House of Lords European Union Committee
Sub-Committee B (Internal Market)

Inquiry into the merits of including the aviation sector in the EU Emissions Trading Scheme

Response by BAA plc
16 September 2005

1. Summary

1.1. BAA is the world's leading airports operator. We are committed to continuing to understand and improve our performance with respect to sustainable development.

1.2. We accept that there are certain known environmental limits, such as the earth's capacity to handle greenhouse gases. However, in keeping with the emphasis placed by a sustainable development framework on policy integration, BAA believes the debate on aviation needs to recognise both the realities of environmental limits and aviation's socio-economic benefits.

1.3. BAA has two main interests in climate change policy: we are one of the UK's top 20 industrial consumers of energy and we are a major player in the aviation industry.

1.4. Aviation has a small but significant and growing impact on climate change, and this impact needs to be addressed. We believe that emissions trading is the most economically efficient and environmentally effective way of addressing the impact. Participation in the EU's emissions trading regime will allow aviation to purchase the necessary additional allowances from other sectors to enable the industry both to continue to grow *and* meet its emissions obligations, by funding emissions reductions elsewhere.

1.5. We welcome the European Commission's focus on emissions trading for aviation and have taken a leadership role within the EU aviation industry in pressing for this, as an interim step to a solution at a global level. We believe that the EU scheme has worked well to date (a view informed in part by our direct participation within it). The scheme has inevitably entailed practical challenges, but these can be overcome and it provides a solid foundation for expansion to other sectors. We believe that integration of intra-EU flights within the EU ETS is deliverable by 2008 or soon thereafter.

1.6. Emissions trading will impose additional costs. However we believe that these will be significantly lower than alternative policy measures for the same environmental outcome. Taxes and charges, which aim to cut emissions by reducing demand, are not well targeted, as the revenues flow to Government rather than directly to addressing the impacts.

1.7. We believe that all intra-EU flights should be linked with the EU ETS, irrespective of the nationality of the airline. On that basis, the scheme would not have any significant competitive effects, since all the flights on a particular route would be included. The extra costs linked to emissions trading may influence the choice of mode of transport, but only on short-haul journeys, where air travel can be practically substituted.

1.8. Aviation's impacts on climate are a result of the following four factors: CO_2, oxides of nitrogen (NO_x), the creation of condensation trails (contrails) and the potential impact of contrails on cirrus cloud. The IPCC has estimated that aviation's impacts resulting from these effects is some 2.7 times that due to CO_2 alone, though there is uncertainty surrounding this. In line with the precautionary principle, we recognise that aviation's total climate impacts should be addressed.

1.9. A targeted approach will be needed to address aviation's total climate impact, with specific measures for the specific impacts. These measures will include further scientific research and technological development (for example investigating advanced air traffic management to allow aircraft to avoid climate-sensitive parts of the sky).

1.10. It may also be possible in future to expand the emissions trading scheme to include these impacts, though there are practical difficulties to overcome. It would be counter-productive simply to apply a CO_2 multiplier to account for aviation's non-CO_2 impacts in the trading scheme (whereby aviation would have to acquire, say, two permits for every unit of CO_2 emitted) as this risks encouraging an undue focus on reducing CO_2 emissions, at the expense of increasing NO_x emissions, where there are known technological trade-offs.

2. Introduction

2.1. BAA is the world's leading airports operator. In the UK, BAA owns, develops and operates seven airports: Heathrow, Gatwick, Stansted, Southampton, Edinburgh, Glasgow and Aberdeen. Overseas we either manage contracts at, or have interests in, airports in the USA, Australia and Italy.

2.2. BAA has two main interests in climate change policy. First, we are one of the UK's top 20 industrial consumers of energy. We have set a target to reduce our CO_2 emissions from energy use by 15% over 1990 levels by 2010 and have a thorough carbon management strategy to deliver that. Since January 2005, we have also registered three combustion plants at our airports to participate in the EU Emissions Trading Scheme (ETS).

2.3. Second, we are a major player in the aviation industry and have taken a proactive role in the debate over addressing aviation's impacts on climate. Our response to this Inquiry focuses primarily on the second area, though it also draws where appropriate on our own direct experience of the EU ETS.

2.4. We divide our evidence into the following three sections:

- Section 2 provides a short summary
- Section 3 provides an overview of BAA's approach to sustainable development.
- Section 4 responds in detail to the seven questions on which the Sub-Committee is seeking evidence.

2.5. The European Commission is due to publish a Communication during September 2005 outlining its policy proposals to address aviation's impacts on climate change. At the time that BAA finalised this evidence for submission, the Communication was not published. The Communication will provide further information which would help BAA to respond to the questions posed by the Sub-Committee's Inquiry. The technical study

used to inform the Communication, produced by consultants CE Delft, was available at the time this evidence was submitted, and is referred to in BAA's evidence.

3. Context: BAA's approach to sustainable development

3.1. BAA's approach to sustainable development

3.1.1. BAA is committed to continuing to understand and improve our performance with respect to sustainable development. Like many companies we work within the UK Government's framework. The Government aims to pursue sustainable development in an integrated way through a sustainable, innovative and productive economy that delivers high levels of employment; through a just society that promotes social inclusion, sustainable communities and personal wellbeing; and in ways that protect and enhance the physical and natural environment, and use resources and energy as efficiently as possible.

3.1.2. BAA believes that responsible air transport and airport growth should take place only where it is in accordance with the integrated approach above. BAA accepts that there are certain known environmental limits, such as the earth's capacity to handle greenhouse gases.

3.1.3. However, in keeping with the emphasis placed by a sustainable development framework on policy integration, BAA believes the debate on aviation needs to recognise both the realities of environmental limits and aviation's socio-economic benefits.

3.1.4. Economically, aviation plays a crucial role in promoting the high-knowledge and high-value-added industries and it also underpins the world's largest industry – tourism. Socially, air travel is a facilitator – for people to visit friends and family scattered around the world, to learn, and to visit parts of the world inaccessible to their parents or grandparents. Sustainable development rightly places emphasis on improving quality of life for all. In this context, the fact that aviation is now accessible to most people, at least in the more prosperous countries, is both significant and welcome.

3.2. BAA's approach to climate change

3.2.1. BAA supports the leading role that the UK Government and the EU have played on climate change and recognises the importance of effective international action to address this issue. BAA notes the EU's publicly stated long-term climate change policy objective:

> "...a long-term objective of a maximum global temperature increase of 2° Celsius over pre-industrial levels… In the longer term this is likely to require a global reduction in emissions of greenhouse gases by 70% as compared to 1990, as identified by the Intergovernmental Panel on Climate Change (IPCC)"[1]

3.2.2. BAA supports the delivery of targets adopted by Governments within the framework of the Kyoto Protocol and we are committed to making a significant contribution to reducing greenhouse gas emissions arising from energy use at our seven UK airports.

[1] Article 2, the 6th EU Community Environment Action Programme, adopted in co-decision in 2002.

4. Response to the Sub-Committee's specific questions

4.1. Has the emissions trading scheme worked well so far, and does the current system provide a solid foundation for expansion to include other sectors of industry?

4.1.1. We believe that an open emissions trading scheme represents the most economically efficient and environmentally effective way of industry addressing the impacts of its emissions. Industrial climate change impacts are most effectively dealt with by harnessing market mechanisms and corporate self-interest, where possible, since these are powerful drivers and are likely to produce faster, better results than blunt regulation. Unlike a tax, where the level needed to achieve the environmental objective is unclear, trading ensures that the environmental objective is delivered through its overall cap on emissions, with the market determining the cost of carbon necessary to meet the agreed target.

4.1.2. We welcome the leadership that the EU has shown in this area by establishing the world's first international scheme for trading emissions. A full assessment of the effectiveness of the EU ETS has not yet been undertaken. Nevertheless, our assessment is that the scheme has worked well to date: functioning as a market mechanism and sending a clear signal on the value of emissions reductions.

4.1.3. Our views on this issue are informed in part by our own experience: during a recent review of our carbon management strategy in 2003, the prospect of the introduction of the ETS was an important driver to establishing our own long-term carbon reduction target. In operation, the scheme has created an important financial incentive for us to reduce our emissions, and we anticipate that it will continue to do so in future.

4.1.4. It is inevitable that the implementation of such a complex international scheme will entail practical challenges. Our own experience has highlighted a number of areas where we feel that the workings of the ETS could be improved. These include the resource implications of administering the scheme, the treatment of new entrants and the need to ensure equitable treatment of industries in different Member States.

4.1.5. However, these practical challenges can be overcome. They do not alter our fundamental view that trading is the most economically efficient and environmentally effective way of industry addressing its climate impacts.

4.1.6. We believe that the current system provides a solid foundation for expansion to other sectors and we welcome the European Commission's focus on emissions trading as the appropriate policy for aviation's climate impacts.

4.2. Why include the aviation sector, and what are the possible costs and benefits to the industry of joining the ETS?

4.2.1. Aviation has a small, but significant and growing impact on climate change, and BAA believes that this impact needs to be addressed. We believe that emissions trading is the best mechanism currently available to policy makers to deal with our industry's emissions, which is why BAA has taken a leadership role within EU aviation in pressing for this.

4.2.2. The Intergovernmental Panel on Climate Change estimated that aviation was responsible for approximately 3.5% of total human climate change impact in 1992. In the UK in 2000, aviation was responsible for around 11% of the total climate impact (the higher percentage reflecting the UK's important role as an aviation hub). However, while aviation's current climate impact is significant, it is nevertheless still smaller than the climate impact arising from other sectors of the economy, such as power generation (29% of UK's total climate impact in 2000).

4.2.3. Governments at the Johannesburg Sustainable Development Summit recognised that the priority of meeting key human development needs (such as clean water, food, and sanitation) will rightly use up a significant proportion of the earth's environmental capacity. The remaining capacity is available within developed and developing nations for use by other activities, including industry.

4.2.4. Governments will determine what amount of the available environmental capacity is allocated to industrial activities, including aviation, but we believe that the market best determines how to reallocate these allowances between industries. In the EU, Governments have chosen emissions trading as the best market allocation mechanism.

4.2.5. We believe that there is a powerful case for aviation to take up some of the environmental capacity available to industrial activities, because of the significant economic and social benefits that aviation generates. We recognise that aviation will need to take up more than its allocated share of this capacity, given society's growing demands for air transport, and given the absence of short-term technological solutions which will allow a breakthrough in reducing to CO_2 emissions.

4.2.6. Participation in the EU's emissions trading regime will allow aviation to purchase the necessary additional allowances from other sectors to enable the industry both to continue to grow *and* meet its emissions obligations. So while aviation may not be able to cut its own emissions directly, emissions trading will enable it to fund emissions reductions elsewhere.

4.2.7. Emissions trading will impose additional costs on aviation which will probably lead to higher air fares. However, we believe that these costs will be lower than the costs imposed by alternative policy measures, thereby benefiting leisure and business consumers of air transport services. The exact cost to the industry of joining the ETS will depend on a range of factors including:

- The extent to which the costs can be or are passed on to the passenger.
- Whether the design of the scheme includes only CO_2 or also addresses aviation's 'total climate change impact'.
- Whether the scheme applies to intra-EU or international aviation.
- The level of the cap.
- How emissions permits are allocated to the aviation industry.

4.2.8. During 2003, BAA convened a major project on emissions trading. Under the guidance of a steering group representing business, government and non-governmental organisations, expert consultants Oxera researched the impact of a range of policy scenarios. Their analysis demonstrates that emissions trading can be a 'win-win', delivering more for the environment at greatly reduced costs to industry.

4.2.9. One scenario was based on 5% emissions growth by 2010 compared to 1990 (ie a 25% reduction against 40% emissions growth). The cost to the EU aviation industry was estimated at around €400 million a year. Another scenario was based on 8% emissions reductions by 2010 compared to 1990. The cost to the industry then increased to around €900 million a year. However, both of these scenarios cost substantially less than the tax-based alternatives[2].

4.2.10. The recent study for the European Commission by expert consultants CE Delft reinforces the conclusion that emissions trading is the most economical and effective measure. CE Delft's assessment of a scheme that includes only flights within the EU (the most practically-deliverable option in the short term) estimated the impact on ticket prices to be between €1.3 and €2.6 per return flight[3].

4.2.11. BAA believes that the suggested alternatives to emissions trading for aviation would impose higher costs for lower environmental return. Policy approaches for aviation which aim to cut emissions by reducing demand, through the mechanism of taxes and charges, are not well targeted, as the revenues which are raised from such charges flow to Government rather than directly to addressing the impacts. Moreover, when it becomes clear that such taxes are not having the desired environmental effect, pressure is brought to bear on politicians to impose ever higher costs through escalating taxation.

4.2.12. The long-term goal is for aviation's emissions to be mainstreamed within the global policy framework to address climate change. The International Civil Aviation Organisation (ICAO) has been asked to identify how best to achieve that. However, reaching agreement at an international level will take time so we support regional action at a European level as an interim step. We therefore strongly support the UK Government's objective of including intra-EU air services in the EU ETS by 2008 or as soon as possible thereafter, and we are pleased that the European Commission is engaging seriously and constructively on delivering this. This will help to bring aviation within the club of climate-responsible industries.

4.3. What are the possible impacts of the inclusion on the international competitiveness of the EU aviation industry (and its competitive position in relation to other transport modes?)

Impacts on international competitiveness

4.3.1. We believe that all intra-EU flights should be linked with the EU ETS, irrespective of the nationality of the airline. On that basis, the scheme would not have any significant competitive effects, since all the flights on a particular route would be included. This view is supported by the CE Delft study, which concluded that 'none of the policy options considered…will significantly damage the competitive position of EU airlines relative to non-EU airlines'.

4.3.2. CE Delft based its conclusion on two main arguments:

[2] BAA has not advocated any of Oxera's scenarios but has used the analysis to indicate how the costs could vary and to stimulate debate and thinking.

[3] BAA is not advocating any of the three policy scenarios assessed in the CE Delft study. We believe that the optimum selection of design elements will require further consultation.

- European and non-European airlines receive equal treatment (which is not the case for other sectors already covered by the EU ETS).
- The impact on the size of the home market (which is sometimes cited as a factor that can affect an airline's competitive position) is too small to have substantial effects on the operating efficiency of EU carriers.

4.3.3. The long-term goal, and the one that will ultimately eliminate the risk of competitive distortion, is for aviation's emissions to be mainstreamed within the global policy framework to address climate change, through the Kyoto Protocol. However, that will take time and we see EU-level action as an effective interim response prior to global action on aviation's emissions.

Impacts on competitive position in relation to other transport modes

4.3.4. We recognise that an emissions trading regime will result in higher costs for the industry and, depending on how far those costs are passed on to customers, is likely to result in some increase in ticket prices. It is possible that this may influence the choice of mode of transport. However, this is only likely to happen on short-haul journeys, where air travel can be practically substituted. We do not believe that this will have a significant impact on the competitiveness of the UK or European aviation industry as a whole.

4.3.5. Moreover, we also believe strongly that aviation should receive equitable treatment alongside other participants in emissions trading and sectors not included in the emissions trading scheme. On that basis, we would welcome further discussion on the potential for other transport modes to be incorporated into EU/international emissions trading frameworks.

4.4. What are the costs and benefits to consumers and the environment of including aviation in the ETS?

Consumers

4.4.1. The main consumer benefit is that emissions trading will address aviation's climate impacts in the most economical way, minimising the additional costs that consumers will need to bear. It will also provide reassurance to consumers that the climate impacts of their flights are being addressed and that the revenue raised by an increase in ticket prices will be invested directly in reducing emissions. In 4.1, we highlighted CE Delft's estimate that the cost of including intra-EU aviation's CO_2 impacts in the EU ETS as between €1.3 and €2.6 per return flight.

4.4.2. The alternative of using taxes to deter people from flying is, as we have stated, inefficient. The idea of a tax has also not found strong public support. In a recent ICM/Guardian poll 61% of UK citizens disagreed that a tax should be added to airline flights to deter people from flying.

Environment

4.4.3. The environmental benefit of aviation's participation in the EU ETS is that real emissions reductions will be achieved. Aviation will be set a limit of allowable emissions and required to purchase permits for any excess emissions it wishes to make. These permits are only available to the market if other companies make deeper emissions

cuts than required and can sell on their surplus allowances.

4.4.4. However, BAA recognises that aviation's impacts on the climate are complex, and that emissions trading is not necessarily the appropriate solution for all impacts. There are four key climate effects resulting from aviation: emissions of CO_2 and oxides of nitrogen (NO_x), the creation of condensation trails (contrails) and the potential impact of contrails on cirrus cloud. The IPCC has estimated that aviation's total climate impact resulting from these effects is some 2.7 times that due to CO_2 alone. There is a range of uncertainty around this estimate, and the latest research has revised the estimate of radiative forcing down to 1.9 times the impact of CO_2 emissions, plus the impact of contrails on cirrus clouds, which continues to very uncertain.

4.4.5. BAA believes that emissions trading is the right policy measure to deal with CO_2 emissions, since there is currently no prospect of a breakthrough technological alternative to burning fossil fuel. And while, in the future, we also believe that there may be scope to expand the emissions trading scheme to address aviation's non-CO_2 impacts, there are practical difficulties and scientific uncertainties which mean that emissions trading may not currently be the most appropriate mechanism for dealing with aviation's non-CO_2 impacts.

4.4.6. The amount by which CO_2 emissions can be reduced will be determined primarily by the level of the of the emissions cap set, both for aviation and for the scheme as a whole. The Oxera analysis shows that a range of different emissions reductions can be achieved through emissions trading, and that the cost of achieving those reductions is substantially less than the tax-based alternatives.

4.4.7. CE Delft's recent assessment of a scheme that includes only flights within the EU (the most practically-deliverable option) would deliver reductions in CO_2 emissions of just under 30% compared to business as usual emissions in 2012[4].

4.4.8. In terms of non-CO_2 impacts, there are other measures that may be more appropriate than emissions trading, and there is wide agreement that further research is needed in order fully to understand the scale and nature of these non-CO_2 impacts, especially in relation to contrails and the impact of aviation on cirrus clouds.

4.4.9. Technological development will have a critical role to play in addressing aviation's non-CO_2 impacts. Manufacturers have already delivered significant improvements and will continue to do so with each new generation of aircraft. For example, the European manufacturing industry has set itself the goal of producing aircraft by 2020 that emit 80% less NO_x than those which came into service in 2000.

4.4.10. In relation both to NO_x and contrails, it might be possible in the long-term to reduce impacts through advanced air traffic management, ie routing aircraft to avoid climate-sensitive parts of the sky, where contrails would otherwise be produced. Eurocontrol is currently conducting a joint project with the European Space Agency to assess the feasibility of this. In addition, the EU's SESAME project is setting out a technological roadmap to support the proposed Single European Sky, and BAA believes that this project should include an assessment of how ATM improvements can deliver environmental benefits. However, we acknowledge that this remains a complex area with many uncertainties.

[4] The CE Delft analysis takes 2004 as its baseline for emissions, so the reductions achieved are not fully comparable with the Oxera results.

4.4.11. We have stated that it may be possible to integrate non-CO_2 impacts into the EU ETS in the future, but we believe that this could only be done if each impact is separately and directly integrated. It would be counter-productive simply to apply a CO_2 multiplier to account for aviation's non-CO_2 impacts (whereby aviation would have to acquire, say, two permits for every unit of CO_2 emitted) as this risks encouraging an undue focus on reducing CO_2 emissions, at the expense of increasing NO_x emissions, where there are known technological trade-offs. There is also the issue that the metric used to measure NO_x and contrail/cirrus cloud impacts (radiative forcing) is not compatible with the metric used in the EU ETS (Global Warming Potential).

4.5. At what point in the development of the EU ETS would it be feasible to incorporate the aviation sector?

4.5.1. The UK Government's policy is to 'press for the inclusion of intra-EU air services…with a view to aviation joining the scheme from 2008, or as soon as possible thereafter'.

4.5.2. There are several practical issues to resolve before aviation can be incorporated. However, we believe that these issues can be overcome and that integration of intra-EU flights within the EU ETS is deliverable by 2008 or soon thereafter.

4.5.3. One particular issue that has an impact on timing is the distribution of allowances to the industry. Kyoto is based on trading in allowances to emit CO_2, so-called 'Assigned Amount Units' (AAUs). Since aviation falls outside Kyoto, there are no AAUs to back emissions from aviation. To address that issue, we have proposed the partial integration of aviation's CO_2 emissions within the EU ETS from 2008, meaning that aviation can only buy emissions allowances from the open EU trading market, but not sell to that market. We believe that full integration of aviation, whereby aviation can buy and sell permits would then be deliverable by 2013.

4.5.4. The recent CE Delft study also addressed in detail this issue of interplay between the Kyoto Protocol and the EU ETS and identified a range of possible solutions that would permit aviation's inclusion before 2013. The overall conclusion of the CE Delft study was as follows:

> 'The introduction of emissions trading for the aviation sector, most immediately in respect of its CO_2 emissions…does not appear to pose many challenges that have not already arise in the context of the existing EU Emissions Trading Scheme. This suggests that emissions trading is a policy option that can be considered alongside other policy instrument to tackle the climate impact of aviation'.

4.6. What other economic or regulatory mechanisms exist to encourage reductions in CO_2 emissions from the aviation sector and how effective might they be compared to emissions trading.

4.6.1. The use of other economic instruments to address aviation's climate impacts has been debated. Some stakeholders suggest a substantial revenue-raising EU charge for aviation's CO_2 emissions. A 2002 study by consultants CE Delft for the European Commission estimated that to achieve 13% CO_2 emissions reductions against 2010 business-as-usual projections would cost €8,600 million a year, significantly more than

the €400-€900 million a year estimated by CE Delft for emissions trading. BAA opposes this policy approach, both because of the punitive costs that it would impose on EU aviation, and because half of the environmental benefit would only arise as a result of taxing away demand, with negative economic and social consequences.

4.6.2. Other stakeholders suggest that a revenue-neutral EU charge could address the climate change impact of aviation's CO_2 emissions, whereby greener airlines are net beneficiaries and dirtier airlines are net contributors. BAA believes such an approach could have a part to play but we do not believe that it would be effective on its own its own, because, under this approach, aviation's CO_2 emissions would continue to grow. However, we believe this option should be kept under review for aviation's non-CO_2 impacts. We have already introduced revenue-neutral NOx charges at some of our airports, to incentivise the use of cleaner aircraft and help address local air quality issues..

4.6.3. However, BAA would support a moderate en-route emissions charge if the revenues were hypothecated specifically to fund research into the non-CO_2 impacts of aviation.

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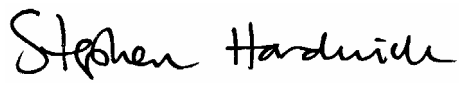

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