Environmental Audit Committee Inquiry on reducing carbon emissions from transport
Submission by the Royal Society for the Protection of Birds

1. Introduction and background

The RSPB is Europe’s largest wildlife charity with over one million members. We manage one of the largest conservation estates in the UK with 188 nature reserves, covering more than 127,000 hectares. The RSPB is part of the BirdLife International partnership, a global alliance of independent national conservation organisations working in more than 100 countries worldwide.

We consider that human-induced climate change poses the biggest long-term threat to global biodiversity. A recent paper in Nature by a large group of scientists (including one from the RSPB) indicates that in sample regions covering about 20% of the Earth’s land surface “15 to 37% of species in our sample of regions and taxa will be ‘committed to extinction’ as a result of mid-range climate warming scenarios for 2050.”

To avoid such a catastrophe, the anthropogenic greenhouse gas emissions that cause climate change need to be cut hard and rapidly. We therefore support policies and measures that do so, particularly those that tackle transport-related emissions which are consistently the fastest growing source of emissions and may well be the UK’s largest source by 2020.

Indeed, in terms of carbon dioxide emissions by end-user, transport emissions are already on a par with industry and the domestic sector, see the figure below.

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2 Updated Emissions Projections: Final Projections To Inform The National Allocation Plan (NAP), DTI, 11 November 2004
Whilst we welcome the DfT taking on a Public Service Agreement to reduce carbon dioxide emissions (as had previously urged them to do) we remain sceptical about UK transport emissions declining sufficiently to meet the DfT’s targets without very significant strengthening of the current suite of UK transport policies and the addition of further policies and measures. Indeed, we consider that without urgent action on transport policy, the UK is in danger of missing its national emission reduction targets.

In this response we focus primarily upon the last of the five strategic issues that the Committee expressed an interest in, i.e. ‘what specific steps the department should now take to reduce road transport carbon emissions and congestion over the next decade?’ At the end, we provide some observations on what we feel needs to be done to constrain growth in aviation emissions, which are of particular concern.

2. Road Transport

If we are to stand any chance of achieving our 20% carbon dioxide emission reduction target, we need at least to halt and preferably reverse the current increase in transport-related emissions, which means that existing measures need to be strengthened considerably and some new ones introduced. In the first part of this section, we consider how to strengthen and add to existing, mostly fiscal, road transport measures. In the second part, we examine other means of cutting emissions, such as by shifts between transport modes.

2.1. Strengthening and adding to existing measures

The voluntary agreements with EU, Japanese and Korean manufacturers

The EU car manufacturers have conceded that the voluntary agreements are not working as effectively as they had predicted. We doubt that they will deliver the target of a fleet average of 140g/km across the EU by 2008/9.4 There thus appears to be a good argument for extending and significantly strengthening the agreements and probably making the agreements mandatory. Whilst there may appear to be difficulties associated with having mandatory agreements with non-EU companies, there are ways around them. California has, for example, been highly successful in persuading foreign companies to comply with its domestic legislation on vehicle emissions, largely because it is a very big market, as is the EU. By adopting mandatory targets, the EU could not only reduce its own emissions but have an additional effect worldwide.

We consider that there is a need for a mandatory upper limit on emissions from new cars. An initial aim for 2010 might be 250 g/km. An upper limit would force the fleet average downwards and prevent the manufacture of wasteful vehicles.

The agreements, voluntary or mandatory, should be extended to all road vehicles, including lorries, again with overall, mandatory emission limits on new vehicles.

To make mandatory targets both politically acceptable, and achievable at lowest cost, it might be possible to consider introducing the flexibility of trading, either within the

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4 After making good progress in early years, progress has slowed. ACEA data indicates that European car makers achieved only a 0.6% decrease in new car emissions in 2003, about the same as in 2002. The industry will now have to achieve annual 2.8% cuts every year from 2004 to meet the target. At this rate, the 140g target will be missed by at least 20%.
automotive sector itself or, more probably, by opting the sector into the EU ETS, at some point after the end of the second period.

Fuel taxes
The high rate of taxation on vehicle fuels has had a significant effect on the types of vehicles that people use, and we regret the dropping of the fuel duty escalator which sent a clear signal that prices were to continue to rise.

However, taxes on fuel are not generally seen as an environmental measure and the way in which they are perceived has not been helped by some tax breaks which, however well-intentioned, are not clearly good for the climate change, such as the lower excise duty on LPG. In our opinion, this situation could be rectified by the replacement of existing fuel taxes by a straightforward carbon tax (applied in proportion to the well-to-tank carbon emissions of the fuel) or cap and trade scheme, which we discuss later in this document. At the very least, fuel duty differentials and rebates should be increased to reflect differences in well-to-tank carbon.

Vehicle Excise Duty and company car tax
We consider that basing VED and company car tax on carbon emissions is a good idea. We would, however, significantly increase both differential between tax bands and considerably increase the duty payable in higher, more polluting bands, perhaps reducing VED on cars under 100g/km to zero. We would also suggest harmonising VED bands with the A-F bands under the new voluntary car labelling scheme, and increasing the number of bands used for the label, specifically by dividing the most polluting band, band F, into at least two. At present, extremely inefficient vehicles are treated on a par with less inefficient ones.

Some have argued that these kinds of taxes are ineffective because they represent only a small proportion of the costs of buying and running cars. However, not only do they send a clear signal that greenhouse gases will be increasingly costly to emit but they force car buyers to be aware of the emissions from their vehicles, because advertising literature cites, and now labels, emissions. There is thus a good reason for retaining and strengthening the taxes, if only for public information reasons. This is especially true since the launch last year of the UK voluntary car label.

Feebates
To reinforce the tax signals provided by carbon-based fuel duty and carbon-related VED, both of which operate after the point of purchase, it would be very sensible to introduce a feebate system that operated at, and therefore influenced, the point of purchase itself. Feebates would use revenue from purchase charges on polluting vehicles to provide capital grants for efficient vehicles. The overall effect would be revenue neutral, and socially progressive. The Feebate scale could be based on the labelling bands, with the middle band attracting neither a charge nor a rebate.

Congestion/road user charging
The RSPB has long supported congestion charging and, to a lesser extent, road user charging because they help to reduce vehicle emissions. However, because they do not directly target emissions, they are not an instrument that can be relied upon to, alone, deliver substantial emission reductions. Indeed, we are generally in agreement with the Government’s road pricing feasibility study which came to much the same conclusion.
Biofuels

Whilst the RSPB is supportive of the increased use of biofuels for the reduction of greenhouse gas emissions, we have biodiversity-related concerns about the potential scale, type and location of the energy crops from which they are derived. If farmed intensively, on a large scale and in the “wrong” places, such crops could have a considerable, adverse effect upon wildlife, both at home and abroad. We therefore favour an approach that includes spatial planning to determine the appropriate scale and location for development, as well as strategic environmental assessment of any programmes that are proposed (following the example of offshore wind). Individual biomass or biofuel processing plant would also be subject to environmental impact assessment. In addition, an accreditation scheme should be established for the growth of energy crops, detailed in our responses to the DfT consultation on a biofuels strategy and the Defra consultation on the strategy for non-food crops uses which are available on request. This accreditation scheme would consider both the life-cycle carbon balance of the biofuel source, and its other impacts on the environment, including biodiversity.

If biofuels are to be used extensively, they will require government support. We consider that a biofuels obligation of the type currently being developed by government, as a result of the Biofuels Directive, is probably not the best approach. A more general approach that encourages the broad development of any type of low or zero carbon fuel would be better and would not “pick winners” in the way that a biofuels obligation would. We prefer a well-to-wheel carbon tax or a cap and trade scheme, which we discuss in the next section.

A well-to-wheel carbon tax

A UK, or preferably EU-wide, carbon tax on vehicle fuels, replacing all existing duties on fuel, would be a valuable addition to the current portfolio of measures for reducing emissions from road transport. A so-called well-to-wheel (or more accurately, well-to-tank) duty levied in direct proportion to the carbon content of fuel, including carbon arising from its extraction, refining and distribution, would clearly target the problem of climate change whilst also encompassing a wide range of fuels and technologies, including biofuels and hydrogen. It would be a fair tax, penalising the use of polluting fuels but not clean ones.

To be practical, a well to wheel tax would have work on average emissions from certain activities and would probably need to avoid double counting emissions from some of them. However, we can see no major technical obstacles to its introduction. As an interim measure, fuel duty differentials could be considerably increased and more finely graduated to reflect life-cycle carbon emissions. This instrument could be made revenue neutral.

Alternatively, a cap and trade scheme could be applied to the road transport sector, probably initially in the UK. Because of the large number of individual sources of emissions, it would be administratively sensible for the allocation to be made upstream, at oil depots where the fuel comes out of bond. Having an upstream allocation would mean that it would have to be made on the carbon content of the fuel. Initially, such a scheme would probably need to be run separately from the EU one, but could eventually be integrated with the ETS. The scheme would replace existing fuel taxes. Alternatively, the obligation could be placed on car manufacturers, based on fleet averages.
2.2. Other means of cutting emissions

The role of industry in developing and implementing low carbon vehicle and fuel technologies

The technology already exists to mass produce cars, such as petrol hybrids, that have significantly lower carbon emissions. The key is, therefore, to overcome the barriers to the sale of such vehicles.

Much more must be done to inform people of the environmental effects of transport use. The voluntary car label, developed by the Low Carbon Vehicle Partnership, is a start. Although the label is a voluntary scheme, the Government should push for it to be made mandatory across the EU, and to include efficiency information on all vehicle adverts.

The cost of low emissions vehicles is an obstacle to their uptake. The Government must continue to review the effectiveness of the Transport Energy grants to ensure they are acting as a catalyst for real changes in the UK vehicle fleet.

Getting the best out of our transport system

In recent years, the emphasis of Government road transport policy has been on getting the best out of the transport system by tackling congestion. However, the RSPB considers that this emphasis should change to reducing the amount of greenhouse gas emissions from road transport. In order to achieve this, Government transport policy must refocus on achieving modal shift and reducing the need to travel. (Achieving modal shift is discussed further in the next section.)

Reducing the need to travel does not necessarily mean restricting the movement of people and goods. It means that people should be provided with the opportunity to go about their lives without having to travel ever increasing distances. This can be achieved by utilising effective planning policies and by the use of information technology.

With regards to planning, there are a number of measures which can be introduced:

- tighten planning standards and guidance to ensure that new commercial and residential development is high density with low levels of parking and designed to maximise walking and cycling
- retain and strengthen controls on out of town retail and business parks
- ensure new residential development has a wide range of local community facilities and services within walking or cycling distance to reduce the need to travel. Protect/fund key local facilities such as shops, post offices, banks etc

As a minimum, all of these measures should be integrated into the Government’s plans for sustainable communities.

Information technology must be part of the solution to reducing carbon emissions from transport. The use of broadband can make home working and shopping much easier. The Government should work with the telecommunications industry to increase the coverage of broadband and to reduce the costs.
How to encourage and help people to make smarter choices about the way they travel

In order to make smarter choices about the way they travel, people must be provided with a viable alternative to the car. Government must, therefore, increase funding of public transport systems to increase frequency and reliability of services and to reduce the cost of travelling.

However, there is a range of other measures that can be introduced to encourage people to utilise more sustainable modes of transport. These range from fiscal measures, such as, well-to-wheel fuel tax, road-user charging and workplace parking levies, through to ‘softer’ measures, some of which are described below.

Workplace and school travel plans can play an important role in reducing the traffic generated by specific organisations and schools. The Government should make it a requirement for all schools with over 100 pupils and organisations with over 200 employees to develop travel plans.

The planning system can also help to encourage people to make smarter choices by designing new developments with good public transport links and by supporting car clubs with reserved parking; implementing them as a standard feature of new residential developments.

Provision of information can also be important in highlighting alternatives to car travel. The Government’s Transport Direct project could be a useful tool, although it has had its initial teething problems. This project should be built upon to develop a transport information database that can be relied on by the public and businesses.
3. Aviation

Although aviation emissions are a quite small fraction of total UK emissions at about 5.7%, they are by far the fastest growing source of emissions, at about 6% per year between 1993 and 2003, despite a slight fall in 2001. EU aviation emissions are increasing at a similar rate (about 5.6% per annum) and as the European Commission points out ‘If the growth continues as up to now, emissions from international flights from EU airports will by 2012 have increased by 150 % since 1990. This growth in the EU’s international aviation emissions would offset more than a quarter of the reductions required by the Community’s target under the Kyoto Protocol.’

UK air traffic forecasts (DfT 2000 currently being revised) indicate that passenger numbers will more than double over the next twenty years, from 160 million in 1998 to 400 million in 2020 (mid-range forecast). The EU Commission forecasts that emissions from aviation will triple by 2020 from 1990 levels to between 6 and 8% of all EU emissions. Other forecasts in general terms support the UK and EU’s figures, for example the International Civil Aviation Organisation (ICAO) estimates that the global fleet of aircraft will double from 12,300 to 25,000 between 2002 and 2020. Some projected estimates of future fuel use are given below.

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Fuel used in early nineties</th>
<th>Fuel used in 2000</th>
<th>Projected fuel used in 2015</th>
<th>Projected fuel used in 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANCATEC2</td>
<td>131.3</td>
<td>-</td>
<td>287.9</td>
<td>633.2</td>
</tr>
<tr>
<td>TRADEOFF</td>
<td>131.0</td>
<td>167.7</td>
<td>-</td>
<td>471.0</td>
</tr>
<tr>
<td>NASA</td>
<td>139.4</td>
<td>-</td>
<td>308.6</td>
<td>471.0</td>
</tr>
<tr>
<td>DLR</td>
<td>129.3</td>
<td>-</td>
<td>285.0</td>
<td>-</td>
</tr>
<tr>
<td>AERO (excl. military)</td>
<td>134.2</td>
<td>166.0 (1997)</td>
<td>257.8 (2010)</td>
<td>368.6 (2020)</td>
</tr>
<tr>
<td>EDGAR</td>
<td>167.8**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Any such rates of growth are clear unsustainable in a world that should be curbing its greenhouse gas emissions, especially because the effect of aviation emissions taken together is greater than for carbon dioxide alone. In 1999 the Intergovernmental Panel on Climate Change (IPCC) estimated that the total impact of aviation emissions on the atmosphere was between 2 and 4 times that of carbon dioxide alone.

Cutting aviation emissions

There are two main ways of cutting aviation emissions: technical improvements to aircraft (and to a lesser extent improvement to their flight paths) and limiting demand. Although the fuel efficiency of aircraft has constantly improved, these improvements have been more

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5 Table 3.8 page 54 of ‘Transport Statistics Great Britain 2005 Edition, TSO, DfT 2005. Here the figures used are for civil (domestic) aviation and international aviation combined, as opposed to the more commonly used international aviation figures.


7 Report of the Sixth Meeting of ICAO’s Committee on Aviation Environmental Protection, 2 February 2004. 1.1.4.

8 Study on air quality impacts of non-LTO emissions from aviation”, Norwegian Meteorological Institute 2004.

than cancelled out by huge increases in demand. As mentioned above, all reputable forecasts envisage this trend as continuing and so measures that limit demand for aviations are essential, even in a world of rising fuel prices. (Fuel prices are quite a small proportion of aviation costs, at most 25%, according to IIATA.)

One obvious way of limiting emissions from aviation is by a fuel tax but this is unlikely to materialise in the foreseeable future. In part, this is because aviation is an international business and its emissions really need to be tackled globally, yet international taxes are hard to agree and impose, and the same would be true of a worldwide set of harmonised national taxes. Also, and probably more importantly, emissions from international travel come under the remit of the International Maritime Organisation (IMO) for shipping and the ICAO for aviation, rather than the Convention on Climate Change and its Kyoto Protocol as is the case of all other emissions. ICAO was established by the 1944 Chicago Convention which, together with a host of bilateral air service agreements, excludes taxes on fuel used for international flights, although domestic taxes are allowed and some countries, notably the USA, have such taxes. Without amending both the Chicago Convention and all of the bilateral agreements, a fuel tax is not legally possible and such amendments would take decades. An EU aviation fuel tax has been mooted but EU member states are signatories to the Chicago Convention and have their own bilateral air service agreements. The RSPB has long argued that aviation emissions should come under the remit of the Climate Convention, rather than ICAO, but this change in competence is, again, unlikely because a number of countries have long opposed such a move, particularly the USA.

Three main alternatives to aviation taxes exist: a standing charge (such as the UK’s Air Passenger Duty), an emissions or route charge, or including aviation emissions in a cap and trade scheme. Standing charges could work and are a desirable first step. But, to be perceived as a fair means of limiting climate change, they would need to levied at least roughly in proportion to the damage that any particular flight causes and so would need to be highly differentiated on the basis of emissions per flight. Also, it is unlikely that charges would be levied at a level that reflects the damage caused by aviation or even at a level that would put aviation on a par with other transport modes. For example, if a charge were to be applied at the same rate as petrol is taxed, the levy on a flight to Australia would be about £700. It would be politically hard to charge this much. Also, it would be difficult to coordinate any charge internationally although it would be possible within the EU.

Emissions or route charges can work and have been applied (for NOX emissions) at Zurich Airport and in Sweden. Again, however, it would be difficult to apply a worldwide emissions charge or a harmonised set of national ones, although an EU-wide charge would be feasible. A practical, and potentially a legal difficulty with emissions charges is, however, that they would have to be linked to fuel consumption and a charge would thus look like a fuel tax. The Swedish charge met with this problem, when the other Scandinavian countries challenged its legality on the grounds that it was really a fuel tax.

The last main option is to have a cap and trade scheme for aviation. Like an emissions charge, this has the advantage that the concept had not been thought of in 1944 and is thus not prohibited by the Chicago Convention and, moreover, it is clearly not a tax. Ideally, were aviation emissions to be included under the remit of Kyoto, then they would be capped by the Kyoto targets and could be traded under its global emission trading scheme. Indeed, even ICAO concluded that what they called an ‘open’ emissions trading scheme would be
the best way of coping with aviation emissions. By ‘open’, ICAO’s Committee on Aviation Environmental Protection meant a system in which aviation emissions would be traded with emissions from other sources. The only global system of this type is the Kyoto one.

It seems unlikely that the type of system envisage by ICAO will occur in the foreseeable future but the European Commission has concluded that the best option for limiting EU demand for aviation would be to opt EU aviation emissions into the EU Emissions Trading Scheme (EU ETS). The UK and France support this proposal. The RSPB also welcomed the Commission Communication on the subject and we sit on the Commission working group considering the subject in more detail.

However, before a Directive opting aviation into the EU ETS can be produced, a number of key issues need to be resolved. The first of these is the scope of the scheme: should only flights between EU countries be included or should all flights to and from the EU be included as well? We consider that it is essential that all flights should be covered, not only because this is clearly the best option environmentally but also because partial coverage could potentially distort the aviation market. If only intra-EU flights were included then not only would a mere 32% of emissions be captured but airlines that operated both within and outside the EU could cross subsidise internal flights from external ones, as the low cost airlines have pointed out.

The second main issue that a Directive needs to address is the non-carbon dioxide impacts of aviation emissions. Aircraft have a number of effects on the atmosphere that when added together, have 2 to 4 times effect of carbon dioxide alone. To capture these additional impacts in any climate change-related measure is clearly important. There are potentially three ways of doing so: i) via the use of a multiplication factor on carbon dioxide, ii) an effect by effect approach to account for CO2 and non-CO2 effects over time when they are more perfectly understood and iii) a CO2 only emissions trading scheme and potential ancillary instruments for non-CO2 effects. Our view is that the best option would be a multiplier because the other two options would almost certainly lead to long delays in implementation.

Thirdly, a question arises as to how to allocate emission allowances, and at what level; are they to be allocated free of charge by member states, as for all other EU ETS allowances or should another method be employed? Linked to this question is another one, which is who decides on the allocation: member states, the Commission or another body? We consider that the simplest, and most environmentally effective way to resolve both questions would be for allowances to be auctioned. Auctioning would also address two further difficulties: firstly, that a Directive will probably come into force well into the second phase of the EU ETS (when all other allocations will have been agreed and given out) and, secondly, the fact that allowances will be worth more to the aviation industry than to the rest of the traded sector. An auction will at least help address these difficulties.

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10 This and all other options for limiting demand are included in the Commission Staff Working Document, Annex to the Communication from the Commission "Reducing the Climate Change Impact of Aviation", Impact Assessment (COM (2005) 459 final).


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