

Media Briefing

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Alexander the Great? Will new Transport Secretary cut aviation emissions?

The Department of Transport, under the leadership of Douglas Alexander, is expected to publish a review of its Aviation White Paper by Christmas. The review follows hot on the heels of the Treasury-commissioned Stern Review, which starkly warned of the massive economic threat posed by climate change and the need for urgent action to cut greenhouse gases. This is Douglas Alexander's first big challenge, as well as his first opportunity to demonstrate leadership on climate change.

Aviation is the fastest growing source of carbon dioxide in the UK, and it is clear that the UK cannot play its part in cutting emissions without tackling the predicted growth in air travel. The Government says it is serious about tackling climate change. But will Douglas Alexander demonstrate real leadership on this issue by shelving plans to expand UK airports?

This briefing examines the growing impact of aviation on the environment and the need for urgent Government action to tackle it through a variety of measures including abandoning plans to allow a huge expansion of UK airports. Also critiqued are a variety of topical issues surrounding aviation and climate change, such as plans to include aviation in the EU emissions trading scheme, the use of bio-fuels and carbon offsetting proposals.

Friends of the Earth's Big Ask Campaign

Through The Big Ask climate campaign, Friends of the Earth has led the call for a new law to tackle climate change and the need for it to require annual cuts in UK carbon dioxide emissions every year. The demand is supported by around two thirds of all MPs, all the main opposition parties and a wide coalition of organizations. The Government has announced that a new climate change law will be introduced, and is currently consulting on the details of what it will contain. It must include aviation emissions and annual targets that will force successive governments to take serious action to tackle climate change, and to implement policies that will actually achieve them. (www.thebigask.com).

The Airportwatch Rethink! Campaign

Friends of the Earth is also part of the Airportwatch coalition calling for a fundamental *rethink* of aviation policy not just a progress report [1]

BACKGROUND

Pressure is rapidly growing for action to be taken to limit the impact that air travel is predicted to have on global climate change. The aviation sector has fast rising emissions and there are few

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technological options for making planes less polluting. Under the Government's airport expansion plans aviation emissions are expected to triple from 1990 levels by 2030.

The Aviation White Paper [2], published by Alistair Darling in 2003, has been widely criticised for failing to address runaway climate change emissions by:

- The House of Commons Environmental Audit Committee [3]
- The Sustainable Development Commission [4]
- Environmental Change Institute, Oxford University [5]
- The Tyndall Centre for Climate Change Research [6]
- The Royal Commission for Environmental Pollution [7]

The UK Government says that aircraft emissions can be tackled by bringing aviation into the EU Emissions Trading Scheme (ETS). However, the scheme will take years to set up, and there is evidence that this is failing to cut emissions from industries already in the scheme.

The review of the Aviation White Paper is Douglas Alexander's opportunity to demonstrate that the DfT is committed to reducing climate change emissions (as it is obliged to do under its Public Service Agreement with The Treasury [8]).

Friends of the Earth is calling for Douglas Alexander, to completely rethink Government aviation policy, including:

- Airport expansion plans to be cancelled
- Further increases in Air Passenger Duty (APD) with a commitment to increase it annually as an interim measure until other effective economic measures to reduce air travel growth and reduce emissions are available. A doubling of APD from February next year was announced in the Treasury's Pre-Budget report earlier this month (December)..
- Honesty and openness from the Government about the scale of the challenge and necessary solutions to enable the aviation industry and public to plan and adapt for the future

AVIATION AND CLIMATE CHANGE

Aviation is the fastest growing source of climate changing emissions in both the UK and the world.

- Carbon emissions from UK aviation increased by 11% in 2004 alone [9] and are estimated to increase four fold between 2000 and 2050 [10].
- Aviation emissions are estimated to have between two and four times the climate change impact of carbon emissions alone due to complex chemical reactions at altitude [11].
- There is no prospect of a significant technological breakthrough that will reduce aircraft emissions. Gradual improvements might manage 1.2% per year reduction in emissions [12]. But this is inadequate to counter the current growth in passengers of 6.4% per year [13].
- The Environmental Change Institute at Oxford University recently concluded [5] that it will be impossible to meet the UK's 60% carbon reduction 2050 climate target without curbing aviation growth.
- Recent research by the respected Tyndall Centre for Climate Change Research [14] found that a more ambitious 90% cut in emissions from 1990 levels by 2050 - and around 70 per cent by 2030 - is necessary. Tyndall also warned that aviation could account for all of the UK's budgeted carbon emissions within 30 years [15].

AVIATION AND EMISSIONS TRADING

In 1998 the Government promised to make aviation pay for its environmental impacts [16] but has only just started to address this with the announcement of an increase in the only tax on aviation, Air

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Passenger Duty [17]. The Government's favoured policy measure to tackle the rapid growth in aviation emissions is to back plans to incorporate the sector into the EU Emissions Trading Scheme (ETS). But the environmental benefits of this are uncertain and the scheme will not start until at least 2010 (and most likely later). Furthermore, there are major concerns about the effectiveness of the existing ETS. Indeed some EU states plan to *increase* their overall emissions in the second phase of the EU ETS from 2008 [18].

Progress towards bringing aviation into the EU ETS

The EU ETS started operating in January 2005 for static sources like power stations and heavy industry. Companies included in the scheme are allocated carbon permits by their governments for the pollution they emit. If they want to pollute more they must buy from other companies, if they pollute less they can sell their excess permits. Promoters of ETS argue that it is the most economically efficient way of cutting emissions because in this 'open' trading scheme the carbon market will ensure that emission cuts take place at the source able to make them at lowest cost.

The European Commission (EC) wants to bring aviation into the EU ETS. The European Parliament endorsed this proposal with a non-legally binding resolution in June 2006 which went further, calling for a separate 'closed', aviation only ETS, and aviation fuel tax among other measures [19].

A legal proposal to incorporate aviation into the EU ETS is expected from the EC by the end of 2006. The proposal then has to clear numerous political hurdles before coming into effect in 2010 or later.

Could the ETS be effective at curbing aviation emissions?

As there are no technical solutions that will significantly cut aviation emissions, the key test of the effectiveness of any policy measure must be whether or not it curbs demand? ETS might achieve this but its effectiveness depends on its design, especially the 'cap' – the total annual carbon permit allocation. Evidence from the existing ETS is not encouraging. Modeling of the impacts of various 'open' ETS design scenarios for the EC in 2005 [20] found just a small reduction in the *rate of growth* of aviation emissions and negligible impact on prices so other taxes and a cap on airport expansion are needed.

Willie Walsh, Chief Executive of BA, said recently that he wanted aviation included in the EU ETS, but also that he did not accept that aviation has to reduce its growth in emissions and that he thought emissions will continue to grow [21]. The reason for this belief is that even if the ETS did include aviation soon, the sector would be likely to be allocated large numbers of permits, so it would not need to buy many, so its inclusion would not affect the price of flying very much. This is the experience so far with the EU ETS – indeed the UK power sector made £800 million profits from the scheme's first year by selling its excess permits.

The Stern report advocated the auctioning of permits rather than handing them out for free, arguing that this would be more economically efficient. Doing so would also implement the Government's 'polluter pays' principle. However, intense industry lobbying means that a major shift to auctioning is extremely unlikely. Aviation's expected huge hand out of permits would be compounded by the sector's tax advantages over other sectors in the ETS – its VAT and tax exemptions and also its status as a less exposed sector.

Aviation is less exposed because a flight between two places cannot be exported, unlike (for example) manufacturing, so can tolerate a much higher carbon price than other sectors. For this reason - and because aviation isn't yet included in the Kyoto protocol [22] - the European Parliament recommended an aviation-only 'closed' ETS. But it is very unlikely that the EC will resist industry opposition to a closed scheme [23].

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Finally, getting aviation into the EU ETS is likely to be slow. Several member states object to its inclusion and any EU proposal to tackle the climate impact of aviation through ETS, taxes or charges is likely to be strongly challenged by the US through the auspices of the ICAO [24] during 2007.

OTHER PROPOSED SOLUTIONS - AND WHY THEY ARE NOT ENOUGH

Unprecedented media attention, along with mounting public and political concern about the climate change impacts of aviation, has put the industry on the defensive. Its response has been to propose a number of initiatives that could make a small contribution towards reducing carbon emissions from individual flights, but which will pale into insignificance in the face of the current and forecast growth rate in flights. While initiatives that cut emissions are generally welcome, it is crucial they do not distract from the need for Government intervention to curb the growth in flights.

Technology

Steady improvements in engine technology have resulted in more efficient aircraft. But modern jets are no more fuel efficient than the propeller-driven airliners of fifty years ago [25]. There will continue to be small improvements, but on average we can expect emissions per passenger km to be cut by 1.2 per cent per year [26]. This is totally inadequate to counter passenger growth of 6.4% per year.

Richard Branson's 'green' aviation proposals

In September Virgin's Richard Branson pledged to invest £1.6 billion in his renewable energy initiatives including biofuels for transport (see below) and launched a cross-industry forum to deliver practical ways of tackling aviation's climate change impacts, including:-

- Towing aircraft to 'starting grids' to cut ground emissions
- Continuous decent (rather than a 'stepped') approach to cut fuel burn on approach to landing
- Lighter aircraft furnishings to reduce weight
- Improvements to air traffic control

Many of these measures are already being pursued in the UK under the 'Sustainable Aviation' initiative (see below) and are included in estimates of what emissions reductions efficiency measures could achieve. They are all one-off initiatives that will not compensate for the rate of growth in flying. For example, Branson's key initiative 'starting grids' would achieve a maximum 'one off' cut of 10% of emissions from a typical 900km flight, or just over two years growth of EU aviation emissions [27].

Aviation industry's 'Sustainable Aviation' initiative

This 2005 Government and UK aviation industry voluntary initiative lists a number of aspirational measures to reduce the environmental impact of aviation. On climate change it proposes:

- Incorporating aviation into the EU ETS and later any global ETS.
- Technology and air traffic management improvements that are forecast to cut emissions per seat by 50% by 2020.
- More research including exploring the use of carbon offsets.
- Better public information on climate change impacts.

The key initiative here is technology improvements. The 50% figure is wildly ambitious for a mature technology. It requires an annual rate of improvement that has not been achieved for many years [28] and even if it were possible will still be outstripped by the growth in passengers of 6.4% per year.

Biofuels

Richard Branson's recent initiative proposed the use of bio-kerosene in aircraft. Fuels derived from recently-grown plant matter do in theory have a lower carbon impact because they do not release

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carbon trapped in fossil fuels – the primary cause of climate change. Biofuels have a role to play in cutting carbon emissions - but they aren't the sole solution and have significant impacts of their own:

- Production processes for existing bio fuels emit significant amounts of carbon and can only be used in a 10%-20% blend with conventional kerosene.
- Significant expansion of existing biofuel production could mean threats to rain forests and food production in developing countries like Brazil.
- So called 'second generation' bio fuels use 'woody' crops in their production, which could significantly cut emissions. But these are very expensive and rely on complex production processes still under development. In any case, the UK could only supply about 10% of even current kerosene demand [29].

Carbon offsetting

Offsetting has received much publicity recently including from a number of travel companies promoting 'green' or 'carbon neutral' tourism. BA also runs a voluntary carbon offsetting scheme that has had a very limited take-up [30]. Offsetting involves the purchase of tree planting or low carbon technology to compensate for one's personal carbon emissions from flying. Offset schemes do not reduce emissions overall. They are a diversion from the real need to change behaviour and the environmental integrity of some offset schemes is suspect. [31]

WHAT FRIENDS OF THE EARTH THINKS

The Government must be honest with the aviation industry and the public about the scale of the problem and the necessary solutions

Allowing unrestricted aviation expansion is completely at odds with tackling climate change: it will mean huge increases in emissions at a time when the focus should be on how to make big cuts. The voluntary solutions proposed by the aviation industry are totally inadequate and must be complemented with measures to manage demand so that aviation emissions decline. It will be much harder to reverse growth in the future when the aviation industry has invested in more runways and the public is even more 'air dependent' [32]. Public opinion is now shifting behind measures to increase the cost of flying, particularly if the environmental impacts are known [33]. By acting now the Government gives maximum notice to allow both industry and public to plan and adjust to the reality of a carbon constrained world. The Government must take four steps as soon as possible:

1) Rethink the Aviation White Paper: no airport expansion

Douglas Alexander must announce a review of the Government's airport expansion plans when he publishes the Aviation White Paper progress report in December. Building new runways is a flawed policy if the growth in flying cannot be permitted because of its climate impacts.

2) Increase Air Passenger Duty (APD) immediately and introduce an annual APD escalator

The Government must build on its recent announcement of an APD increase and continue to manage demand by increasing it annually. This would:

- Continue the process of demand management before ETS can be introduced
- Address the £9billion unjustified annual tax exemptions that the industry enjoys through not paying fuel tax or VAT

3) Publish a Plan 'B' in case aviation cannot be incorporated into the EU ETS

This should include introduction of VAT on air tickets and Kerosene Tax on a bilateral basis. The need to take immediate action was recognised by Environment Secretary David Milliband in a leaked memo sent before the Pre-Budget announcement [34] calling on Gordon Brown to increase

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APD in recognition of “aviation being the fastest growing source of emissions” that “we cannot leave untouched for the best part of a decade”

The Aviation White Paper ‘reserves the right of the Government to take unilateral or bilateral action if progress towards EU ETS proves too slow’

NOTES

[1] www.rethink.airportwatch.org.uk

[2] The Aviation White Paper outlines plans for expanding airports including 5 new runways to cater for a predicted virtual three-fold increase in passengers up to 2030, see:

http://www.dft.gov.uk/stellent/groups/dft_aviation/documents/divisionhomepage/029650.hcsp

[3] Various reports in 2004, see:

<http://www.publications.parliament.uk/pa/cm200304/cmselect/cmenvaud/233/23302.htm>

[4] “Missed Opportunity - A summary critique of the air transport white paper: The future of air transport”

<http://www.sd-commission.org.uk/publications.php?id=161>

[5] “Predict and decide: aviation, climate change and UK policy”

<http://www.eci.ox.ac.uk/research/energy/predictanddecide.php>

[6] “Growth Scenarios for UK and EU Aviation”

http://www.foe.co.uk/campaigns/transport/news/tyndall_launch.html

[7] See:- Letter to The Independent 27/6/06

[8] http://www.hm-treasury.gov.uk/media/A4F/E8/sr04_psa_ch4v1.pdf

[9] DEFRA figs inc. international flights

[10] page 14, ‘Predict and Decide’

[11] page 16-17, ‘Predict and Decide’

[12] based on IPCC findings, see:-see page 8 “Growth Scenarios..”

http://www.foe.co.uk/campaigns/transport/news/tyndall_launch.html

[13] Eurostat figs see:- page 49 “Growth Scenarios..”

http://www.foe.co.uk/campaigns/transport/news/tyndall_launch.html

[14] ‘The Future Starts Here – The Route to a Low Carbon Economy’

[15] If the full climate impact is taken into account, see:- ‘Growth Scenarios...’

[16] ‘Aviation should meet the external costs, including environmental costs, which it imposes.’ – page 76 ‘A New Deal for Transport, Better for Everyone’ Transport White Paper DETR 1998

[17] An APD increase was announced in the Treasury’s Pre-Budget report on 6.12.06, see:- http://www.hm-treasury.gov.uk/media/571/CF/pbr06_chapter7.pdf

[18] see WWF statement signed by 50 leading economists:- http://www.wwf.org.uk/news/n_0000003195.asp

[19] http://www.europarl.europa.eu/news/expert/briefing_page/9185-178-06-26-20060620BRI09184-27-06-2006-2006/default_p001c010_en.htm

[20] ‘Giving Wings to Emissions Trading’ CE Delft for the EC, see:- <http://www.ce.nl/eng/index.html>

[21] Interview on Today Programme Radio 4, 3/11/06

[22] international aviation and shipping emissions are not included in the Kyoto Protocol because responsibility for them has yet to be agreed at an international level

[23] see European aviation industry joint statement:- <http://www.eraa.org/issues/Environment/ETS.php>

[24] International Civil Aviation Organisation, UN body, sets laws and regulations that govern international air transport, including environmental policy, see:- <http://www.icao.int/>

[25] see:- http://www.transportenvironment.org/docs/Press/2005/2005_12_07_aircraft_fuel_efficiency.pdf

[26] see:- [12]

[27] Maximum 10% only if towing vehicle is carbon neutral. Fuel burn for taxi out and taxi in for Boeing 737 = 367kg, total for 500nm flight = 3612.8kg, source:- “Calculating the Environmental Impact of Aviation Emissions” – Environmental Change Institute, Oxford University. EU aviation emissions growth = 4.3% per year 1990-2003, European Commission communication – ‘Reducing the Climate Change Impact of Aviation’

[28] http://www.transportenvironment.org/docs/Publications/2005pubs/2005-12_nlr_aviation_fuel_efficiency.pdf, energy consumption per seat km improved by 67% between 1960 and 1980 but only 26% between 1980 and 2000

[29] Carbon emissions from use of bio diesel are 50-80% less compared to kerosene when emissions from fuel

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production are taken into account, see:- 'The Potential for Renewable Energy Sources for Aviation' – Imperial College 2003, <http://www.iccept.ic.ac.uk/pdfs/PRESAV%20final%20report%2003Sep03.pdf>

[30] less than 1% of emissions see evidence from Environmental Audit Committee report 'Reducing Carbon Emissions from Transport'

<http://www.publications.parliament.uk/pa/cm200506/cmselect/cmenvaud/981/981-ii.pdf>

[31] see FOE/Greenpeace/WWF position paper :- http://www.foe.co.uk/resource/briefings/carbon_offsetting.pdf

[32] availability of cheap flights is leading to societal changes that will encourage more flying in future, see pages 36-38 'Predict and Decide' – Oxford University

[33] 2006 MORI poll found the majority of respondents would support a policy aimed at slowing down the growth in air travel in order to help tackle climate change, see:- pages 66-68 'Predict and Decide'

[34] Reported in Daily Mail (and others) 28/10/06

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