

Consultation on the Commission's proposal to include aviation in the European Union emissions trading scheme

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Department for
Transport

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Introduction

1. Climate change is the biggest challenge facing the 21st century. The Stern Review on the Economics of Climate Change¹ estimates that if no action is taken, the overall costs and risks of climate change will be equivalent to losing at least 5% of global Gross Domestic Product (GDP) each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more. In contrast, the costs of action - reducing greenhouse gas emissions to avoid the worst impacts of climate change - can be limited to around 1% of global GDP each year. Tackling these issues now will cost less in the long term.

The Aviation Challenge

2. The aviation industry has grown substantially over recent years. This reflects its success in providing services in line with people's needs. It has facilitated economic growth adding in excess of £10bn of value annually to the UK economy and an estimated 200,000 jobs in the UK depend directly on the industry. However, it is crucial that aviation operates in a sustainable way and addresses the challenge of rising emissions.
3. Aviation is making a growing contribution to Greenhouse Gas (GHG) emissions. Although currently only contributing 2% of global emissions, this is expected to rise to 5% by 2030. Within the EU, aviation contributes 3% of emissions according to the Commission's proposal, and has risen by 87% between 1990 and 2004². Forecasts suggest that by 2030, aviation could account for a quarter of the UK's contribution to climate change.³
4. The impact of aviation is not only from carbon dioxide (CO₂). Other effects such as nitrogen oxides and cirrus cloud formation means that the total effect of aviation is estimated by the Intergovernmental Panel on Climate Change (IPCC) to be 2-4 times that of its CO₂ effects.
5. In December 2003, the UK Government published The Future of Air Transport White Paper which set out the strategic framework for the sustainable, long-term development of air travel up until 2030³. This policy stated that the best way of ensuring that aviation contributes towards the goal of climate stabilisation would be through a well-designed trading regime. The White Paper set out the Government's intention to press for the development and implementation of a well-designed, open international emissions trading regime for aviation through the International Civil Aviation Organisation (ICAO), as well as committing us

¹http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

² http://eur-lex.europa.eu/LexUriServ/site/en/com/2006/com2006_0818en01.pdf

³<http://www.dft.gov.uk/about/strategy/whitepapers/air/>

to working towards including aviation in the EU Emissions Trading Scheme (EU ETS).

6. The publication of this policy was preceded by a significant amount of national and regional consultation, which included the use of market-based instruments as a means of addressing the growing issue of the environmental impacts of aviation. However, the Government has recognised that whilst emissions trading is the most appropriate measure for addressing the role which aviation plays in climate change, other measures may be needed. It therefore sits within a programme of measures which includes research into technological improvements, ensuring that air passengers are aware of the environmental consequences of their actions, and working with operators to make emissions savings through operational efficiencies. We will also continue to explore and discuss options for the use of other economic instruments for tackling aviation's greenhouse gas emissions.
7. Following the publication of the White Paper the UK took a successful lead in Europe on the debate to include aviation in the EU ETS and made it a priority for the UK Presidency of the EU in 2005. In September 2005, the Commission adopted a Communication recommending the inclusion of aviation into the EU ETS and concluding that the Commission should produce a legislative proposal by the end of 2006.
8. The Future of Air Transport Progress Report⁴, published in December 2006, identified that passenger demand is expected to increase from 228 million passengers in 2005 to 465 million passengers in 2030. These estimates are based on the assumption that passengers will pay their climate change costs and that future UK airport capacity will constrain demands.
9. The recent publication of both the Stern Review and the Eddington Transport Study⁵ confirm the need for action and that aviation should pay its full external costs. The UK Government believes emissions trading is the most appropriate instrument for ensuring this.
10. Emissions trading guarantees a specific environmental outcome in a way other pricing instruments do not. By imposing an overall limit on emissions whilst allowing the trading of the right to release emissions, emissions reductions are achieved at least cost to the economy. The emissions reductions required to achieve a particular environmental outcome will take place in as cost-effective manner as possible. In addition, aviation is an industry with limited immediate abatement opportunities and emissions trading will therefore enable reductions in other sectors to be funded by the aviation sector. Emissions from aviation above their allocation will

⁴ Air Transport White Paper Progress Report
<http://www.dft.gov.uk/162259/165217/185629/progressreport>

⁵ Eddington Report
http://www.hm-treasury.gov.uk/independent_reviews/eddington_transport_study/eddington_index.cfm

therefore lead directly to reductions in emissions in other sectors. Furthermore, because emissions trading schemes operate internationally, they are far more effective than mechanisms that operate in any single country alone.

11. The Government is committed to the principle of sustainable development for aviation - that a proper balance should be struck and maintained between economic, environmental and social considerations. Within this framework, aviation should meet its full external costs. The Future of Air Transport Progress Report reaffirms the Government's commitment to this strategy. This provides for responsible growth and the development of the aviation sector, predominantly through making the best use of existing capacity and supporting targeted capacity increases.

Global Action

12. International aviation is covered by a complex legal framework including the Chicago Convention (1944) and many bilateral agreements setting out States' obligations.
13. The International Civil Aviation Organization (ICAO), a UN Specialised Agency, is the global forum for civil aviation. ICAO works to achieve its vision of safe, secure and sustainable development of civil aviation through cooperation amongst its member States. This includes the application of the Chicago Convention. Within ICAO, environmental activities are largely undertaken through the Committee on Aviation Environmental Protection (CAEP). CAEP assists the ICAO Council in formulating new policies and adopting new Standards on environmental issues and makes recommendations to ICAO.
14. Under the Kyoto protocol⁶ parties are required to "pursue limitation or reduction of emissions of greenhouse gases... from aviation, working through ICAO...". At the sixth meeting of CAEP in 2004, it was agreed that an aviation-specific emissions trading system based on a new legal instrument under ICAO auspices "seemed sufficiently unattractive that it should not be pursued further". The ICAO Assembly, in Resolution 35-5 in September 2004⁷ endorsed open emissions trading and the possibility for States to incorporate emissions from international aviation into existing emissions trading schemes. It further requested the development of non-binding guidance for use by States. This guidance has been worked up and will be considered at the three-yearly ICAO Assembly which meets in September 2007.
15. Coordinated, international action is the most effective way of addressing climate change impacts and the Government is working, with our European partners, for progress on this through the ICAO as described above. However, progress has been slow and the EU and UK believe that EU level multilateral action is needed now.

⁶ UNFCCC - <http://unfccc.int/resource/docs/convkp/kpeng.pdf>

⁷ ICAO - http://www.icao.int/icao/en/assembly/a35/a35_res_prov_en.pdf

European Union Emissions Trading Scheme

16. The European Union Emissions Trading Scheme (EU ETS) is a Community-wide scheme established in 2003⁸. The first phase (Phase I) commenced on 1 January 2005 and runs until 31 December 2007 and the second phase (Phase II) runs from 1 January 2008 to 31 December 2012; 5 year phases will follow thereafter. It is a crucial element of the EU's overall strategy for meeting its greenhouse gas emissions reduction target under the Kyoto Protocol.
17. The EU ETS is a market-based mechanism that incentivises the reduction of greenhouse gas emissions in a cost-effective and economically-efficient manner. The scheme operates through the allocation and trade of greenhouse gas emissions allowances throughout the EU. At present, an overall limit, or 'cap', is set by each Member State on the total amount of emissions allowed from all the installations covered by the scheme. Participants are then allocated a number of allowances by Member States, detailed in their national allocation plans (NAPs), in proportion to the amount of carbon dioxide they are expected to emit over the coming phase and based on the Member States' Kyoto emissions reductions targets. Each allowance represents one tonne of carbon dioxide equivalent. At the end of each year installations are required to ensure they have enough allowances to account for their emissions and to surrender the equivalent number of allowances.
18. Emissions trading allows companies to emit in excess of their allocation of allowances by purchasing allowances from the market. Similarly, a company that emits less than its allocation of allowances can sell its surplus allowances. In contrast to setting fixed emission limits on particular facilities, emissions trading gives companies the flexibility to meet emission reduction targets according to their own strategy; for example by reducing emissions on site or by buying allowances from other companies who have excess allowances, depending on which makes most business sense. This enables coverage of the environmental costs through a mixture of emissions reductions within the sector and purchase of reductions that can be produced more cheaply by other sectors. The environmental outcome is not affected because the amount of allowances allocated is fixed; but the cost of achieving the outcome should be lower (which may in turn allow public authorities to make more rapid progress towards the objective of avoiding dangerous climate change).
19. Participants are also currently able to use Kyoto project credits⁹, to a limit agreed within each Member State, to help meet their commitments.

⁸ Emissions Trading -

<http://www.defra.gov.uk/environment/climatechange/trading/eu/index.htm>

⁹ Certified Emissions Reductions (CERs) from Clean Development Mechanism (CDM) projects and Emission Reduction Units (ERUs) from Joint Implementation (JI) projects. Additional information can be found at

http://unfccc.int/kyoto_protocol/mechanisms/items/2998.php

20. The UK Government supports the Stern Review's advice that trading may not provide a total solution for all sectors but is key to fixing a carbon price. A mix of economic measures is required. In view of this, we are continuing to explore the role of other economic instruments for tackling aviation's climate change impacts.
21. The European Commission is currently conducting a wider review of the EU ETS. The key goal of the review is to increase predictability in the scheme and in doing so maximise the potential of the EU ETS to stimulate necessary investments in low carbon technology. The main areas to be addressed are:
- a) Setting safe, stable and affordable emissions limits to ensure we are on the right course, and to give businesses the confidence to invest in reducing emissions;
 - b) Building a global carbon market. A deeper, more liquid market with increased coverage will bring about emissions reductions at lower cost and more effectively;
 - c) Expanding the scheme through considering whether more sectors, and more greenhouse gases should be included;
 - d) Improving efficiency through further technical changes.
22. The UK Government fully supports the Commission in this process and is actively engaged in the European Climate Change Programme Working Group that has been set up by the Commission to discuss the Review. We are determined to ensure that the Review makes a real impact on the efficacy of the scheme, all the while ensuring that the policy mix is effective and that the principles of Better Regulation are respected.
23. The Review is being undertaken in a separate process from consideration of including aviation in the Scheme and will be subject to separate consultation arrangements. The Commission intend to publish a legislative proposal on the Review later in 2007.

Aviation in the EU ETS

24. On 20th December 2006, the Commission published proposals for including aviation in the EU ETS¹⁰. This consultation relates to this proposal.
25. The Commission's proposal aims to:
- a) tackle the impact of aviation emissions on climate change, in a cost-effective manner, ultimately ensuring that aviation contributes to climate stabilisation, and
 - b) ensure that the long-term development of aviation is sustainable and that it meets its external environmental costs
26. This proposal will be subject to the co-decision process within the EU. Both the European Parliament and the Council of Ministers must agree the Directive. The UK Government are pushing for rapid progress on the

¹⁰ http://ec.europa.eu/environment/climat/aviation_en.htm

negotiations of this proposal. The German Presidency has announced that they will provide a progress report to the next Environment Council in June 2007. We do not expect the proposal to have its first reading in the European Parliament until summer 2007 and it is anticipated that the directive will not be finally agreed by both Council and Parliament until 2008.

Purpose of the consultation

27. This consultation seeks views on the European Commission's proposal to include aviation into the EU Emissions Trading Scheme (EU ETS) and on the Government's initial analysis on the changes required to the proposal. Responses will inform the UK Government's position on negotiating this proposal.
28. A partial Regulatory Impact Assessment (RIA) is published alongside this document (Annex A) on which we would welcome detailed comments and further information particularly from businesses affected by the proposal. A full RIA will be published once negotiations have concluded, before implementation of the Directive.
29. We have posed a number of questions in the document on which your views are particularly sought. These questions are highlighted throughout the document and a list of all the questions can be found in Annex C. As much as possible please structure your responses to these questions but we welcome comments on any aspect of the proposal.

Consultation arrangements

30. This consultation will close at **17.00 on 1st June 2007**. This is intended to provide consultees with time to consider and communicate their views while recognising the timing of the Environment Council in June, for which we wish to be informed by this consultation. The nature of the legislation process in Europe means that there will be continuing discussions at the EU level in which the UK will be participating during the consultation process. This is unavoidable.
31. Responses to this consultation document should be marked clearly "Aviation Consultation" and sent by email to:

Consultation.aviationets@dft.gsi.gov.uk

or by post to:
Aviation Environment Division
Department for Transport
1/22 Great Minster House
76 Marsham Street
London SW1P 4DR

The email address above should also be used for general queries relating to this consultation. Please mark the subject field "Aviation consultation query".

32. Respondents in Scotland, Wales and Northern Ireland may wish to copy their responses to the relevant devolved Administration.

For Scotland:

climate.change@scotland.gsi.gov.uk

Or by post to:

SEERAD

CCA Division – Climate Change

Team 1-G.2 Victoria Quay

Edinburgh EH6 6QQ

For Wales:

Ruth.Gow@wales.gsi.gov.uk

Or by post to:

Ruth Gow

Environmental Protection Division

1st Floor

National Assembly for Wales

Cathays park

Cardiff CF10 3NQ

For Northern Ireland:

Chris.McWilliams@doeni.gsi.gov.uk

Or by post to:

Christopher McWilliams

Environment Policy Division

Department of the Environment

River House

48 High Street

Belfast BT1 2AW

33. A list of organisations/stakeholders that we have sent this consultation to is included in Annex C. If you have any suggestions of others who may wish to be involved in the consultation process please let us know.

34. This consultation has been produced in accordance with the principles of the Government's "Code of Practice on Consultation" which are included at annex D. Ministerial approval has been given for a shorter consultation period of 9 weeks so that results of the consultation can inform any consideration at the EU Environment Council meeting in June.

35. A summary of responses to this consultation will be published on our website: www.dft.gov.uk after the consultation period has closed.

36. According to the requirements of the Freedom of Information Act (2000), all information contained in your response to this consultation may be subject to publication or disclosure. This may include personal information such as your name and address. If you want your response *or your name and address* to remain confidential, you should explain why confidentiality

is necessary. Your request will be granted only if it is consistent with Freedom of Information obligations. An automatic confidentiality disclaimer generated by your e-mail system will not be regarded as binding on the Department.

37. In line with Government's policy of openness, at the end of the consultation period, copies of the responses we receive may be made publicly available through the main DfT Library telephone 020 7944 8090 or infopoint@odpm.gsi.gov.uk. In Scotland, responses may be made publicly available through the Scottish Executive Library at Saughton House, Edinburgh EH11 3XD. For availability in Northern Ireland and Wales, please contact the relevant individuals at the addresses above. The information the responses contain may also be published in a summary of responses.
38. The library will supply copies of consultation responses to personal callers or in response to telephone or email requests (tel: 020 7944 8090, email: infopoint@odpm.gsi.gov.uk). Wherever possible, personal callers should give the library at least 24 hours' notice of their requirements. An administrative charge will be made to cover photocopying and postage costs.

The proposal

39. The Commission published a proposal for a 'Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community' on 20th December 2006.
40. The key aspects of the proposal are:
- **Basic requirements** - Aviation would become one of the activities regulated by the EU emissions trading scheme; operators would only be allowed to carry out the activity of aviation defined in the directive if they surrender sufficient allowances equal to their total emissions for the calendar year.
 - **Geographic scope and timing** – The proposal covers all flights arriving at or departing from an airport in the Community as of 1 January 2012. All flights between EU airports would be covered from 1 January 2011.
 - **Allocation methodology** – In contrast to the existing scheme, the method of allocating allowances would be harmonised across the Community. Aircraft operators would be able to buy allowances from other sectors in the Community scheme for use to cover their emissions.
 - **Benchmarking** - A fixed percentage of the total quantity of allowances would be allocated free of charge on the basis of a benchmark to aircraft operators.

- **Auctioning** – For the period 2011-2012 this percentage would correspond to the average percentage proposed by the Member States including auctioning in their NAPs. Thereafter this would be reviewed in light of the results of the general review of the emissions trading scheme.
Details of how auctioning will work such as appropriate design and timing will be set out in a Commission Regulation. Auctioning proceeds should be used to mitigate and adapt to the impacts of climate change and to cover administrative costs.
- **Setting a cap** – The total number of allowances to be allocated to the aviation sector would be determined at Community level by reference to average emissions from aviation in the years 2004-2006.
- **Non- CO₂ impacts** – The scheme would cover only CO₂ emissions. To address other gases, by end of 2008, the Commission would put forward a proposal to address the nitrogen oxide emissions from aviation after a thorough impact assessment.
- **Peripheral regions and exemptions** – Flights by State aircraft, flights under visual flight rules, circular flights, flights for testing navigation equipment or for training purposes, rescue flights and flights by aircraft with a maximum take-off weight of less than 5700kg would be excluded from the scheme.
Special consideration to the treatment of air services to remote or isolated regions, which are particularly dependent on air transport services, can best be given within the framework of existing measures such as public service obligations (PSOs) and aid having a social character under Article 87(2) of the Treaty.
- **Relationship with Kyoto** – Aircraft operators would also be able to use Kyoto Protocol project credits – Emission Reduction Units (ERUs) and Certified Emissions Reductions (CERs) up to a harmonised limit equivalent to the average of the limits prescribed by Member States in their NAPs for other sectors in the Community scheme.
- **The regulator** – In order to avoid duplication and an excessive administrative burden on aircraft operators, each aircraft operator, including operators from third countries, would be administered by one Member State only.
- **Monitoring, reporting and verification (MRV)** – Like other participants in the Community scheme, aircraft operators would have to monitor their emissions of CO₂ and report them to the competent authority of its administering Member State by 31 March each year. The reports should be verified by an independent verifier to make sure that they are accurate. The basic principles for monitoring, reporting and verifying emissions set out in the proposal would be elaborated by guidelines.

Issues raised by the proposal

41. This consultation paper will address each of these key issues in turn. The UK Government's initial view of the proposal when expressed below is based on early analysis and in the context of its overall ambitions for the EU ETS.

Geographic Scope

42. The Commission propose including all flights between EU airports from 1 January 2011 ('intra-EU'). All flights arriving at or departing from an airport in the Community ('all arriving/departing') would then be included from 1 January 2012.

43. The proposal also states that if a non-EU (or "third") country were to adopt measures for reducing the climate change impacts of flights to a community airport departing from that country which are at least equivalent to the requirements of this Directive, the scope of the Community scheme should be amended to exclude flights arriving in the Community from that country.

44. As previously described, the legal framework for international aviation is complex. Some countries are of the opinion that implementing the inclusion of a third country's carriers into the EU ETS, without the express permission of that country, would be counter to the Chicago Convention. However, the UK Government and the Commission are satisfied that there are good arguments that covering third country's carriers under the all arriving/departing model is in accordance with international and European law.

45. Three main options exist for the extent of geographical coverage from the scheme:

- a) Intra-EU only
- b) All departing flights from the EU
- c) All flights arriving at and departing from the EU

46. The UK Government's view is that an all departing and arriving flight option would provide the most environmental benefit as it would cover a relatively high proportion of flights and so include more of the aviation sector within the scope of the EU ETS. An all arriving/departing scheme is expected to lead to an annual reduction by 2020 of 183MtCO₂ as opposed to 44MtCO₂ for an intra-EU option. An all departing model would lead to a reduction of 115MtCO₂ on the same basis.³

47. The Government considers that an all departing and arriving flight option does not give rise to the risk of significant competitive distortion. Whatever scope of scheme was introduced, the Government would expect it to apply on a non-discriminatory basis for all operators on relevant routes, thus minimising the scope for competitive distortions. Views are invited on the impact of different scopes

- Q1. Should the scope of the scheme be:
- a) intra-EU only
 - b) all departing flights from the EU
 - c) all arriving and departing flights from the EU
- Q2. How will these different scopes impact on aircraft operators?
- Q3. What is the evidence for any impact?

Timing of Implementation

48. The Commission proposes including intra EU flights in the scheme from 1 January 2011 and to expand the scope to all departing and arriving flights from 1 January 2012.
49. Factors that influence the start date of inclusion include:
- Ensuring that emissions from aviation are tackled as quickly as possible
 - Ensuring practical processes are in place for the proposed dates
 - Ensuring there is coordination with current and future phases of the EU ETS
50. The initial view of the UK Government is to support the earliest possible inclusion of aviation in the EU ETS. This could be as early as 2010. It seems unlikely that the one year introductory phase proposed would allow time to learn lessons before applying a wider scheme. Indeed it would add further administrative complexity. Given our desire to see early progress, this argues against a phased approach.
- Q4. What is your view on the scheme commencement date?
- Q5. What is your view on the two staged approach proposed by the Commission?

Setting a Cap for the Aviation Sector

51. The EU ETS 'cap' for emissions from the aviation sector will determine the total allowances allocated to aviation, by whatever methodology and therefore set the limit on total emissions beyond which aviation will have to buy additional allowances. It will be based on emissions from a specific year (or years) before the start of the scheme.
52. The Commission proposes that the total number of allowances to be allocated to the aviation sector would be determined at Community level by reference to average emissions from aviation in the years 2004-2006. There is currently no provision to review the level of the cap in subsequent years set out in the proposal.
53. The current model for setting sector caps for the EU ETS devolves cap setting to Member States. Due to the international nature of aviation, the UK Government do not believe a scheme based on the same method would be appropriate. It is possible that individual Member States would

take different approaches to the level of the cap for the sector and create competitive distortions. The UK Government supports the Commission's proposal for a centrally set EU-wide cap for aviation.

The level of Cap

54. The UK Government has identified and is assessing three options for the baseline years on which the cap will be based; 1990, average of 2004-2006, and 2008.

- a) 1990 – Within the existing EU ETS scheme, 1990 is the baseline year. This would be a challenging baseline as GHG emissions from aviation in the EU have grown by 87% between 1990 and 2004. It is possible that this would put greater pressure on the carbon market, and would be likely to lead to a higher allowance price.
- b) Average of 2004-2006 – The Commission proposal still sets a challenge for the industry, as the aviation industry is expected to continue to grow between 2006 and 2011 and beyond.
- c) 2008 – This would still mean that there was a shortfall in allocations for the sector in 2011 compared with anticipated growth, though the shortfall would be less than under option b). The cap would therefore be less tight. There is an interesting point that this could incentivise operators to increase their current emissions before the baseline year to receive more allowances, though in practice the scope for this is likely to be small.

55. Whatever the final cap level, the UK Government recognise that there may be limits to the extent to which aviation will be able to invest in abatement equipment to reduce emissions in the medium term but believe that it is right that the costs of flying should reflect the environmental impact as measured in the carbon price.

Q6. Should the cap be set at Member State or EU level?

Q7. Should the cap be set by reference to emissions in:

- a) 1990
- b) average of 2004-2006, or
- c) 2008
- d) an alternative (please provide details?)

Please explain your choices and provide any evidence to support your views.

Allocation methodology

56. The Commission proposes that the method of allocating allowances will be harmonised across the Community and that the allocation be constructed on the basis of:

- a) A small proportion of allowances would be auctioned. For the period 2011-2012 this percentage would correspond to the average percentage proposed by the Member states including auctioning in their NAPs. This is expected to be in the region of 3%. Thereafter this will be reviewed in light of the results of the general review of the emissions trading scheme.

- b) The remainder would be allocated free of charge on the basis of a benchmark to aircraft operators which submit an application. Operators will be required to submit information on the tonne-kilometres¹¹ performance during the calendar year ending 2 years before the phase (e.g. for a 2011 start, they would be required to submit information for 2008).
 - c) Auctioning proceeds should be used to mitigate and adapt to the impacts of climate change and to cover administrative costs.
57. The Commission proposes this combination of harmonised benchmarking and auctioning as a way to reduce competitive distortions and to allow access to the market by new aircraft operators.
58. The UK Government is, in principle, in favour of a harmonised approach to the use of appropriate benchmarks. However, the exact nature of the metric, the measure by which allowances would be distributed, requires further consideration and research to avoid benchmarking becoming a form of 'grandfathering' (discussed below) by allocating allowances based on an operator's historic emissions.
59. The UK Government supports a mix of auctioning and benchmarking. However, it does not see the need to approach allocation issues for the aviation sector based on the average performance from early experiences of the EU ETS; this would ignore lessons learnt from previous experience and not allow for the specific nature of this sector. The sector's entry into EU ETS is already being addressed differently by recognising that a 1990 base, as used for other sectors in EU ETS, is unlikely to be feasible for this sector.
60. The UK Government sees no reason why individual Member States should be limited to a maximum percentage of allowances that may be auctioned. However further work is needed to assess the impact on the EU ETS allowance price of different auctioning percentages.
61. The UK has commissioned further analytical work on benchmark metrics and allocation methods, covering grandfathering, benchmarking and auctioning. These options are discussed below.

Grandfathering

62. This involves the free allocation of allowances to operators based on historical emissions. There are several disadvantages to this method which were experienced during the first phase of the EUETS. One of the biggest problems with this type of allocation is that it rewards previously high emissions, creating a risk that operators will be incentivised to maintain high emissions to receive more allowances. Grandfathering can also incentivise resource intensive lobbying to secure high allowance allocations. The Commission have discounted the use of grandfathering

¹¹ Tonne-kilometres = weight of passengers (for which the default value is 100kg) or cargo carried multiplied by the distances over which it was carried

as an efficient and robust means of allocating carbon allowances to the aviation sector, in favour of benchmarking and auctioning. The UK Government supports the Commission's approach.

Benchmarking

63. Use of a technical benchmark or activity indicator can enable credit to be given to those operators who use best available technology and operational efficiency to reduce their emissions, and incentivises further investment in new technologies and efficiency measures such as moving to higher load factors and more fuel efficient aircraft. It has the advantage that the industry already uses activity indicators such as tonne/kilometre as proposed by the Commission.

64. However, the UK Government wishes to be sure that an appropriate metric is used to reward and encourage those operators who have previously taken action to reduce their emissions, and those who operate efficiently. We have commissioned further work on this which will look at alternative metrics including:

a) Output based benchmarks

Aircraft operators generate different forms of output:

- Economic output: turnover or profit
- Physical output: transport of passengers or cargo

b) Input based benchmarks

Benchmarks could be based on a number of other aircraft characteristics.

Aircraft manufacturers generally report a number of characteristics, like:

- Maximum Design Taxi Weight (MTW). Maximum weight for ground manoeuvre as limited by aircraft strength and airworthiness requirements. (It includes weight of taxi and run-up fuel.)
- Maximum Design Takeoff Weight (MTOW). Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the takeoff run.)
- Maximum Design Landing Weight (MLW). Maximum weight for landing as limited by aircraft strength and airworthiness requirements.
- Maximum Design Zero Fuel Weight (MZFW). Maximum weight allowed before usable fuel and other specified usable agents must be loaded in defined sections of the aircraft as limited by strength and airworthiness requirements.
- Operating Empty Weight (OEW). Weight of structure, power plant, furnishing systems, unusable fuel and other unusable propulsion agents, and other items of equipment that are considered an integral part of a particular airplane configuration. Also included are certain standard items, personnel, equipment, and supplies necessary for full operations, excluding usable fuel and payload.

- Maximum Payload. Maximum design zero fuel weight minus operational empty weight.
 - Maximum Seating Capacity. The maximum number of passengers specifically certificated or anticipated for certification.
 - Maximum Cargo Volume. The maximum space available for cargo.
 - Usable Fuel. Fuel available for aircraft propulsion.
- c) **Technology based benchmarks**, for example average fleet age this could enable use of best available technology to be rewarded.

Auctioning

65. Auctioning allows for there to be a percentage or no allowances to be allocated for free ie if there were 100% auctioning. In this latter case, aircraft operators would be expected to buy all of the allowances they required through an auction or on the secondary market. It is an effective allocation methodology, as firms reveal how much they value allowances, reflecting abatement opportunities and ensuring that allowances are allocated to those that value them most.

66. Auctioning allowances that would otherwise have been allocated for free, reduces the potential for airlines to make windfall profits, where an operator passes the 'opportunity' costs of carbon allowances onto customers, irrespective of whether they have incurred it or not. Some sectors in EU ETS Phase I were able to make windfall profits by passing the full economic cost of the free allowances they had been allocated, through to consumers. This would clearly be a concern if the aviation sector were to do the same. We expect the aviation business to remain highly competitive and the potential for making windfall profits may be limited. However, we invite any respondent to provide evidence about the prospect of this happening in the specific circumstances of the aviation sector.

67. The Government has acknowledged there is a case for auctioning as an effective allocation methodology. However further work is needed to assess the potential for impact on the EU ETS allowance price of different auctioning percentages, and the likelihood of the aviation industry passing through the cost of allowances and receiving windfall profits as result.

Hypothecation of Revenues

68. The Commission proposal states that the proceeds from auctioning must be used to mitigate and adapt to the impacts of climate change. Centrally dictated hypothecation in this way is not acceptable to the UK Government since decisions on this matter must be for each Member State to consider in the light of their particular circumstances and to ensure that the Government spends its resources in the most efficient way possible, including on measures to mitigate and adapt to the impacts of climate change.

Q8. Which allocation methodology should be used to maximise efficient and cost effective reductions in emissions?

Please explain your choices and provide any evidence to support your views.

Q9. If auctioning is part of the allocation methodology what is appropriate level of auctioning?

Q10. If benchmarking is part of the allocation method what is the most effective metric for benchmarking?

Please explain your choices and provide any evidence to support your views.

Q11. Do you have evidence to provide on the scope for making windfall profits from free allowances?

Non-CO₂ Greenhouse Gas Emissions

69. The proposal covers only CO₂ emissions. The Commission has made a commitment to putting forward a proposal to address the impacts of nitrogen oxide emissions from aviation after a thorough impact assessment by the end of 2008. Expansion of the ETS to additional greenhouse gases is also being analysed within the general Review of the scheme.

70. Non-CO₂ emissions from aircraft that impact on climate change include nitrogen oxides, water vapour, sulphate and soot particles. Their contribution to climate change, especially at high altitudes, is less well understood than those of CO₂ and consequently is more difficult to address. The IPCC estimates the total climate change impact of aviation is 2-4 times that of its CO₂ emissions with nitrogen oxides as the greatest contributor after CO₂.

71. The Commission has identified two options for tackling the non-CO₂ emissions of aviation:

- a) A multiplier – operators would be required to surrender allowances corresponding to its CO₂ emissions multiplied by a precautionary factor to reflect the other impacts
- b) Ancillary instruments – these will be designed to specifically tackle the effects of the non-CO₂ emissions

This would best be done through an ancillary instrument which addresses directly the emission or emissions targeted. We therefore welcome the Commission's commitment to look at this. A multiplier has a number of disadvantages since different emissions have impacts over different periods. In addition nitrogen oxide and other emissions are not directly related to CO₂ production. For these reasons, it is not our preferred option. It does however, have the benefit of being administratively achievable without requiring new arrangements or a separate instrument.

Q12. Should the non-CO₂ emissions of aviation be dealt with in the EU ETS, either by a multiplier applied to CO₂ emissions or by direct measurement of nitrogen oxide emissions, or should they be dealt with by ancillary measures?

Q13. How should any ancillary measures be designed and function?

Exclusions and Services to Peripheral Regions

72. There are a number of exclusions proposed by the Commission. These include:

- a) Flights performed exclusively for the transport, on an official mission, of a reigning Monarch and his immediate family, Heads of States, Heads of Government and Government Ministers where this is substantiated by an appropriate status indicator in the flight plan
- b) Military flights performed by military aircraft and customs and police flights and search and rescue flights authorised by the appropriate competent authority
- c) Flights performed exclusively under visual flight rules as defined in Annex 2 to the Convention on International Civil Aviation 1944
- d) Flights terminating at the aerodrome from which the aircraft has taken off and during which no intermediate landing has been made
- e) Training flights performed exclusively for the purpose of obtaining a licence, or a rating in the case of cockpit flight crew where this is substantiated by an appropriate remark in the flight plan, provided that the flight does not serve for the transport of passengers and/or cargo or for the positioning or ferrying of the aircraft
- f) Flights performed exclusively for the purpose of checking or testing equipment used or intended to be used as ground aids to air navigation excluding positioning flights by the aircraft concerned
- g) Flights performed by aircraft with a certified maximum take-off weight of less than 5700kg

73. The 5700kg threshold would cover relatively small aircraft and is designed to ensure that business jets are included. However this threshold may also pick up a number of services to isolated regions which several Member States, including the UK, subsidised through Public Service Obligations (PSO) and Aid of a Social Character. These are lifeline services that local communities depend on (currently 15 in the UK, with 5 due to be established shortly) and including these flights within the scheme could increase the costs of these services. At this time, five of these services¹² routinely use aircraft on the 5700kg threshold and over.

74. In addition to the PSO flights, there are flights which operate under the Air Discount Scheme (ADS) designed to tackle problems of high airfares in the most peripheral parts of the highlands and islands of Scotland by providing a 40% discount on core air fares to eligible residents. The vast

¹² Glasgow to Cambeltown, Glasgow to Tiree, Glasgow to Barra, Barra to Benbecula, Benbecula to Stornaway, Cardiff to Anglesey

majority of these services are currently provided by aircraft which would breach the proposed threshold

75. The Commission proposal is that issues around such flights can best be given within the framework of existing measures such as PSOs and 'aid of a social character' under Article 87(2) of the EC Treaty.

76. Whilst the UK Government is keen to minimise the number of exemptions to maximise environmental benefit, we recognise that regional aspects and special situations should be considered. The UK Government will consider carefully whether special consideration should be given to services in remote and peripheral parts of the Community

77. The UK Government will also consider whether other proposed exclusions are appropriate.

Q14. Do the exclusions and thresholds create any specific problems for the cost effective delivery of emission reductions?

Q15. Should special consideration be given to services in remote and peripheral parts of the Community?

Q16. Do you have any views on other proposed exclusions?

Relationship with the Kyoto Protocol

78. Under the Kyoto Protocol, those countries who have agreed targets to reduce their emissions are allocated Assigned Amount Units (AAU) equal to their level of emissions target. As with the EU ETS, each of these allowances is for the emission of 1 tonne CO₂ equivalent. The amount of emissions produced by each country must be reported in a national inventory. If a country is unable to meet its targets it can purchase Certified Emissions Reductions (CERs) or Emission Reduction Units (ERUs) to meet their commitments.

79. Allowances within the EU ETS (EUAs) are "backed" by an equivalent AAU. This is to ensure that if an allowance from an operator within the EU ETS, whose sector is covered by the Kyoto targets, is sold to an equivalent operator within another Member State, the AAU which it is backed by is also transferred to the second Member States' inventory. Operators within a sector covered by the Kyoto target must use an allowance backed by an AAU against their emissions.

80. However, as international aviation is not included within the inventory of emissions for Kyoto targets (as there is no agreed methodology to enable this), there is no need to 'move' an AAU if the allowance were sold to an equivalent operator within a different Member State. Complications could arise therefore when a non-aviation operator wishes to sell its allowance to an aircraft operator or vice versa.

81. To overcome this, the Commission propose that aircraft operators would be issued with aviation allowances which can only be surrendered against aviation emissions and which would not be backed by AAUs. Allowances allocated to the aviation sector cannot therefore be used directly by other sectors.
82. The aviation sector would be able to purchase allowances from other sectors to meet their commitments, but it is unclear how the AAUs which back these would be dealt with. To enable aircraft operators to sell allowances to the wider ETS market, they would be able to request that their allowances are exchanged for EUAs, which would be backed by AAUs and therefore could be surrendered by any sector.
83. The Commission have not clearly explained how this process would work in practice. Member States must surrender sufficient AAUs to cover their Kyoto targets. If these have been sold to another Member State, they must purchase project credits to cover the excess emissions.
84. This conversion of aviation allowances to EUAs may lead to significant additional costs for some Member States and profit taking by airlines. For example, if an airline was being regulated by a Member State which had insufficient AAUs to meet its Kyoto targets, and the airline was to request conversion of its aviation allowances into EUAs, would that Government have to enter the market to buy EUAs and AAUs backing them to hand to the airline?
85. An option under consideration by the UK Government is a gateway system where a net movement of aviation allowances into the main ETS would not be allowed. Free movement of EUAs into the aviation sector would be permissible.
86. If the aviation sector were to buy more allowances from the other sectors than it sold (net purchase), the AAUs which had backed the allowances bought could be 'retired' to ensure there was no discrepancy between the EU ETS accounting system and the Kyoto accounting system.
87. If however, the aviation sector sold more allowances than it purchased (net sale), operators within the non-aviation sectors would be able to produce more emissions than there were AAUs to accompany them. This could cause difficulties with the Kyoto system.
88. The use of a gateway system could ensure the aviation sector do not sell more allowances than they buy. This would be feasible when, at the start of the scheme, aircraft operators seem likely to have little scope for abatement in the short term and will need to buy allowances, funding cost effective abatement elsewhere. The operation of the gateway may need to be reconsidered as more abatement options become available to the aviation sector.

89. This issue will require further analysis by the Commission and Member States.

90. As in the existing EU ETS scheme, aircraft operators would be able to purchase Kyoto protocol project credits (ERUs and CERs) to meet their commitments. Use of these credits would be allowed up to a harmonised limit equivalent to the average of the limits prescribed by Member States in their NAPs for other sectors which is approximately 20%.

91. Use of these credits would ensure emissions reductions in other countries not within the scheme and may reduce the impact on EU allowance prices of aviation's inclusion in EU ETS. However further analysis is required on the impacts on the market of, and availability of, ERUs and CERs for different levels of allowed purchasing by aircraft operators.

Q17. We welcome comments on the links with Kyoto credits.

Q18. Should a gateway system be considered for the aviation sector?

Q19. If a gateway system is applied how should it function?

Responsible entity

92. The Commission proposes that aircraft operators would be the entities responsible for complying with the obligations imposed by the scheme. This is in accordance with the guidance from CAEP.

93. Each aircraft operator would be administered by a single Member State. For EU airlines, that state will be the one that issued its operating licence. For non-EU airlines, they would be administered by the state within the Community to which most of its emissions are attributed in 2006 (or the first year of operation if later). Emissions would be attributed by determining which flights, falling within the aviation activities included within the scheme, depart from a Member State or arrive in the Member State from a third country. The Commission would publish and update a list of operators and their administering Member States.

94. The operator would be identified by use of an ICAO designator or any other recognised designator used in the identification of the flight. If the identity of the operator was not known, the owner of the aircraft would be regarded as the operator unless it proves which other person was the operator.

95. The UK government supports this approach. Aircraft operators have most direct control over the type of aircraft in operation and the way in which they are flown and therefore the level of emissions. The UK government has not identified any other feasible entity to which the scheme's obligations might be applied.

Q20. Which entity should be responsible under the scheme to ensure cost effective emissions reductions?

Regulator and enforcement

96. The Commission proposes that like other participants in the EU ETS, aircraft operators will have to monitor their emissions of CO₂ and report them to the competent authority of its administering Member State by 31 March each year. These reports must be verified to make sure that they are accurate. The basic principles for monitoring, reporting and verifying emissions set out in the proposal will be elaborated by guidelines. The entity within each Member State that carries out the monitoring, reporting and verification will be for the Member State to determine.

97. The current directive for the EU ETS states that Member States must ensure the following tasks are carried out:

- Issuing of permits. The permits specify monitoring and reporting requirements and impose an obligation to surrender allowances equal to the total emissions in the calendar year.
- Checking whether operators are compliant by:
 - Approving the monitoring and reporting plans proposed by the operator
 - Verifying operators' reports of CO₂ emissions
 - Checking sufficient allowances are surrendered by operators
- Enforcing the penalties if an operator is non-compliant with the conditions of the permit
- Enforcing the penalties if an operator does not have a permit.

98. In the existing scheme the Regulators are responsible for all but one of the above responsibilities. In England and Wales this role is provided by the Environment Agency. In Scotland it is the Scottish Environment Protection Agency (SEPA) and in Northern Ireland it is the Department of the Environment (DOENI). Operators' CO₂ reports are verified by independent verifiers, who are themselves verified by the United Kingdom Accreditation Service.

99. The Environment Agency, SEPA and DOENI do not have a current regulatory role in relation to aviation. The main regulatory body of the aviation industry in the Civil Aviation Authority (CAA). The CAA exercises its functions in a number of areas including economic, safety and consumer regulation. It also has a limited number of environmental roles in the context of its statutory functions, although not currently a specific role in relation to monitoring the emissions performance of the aviation sector.

100. The Government will assess the most appropriate body or allocation of responsibilities. We would welcome views on this issue, including other options for carrying out tasks on emissions trading.

Q21. Which body would be best equipped to be the competent authority body?

Q22. Are there other options for delivering the tasks required?