

ECCR Open Debate: 'Flying in the Face of Climate Change?'

ECCR's 2006 open debate took place at Methodist Church House, London, on 28 September 2006. The theme was aviation and climate change, with speakers from industry and environmental NGOs, and an audience of ethical investors, corporate responsibility practitioners, members of faith groups and NGOs, and concerned citizens.

Stephen Hucklesby, Methodist Church Secretary for International Affairs and ECCR Board member, welcoming speakers and audience, emphasised the urgency of meeting the challenge of climate change and the churches' Operation Noah campaign (www.christian-ecology.org.uk/noah).

In the chair, Barbara Hayes, chaplain at Birmingham International Airport and ECCR Board member, spoke of the undoubted benefits that air travel has afforded in terms of bringing people together, maintaining family ties and strengthening international contacts and understanding. Yet continuing flying posed an enormous environmental challenge in terms of greenhouse gas emissions and associated climate forcing.

Peter Lockley: 'Achieving a sustainable future for aviation'

Peter Lockley of the Aviation Environment Federation highlighted the fact that aviation is the fastest growing source of CO₂ emissions and currently represents a 2.5 per cent share of total CO₂ damage worldwide, a 3 per cent share of Europe's damage and 6.5 per cent in the UK. CO₂ was not the only source of aviation's impact. Nitrogen oxide (NO_x) emissions and the effects of vapour trails also contributed to climate change, multiplying the effect of the CO₂ by an estimated 2.7 times.

While the expected growth rate in aviation worldwide was projected at 5-6 per cent a year, net technological and efficiency improvements were likely to reduce emissions by only 1-2 per cent annually. This meant a net overall increase in emissions per annum of 4 per cent.

At this rate, taking into account the extra forcing effect of the NO_x and vapour trails, by 2050 aviation would be responsible for 245 per cent of the UK's total emissions target - assuming that target involved a 60 per cent reduction in greenhouse gas emissions.

Regarding how emissions could be tackled, at the international level aviation was excluded from the Kyoto Protocol, and there was no standard on fuel efficiency and little prospect of aviation fuel taxes, charges or emissions trading. At the EU level, there was also no aviation fuel tax but attempts were being made to include aviation in emissions trading. A strong European scheme could work but was unlikely to happen.

In the UK the 2003 Government White Paper appeared committed to expanding airports and, in effect, to a taxpayers' subsidy of £9 billion annually. The White Paper acknowledged climate change problems but left the solution to Europe.

While the UK aviation industry was the most progressive and responsible in the world, rapid expansion was incompatible with sustainability. Hard questions had to be faced about a carbon-constrained future.

Martyn Graham: 'The contribution of technical development to tackling climate change'

Martyn Graham of the Society of British Aerospace Companies spoke of the positive contribution that technical development and research are making to tackle climate change. The aviation industry was particularly concerned to produce technological advances which would result in lower emissions of NO_x and CO₂, as well as reducing noise pollution. The research focused on the various stages of an aircraft's flight, i.e. taxiing, take-off, cruising and landing.

In 2001 the industry set itself target reductions for CO₂, NO_x and noise. Through the 'Greener by Design' initiative industry interacted with the academic atmospheric scientific community

culminating in a Cambridge workshop in 2003. The Omega initiative launched recently by academia will, through a network, assess the challenge to air transport and identify technology developments that would be of greater benefit to the environment.

It was apparent that the aircraft of the future, to meet the green challenge, would need to be very different from today's. One concept under examination is the use of integrated wing technology. The airframe would be much lighter, using new materials not presently available with more efficient engines mounted on top of the wing,

The industry had set itself a target to produce an environmentally friendly engine which would reduce CO₂ by 10 per cent and NO_x by 60 per cent over a period of five years. Research into the aerodynamics of future airframes and engine configurations is being pursued. Sustainable Aviation, a vision of air transport to 2020, had been formulated to address the industry's balance between economic success, social progress and the environment.

The industry was aware that regulation was likely to come soon and that voluntary efforts currently being made could become mandatory. The way forward was radical new design, achieved through research and the utilisation of innovative technology.

Chris Goater: 'An aviation industry perspective'

Chris Goater of the Airport Operators Association was professionally involved in both encouraging people to fly and encouraging airports to adopt more environmentally friendly procedures and look at ways to minimise their environmental impacts.

From press coverage one might assume that aviation was the highest or second highest contributor to climate change. Yet globally aviation accounted for just 2 per cent of carbon emissions, projected to rise to 5 per cent by 2050. In the UK aviation lagged behind passenger cars, power generation, and domestic and commercial buildings in carbon emissions.

Aviation's general upward emissions trend was because the rate of growth had outstripped the ability of technology to deliver fuel savings. There had been tremendous technological advances, however, and further improvements were expected.

To bridge the emissions gap, emissions trading was favoured by UK aviation companies. The scheme maximised efficiency and would help accelerate the pace of technological change and/or lead to demand reduction. Trading was likely to be implemented at EU level for aviation.

The industry's contribution to UK jobs and prosperity was very substantial, and through travel our quality of life was improved. But as an industry, it was clear that more needed to be done. Hence the Sustainable Aviation Strategy (www.sustainableaviation.co.uk), bringing together airlines, airports, manufacturers and air traffic control on a voluntary basis.

The strategy embodied commitments on a range of issues covering noise, local air quality, natural resources and of course, global warming. It had already started to have an impact.

Aviation was the swiftest way for markets and people of the prosperous nations to reach those of the less prosperous. It would be wrong to prevent others from travelling, when we had benefited so much from it ourselves.

Aviation was not a 'special case' or 'luxury' but had become part of the fabric of our culture, society and economy. The individual must take responsibility for his or her journey as an informed choice.

Jason Torrance: 'Aviation and climate destabilisation'

Jason Torrance of Transport 2000 observed that in our time we were witnessing the fastest rate of extinction of living species. The reality of climate change was now beyond question and what was needed was a change in current attitudes. Transport was a particular area of concern, and the growth in aviation was particularly significant. Aviation emissions could exceed government

reduction targets by around 340 per cent by 2050.

A recent Mori poll had showed that 73 per cent of people favoured a higher tax on fuel if the money raised were spent on the environment. Politicians were also beginning to join the ranks of the protestors, as had been witnessed at recent party conferences.

Figures from the Meteorological Office showed that over the last 45 years we had witnessed a 1 per cent temperature increase in the UK. What was the government doing about this? In the case of congestion on the roads, it planned to build more roads, but that only generated more traffic. For aviation it seemed to have decided on airport expansion, which was expected to result in yet more air travel and provide capacity for trebling present travel volumes by 2030. There were also given tax breaks and indirect subsidies amounting to about £9 billion a year to the airline industry.

Emissions trading was part of the solution but only part.

NGOs, local community groups and thousands of concerned individuals were campaigning around issues of emissions and noise, which keeps people trapped indoors in some areas. People wanted a healthy future for their children and diversified wildlife around us. This required immediate action.

There were alternatives for local and even overseas travel, if not for the longest journeys to the most distant places. The most important alternative was increased capacity on the railways, whose use resulted in 80 per cent less CO₂ emissions than air travel. High-speed rail links would be better than expanded airports. The government needed to respond to the crisis and to public opinion.

Questions and discussion

Questions and observations from the audience, with responses from the panel, followed.

It cost £1.50 to take a London bus and as little as 79 pence to fly from London to Dublin. What were the panel's views on this?

In Peter Lockley's view, this was evidence of the huge and unnecessary subsidies paid to aviation.

For Chris Goater, most flights were not cheap, but a few very cheap flights were sold as part of the industry's business model. Public transport such as the railways was also heavily subsidised.

The aviation industry appeared to underestimate the extent of the problem and how fast climate change is driving us to disaster. To avoid dangerous climate change, we can afford for each individual to emit only 1 tonne of CO₂ per year, and the UK needed to reduce its emissions by 90%. Adoption of the Contraction & Convergence framework was needed worldwide. A return London to New York flight would use 3-4 years of a person's carbon ration.

Barbara Hayes observed that the churches recognise the importance of the convergence principle. It was salutatory to be reminded how low environmentally benign individual carbon allowances were.

While agreeing the importance of emissions trading and carbon rationing/taxes, technological change needed to be far more ambitious. Why was the aviation industry not exploring more actively hydrogen and other advanced technologies? Was the military controlling access to these?

There was ambition in the aviation industry, Martyn Graham said. The industry recognised that mandatory limits to carbon emissions will come and set very challenging targets. Radical redesigns of commercial aircraft were being contemplated.

For Peter Lockley, we no longer had the time to wait for ambitious new technologies, such as 30 years for the development of hydrogen fuel cells.

Emissions trading would take several years to include aviation. Did Richard Branson's recently announced ideas such as towing planes and better air traffic management offer significant possibilities?

Better aircraft routing is under consideration, Chris Goater responded. Branson's agenda could take 20 years to develop. All measures involve trade-offs, such as noise versus fuel burn. The Sustainable Aviation project considers such measures.

Jason Torrance agreed that emissions trading will be part of the solution. But none of the aviation industry's currently offered solutions matched the scale of the crisis, he said.

If emissions trading were not enough, should there be personal carbon emission permits?

Individual permits or rations were needed to help address the problem, Peter Lockley thought. In the meantime, air passenger duty should be raised significantly.

Climate change had to be tackled within the next 10 years, as the Al Gore film 'An Inconvenient Truth' made clear. Air travel needed to be curbed now.

A 45 cm sea level rise would create 6 million environmental refugees in Bangladesh alone – this was an issue of moral injustice. The people who will suffer most are the poorest. All the technical improvements are inadequate. People must simply stop flying – and taxes, permits and rations must be implemented.

Chris Goater responded that we need to identify where quick wins can be made. Emissions cuts can be made now in energy efficiency and power generation but not yet in aviation. Too much emphasis is placed on aviation, whereas we can address climate change faster in other sectors.

Peter Lockley saw it differently. Other sectors such as power generation were contracting in terms of emissions, while aviation was still expanding.

Barbara Hayes brought the lively discussion to a close, observing that there was no disagreement about the challenge but only regarding where and how best to address it. We needed both to take individual responsibility for our own impacts and to seek leverage to effect the required policy changes.