then, is the 2%-a-year improvement.
- The capacity of our airports is three times the 2030 forecast and twice the 2050 forecast. The capacity tends to be in the regions more than in the South East.
- We have more runway capacity than almost any other comparable country.
- The number of business flights abroad by UK residents has fallen by a fifth in the last 10 years.

These are the points I wanted to make, to try to give a sense of perspective, and I hope that is helpful. Thank you.

**Sir Howard Davies**

Thanks very much. We will move straight on to Nicola Walker from the CBI.

## **Air Connectivity and Economic Growth**

**Nicola Walker**

**Head of Infrastructure and Environment, CBI**

### **I. Preamble**

Thanks, Chair, and thank you very much for inviting us to be part of this panel. For those of you who do not know us, the CBI is an employer membership organisation that represents sectors across the country. We represent all sizes of company. We tend to approach this issue from a business-user perspective, predominantly: businesses that are currently trading or hope to trade overseas and which are concerned about the current debate taking place, concerned about future capacity, and concerned about how it is going to impact their future investment decisions.

### **II. Opportunities**

I would like to use this time to make some comments about the broader implications for the UK's economy on connectivity, and to think about the impact that this debate would have on trade and investment. At a time when the UK is looking to exports as the way to solidify quite a fragile recovery, this discussion on aviation capacity takes place on a much broader scale. It has a wider economic significance. The imbalance in our economy is well known. The Chancellor has set some quite stretching exports targets by the 2020s. If we are going to meet them, this means

diversifying our export markets into new fast-growing economies. Currently, the UK is dependent on the EU and the US for almost three quarters of our exports, yet the International Monetary Fund (IMF) is forecasting that emerging markets and fast growing-economies will be set to grow at an average rate of about 7.7% in the next five years, so much less than our established trading partners.

We would argue that, currently, the UK is quite poorly placed to take advantage of some of these opportunities, and this needs to change. This absolutely does not mean abandoning the mature markets that we currently rely on. We need to maintain those links that have been the backbone of UK trade, but it also means that we need to equip our businesses with the right tools and connections to enable them to break the markets that everyone is suggesting we should be focusing on, especially where the UK has traditionally had little or no presence.

We know that there is no one solution to this – the CBI has done an awful lot of work on exports in the last couple of years – but what we do need to ensure is that Government is pulling in the same direction across all departments, which means that aviation policy is synced with what UK Trade & Industry (UKTI), the Department for Business, Innovation and Skills (BIS) and the Foreign & Commonwealth Office (FCO) are trying to do as well. We know, from some of the work that the CBI has done, that direct flight connections are an essential part of this puzzle. We hear it from businesses directly and anecdotally, and it has also been shown in a lot of the economic work that we have done.

### **III. Flight Connectivity and Flourishing Trade**

The CBI submitted a publication back in February/March, *Trading Places*, for the Commission's consideration, where we asked aviation economists Steer Davies Gleave to look at connectivity and at what businesses have long been telling us anecdotally, and to examine growth in trade and flights between the six largest EU countries, including the UK, and eight of the largest fast-growing economies in the rest of the world. Broadly speaking, their analysis demonstrated that, where flight connectivity grows, trade flourishes.

Not only does this analysis show a statistical link but, what is more, removing the effect of other factors such as historical ties, common language and proximity, we were able to try to demonstrate just how much trade is at stake here. The analysis demonstrated that, for each and every additional daily route between the UK and a fast-growing market, trade increases by £128 million a year. If you ratchet that up across the eight fast-growing economies that we looked at, this means that better connections with these markets could be worth up to £1 billion of trade a year for the UK. At a time when we are searching for something to solidify that fragile recovery, this is not a figure that should be sniffed at.

### **IV. A Virtuous Circle**

There has been an awful lot of fixation in this debate about what comes first: the trade link or the air link. It is a chicken-and-egg issue that probably oversimplifies the issue, I would suggest. We asked Steer Davies Gleave to test for lagged impact, and they demonstrated that this causality runs both ways: that flights and trade fuel and feed each other, creating almost a virtuous circle of activity. Coming back to the capacity point, without the ability to put on these new flights we can expect trade to be suppressed in the future as a result.

The obvious question, then, is: how well is the UK positioned to take advantage of this virtuous circle? What the aviation industry tells us is that new flights require both capacity and demand to

be economic. In recent years, the UK has experienced problems on both fronts, potentially limiting our ability to take advantage of these new markets. Our data has suggested that there are pinch points both on the ground and in the air, which have limited our hubs' ability but also that of our regional international airports to make new connections, often leaving the industry with a trade-off between existing, very profitable destinations – New York and Miami etc – and their ability to put on new routes to China, Malaysia and Indonesia.

We know that our hubs' growth rate continues to be restricted by a lack of available capacity. Figures suggest that we are falling behind our EU competitors. In the last years, Heathrow has grown by 53% as it approached capacity; growth at Schiphol and Charles de Gaulle, unrestrained by these capacity issues, has soared at three times that rate. Point-to-point airports – the other international airports that rely on in that model – have had to look to increase their catchment areas to try to boost demand, to make some of these new routes more economic. Good ground connections are essential here. They help to drive up the number of people who can easily, quickly reach the airport, thereby boosting demand, yet CAA figures have indicated that only 11% of passengers outside London arrive at their airport of choice by public transport – an indication that there is more to do on surface access and that our regional and international airports are currently being let down on that front.

## **V. Impact on the UK**

I would suggest that these problems have left the UK trailing our EU counterparts in connections to high-growth markets, and that business leaders are starting to feel the pinch. Evidence shows that the UK is slipping down the international rankings in terms of our ability to put on those new routes. An analysis of new routes created in the last decades from the EU to BRIC economies puts the UK in fourth or fifth place for three out of four of these countries – hardly the performance of a country that, in bygone years, has considered itself really the best connected in Europe. The UK captured just 14% of new flights to China from the EU in this time; fewer than half the new flights put on from France and Germany. To Russia, this figure was 8%, ranking behind France, Germany, Italy and Spain. Again, these are the markets that we should be focusing on.

This outlook is sufficient cause for concern for business leaders. Every year, the CBI does an infrastructure survey, where we survey about 600 of the UK's business leaders across the country in all sectors, and almost half of respondents expressed dissatisfaction at the UK's links to these emerging markets. This trend looks set to continue, with almost half of respondents expecting the standard of international connectivity to diminish in the next five years. With business perceptions visibly affected, I would suggest that it is more pressing than ever to tackle these dual issues of capacity and demand to lay the right foundations for new routes. Thank you very much.

# **Air Connectivity and Economic Growth**

**Mark Tanzer**

**Chief Executive, ABTA**

## **I. Preamble**

Thanks for inviting me here today and good morning, everybody. I suppose I am here to talk about the leisure-aviation perspective. ABTA's members sell 90% of package holidays in this country, most of which have a flight attached. A number of our members have their own airlines: Thomas Cook, Thomson and Monarch. We are also large consumers of scheduled and chartered airline services.

What do our members and, by extension, our customers – the British holidaymaking public – want from the airport configuration? They want a choice of routes. It has been a real triumph of travel, tourism and aviation to have opened up the world to so many new places. It is a great boon for the places and for the people travelling there. They want ease of access: they want to get to the airports without too much bother, and a good experience when they go through – as fast as possible. They want the airport service to be resilient: they do not want it to collapse every time there is a hiccup, with long delays or cancellations. I would also say that they want a free market as far as possible in aviation, to have choice and price driven by supply and demand, not by artificially constrained supply.

## **II. The Leisure Perspective**

First of all, let me just remind people that Heathrow and Gatwick are predominantly leisure airports, and that the majority of both of their businesses is leisure traffic. We were concerned, going into this study and the debate, that leisure might be given the poor-relation status. We have just heard about the business priority for strong aviation links, but there is also a very strong case for leisure to be taken into account. We have just commissioned some research by an independent economic bureau looking at the value to the UK economy of leisure aviation. I will not drown you in a blizzard of numbers; suffice to say it is very large in terms of its contribution to GDP, both directly and indirectly via all of the supply-chain producers that fed into it, and also in terms of employment. It is a very considerable employer, just not just in the South East but across the regions. Similarly, its contribution to regional economies is not to be underestimated. It also makes a very significant contribution to the Chancellor of the Exchequer, not just through APD, which we heard about earlier, but through other direct and indirect taxes. Leisure aviation is, then, an important economic player.

## **III. Links between Business and Leisure Travel**

The second point I want to make is that it is very difficult to disentangle business and leisure aviation. They share a similar fixed infrastructure – airports and access to them etc – but the economics of flying depend on business, leisure and cargo, even, all playing a role together. Aircraft seldom have purely one kind of passenger on them. Long-haul flights would not be economic without transfer passengers, which is one of the strong arguments for a hub in the UK.

Our research showed that over 80% of inbound and outbound flights are leisure-related, but the vast majority of flights have a majority of leisure passengers on them – some have more than 90%. They are going to traditional destinations but also to growth economies, where they want to build business links. Leisure traffic to BRIC countries has increased by 100% in the last 10 years. They are, then, helping build these arteries of trade that we need so badly, as we have just heard.

#### **IV. Access to Local Airports**

In terms of access to the airports for the customers, we do our own consumer research every year, and it is very clear that customers do not want to travel a long time to get to the airport. 45% of people will not travel more than an hour, and 80% will not travel more than two hours to get to their airport. They would trade off ease of access against price. Everyone thinks that the holiday market is entirely price-driven, but there is clear utility in having access to your local airport. We are here to say that you cannot shunt leisure passengers around with a focus on business and say that they can fly from a different airport. They want to be able to fly from a local airport. For a lot of people, Heathrow and Gatwick are their local airports. They also want a high quality experience when they get there, so we will keep the pressure on Government to ensure that border control and security are as seamless as possible, both going out and coming in.

#### **V. Summary**

- We do believe that there is a shortage of capacity, notwithstanding the arguments that we heard earlier, which threatens choice and resilience in particular, and probably cost.
- We are in danger of being uncompetitive as an aviation industry and as an economy as a result.
- Travel is good. We believe that not just of the economic benefit that it has for us but for the benefit that it has on destinations too, which we need to support with the investment in infrastructure that is required.
- We do believe that there is a requirement for a hub in the UK, for reasons of choice, facility and fundamental economics. I mentioned transfer passengers, and also the sharing of business and leisure travel for us argues very strongly for a hub with the correct capacity.
- Lastly, as you go through the deliberations in this debate, do not underestimate the importance of the leisure sector to the economics of the business and, in fact, all the aviation sectors.

### **Panel Questions**

#### **Sir Howard Davies**

Thanks very much. Let me kick off the questioning from our side with the Chairman's prerogative and a first question from me. Brian, you talked about the broad picture, which is exactly what we asked for, but in the middle of it you did refer to the particular issue of capacity constraint at Heathrow. You posited as one response to that some kind of differential APD treatment. How would that work and what would the mechanism be to deliver something?

**Brian Ross**

The justification for it does not relate just to the fact that capacity is much tighter in the South East than it is elsewhere in the country. It is also important to recognise that, presently, two thirds of all travel is from airports in the South East, which is about a third of the UK population. Mark just made the point about people looking to travel from their local airport. I am not trying to play pass the parcel here and to dump the problem, but if there were no more runways built in the South East, that would encourage a continuation of the trend, which is almost the internationalisation of our regional airports – Manchester, Newcastle and others – that are developing international services. It is probably a good thing to balance things more evenly across the country, not just because it is more convenient for people, but also economically.

So far as APD is concerned, there are no published figures, as far as I am aware, that show how much is collected airport by airport. A back-of-the-envelope calculation, however, would suggest that Heathrow collects more than half of all APD in the UK, or about 1.4 billion, despite the fact that Heathrow has a lot of transfer passengers who do not pay it. In theory, then, at one extreme you could double APD at Heathrow and abolish it everywhere else – revenue-neutral. To what extent would that take the pressure off Heathrow and shift the Miami flights to Stansted? It is not difficult for DfT modelling to work out what effect that would have in terms of dispersing the demand.

**John Armitt**

Brian, I want to pick up your point about the fact that the UK is the best place to do business in these surveys. I would argue that that does not necessarily mean that more business is done here. In fact, interestingly, in the recent Nabarro report on the best place to invest in infrastructure, the answer was the UK, but we are one of the worst places in investing in infrastructure, and our infrastructure is 24<sup>th</sup> in the world. My question is, whether it is expansion of airports or of infrastructure to improve the use and flexibility of other airports, who is going to pay for it? The supposed benefit of the aviation sector would be that, largely, it pays for itself, whereas, in fact, other infrastructure has to be paid for, largely, by the public purse, because we do not have mechanisms for recovering it. The aviation sector seems largely to be able to pay for itself. BAA is not seeking Government money to pay for expansion at Heathrow, as far as I am aware. Would your point be that, in fact, it is necessary for us to take a decision to invest publicly to make these shifts in the use and the balance of use of airports to avoid expansion of any of the airports in the South East?

**Brian Ross**

I certainly would not advocate public subsidy for UK airports in the way that, for example, the Mayor of London wants to argue it. This is more perhaps a debate for tomorrow. It is perfectly reasonable to expect the industry to pay for its own infrastructure, including a share of the surface-access costs to the extent that the airport operator benefits from that. One of the difficulties that you and Government have is that you cannot dictate the investment policy for the private sector. The 2003 White Paper arguably failed, because here was a Government and we thought, 'We are going to have a White Paper on health or education', and the Government is in control and can make these things happen, but there is no point having an airport-development policy unless it is aligned with commercial realities/practicalities. Some would argue that Government does not need to have that at all.

My point was really about a very modest level of Government intervention, in that, insofar as Government collects APD and deems that £2.7 billion is the right level just now – and I think it should be higher – you could apply that tax more intelligently than it is presently applied. You could apply it in a way that tries to move things more in line with what you are trying to achieve as Government in terms of regional policy and alleviating capacity in the South East. That was my simple point and, for the avoidance of doubt, I am not for one minute suggesting that Government should be investing public money in airport infrastructure.

### **John Armitt**

I have a wider point on forecasting. Most people seem to be fairly reluctant to come to any conclusions post 2030, yet I do not see how we can address this issue without being prepared to make the forecasts beyond 2030. Is it not the dilemma of this sort of question that, in fact, these are long-term questions, and that the level of investment is one which is going to be made, in whatever form, for 30 to 100 years, yet most respondents to us say that, beyond 2030, it is very difficult and they do not want to do anything. They want to flat-line it. Is that not an abdication of joint responsibility – yours and ours – if we were to go down that route? Do you have a better approach to this?

### **Brian Ross**

I want to answer that in three ways. First of all, I do not think it is necessary to plan beyond 2030. In terms of the London Olympics project, this clever chap managed to deliver the whole thing within seven years of London being awarded the Olympics. If you can do that in seven years, I am sorry but we can build a runway within that sort of planning horizon too. Certainly, 2030 is quite a big planning horizon in any event. That is 15 years from the time you produce your report. For those of us who are nervous about going beyond 2030, the 2003 Transport White Paper showed just how much of a guessing game it is when you try to predict 2030. I think the aviation industry is particularly difficult to predict, for three big uncertainties: first, the price and availability of oil; second, what is going to happen to carbon and climate change; and third, something that we do not like to talk about – the security and terrorism threat. These are three huge uncertainties that make it very difficult to predict beyond 2030.

My final point comes back to commercial realities: companies are reluctant to invest too early in something, because that is just wasted resources. If, tomorrow, you were speaking to Heathrow and Gatwick, Gatwick has already said that, if Heathrow had permission to build a runway, they could not do it for 10 years. It would not make commercial sense. Companies will not invest ahead of the game. As much as the CBI, airlines and others might want them to do it, they will be reluctant to invest ahead of the game.

### **John Armitt**

With respect, Gatwick saying that it is not going to do something for 10 years is a pretty meaningless statement in the context of how long it takes to plan and build, and long-term use. Does the CBI have a view on these projections?

**Nicola Walker**

We are talking about a guessing game, to some degree, post 2030. I think everyone acknowledges that and no one wants to put their name to forecasts for that reason. However, considering we are talking, as Brian quite rightly says, about commercial decisions here, if the aviation industry is comfortable with their own passenger projections, they will invest. It is not necessarily for the DfT to ensure that the industry has those numbers. The industry will create their own numbers and will do their own checks and balances and price that risk into whatever investment decision they make.

It is not necessarily up to us to provide those 2030 figures. I do not think we could provide 2030 figures that are going to put those projections beyond reasonable doubt. It is a guessing game to some degree, and Brian is right to flag other issues. Technology, perhaps, is one that you did not mention but I would throw in there too. We are just not sure, but I do not think that necessarily stops us from taking those decisions today. We are talking longer-term and beyond 2030. The CBI has always said you cannot draw a line there just because projections might stop there. This is a decision that is going to stretch 50 or 60 years, and perhaps more, into the future, but we cannot assume that we are going to have all the facts at our disposal to make sure that those forecasts are within our grasp, because that just will not happen.

**Ricky Burdett**

I want to go back to John's point about what happens after 2030, which links to some of the issues raised in the first session about behavioural change. In many ways, we are talking about relatively linear processes. Brian, you made a very argument about seeing where we are and looking at things in perspective – this is what has happened up until now. The presentations made this morning by the WWF and others investigated, for example, what is happening in some FTSE 500 companies, which is quite a radical shift in the way of doing business and other things.

There is a question out there that might be addressed to all of you about how you factor this in, in terms of future projections of use. Particularly in the case of Nicola, you hardly mentioned – and I understand why, given the time and the subject matter – the environmental issue in your presentation. I was struck by that: that the CBI, in looking at where we are going, does not consider that an important factor. It would be interesting to hear how you take the behavioural shift in companies in terms of your projections, and then to ask the other two, perhaps, given that – and it is a learning curve for many of us here – the prominence of the leisure-travel sector as opposed to business, is it possible to imagine behavioural shifts affecting that part of the market as much? There are series of follow-up questions which might come around that, which are to do with ease of access to airports and surface transport, but perhaps we could start with that.

**Nicola Walker**

From the environmental perspective, if I am absolutely honest, I cut my opening statement short because I knew that we were running short time-wise. I was going to make the point that the CBI has always said that growth in the aviation industry should take place within the constraints of global climate-change agreements. We have a very clear 2050 climate change target in this country and at an EU level, and growth within the industry must take place within that. I think that that is taken as read.

I do not necessarily think that that means that growth cannot happen. The technological changes and further innovations that have taken place over the last decade demonstrates that you can have

growth in the industry while keeping the lid on carbon emissions and tackling the issue of noise, which, of course, is a particular bugbear. I do not necessarily think that the two are incompatible, just to make that clear.

### **Ricky Burdett**

What about in terms of possible shifts in the leisure market?

### **Mark Tanzer**

If I could say a couple of things, one is about demand. Aviation is a networking phenomenon and it is very difficult, because it becomes a self fulfilling prophecy in terms of how much demand there will be for it. If you predicted how many people who would want mobile phones 20 years ago, it did not take into account the fact that, once everyone has a mobile phone, everyone needs a mobile phone. I think the same is true of aviation. If we stayed where we were, there would not be any growth. It is not like how much food people are going to eat in 2020; you have to have a vision of a world which is not connected and of which we are a part. We want to open up those connections. It is almost a philosophical question as to how much you want to be part of that world.

In terms of behavioural changes, and particularly relating to sustainability, the leisure industry has been active in pursuing a sustainable future for itself, which is, candidly, for the good of the planet, but also because we want to have destinations that are still sustainable and we want an environmental impact that is absolutely at a minimum. Investing in newer, quieter and more fuel-efficient aircraft is all part of the economic strategy, but it is also helping reduce the environmental impact of leisure travel.

We heard earlier that we are a nation of holidaymakers. The holiday is a very important part of people's lives. When we ask people where, in their list of disposable spending priorities, their holiday comes, it is very high up. After you have paid the mortgage and fed the dog, you want to have your summer holiday. We have opened up the world to the UK, and people are not going to go back into a shell, now that they have had that experience.

### **Ricky Burdett**

In terms of surface transport, as an implication of what you said about improving ease of access and reducing journey times to airports, particularly outside London, do you think that there would be a substantive difference in patterns of use if there was an improvement and investment in the quality of surface transport?

### **Mark Tanzer**

We are very encouraged that there are investments going into rail infrastructure such as Gatwick station to improve that aspect of the customer experience. We do not see it as a substitute for aviation capacity. We support HS2. We think it should go to Heathrow, because that is the logical place where people would be able to use it. It is not going to stop people flying but it could reduce wear and tear on the roads and also improve the customer experience. That is encouraging and we want to see that kept up. I would reiterate the point made about the aviation sector paying for its own infrastructure: the idea that it is under-taxed in APD is just not true. If we think this is a

strategic priority for our industrial policy or our vision of the UK's economic future, we should respect the fact that aviation is paying for this infrastructure and not cobble it with APD.

### **Ricky Burdett**

Brian, there is a point in your report that I do not think you mentioned in your presentation: that it could be conceivable that you could increase ATMs from 5.7 million to 6.7 million with investment in terminals, taxiways and other technical elements. Could you say a little more about how that would be possible?

### **Brian Ross**

I was speaking there about the capacity of our airports. The figure of 5.7 million was the original one produced by the CCC report. Since that report was written, a number of airports have updated their master plans; London City, for example, has planning permission to add a few more, as have Luton and Bristol. Every year, even without any additional airport infrastructure, airports are technically capable of handling a few more movements per hour. Just a few years ago, the public inquiry at Stansted said the maximum they could handle was 47 or 48; now, they speak about 51 or 52. Gatwick speaks about being able to handle a few more than that, because they put in a rapid-exit (RETs) or rapid-access taxiways (RATs). This is not my specialist field, but you can increase the number of aircraft movements on a runway, partly as the technology gets smarter and partly because you can put in extra infrastructure to get the aircraft on and off the runway more quickly.

### **Professor Dame Julia King**

Nobody has mentioned the issue of resilience. Brian, you spoke about there being plenty of capacity and we could get more capacity into Heathrow, but we have had some quite significant examples in the past year of Heathrow coming to a standstill. We have just had a crash at San Francisco closing the airport there, which must be causing absolute chaos. Is it realistic to continue to push more flights into some of these busy places?

### **Brian Ross**

At Heathrow, they have done it for years, of course. Arguably, the reason why they are in so much trouble is that they have over-scheduled for years – trying to get more than a pint out of a pint pot. They do have planning permission for 480,000 ATMs, and they are running at about 472,000. There is more resilience at Heathrow today than there was a couple of years ago. The winter resilience is far better than it was, and they also have operational freedoms, which allow them a bit more flexibility in the use of the runways in order to catch up a backlog. In a sense, then, Heathrow has a bit more breathing space now than it did then. I suppose it could schedule more than 480,000, knowing that a few are cancelled; I am not advocating this, but rather answering your question in a factual way. In the same way that a hotel will sell 105% of its bedrooms or an airline will sell 104% of its seats, Heathrow could schedule more. It is not much, given how tight it is.

The main area where Heathrow can improve its throughput is the use of larger aircraft. It strikes me as bizarre that Heathrow has something like 18 flights a day to Amsterdam. With aircraft that hold about 150 people, why does it not have 12 flights with bigger aircraft? Everybody likes a frequent schedule, but there comes a point where, if there is an early service or a service every twos, that is probably enough. Heathrow has a few destinations like that. In Japan, one of my papers made the

point that Haneda airport is almost exactly the same size as Heathrow in terms of passengers handled, but far smaller in terms of ATMs. For almost 10 years, Haneda has had more than 200 passengers per plane. They use jumbo jets for domestic flights, with 550 passengers on them. If Heathrow had 200 passengers per plane, that would potentially be 96 million people. There is scope to get more people through Heathrow through the use of larger aircraft.

### **Geoff Muirhead**

If we were working in a world with unconstrained capacity, a hub would see more and more destinations, because of the agglomeration impact of connecting flights and the benefit of transfer traffic. People have argued to us that Heathrow and London in particular is a unique market because of the strength of demand of the origination and destination (O&D) market. The reason we are here is because we are not going to constrain demand delivery here. We have legally binding limits on carbon emissions to take into consideration. We are working in constrained demand.

Within that framework, could you talk to me about the value of transfer traffic and the use of capacity for transfer flows, particularly at Heathrow, losing opportunity for other developments of destinations on the back of that? For example, do we need a flight every half an hour to New York or is there a better use of capacity? We have something like seven flights a day coming in from Hong Kong, five of which arrive in the first two hours of Heathrow's early morning. Is that a sensible use of capacity? Since airlines use capacity at their discretion, for their best benefit, and we are here trying to look at what is in the best interests of the UK economy, not necessarily of aviation's economy, where does the balance lie in looking at all of these issues in the round? I would ask all of you to comment on that framework.

### **Mark Dittmer-Odell, CBI**

On the first question about transfer passengers, our research has clearly shown that, when you look at different airport-operating models between hub and point-to-point, there is really strong demand for both sets of airports. Looking at the growth rates in mature-market economies, hub airports have grown at about 100% in the last 20 years. Point-to-point airports have grown at about 120% in the last 20 years. This is taking a number of pairs of point-to-point and hub airports, and comparing growth rates in a number of countries.

Heathrow's growth rate is about 53%. If you look at the growth rate of those that have been unconstrained, it is very difficult to come away from that believing that we have not, in some way, been held back by the fact that Heathrow is at 99% of its capacity. That follows in to the amount of flights that we have to emerging-market economies right now. As Nicola said in her opening remarks, we are lagging badly behind France and Germany when it comes to flights to China, and significantly behind all the other major airports in Europe when it comes to flights to Brazil and Russia. The demand, quite clearly, is there for the kind of flights that are going from hubs, because they are able to bring in those extra passengers from across the continent in order to fill them. If we cannot do that, ultimately our airports will not be able to put on those flights.

### **Nicola Walker**

In terms of whether or not we need a flight every half hour to New York, ultimately the aviation industry is a market and we have to remember that. We are here addressing a political problem and we cannot look to any kind of market intervention to try to solve that. Airlines put on these flights because it is economic for them to do so and because they are profit-making. That is not to suggest

that, if sufficient capacity were there, taking into account Julia's point on resilience, for them to explore the demand that, as far as my members are concerned, does exist to these new and emerging markets, we have to think about – and I am sure the airports and airlines will tell you tomorrow about how long it takes for some of these flights to become economical – you have to have that capacity there in order for them to take that leap of faith for them to put on these new flights, which will take a couple of years to start to turn a profit.

### **Geoff Muirhead**

My point is that we do not have unlimited capacity for airlines to trial things in that way. They concentrate on the routes that they know are profitable. In a constrained market, how do we influence that?

### **Nicola Walker**

We are not talking unlimited capacity – you are absolutely right and I do not think anyone is – but we are talking about a hub that is 99% full. There has to be somewhere in between.

### **Geoff Muirhead**

Even if you increased the capacity, how would you ensure that that capacity would be used to the routes that the CBI and the country needs to see developed?

### **Mark Dittmer-Odell**

The reality is that, if you look at the different routes to emerging-market economies from Charles de Gaulle and Amsterdam, when they have had sufficient capacity those routes have emerged. While we are not at the upper limit of our constrained ability to put on new flights at the moment, we are quite clearly, because Heathrow is 99%, constraining ourselves at this point in time.

### **Mark Tanzer**

Can I just, from the point of view of the poor leisure passenger, make a couple of points? If you looked at this as a manufacturing process in which the airport is a component – and I understand there are political and environmental constraints, but put those aside for a moment – you would be crazy to try to design the customer experience from the airport. You would say, 'What does the customer want and let us try to deliver the right kind of mechanism for giving that customer experience', not 'We are going to design the airport piece and then retrofit where the customer has to fly from or whether they can fly half-hourly.' It just would not make sense in a manufacturing sense if you wanted to give a good-quality product.

Second, we have rather talked as though the UK was a hermetically sealed market. This is a competitive market. We might say that there is plenty of spare runway capacity in the regions and that we should use that, but we are not competing just among ourselves; we are competing with foreign airports. Traffic is going there and people will transfer via overseas airports. We have to look at this not just as a market for aviation, but in terms of us competing against other destinations, and not just design something that works for the perfectly sealed UK market.

**Sir Howard Davies**

That is one thing that is observable, with the growth in the number of regional UK flights to Schiphol particularly, but also, increasingly and more recently, the number of flights to Dubai from Edinburgh, Birmingham or Manchester etc. I suppose the question is: do you regard that as a benign development or is the UK, as a result of capacity constraints, losing out economically because of the way these flows are developing?

**Brian Ross**

I think it is the opposite: I think the UK gains from that economically. If people in the North East can use Newcastle airport to travel anywhere in the world via Schiphol or Dubai, I think that is a benefit. I think the North East CBI and others would say that is a benefit, and probably a bigger benefit than the loss of that traffic to Heathrow, because economic growth and jobs are more valuable in the North East. The same is true for Scotland or the North West, where they all have connections to Schiphol and, these days, to Dubai. Business and leisure travellers can hub in those locations and use their local airport, and I think there are enormous benefits economically for the UK in that. The people who lose are those who have a clear, direct interest in Heathrow: British Airways, the BAA, Virgin and others that use Heathrow. It is always important not to conflate the interests of the industry, or particular companies within the industry, with those of UK plc. That is really important for the Commission to keep those as two distinct issues.

**Sir Howard Davies**

Is that the way the CBI sees it?

**Nicola Walker**

I agree that CBI in the North East welcome the new Emirates flights to Dubai. Cargo through the airport has trebled in the last couple of years as a result of that. I would argue that it is not a zero-sum game. It is not saying that either people fly from Newcastle or they fly from Heathrow, or they transfer through either. I would say we need to be looking at the perceptions of the UK as a result of this. When businesses are looking at where to locate, when they are looking at the UK in terms of a competitive location, are they going to say, 'It is okay, I can hub through Dubai from Newcastle'? Not necessarily. They are going to say, 'That constrains my ability to fly wherever I need to for business purposes. That makes the UK slightly less attractive to me and slightly less competitive. Maybe I will look at Paris.'

**Geoff Muirhead**

That applies, however, if they have to hub through hub. It is the same argument for Newcastle. They do not want to hub through anywhere; they want to go directly.

**Nicola Walker**

They want to fly directly, absolutely, and that is one of the things that our analysis has looked at: the value of direct flights.

**Brian Ross**

I live very close to Stansted Airport, and my job used to be international development director for a major plc. I used to travel a great deal and I avoided Heathrow at all costs. I hubbed via Schiphol, Helsinki, Vienna or Frankfurt, and not only for long-haul flights. For relatively short-haul flights, sometimes, I would go from one European airport to another, simply so that I did not have to tackle the M25. Lots of people do exactly the same. The importance of having your local airport is pretty important.

I wanted to make one last point about transfer passengers. It does not matter what Government or anyone thinks in terms of whether or not transfer passengers are valuable. You cannot do anything about it. If someone from Perth, Scotland wants to visit his cousin in Perth, Australia, you cannot ban them from using Heathrow. I just cannot see this argument going very far. The market will decide about transfer passengers. Just as we should not get too uptight about transfer passengers at Heathrow, nor should we behave like Little Englanders when some of our people are hubbing in Amsterdam.

**Professor Dame Julia King**

Nicola, we have heard a lot about the behaviour of large companies and FTSE companies reducing the number of flights they take. It just happens that, at Aston, we do a lot of work on SMEs, and clearly most employment is being generated and a big contribution to economic growth is coming from the SME sector, and indeed encouraging them to think more about exporting. Do we know if we are seeing a change in business passengers? Are we seeing a higher proportion coming from SMEs rather than FTSE 100 or 500 companies? Are we perhaps, to some extent, looking in the wrong place to see how business travel may be changing in the future?

**Nicola Walker**

I cannot tell you about business travel. I do not know whether those figures are broken down by size of company. What I can say is that the CBI has done an awful lot of work on midsize businesses in the last couple of years, and one of the key barriers that they find to growth is the ability to export and to break new markets. One of the things that we have been very keen to do in our own infrastructure surveys is to start to break those results down by size of firm. What we see is that, in both the smaller and medium-size companies, they are starting to value international connections more and more and starting to think more about the kind of markets, trying to branch out away from mature markets towards the higher-growth markets, than we have seen before. We would be very happy to share those statistics with the panel.

**Mark Dittmer-Odell**

One of the really interesting things about this year's survey – we have just received some of the interim results back – is that, as these companies are beginning to look further afield for their growth opportunities, we are starting to see slightly increased levels of dissatisfaction with our flight links to emerging-market economies. In having their ambitions and horizons broadened somewhat, they are beginning to realise precisely what it is that is holding them back.

**Geoff Muirhead**

Can I try to get an answer to something? I do not really understand what has been said. In a constrained market, if we were to provide extra capacity, how would we ensure that that capacity is targeted in the areas that are in the national interest? At the moment, as soon as an airline gets slots, it can fly wherever it wants, with no constraint, but it is a constrained market, not a free market. How do you align a national interest and capacity in a capacity-constrained marketplace?

**Nicola Walker**

The key thing to remember is that the demand is there. The airlines will be able to tell you more about how later on it takes to make a flight economical. You only have to look at Gatwick, for example, putting on a new flight to Jakarta. They believe that the demand for that is there. They have looked at their catchment area and at the population surrounding the airport, and the airline has made the decision that that would be an economic route. Perhaps exploring those kinds of examples would give you a better clue as to what is the decision-making that goes in to exactly deciding where to fly. It is, however, a market, and the market will ultimately meet that demand, if it is given more demand to do so. As I say, we are not talking about unconstrained capacity, but we are not just talking about a couple of extra slots either.

**Geoff Muirhead**

We are talking about Heathrow, fundamentally, here in providing the base on which those markets could be profitably served. At Gatwick, people have choice, because there are still slots available. At Heathrow, it is a choice between which is the most economic, and profitable routes can be dropped for more profitable routes. That is what we have seen over the years, where domestic and international connections have been dropped to add more frequency to other destinations. Unless we had unconstrained demand, that is a model that will continue and will not be in the national interest. That is my question: how do you do that?

**Brian Ross**

You could ask your secretariat to give you a briefing paper on the feasibility of reintroducing the Traffic Distribution Rules, which you will be familiar with in the 1982 Civil Aviation Act, where Government did direct certain routes to certain airlines. The Traffic Distribution Rules are still on statute. As I understand it, they only apply currently to freight and charter in London and South East airports. There is some argument as to whether they would be illegal today under European competition legislation, but they are still on the statute book and do give Government Stalinist powers to direct airlines to fly to certain places.

One of the best examples of what you are speaking about is Virgin. For years, Richard Branson shouted about more routes to China. He got 21 slots out of the British Airways takeover of British Midland. He got 21 pairs of slots at Heathrow and he allocated them to Aberdeen, Edinburgh and Manchester: three daily flights from Manchester to Heathrow, something similar from Aberdeen and a few more from Edinburgh. He used all of the slots that he got at Heathrow for domestic journeys, and not one to China. That is the market.

## **Comments from the Floor**

### **Sian Foster, Virgin Atlantic**

The slots that were awarded after the BA/BMI takeover are specifically linked to specific routes, and those are Aberdeen, Edinburgh and a few others. Manchester were our own slots. It is really important that airlines serving long-haul markets have short-haul feeds, and passengers travelling from Scotland and the British regions need access to those markets just as much as people leaving in and around London and the South East. It was a much smaller number of slots, they were very specifically linked to specific markets, and we could not have used them for China, even if we had wanted to, just to correct that.

### **Graeme Mason, Newcastle Airport**

We also had a mention during the proceedings. We are very much a voice for the businesses in the region – Nissan, Sage, Procter & Gamble, the offshore sector and the low-carbon sector – and we are under incredible pressure from those businesses to improve connectivity. They want more rather than less, and they do not want to see one connection opportunity replaced by another. I know there will be a lot of interest in terms of the relative importance for the North East economy of the likes of the connection to Dubai. We have had it for five and a half years. It is now a 777 daily. That 777 is operating at its capacity, and there have been a quarter of a million passengers per year. That is our third biggest hub connection; second is Amsterdam, just above Dubai, but Heathrow is the biggest by far, with half a million passengers per year out of our total 4.5 million passengers, with six a day, yet it will be under pressure in the future.

We are never going to have direct services to far-flung parts of the world, so we are always going to rely on hubs somewhere in the world. While we aspire for more – and a New York service would be top of our list – we are very much dependent upon a UK hub, and we do not want the future connectivity of the North East put in the hands of overseas governments that may make policy decisions that do not prioritise UK regional connections. The Dutch or UAE government, at some point in the future, could make a decision that is not in our best interests. It is a case of retaining our most important connections and getting more.

The point made in relation to APD is very much welcomed. If the Commission can encourage the Treasury to intervene in relation to APD to make better use of some of the capacity around the country, that would be great, although we have found it a particularly difficult nut to crack.

### **Sir Howard Davies**

Can I take it that, from your interactions with local business, they have generally regarded the addition of Schiphol and Dubai as being positive for connectivity, as long as the Heathrow connections do not wither on the vine?

### **Graeme Mason**

Yes, absolutely. They say that there are not enough connections from the region via all of those hubs in combination, so they want more. The removal of that massive chunk which is Heathrow

would be almost impossible to replace for the North East economy via the other potential connections that we have. It would create too big a gap.

**Jeff Gazzard, AEF**

I want to make three quick points. First of all, not every airport that expands in the UK meets its targets. Another famous local man delivered a construction project on time and built a second runway just six miles away from here, which was forecast to handle 30 million passengers in 2005. The target has not quite been reached. Not every regional airport can fulfil its targets just by constructing over greenbelt countryside.

The point about [inaudible] is one that always amazes me about Emirates: if you want to compete with Emirates, jolly good luck to you. That is all I can say. This is the aeronautical equivalent of the train-set in the attic. While it is a serious airline and while it does serious stuff for the regression, you cannot compete with it.

Finally, in terms of business and connectivity, every survey, whether it is Newcastle or the CBI, asks businesses what they want. They want an airport next door, empty, with flights to whatever destination they can possibly go to, from A to Z, tomorrow, so the relevance of that is that that sort of issue is turning into a fantasy.

I am astonished that people tell us that we cannot fly to China from the UK. The last time I looked – and my geography is pretty crap – Hong Kong was inextricably linked to mainland China, and we could fly there many times a day. In terms of the flights that Lufthansa flies from its hubs, they are not all going point-to-point. Some go to hubs, and some have an extra three-quarters-of-an-hour leg with three people on it flying to another destination, so you need to look very specifically at what you are told is happening in the air and on the ground.

My last point is about London and the South East: the whole of the South East airport system is a hub. You cannot find an easyJet aircraft on the tarmac any time of day at Heathrow, but you can at Charles de Gaulle and at Schiphol. The way the hubs are generating airline alliances is completely changing their view of the world. British Airways and Iberia have two hubs: Heathrow and Barajas. Lufthansa have Frankfurt, Munich, Zürich and Brussels, with very degrees of size – four or five hubs. Air France-KLM, as the name indicates, has two. All of this is changing all the time. It is a very dynamic industry.

If you look at how things have been in the past, without looking at how things change, you will make the fundamental error of assuming that [inaudible]. Our system already has Traffic Distribution Rules in the South East. If you cannot get into Heathrow, go to Gatwick; if you cannot get in there, go to Stansted; if you cannot get in there and you are a charter flight, go to Luton; if you are a private jet, go to Luton or down to Farnborough. This is a dynamic system. I am all for aviation and market forces, despite being quite green on these issues, but please do not ignore what it is in front of you. This market copes with all of these issues quite well at the moment, and will do in the future.

Very lastly, why do we have a planning horizon through to 2030? The US FAA – the mother, grandfather, aunt, first niece and favourite cousin – operate on a 25-30-year timeframe, and we have inherited that. Every year, they produce forecasts and they are now looking through to the early 2040s. In terms of forecasting, speak to EUROCONTROL and it will tell you that every major hub competitor to Heathrow throughout Europe, in the main west European economies, will be full in

the morning and afternoon peak between 2027 and 2030, which is why they do not want to go beyond 2030, because, as we raise in this issue, where we do build and where we do construct?

### **Sir Howard Davies**

Thank you – important points about the future. I do not think we will do a post-investment appraisal of Manchester airport, but I would query one point: you said ‘a local man’ but he sounds like a Geordie to me.

### **Geoff Muirhead**

I do not have an accent – everybody else does.

### **Louise Congdon, York Aviation**

I confess an interest in finding a solution [inaudible] as a member of the [inaudible] in the early 1990s, which tried to grapple with the same issues you are now grappling with. I should probably confess as well that I did the forecasts for Manchester airport’s second runway, but I think I know now why those might not have been [inaudible]. What I wanted to do was perhaps help Geoff to find an answer to his question, as well as to comment on something that Brian Ross said.

With this, the devil is in the detail. It is very easy to say, ‘Look at all the capacity we have in the UK. We have plenty of runway capacity [inaudible].’ If you take the time and effort to look in detail at demand route by route and why certain airlines are doing certain routes at certain times – for example, why we have so many flights going to Amsterdam – you would have to understand why BA are operating so many flights from Heathrow to Amsterdam and what they are trying to do with it, but you would also have to understand what KLM were doing in reverse. Every airline and every route is different, and the devil in this is really in the detail. What concerned me this morning is how little we have heard from the panel about how airlines respond to demand. If you do not properly understand how airlines respond to demand, constrained or otherwise, you will not understand where you need to provide more capacity to enable the airlines to respond appropriately to those markets that are important to the UK economy. I know that this is something that you are going to talk about tomorrow, and regrettably I will not be there, although one of my colleagues will be. It is very important to get into that detail – something that we have done a number of times in the last five months in a number of different inquiries. Some reports are in the public domain and some are about to be. Hopefully, you will read those.

### **Participant, Plane Stupid**

I want to pick up on the issues about demand management and demand forecasting. I touched on it earlier on, but it is worthwhile just understanding how poor we have been historically at forecasting demand. For example, as you are probably well aware, Sir Howard, the financial models that the banks used predicted that the type of financial crash that we had had a chance of 1 in 50 billion. When we are looking at demand forecasts now beyond 2030, all we know is that, between now and 2030, with CO<sub>2</sub> levels increasing at their current rate, almost inevitably the demand forecasts we see at the moment are going to be extremely weak. I would suggest that John can answer his own question by looking at the experience in Railtrack, which has had to spend enormous amounts of money on things like the [inaudible] sea wall and on infrastructure that is being damaged by climate-change-related events.

These are going to become the things of the future. Our infrastructure and economic resources will simultaneously have to be directed towards low-carbon infrastructure and energy supplies, and potentially even the complete relocation of cities as sea levels start rising. It is almost inconceivable that, by 2050, we could have any firm idea at all of the level of demand that we are looking at. What is happening on climate change now is so fast and significant that it makes the kind of predictions that we have now almost guaranteed to fail. I would pose a similar question to the CBI: you are saying that we need these routes to fast-growing economies like China or India, but how long do you think they will continue to be fast-growing when every single one of these major economies is already signs of weakening growth and are already showing the limits to their own growth being approached?

### **Jean Leston**

Nicola, in your presentation you mentioned that each additional trade route increases UK exports by £120 million, which multiplies to £1 billion a year. There are a lot of studies like this. I have read studies saying that we are losing £30 billion or £40 billion a year. I wanted to mention a piece of work that WWF had commissioned recently, *The Economics of Airport Expansion*, by CE Delft, which makes the point, without criticising your report in particular, that a lot of these kinds of reports typically overstate the economic benefits of expansion while ignoring the associated costs, and make false comparisons that produce biased results in favour of airport expansion. It criticises a lot of these studies, like *Frontier Economics*, which says that the UK trades 20 times more with those economies to which we have direct flights. It particularly criticised that report by saying that most of our trade is maritime. When it comes down to it, you must not forget that fact. They also found that UK exports to emerging economies equal or out-compete our European competitors, even where they have direct flights to a particular market [inaudible].

### **John Armitt**

Mark, could I make an observation on a couple of points in your submission? Your submission comes through to arguing that, if we do not expand Heathrow, with the desirability of connectivity and having that large single hub, essentially we are going to see more people using hubs in Europe, which is bad for the UK economy. Your own figures suggest that the bulk of the money spent by a UK overseas traveller is on buying a ticket and associated costs, and second the amount they spend on the high street on sun cream and clothes etc, so those are going to happen anyway. Why, then, is there particularly a significant deficit to us in not picking up those opportunities to hub through other countries?

### **Mark Tanzer**

There are two reasons. I can give you factual information about passengers from the West Country using Charles de Gaulle and Schiphol rather than Heathrow, and that is a loss of economic activity at Heathrow. There are jobs at Heathrow that would be created if they had more passengers, and there are direct and indirect multiplier effects from that. Even if they buy their suntan lotion and go to Schiphol, there is still a loss of economic activity from the fact that they are doing that in the Netherlands and not in the UK.

Second, in terms of inbound traffic, people who are coming into Europe and transiting via Heathrow are creating economic value because they are transfer passengers, which helps sustain that flight. Further, if they are spending money in the UK, that is more GDP here that would

otherwise go to another hub in Europe. On both fronts, then, there is a drainage of value out of the UK through people not being able to use Heathrow as their hub.

### **John Armitt**

Is it not, though, in a sense, rather inefficient if we require two lots of services to get somebody out of the UK to wherever they want to go to, rather than just one lot?

### **Mark Tanzer**

In my view, the only brain big enough to decide these patterns is the free market. Each of these routes is an independent business. If there is a direct route, people will fly directly, if they can fill an aircraft; if there is not and they need to use a hub to gain capacity for the aircraft to then fly on, that is the most economically sensible thing to do. It is very difficult, however, to design that on a piece of paper without having the intelligence around individual behaviour. A hub gives you that flexibility and capacity management that will give you the best income result, which will probably also be the best customer result.

## **Closing Comments**

### **Sir Howard Davies**

Let me thank the panel and you. I was challenged by the man from Plane Stupid on economists and forecasting, and I am going to tell you a story that I heard the other day, which comes from Canada, about economists, forecasting and aviation. It is particularly relevant that it is from Canada, since a Canadian economist is in charge of our economy now. Three economists go moose-shooting. They get a private plane, go up into the Northern Territories and, amazingly, they are all successful. They each shoot a moose, which is dragged back to the airstrip, and the pilot says, 'This is fine, but there is no way we are going to get three moose back on this plane. The maximum I can take is two. You will just have to have it out among yourselves.'

The economists absolutely could not agree, so they finally forced the pilot to take all three. He said, 'I am not sure that this is going to work', but they dragged him onto the plane and said, 'You are going to take us.' They take off and the plane just about gets in the sky. It stutters along but, after a little while, it is too heavy and it crash-lands in a clearing in the forest. Two of the economists roll free from the plane and one says to the other, 'Do you know? This is exactly where we landed last time.' Thank you very much for coming.

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