

**Summary of responses to the Government's
consultation on the aviation emissions cost
assessment**

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This is an amended version of the Summary of Responses to the Government's Consultation on the Aviation Emissions Cost Assessment, published in October 2008. It replaces the original version, published in July 2008.

Aim

Since the publication of the Future of Air Transport White Paper in 2003 the Government has been committed to ensuring that aviation reflects its climate change emissions. In line with this commitment, the social cost of carbon has been updated as our understanding of the issues has improved, Air Passenger Duty has been doubled and the UK has led the debate on the inclusion of aviation in the EU ETS.

In order to gain a better understanding of how far the aviation sector reflects its costs, the Government announced the introduction of an aviation emissions cost assessment in the white paper progress report, of December 2006. The aim of the assessment is to provide a strategic view on whether the aviation sector is covering its climate change costs. This information will then contribute to the evidence provided to inform decisions on major increases in aviation capacity.

We acknowledge that such an assessment could be calculated in several different ways and that securing consensus on the methodology would be difficult given the different views held by individuals and organisations on the scope of the assessment, the social cost of carbon, and the climate change impacts of aviation. However, it is important that the Government can formally assess the extent to which aviation covers its climate change costs, and to do this, a methodology which is simple, transparent, and yet reliable, needs to be designed. The consultation document set out a methodology for an aviation emissions cost assessment, which we believe fulfils these requirements.

To be clear, the aim of the assessment is not:

- to provide a view of climate change costs for each airport development
- to provide a comprehensive assessment of all the external costs of the aviation sector.
- to indicate the appropriate level of taxation for the industry

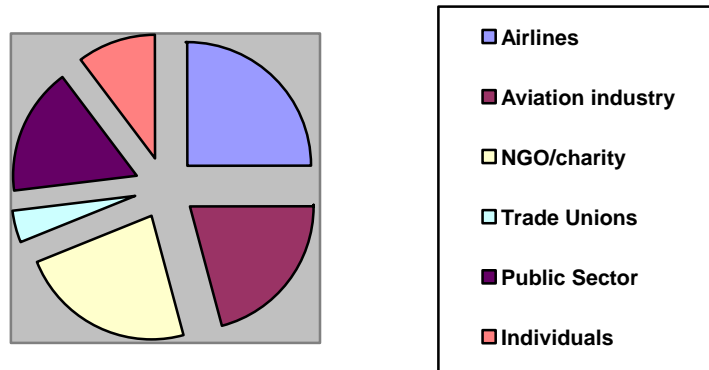
The consultation

The consultation was launched on 7 August 2007. Electronic copies of the consultation document were sent to a number of stakeholders, including representatives of the airline industry, airports, non-governmental organisations (NGOs), business associations and the public sector. The consultation document was also made publicly available on the Department for Transport (DfT) website. We received 48 replies to the consultation. A list of organisations that responded can be found at Annex A. As part of the consultation exercise DfT held two stakeholder meetings in September where the emissions cost assessment was on the agenda. The meetings provided key stakeholders with an opportunity to ask questions and seek clarification on the detail of the assessment methodology.

The approach

Where responses did not correspond directly with the questions posed, but took a more general approach, these comments have been considered under the most appropriate questions. If respondents answered only a limited number of questions, 'no comment' was recorded for the remaining questions. This report does not attempt to summarise all of the comments made by stakeholders, however, all comments have been considered, whether they appear in this report or not.

Response profile



For the purpose of analysis the responses were segmented into six discreet categories. A total of 48 responses were received across the categories as follows:

- 12 responses from airlines and airline associations (25%)
- 10 responses from the wider aviation industry including airports and engine manufacturers (21%)
- 11 responses from NGOs, charities and environmental pressure groups (23%)
- 5 responses from individuals (10%)
- 2 responses were from trade unions (4%)
- 8 responses were received from public sector organisations and local government (17%)

From the categorisation above, it is clear that a wide range of organisations responded to the consultation; the majority of responses were however, largely from the aviation industry or the environmental interest groups.

Summary overview

The emissions cost assessment consultation demonstrated that there is a range of stakeholders with an interest in how the assessment is designed, what it is used for and what the possible outcomes are. The fact that the proposed assessment does not focus on individual airport development or feed directly into levels of taxation has disappointed some stakeholders and in some cases, has meant that some stakeholders had misunderstood the purpose of the assessment this impacted on the responses as a result.

There was a broad consensus on the following proposals: that the UK emissions inventory data should be used as an indicator of UK aviation emissions; that an uprating factor should not be used to account for flights with more than one leg; that the data should relate to the most recent calendar year available at the time; that Government data should be used; and that the methodology should be kept under review.

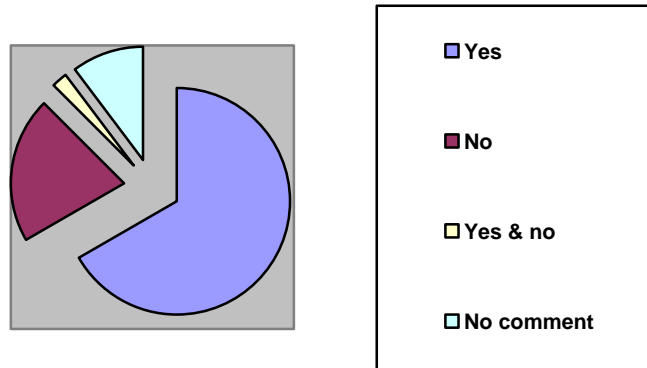
The principal areas of discussion about the proposed methodology were: the accounting of aviation's non-CO₂ impacts and the corresponding use of a multiplier; whether aviation passenger duty and AVGAS receipts should be considered as aviation's contribution to climate change costs; and the financial valuation of the social costs of climate change. The discussion on these issues saw a clear divide between the aviation industry - who preferred to see a narrower range of multipliers; supported the use of air passenger duty and AVGAS receipts; and preferred lower valuations of carbon - and NGOs and other non-industry bodies - who believed the lower range of multipliers weren't sufficient; that AVGAS and air passenger duty should not be used; and that the social costs were not high enough.

There was also considerable discussion of data limitations; the need for transparency; the possibility of expanding the assessment to include non-climate change impacts and other industrial sectors; and the use of aviation taxation.

DfT would like to thank those recipients who took the time to provide a response to this public consultation. Following the analysis of these consultation responses, we publish alongside this summary the first aviation emissions cost assessment.

Emissions data

Q1: Are the UK emissions inventory carbon figures from domestic and departing international flights a satisfactory indicator of the UK aviation carbon emissions?



Of the 48 consultation responses 32 agreed with the use of the UK's national inventory emissions, 10 disagreed, five did not respond to the question and one respondent answered yes and no. Of those that did not comment, one respondent acknowledged that international guidance on allocation of international emissions to national inventories was required. One of the respondents that disagreed with this question stated that only domestic flights should be included in the assessment owing to the lack of international agreement on allocation methodologies. Some respondents that answered yes justified their response in the following ways; some said this method was the best that was currently available while others said this method was not burdensome, sufficiently robust and open to scrutiny. Of those that agreed with the question, a significant number suggested changes such as including arriving flights and accounting for high number of UK citizens on flights to and from the UK.

A number of reasons were provided to justify disagreeing with the UK national inventory figures. The aviation industry responses stated that the inventory figures were inaccurate, whereas other organisations from the environmental groups and local government said the emissions figures did not reflect the full scale of aviation's emissions suggesting that arriving flights should be included or an uprating factor should be used to reflect the high percentage of UK citizens on each flight arriving and departing the UK.

Five respondents from the aviation industry noted that the UK inventory figures, based on fuel uplift, were likely to be an overestimate of actual emissions and one suggested that some work should be conducted into the scale of the inaccuracy.

12 respondents, that answered a mixture of yes and no, stated that a cost assessment based on actual emissions would be preferred and nine of these responses suggested that once aviation is included in the EU emissions trading scheme (ETS), the verified emissions data should be used as it would be more accurate and would already be submitted as part of ETS compliance. One airline, supported by an airline association suggested that in the interim period before emissions trading data from the AERO2K or the SAGE project could be used instead of the UK national inventory figures.

Government response

In the consultation document we acknowledged that there were limitations in using the emissions data reported to the UNFCCC. However, despite these limitations, almost three quarters of the consultation responses were satisfied that the UK's reported emissions inventory were sufficient for the purposes of this assessment.

The fact that a number of respondents raised concerns with the accuracy of the inventory data demonstrates the importance of obtaining international agreement on allocating emissions. While we recognise that the national inventory figures are not an exact representation of aviation's emissions, we believe that, at this time, there is no better alternative source of data which provides the required level of consistency and transparency, while at the same time keeps the administrative burden low. The same inventory is used for the assessment of all UK emissions across the range of sectors. We therefore continue to believe that for the purposes of this assessment fuel uplifted in the UK represents a comprehensive and realistic share of aviation's emissions driven by the UK economy.

We indicated in the consultation document that we would keep the methodology behind the emissions cost assessment under review. This would enable developments, such as the reporting of verified emissions under the inclusion of aviation in the EU ETS, to be considered.

Q2: Do you believe an uprating factor should be applied to the estimated carbon emissions to account for long-haul UK departing flights with more than one leg?

The majority of respondents (32) thought that an uprating factor should not be applied to take into account flights with more than one leg. It was widely agreed that an uprating factor would increase the complexity and administrative burden of the assessment and would add no real value. 12 stakeholders also pointed out that this could lead to emissions being double counted if other countries were to conduct a similar assessment. To avoid double counting it was suggested that refuelling stops should be included in the host country's inventory.

Only eight respondents believed an uprating factor should be used. One stakeholder suggested using an uprating factor of 1.5 which would take into account the increased percentage of UK citizens on a UK flight and the increased emissions from flights with more than one leg. Another respondent stated that by including the second leg of the flight, consistency was being maintained with the UK Environmental Company Reporting Guidelines.

Of the eight stakeholders who did not respond to the question, one said more information on the impacts of uprating was required before they could comment further.

Government response

We continue to believe that an uprating factor which accounts for long haul flights with more than one leg would add little value to the emissions cost assessment as it would involve an additional administrative burden; could reduce the relative accuracy of the calculation as the uprate factor could only be an estimate; and would therefore create additional complexities.

Scope of Aviation Activity

Q3: Are you content that the UK emissions inventory figures for UK domestic and departing international flights provide a satisfactory indicator for total UK aviation sector activity?

In the consultation document we proposed that only airline emissions reported in the UK emissions inventory (a proxy for departing flights) would be included in the assessment. 34 responses were content with the use of the UK emissions inventory figures. Many of these responses said it would be too complex to include other sources and in some cases other measures such as the Carbon Reduction Commitment were addressing emissions from sources such as airports.

The eight responses that disagreed with this approach were from a cross-section of the stakeholder groups. Four said that ground sources should be included, while one stakeholder believed that noise and air quality emissions should be taken into account. One stakeholder believed that there should be a better understanding of indirect aviation emissions.

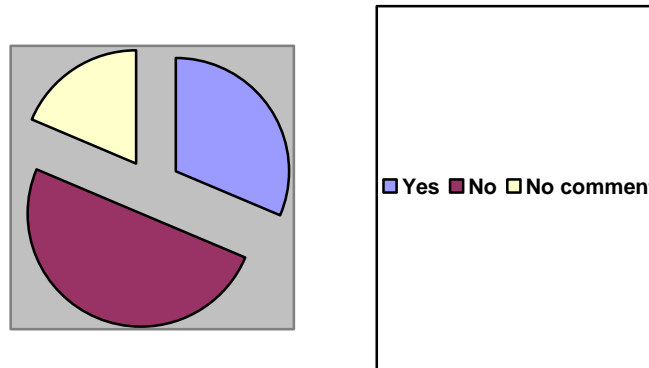
One stakeholder answered yes and no on the basis that they agreed other aviation emissions data may be complex to collect but they stated that all other sectors should have their own emissions cost assessment to demonstrate that carbon costs are being covered across the economy. Five stakeholders did not respond to this question.

Government response

As stated in the consultation document, we believe that for the purposes of this assessment only emissions of carbon dioxide attributable to flights should be included. This would be consistent with our international reporting practices and would ensure that the assessment is as clear and transparent as possible. As we noted in the consultation document, emissions from other sources such as surface transport or airport buildings are difficult to attribute solely as 'aviation activity' and in many cases they are covered by measures such as the Carbon Reduction Commitment.

Non-CO₂ impacts

Q4: Do the proposed values for the factor for non-CO₂ effects provide a robust way forward, recognising there are uncertainties that must be taken into account?



In the consultation document we proposed that a range of multipliers should be used to account for the scientific uncertainty surrounding the non-CO₂ impacts of aviation emissions. This range would be 1 (ie no non-carbon impacts are accounted for), 1.9 and 4. There was clear division in the views of the responses to this question. Of the 39 responses to this question, 24 said they were not satisfied with the proposed values. Dissatisfaction was for one of two reasons, some thought the range did not go high enough, while others thought the range was too wide and should be reduced. Some stakeholders thought it was not appropriate to exclude the effects of cirrus clouds and contrails, despite the scientific uncertainty surrounding these effects, while others thought that there was sufficient scientific uncertainty surrounding the whole issue of non-CO₂ impacts that no multiplier should be applied at all. Of the multipliers suggested four stakeholders recommended a multiplier of 1.2; two recommended 1.9; one a range of 2-4; three recommended a multiplier of between 2.5 and 2.7; three recommended 2.7; and one suggested 5.4. Two stakeholders specifically disagreed with the upper bound of 4.

A number of stakeholders questioned the use of a multiplier as the best means of taking into account the non-CO₂ impacts but offered no alternative and four

respondents suggested that the impacts of each greenhouse gas should be calculated separately.

Two stakeholders said that it was important that a multiplier was applied consistently both to other sectors and across policies. It was also stated that the multiplier should be kept under review as the science of non-CO₂ impacts progresses and one stakeholder asked for independent work on this matter to be conducted.

Government response

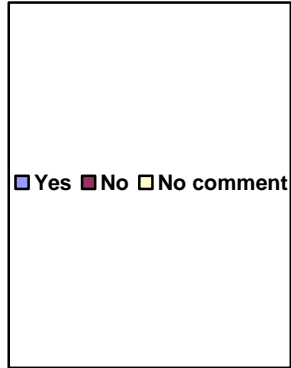
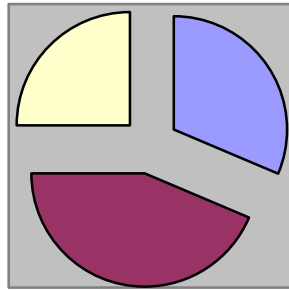
The issue of accounting for aviation's non-CO₂ impacts is a complex one owing to substantial scientific uncertainty and the lack of a suitable climate metric which takes into account the different impacts of an aeroplane's emissions and the resident timescales in the atmosphere. We believe the most appropriate means of addressing these effects in the emissions cost assessment will include a range of carbon dioxide multipliers varying from one (i.e. no uplift above carbon dioxide emissions only) to four (the upper bound of the IPCC range). We accept that this is a significant range to apply, however this reflects the scale of uncertainty of aviation's non-CO₂ affects. The best scientific evidence we currently have available is a radiative forcing factor of 1.9, excluding cirrus impacts.

Whilst we acknowledge that most sectors impose a greater impact on the climate than represented by their carbon emissions alone, aviation's non carbon impacts are relatively higher than for most other sectors. For this reason, an emissions cost assessment that completely excludes non-CO₂ would not be credible, and we propose the use of a multiplier as a proxy for aviation's total climate impacts.

As the science on the non-CO₂ impacts improves over time, the emissions cost assessment can be updated and can then take account of a number of respondents' suggestions to calculate each emission's climate change impact separately.

The cost of carbon

Q5: Do the proposed values for the social cost of carbon provide a robust way forward, recognising there are uncertainties that must be taken into account?



In the consultation document we proposed to use the Government’s social cost of carbon figure, alongside the agreed range of between £45 and £163 per tonne of carbon. 12 stakeholders did not answer this question on the proposed values for carbon, of which two said they didn’t have sufficient knowledge about the subject area. Two stakeholders suggested the social cost of carbon would not be sufficient to cover all the costs as some climate change effects were impossible to put a monetary value on. While two responses said that the range of uncertainty should be reduced and there should be consistency in carbon costs with the Stern Review and the IPCC Fourth Assessment reports.

15 stakeholders agreed with the use of the Government’s social cost of carbon, however many of these responses highlighted the need to reduce the sensitivity range and to keep the social cost under review.

Of the 21 stakeholders who did not agree with the use of the Government’s social cost of carbon, many disagreed with the use of such a broad range of costs and some disapproved of the way the social cost was calculated. Two respondents thought the carbon cost should be linked to the retrospective price of carbon on the open carbon markets, making the carbon cost significantly lower than the social cost in the short to medium term.

Nine respondents thought that the social cost did not take the full range of costs. and therefore should be higher to reflect climate catastrophes and the non-linear tipping points of carbon concentrations. It was also noted that the social cost of carbon had previously been calculated based on the Kyoto targets as opposed to a 60% cut in emissions and therefore the cost should be re-calculated in line with the more recent national target. Many of these nine stakeholders stated that the Stern Review’s business as usual social cost of £238 per tonne of carbon at 2000 prices should be used (equivalent to \$85 per tonne of carbon). One stakeholder quoted a report for Defra by Downing et al (2005) which stated that the carbon costs were likely to span three orders of magnitude and so could be as much as £1000 per tonne of carbon at 2000 prices.

Four stakeholders questioned the use of the social cost of carbon as it did not relate to the costs of complying with carbon reduction trajectories. Of these, two stakeholders thought the cost of carbon should be calculated based on the costs

of keeping aviation within an agreed domestic target (such as the Climate Change Bill 60% targets).

Respondents from both the aviation industry and the environmental groups referred to the Stern Review to support their arguments for higher and lower carbon costs. The Stern Review on the Economics of Climate Change provided a range of climate change costs in US dollars based on business as usual, taking action to reduce emissions to two specific climate stabilisation levels (450 parts per million of CO₂ equivalent and 550 parts per million). Depending on the view point of the stakeholder, different values were chosen using varying units; for example many stakeholders from the NGOs believed that the business as usual figure of £238 per tonne of carbon should be used. In the answers to this question, stakeholders compared carbon costs with carbon dioxide costs; this could therefore have been the reason why some stakeholders disagreed with the costs in the consultation document.

Government response

Since the publication of the consultation on the aviation emissions cost assessment, the Government has published updated guidance on applying a value to carbon dioxide emissions. The former social cost of carbon (SCC) that was used in the initial consultation document has now been replaced with the Shadow Price of Carbon (SPC). The revised guidance was published in December 2007¹. The new values do not materially change the assessment presented in the consultation document.

It should be noted that both the SCC and the SPC are fundamentally linked. The SCC measures the full global cost today of an incremental unit of carbon dioxide emitted now, summing the full global cost of the damage it imposes over the whole of its time in the atmosphere. It signals what society should, in theory, be willing to pay now to avoid the future damage caused by incremental carbon emissions. The amount of damage done by each incremental unit of carbon in the atmosphere depends on the concentration of atmospheric carbon today and in the future to which it is added. The SCC therefore varies depending on which emissions and concentration trajectory, or stabilisation goal, the world is on. The SPC is based on the SCC for a given stabilisation goal, but can be adjusted to reflect:

- estimates of the Marginal Abatement Cost Curve (MACC) required to take the world onto the stabilisation goal; and
- other factors that may affect UK willingness to pay for reductions in carbon emissions, such as political desire to show leadership in tackling climate change.

¹ This can be viewed at <http://www.defra.gov.uk/environment/climatechange/research/carboncost/pdf/background.pdf>

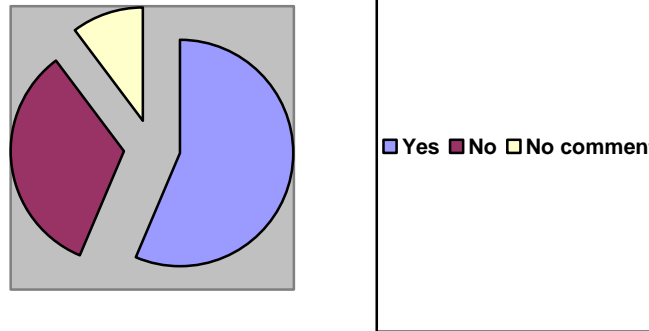
This makes the SPC a more versatile concept in making sure that policy decisions across a range of government programmes are compatible with the Government's climate change goals and commitments.

The SPC is therefore fully consistent with the Stern recommendations and is based upon Stern's suggested stabilisation range and has been calculated at £19/tCO₂ equivalent in 2000 prices which is £25.50/tCO₂ equivalent in 2007 prices. This value rises at 2% per year reflecting the increasing costs as atmospheric concentrations increase.

The new shadow price of carbon has been peer reviewed by a panel of academic experts, including an academic who worked on the Stern Review. Consequently the aviation emissions cost assessment will use the SPC values in the Government guidance as this would ensure consistency with carbon costs used for policy development elsewhere in Government.

Aviation sector costs

Q6: Should APD and duty collected on AVGAS be treated as contributing to the climate change costs of aviation?



The Government's domestic aviation tax regime is structured so as to send environmental signals, however, neither air passenger duty nor the proposed per plane tax should be seen as an environmental charge designed solely to capture the environmental cost of aviation.

Of the 43 responses to this question, 27 suggested that AVGAS and Air Passenger Duty (APD) receipts should be considered as a contribution to climate change costs. The majority of these were from the airline or wider aviation industry. Many of these responses noted that they felt rail and other public transport services receive subsidies and that aviation does not, and that the sector pays for its own infrastructure, security and safety costs. Six responses, all from the aviation industry stated that once aviation is included in the EU

emissions trading scheme that APD should be reduced or withdrawn given that the industry will be covering its costs through trading. Three stakeholders included in their response to this question that APD should be 'hypothecated', ie ring-fenced specifically for environmental causes, if it was to be counted as covering the social costs of carbon.

16 responses did not agree with the use of APD and AVGAS; most of these focused on the use of APD. None of these were from the aviation industry. Of the 16 responses, 13 commented that the purpose of APD was not to cover carbon costs, therefore the tax was not linked to environmental criteria and as such it could not be considered a 'green tax'. Many of these stakeholders thought that APD had been introduced as a means of levelling the playing field in recognition of the fact that aviation does not pay fuel tax and tickets are not subject to VAT. It was also felt that the exemptions from APD meant that cargo flights and small aircraft, including private jets, do not cover their carbon costs at all. No alternative basis was offered in any of the responses.

It was noted that if APD was used in this assessment as covering carbon costs, the aviation sector's other externalities such as noise and local air quality would not be covered. One stakeholder suggested that if APD were to be considered as an environmental cost, reductions should be made to ensure that a share of the revenue was attributed to noise and local air quality costs.

Government response

The Government's domestic aviation tax regime is structured so as to send environmental signals, however, neither air passenger duty nor the proposed per plane tax should be seen as an environmental charge designed solely to capture the environmental cost of aviation.

The Government's proposals for an aviation tax, as set out below, would better reflect environmental impacts as well as ensuring that the aviation industry continues to make a fair contribution to the public finances. Were the UK to charge a fuel duty and VAT on tickets, this could result in revenues of around £10 billion.

Since publication of the aviation emissions cost assessment the Government has announced a reform of APD. In the 2007 Pre-Budget Report it was announced that from 1 November 2009, APD would be replaced with an Aviation Tax which would be levied on a per plane basis in order to send an improved signal of environmental costs. A consultation on the detail of this new tax was launched on 31 January 2008 and closed on 24 April 2008. The Chancellor intends to make an announcement on the policy in the autumn.

A number of responses noted that they felt that aviation does not receive any subsidies like rail and other public transport services. However, the Government

does not believe that such comparisons with other transport modes are meaningful, as the circumstances of each (including funding and taxation arrangements) are unique.

The Government believes that there is a place for domestic aviation taxation alongside the ETS as aircraft emit other externalities and the industry should also make a fair contribution to the public finances. The Treasury keeps all taxes under review and will monitor the interaction of the two instruments as ETS auctioning rates rise.

The Government does not believe that hypothecation of specific revenue streams to finance specific expenditure programmes is an efficient means of determining public expenditure priorities. It prevents judgements being reached in the round on the relative prioritisation of competing public expenditure programmes. And it introduces an unjustified link between the level of funding for a particular programme with the buoyancy of the revenue stream used to finance it.

For the purposes of this strategic emissions cost assessment, a comparison has been made between the level of Air Passenger Duty and AVGAS receipts and cost of its climate change emissions. However, the Government emphasises that neither Air Passenger Duty nor the proposed per plane tax should be seen as an environmental charge designed solely to capture the environmental cost of aviation. While the proposed per plane tax would better reflect environmental impacts, it would also ensure that the aviation industry continues to make a fair contribution to the public finances.

Q7: Are there any other actions, in addition to offsetting and emissions trading, taken by the aviation industry which you would regard as relevant to the emissions cost assessment?

40 stakeholders responded to this question and of those 18 responses believed that there were other actions taken by the aviation industry which should be included in the assessment. The majority were from the aviation sector. Only four were not from the aviation industry and their suggestions for additional factors to be considered included VAT on tickets, EU-wide fuel tax and cirrus cloud effects. Although offsetting was not considered to be a contribution by the aviation industry in the consultation, nine of the responses thought that offsetting should be included and some specified that only auditable offsetting schemes should be taken into account. Six stakeholders agreed that research and development costs including fuel efficiency costs should be included and three thought that infrastructure as well as noise and local air quality mitigation costs should be included.

Of the 22 responses which thought there were no other actions, seven specifically agreed that offsetting should not be included in the aviation emissions

cost assessment, while three thought that emissions trading should not be included once aviation enters the EU ETS.

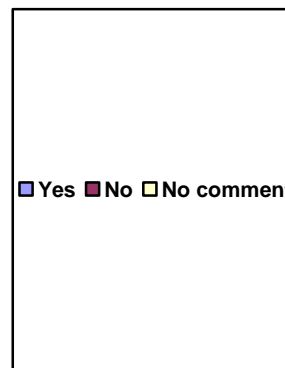
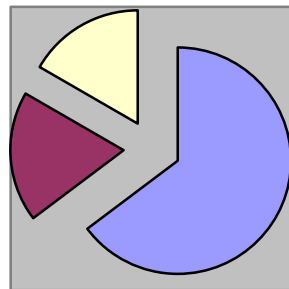
Government response

Of the alternative costs that were suggested, we do not believe that any of them should be included in this assessment. Currently the Government has no plans to introduce VAT on tickets, so these costs cannot be used in the emissions cost assessment at this time. Research and development costs would be difficult to define as being specifically related to climate change and could be burdensome to collect and verify.

With regard to offsetting, as we set out in the consultation document we do not recognise voluntary, individual offsetting as a contribution made by the aviation industry towards its climate change costs for the purposes of this assessment. However, as we stated, were a part of the airline industry to take its own systematic action to offset its carbon emissions, purchasing approved credits, we would in future consider the case for adjusting the assessment accordingly.

Data sources

Q8: Should the emissions cost assessment be based on the most recent calendar year for which a full and consistent data set is available?



Eight out of the nine stakeholders who did not agree that the emissions cost assessment should be based on the most recent calendar year, said that they thought the emissions cost assessment should be forward looking and take into account emissions forecasts on the basis that decisions about future capacity should be based on forecast emissions, otherwise the assessment underestimates the impact of aviation. These responses were from environmental organisations. The remaining stakeholder believed that once aviation is included in the EU ETS, the yearly emissions data should be used to calculate a rolling average which would decrease the impact of a time-bound peak or trough in activity.

31 stakeholders agreed with the use of the previous calendar year's data. One respondent said forecast data should also be included, while six responses from the aviation industry specifically stated that forecast data should not be used. Two responses highlighted the need for the assessment to take into account any changes in taxation, although it should be noted that this was the case in the consultation's illustrative assessment which considered the increased rate of air passenger duty.

Government response

We continue to believe that the emissions cost assessment should be based on the most recent historical data. The data used has been produced in accordance with United Nations Framework Convention on Climate Change international reporting requirements. As we made clear in the consultation document, forecast emissions data introduces uncertainty into the assessment as does forecast revenue data. The emissions cost assessment is intended to be one piece of evidence alongside many, including emissions and activity forecasts, that will be presented to Ministers when decisions are being made about the UK's aviation strategy.

Q9: Are there any other data sources you believe might be relevant to carrying out an emissions cost assessment?

16 respondents did not think that there were any other data sources that were relevant to the aviation emissions cost assessment, although one stakeholder thought that emissions trading data could be used once the sector is included in the EU ETS.

23 stakeholders thought that there were other data sources that should be used. Many of the data sources had previously been mentioned in the consultation response and related to views on what should be included in the assessment. Responses from the aviation industry supported four other data sources; offsets (four responses); ETS data (four responses); fuel burn data (four responses); research and development information including data from Sustainable Aviation (four responses from the aviation industry and one from a member of the public). One member of the airline industry suggested that the external benefits of aviation should be factored in and that the ICAO range of greenhouse gas costs should be considered.

Four environmental organisations and one member of the public supported the inclusion of cirrus cloud impacts, three of whom said these could only be included once more information was known. One stakeholder thought AERONOX data should be included to cover NO_x emissions, and another stakeholder thought ground based emissions should be considered in the assessment.

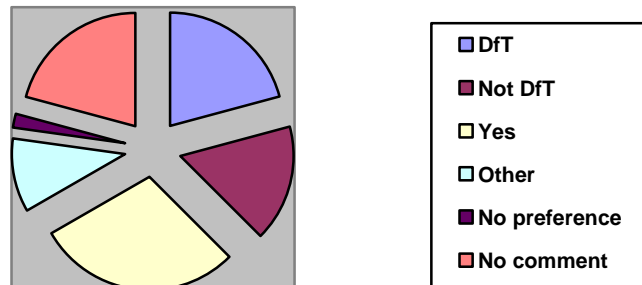
Three stakeholders believed that passenger weighting should be applied to the UK national inventory data and one respondent thought that in order to do this an uplifting factor of 1.5 should be used.

Government response

The consultation document set out our rationale on why some of these other data sources would not be appropriate for the purposes of this assessment. We do not consider that any of the options proposed in the responses present a robust and valid option for inclusion in the assessment. Consequently we believe the data sources identified in the emissions cost assessment consultation are currently the most suitable, although where appropriate we have acknowledged data limitations.

Assessment methodology

Q10: Should the assessment be carried out by the Department, or by another Government body?



There were a broad range of answers to this question. 10 stakeholders did not comment, one said they did not have a preference and 14 answered 'yes' without naming a preference between the Department for Transport (ie Government) or a Government body.

There was a divergence of views from respondents about whether DfT should conduct the assessment. 10 responses believed that DfT should be responsible for doing the necessary calculations as it was thought the Department had the necessary expertise. It was also noted that as all the data was publicly available there was no need for an independent body. 8 respondents, however, thought that the assessment should not be conducted by DfT because the Department was not considered to be an impartial Government department by many of the environmental organisations. The alternatives that were provided by those that did not want DfT to carry out the assessment were Defra (three responses); the Office of Climate Change (one response); Office of National Statistics (one response); Government body (four responses); independent organisation (one response).

Two responses named Defra as the preferred Government department, and three thought an independent organisation should do the calculations and then report to Government. None of these responses commented on the suitability of DfT to conduct the assessment.

Government response

Whether the DfT or another Government department or body conducts the assessment, the result would be the same given that the methodology proposed here has been clearly explained and justified. Whilst there was concern expressed by some stakeholders about the impartiality of the Department for Transport, the assessment uses data that is publicly available and in most cases has been verified by a third party. The proposed emissions cost assessment does not prevent other organisations from conducting their own assessment, using different data and a different methodology, but in this case, this is a Government assessment to be used to inform Government policy and as such we continue to believe that the DfT is best placed and has the necessary expertise to conduct the assessment.

Q11: Do you agree that the assessment should be based on Government data, such as the social cost of carbon, radiative forcing factor and emissions data, in order to ensure consistency and credibility going forward?

Responses to this question depended on whether the stakeholder had raised concerns with the data sources previously. 10 stakeholders did not respond to this question, 26 agreed, 11 disagreed and one stakeholder answered yes and no.

Of those that agreed one stakeholder noted the need to highlight the range of uncertainties in the assessment particularly with the non-CO₂ impacts of aviation and the social cost of carbon. A number of stakeholders stated that by using Government data, consistency would be maintained with other cross-Government data and methodologies. Three stakeholders who answered yes continued to question the inclusion of APD, the range of values for the social cost of carbon and radiative forcing.

The majority of stakeholders that answered no, tended to disagree with the inclusion of at least one of the data sources. Five responses from the aviation industry disagreed with the inclusion of a radiative forcing multiplier and one disagreed with the social cost of carbon range. One environmental group thought that APD should not be included and that the social cost of carbon and the multiplier were too low.

Two respondents would like the Government's data to be supported by EU data, although no specific data sources were mentioned. Two stakeholders preferred independent data to be collected and peer reviewed, although the detail of who would do this and how the data would be collected was not specified.

The stakeholder who answered yes and no, said that Government data should be used for the purposes of consistency but that in order to be credible, the emissions cost assessment should not use a radiative forcing multiplier.

Government response

As we have stated previously, we acknowledge that there are limitations with the data we propose to use in the emissions cost assessment. However, in many cases these limitations are understood and the proposed data is the best available given our need to rely on credible and consistent data. Some data limitations can be addressed by using an agreed range of values. Government data is verified, and in most cases peer reviewed and will be consistently applied within Government. If we were to use independent data, we would lose many of these advantages and for this reason we do not favour the use of values calculated by an independent body using different parameters to those used across Government.

Comparing UK data with EU data would provide an interesting comparison, however no data sources were provided and widening the scope of the assessment makes it much more complex, data intensive and less transparent.

We continue to believe that Government data is the most appropriate for the emissions cost assessment but as stated below we will keep the values and methodology behind the values under review to ensure new developments are taken into account.

Q12: Should the methodology be kept under review to take account of developments in the evidence base and policy?

Seven stakeholders did not respond to this question. None of the respondents thought that the methodology should not be kept under review. Of those that thought the methodology should be reviewed very few provided further comments. One stakeholder believed that the emissions cost assessment should not be used for trend analysis as the data characteristics were likely to change over time so cost assessment comparisons would have less value. Another stakeholder said that the methodology should take account of IPCC work into the Global Temperature Potential concept. Most of the comments reflected the need to ensure that the assessment was updated with the latest agreed scientific thinking, particularly with reference to non-CO₂ impacts. One stakeholder believed that any change in the methodology should be subject to consultation.

Government response

In line with the majority of stakeholder views the emissions cost assessment will be kept under review to take account of developments, particularly in the scientific understanding of climate change, changes in aviation taxation policy and in the introduction of new measures to tackle the climate change impacts of aviation.

In order to provide an opportunity for stakeholders to comment, we intend to consult on significant changes to the methodology of the aviation emissions cost assessment.

Next steps

The DfT would like to thank those recipients who took the time to provide a response to this public consultation. We publish an emissions cost assessment alongside this document which reflects the decisions taken in light of the consultation.

Subsequent emissions cost assessments will be conducted periodically to inform strategic decisions on aviation capacity in the UK. We would therefore expect the next emissions cost assessment to be conducted in 2009 at the time of the next Future of Air Transport Progress Report.

Annex A: Organisations that responded

Aviation Environment Federation (AEF)
Airbus
Airport Operators Association
AirportWatch
Air Transport Association of America ATA
Air Transport Users Council (AUC)
Austrian Airlines Group
BAA
Board of Airline Representatives in the UK (BAR UK)
British Air Transport Association (BATA)
British Airways
British Business and General Aviation Association (BBGA)
British Helicopter Advisory Board (BHAB)
Campaign to Protect Rural England
Civil Aviation Authority
Department for Employment & Learning (NI)
East Ayrshire Council
Easyjet
European Low Fares Airlines Association (ELFAA)
Friends of the Earth
Friends of the North Kent Marshes
George Best Belfast City Airport
Greener by Design
Hertfordshire County Council
Highlands and Islands Transport Partnership (HITRANs)
London Borough of Hillingdon
London Borough of Hounslow
Luton and District Association for the Control of Aircraft Noise (LADACAN)
Manchester Airports Group
Parish Councils Airport Association
Peel Airports Group
Prospect
Rolls Royce
Royal Mail Group
SBAC
Singapore Airlines
Stop Stansted Expansion
Strategic Aviation Special Interest Group (SASIG)
Thomas Cook
Transport and General Workers Union (TGWU)
Uttlesford District Council
Virgin Atlantic
WWF

