



Tailpipe Trading

**How to include road transport in the
EU Emissions Trading Scheme**

***A proposal to the Low Carbon Vehicle
Partnership Road Transport Challenge***

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Tailpipe emissions trading: How to include road transport in the EU Emissions Trading Scheme

Summary

We propose that the European Union Emissions Trading Scheme (EU ETS) should be extended to include tailpipe emissions of carbon dioxide (CO₂) from road vehicles, indirectly through fuel suppliers. This would be relatively simple and cheap to administer because of the small number of companies involved: 20 companies in the UK account for more than 99 per cent of road fuels supplied.

Emissions allowances could be auctioned to fuel suppliers or allocated free according to market share or by a combination of the two, either at EU or country level. Revenue from auctioning could be used to reduce fuel duty or for climate change mitigation measures or a combination of these. Biofuels would not require emissions allowances, since they are renewable, hence their supply would be promoted.

Including road transport in the EU ETS in this way would provide the framework for assured emissions reductions but would not negate the need for complementary actions to promote low carbon vehicles, fuels and journeys through regulation, taxation, public spending and voluntary measures.

If road transport makes a proportionate contribution to reducing greenhouse gas emissions across the EU by 15-30 per cent from the 1990 level by 2020 (the goal suggested by the European Council in March 2005), then including road transport in the EU ETS could potentially save about 75-235 million tonnes of CO₂ per year by phase IV (2018-22) compared to phase II (2008-12).

The European Commission should initiate a feasibility study followed by consultation and legislation to include road transport in the EU ETS through fuel suppliers from phase III (2013-17) onwards. Failing that, the UK Government should consider acting unilaterally.

Introduction

Human induced climate change caused by emissions of carbon dioxide (CO₂) and other greenhouse gases (GHGs), mainly from burning fossil fuels and deforestation, is the most serious long-term global threat to human and ecological welfare. To mitigate dangerous climate change, global GHG emissions must be reduced. Potentially the most efficient and effective way to do this would be through a comprehensive global mandatory emissions cap and trading scheme covering all GHG emissions from all sectors of the economy in every country. This would put a quantified limit on global GHG emissions reducing over time and enable emissions reductions to be achieved in the most cost-effective way, through emissions trading.

The establishment of the EU Emissions Trading Scheme (EU ETS) is an important step towards this goal, which already covers nearly half of all CO₂ emissions from the EU. We propose that the EU ETS should be expanded to cover CO₂ emissions from road transport, indirectly through fuel suppliers.

EU Emissions Trading Scheme

The EU ETS currently covers CO₂ emissions from power stations and installations of energy-intensive industries such as steel, cement, paper and oil refining, throughout the EU. The first phase of the scheme runs from 2005-07 (phase I) and the second, from 2008-12 (phase II), coincides with the first commitment period of the Kyoto Protocol. Subsequent phases will also have five-year periods.

Under the scheme, each member state devises a National Allocation Plan (NAP) for each phase. The NAPs specify the total permitted emissions for the phase and how allowances are to be allocated to the installations included in the scheme. In phase I, governments have the discretion to auction up to five per cent of their allowances but the other 95 per cent must be allocated free of charge. Up to ten per cent can be auctioned in phase II.

Installations, such as factories or power stations, are allocated a quota of allowances. Each allowance permits the installation to emit one tonne of carbon dioxide (tCO₂). Allowances can be traded between installations (and intermediaries) across the EU. If an installation produces more emissions than its quota it

must purchase additional allowances. Installations emitting less than their quota can sell their surplus allowances. The penalty for producing more emissions than allowances is EUR 40 per allowance in the first phase and EUR 100 per allowance in the second phase. The excess emissions must also be covered by allowances surrendered by the installation in the following year so that the environmental integrity of the scheme is not compromised.

In phase II, allowances must be backed by equivalent greenhouse gas emission allowances under the Kyoto Protocol (Assigned Amount Units). It will be also possible for emissions credits to be acquired through Kyoto's Clean Development Mechanism (CDM) and Joint Implementation (JI) whereby investments in emissions-saving projects abroad, in developing countries and industrialised countries respectively, earn Emission Reduction Units (ERUs) and Certified Emissions Reductions (CERs) equivalent to allowances.

The EU ETS is a sure way of capping and reducing total emissions from the installations covered by the scheme across the EU, or achieving equivalent emissions savings through the flexible mechanisms (CDM and JI). It is currently the single most important policy instrument in the EU and UK climate change programmes, covering around half the CO₂ emissions from the EU and UK (excluding international aviation and shipping). Trading of allowances should ensure that emissions savings are made in the most cost-effective way between the sectors covered. Installations will either limit their emissions and sell surplus allowances or buy extra allowances, whichever is the most profitable or costs least.

Potential for expanding the EU ETS

The EU ETS Directive¹ provides expressly for extending the scope of the scheme in future phases through:

- Amendments to Annex I to include other activities and greenhouse gas emissions
- Article 24, unilateral inclusion of additional activities, installations and gases.

It is unlikely that there will be major alterations for phase II. Member states are unlikely to make very substantial changes unilaterally, though some new sectors of industry may be included.² The Commission is not intending to change the Directive in time for phase II. However, under article 30 the Commission will come forward with initial proposals for later phases to the European Parliament and Council by 30 June 2006.

This includes, 'how and whether Annex I should be amended to include other relevant sectors, inter alia the chemicals, aluminium and transport sectors, activities and emissions of other greenhouse gases listed in Annex II, with a view to further improving the economic efficiency of the scheme.' It also encompasses the method of allocating allowances including auctioning for the time after 2012 and the criteria for NAPs, among other things.

The Commission already intends to come forward with legislative proposals for including air transport in the scheme³, which is also a priority for the UK Government. The Commission's preference is to include airlines in the scheme and emissions from all flights departing from EU airports, whether their destination is within or outside the EU.

Including road transport

The review of the UK Climate Change Programme included a commitment to consider the scope for including surface transport in the EU ETS.⁴ Aviation sets a precedent for moving beyond including only stationary installations. But road transport is different. Whereas the study by consultants CE for the European Commission on including aviation in the EU ETS shows that there are only 774 aircraft operators in the EU⁵, most road vehicles are not owned by fleet operators but are in the hands of tens of millions of

1. Directive 2003/87/EC http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_275/l_27520031025en00320046.pdf

2. The UK is considering gypsum, rock wool, glass, integrated steelworks, foundries and other ferrous metals, offshore flaring and petrochemicals www.defra.gov.uk/corporate/consult/euets-phasetwo/consultdoc.pdf

3. www.europa.eu.int/comm/environment/climat/aviation_en.htm

4. HM Government (2005) Review of the UK Climate Change Programme – Consultation Paper, December 2004 www.defra.gov.uk/corporate/consult/ukccp-review/index.htm

5. http://europa.eu.int/comm/environment/climat/pdf/aviation_et_study.pdf

private households. There are more than 200 million cars in the 25 countries of the EU.⁶

The political barriers to and administrative costs and complexity of including individual car owners in the trading scheme would be great. Many people have difficulty enough with money, let alone getting to grips with emissions as a new currency (sometimes called Domestic Tradable Quotas or Personal Carbon Allowances). Under any system of allocation, huge numbers of people would have to pay for extra emissions allowances to carry on driving as usual, or change their behaviour, which may be a good thing but is unlikely to meet with universal acclaim. In principle, information technology (IT) is up to the task of enabling administration of a scheme but the risks and costs of implementing major IT projects are large. None of these barriers may be insurmountable in the longer term but including households as entities in the EU ETS is unlikely to be a politically viable option for phase III (2013-17).

Instead, the option of including road transport CO₂ emissions through fuel suppliers should be adopted. This would be relatively simple and cheap to administer and is much more politically feasible. The feasibility study for the Renewable Transport Fuel Obligation (RTFO), which the UK Government proposes to introduce, shows that just 20 companies (eight oil refiners and a dozen other major companies) dominate the supply of road fuels in the UK, paying over 99 per cent of all road fuel duties⁷. Every litre of fuel supplied in the UK is already accounted for the purpose of fuel duty by HM Revenue & Customs (HMRC).

We propose that road transport fuels should be included in the EU ETS at the duty point. The administrative costs of incorporating road transport in the EU ETS through fuel suppliers at the duty point is likely to be similar in scale to the costs of administering the RTFO, which is a tradable obligation on fuel suppliers to supply biofuels. The costs of administering the RTFO are estimated to be in the order of £1 million per year for the Government and around £2 million per year for the industry⁸, peanuts in comparison to the industry's turnover. In the case of the EU ETS, the Environment Agency is the administrative authority in the UK and could administer the inclusion of road transport fuel suppliers in the scheme.

Extrapolating to the European level, there are currently about 102 oil refineries in the 25 EU countries plus two in Norway and two in Switzerland. These are owned by 31 companies, including 23 who are members of the European petroleum industry association, EUROPIA. In addition, there will be a number of other companies importing road fuels into the EU. Every country has its own system of fuel duty that would provide the administrative foundation for including road transport fuels in the EU ETS. Hence the administration of the scheme would be likely to be relatively straightforward and cost effective.

Allocating emissions allowances

There is more than one option for allocating emissions allowances to fuel suppliers. It could be done at EU or country level. The inclusion of international aviation already raises the issue of whether it would be more logical to allocate at EU level for this industry. The oil industry also operates trans-nationally. Allocations could be made free of charge based on market share or through auctioning, or some combination of the two. One option would be 100 per cent auctioning with recycling of the revenue to reduce fuel duty, hence ensuring it is an instrument used to reduce emissions rather than raise money. Another option would be to earmark some of the revenue for climate change mitigation measures.

Fuel suppliers would, of course, also be able to buy and sell allowances on the market. They would be required to surrender allowances to cover the CO₂ emissions of the fossil fuels they supplied each year. Biofuels should be exempted, since their carbon content is renewable. Although production of biofuels involves CO₂ emissions, this varies hugely between different biofuels and it would be very difficult and complex to account for this at the point of supply. In the longer term future, these emissions should be accounted for at the point of production if and when there is a fully comprehensive global trading scheme.

Standard values for the amount of CO₂ emissions from each litre of each main road fuel type are already used to calculate emissions produced through employee transport for the installations covered by the EU ETS. These are shown in the table overleaf. Hence there would be no difficulty in calculating the number of allowances required for the volume of fuel supplied.

6. http://europa.eu.int/comm/dgs/energy_transport/figures/pocketbook/2004_en.htm

7. www.dft.gov.uk/stellent/groups/dft_roads/documents/page/dft_roads_610329.hcsp

8. *ibid*

Fuel	kg CO ₂ per litre
Petrol	2.31
Diesel (incl. low sulphur)	2.68
Compressed Natural Gas (CNG)	2.67
Liquid Petroleum Gas (LPG)	1.51

Source: DEFRA (2005) Guidelines for Company Reporting on Greenhouse Gas Emissions⁹

Potential emissions savings

The amount of emissions saved by including road transport in the EU ETS depends on the amount of allowances issued. Savings would either be direct, through less fuel consumption, or indirect, through fuel suppliers buying additional allowances, hence reducing the amount available to other sectors. Under the Kyoto Protocol, the EU is committed to reducing its greenhouse gas emissions (excluding international shipping and aviation) by eight per cent from the 1990 level in the first commitment period (2008-12). In March 2005, the European Council agreed to explore with other parties 'reduction pathways for the group of developed countries in the order of 15-30 per cent by 2020, compared to the baseline envisaged in the Kyoto Protocol'.¹⁰

CO₂ emissions from road transport account for about one fifth of the EU's greenhouse gas emissions¹¹. For illustration, let us assume that the EU meets its Kyoto obligation and adopts a commitment to cut greenhouse gas emissions by 15 to 30 per cent from the 1990 level by 2018-22 (corresponding to the third Kyoto commitment period and phase IV of the EU ETS). Let us also assume that road transport makes a proportionate contribution to meeting this commitment, that is about one fifth of the additional seven to 22 per cent reduction. That corresponds to potential emissions savings of about 75-235 MtCO₂ (20-64 MtC) per year.

Complementary measures

Mandatory emissions cap and trading schemes like the EU ETS provide the framework for assured reductions in greenhouse gas emissions but not the whole solution. One criticism of including road transport in the EU ETS indirectly through fuel suppliers is that it does not provide any direct incentive on consumers to reduce fuel use. This is similar to the current situation with electricity, since power stations are included in the scheme, not homes, commercial buildings and train operators. An indirect incentive does come through the price of electricity including the value of emission allowances. In addition, there are complementary measures including the home Energy Efficiency Commitment, the Climate Change Levy on business combined with Climate Change Agreements, and the Renewables Obligation.

In the case of road transport, measures would continue to be needed to promote low carbon vehicles, low carbon fuels and low carbon journeys, such as tax incentives, the RTFO and policies to encourage smarter travel choices. In the longer term, it may be possible to introduce Domestic Tradable Quotas or Personal Carbon Allowances to provide direct incentives to consumers. Realistically, we think this could happen no earlier than phase IV of the EU ETS (2018-22). Meanwhile, the perfect should not be the enemy of the good.

Next steps

The European Commission should commission a feasibility study on including road transport in the EU ETS through fuel suppliers followed by a consultation with the aim of legislating to include CO₂ emissions from road transport from phase III (2013-17). Failing that, the UK Government should consider unilateral inclusion of road transport to set a lead and ensure that road transport plays its full role in emissions reductions under the UK's climate change programme.

9. www.defra.gov.uk/environment/business/envrp/gas/

10. http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/84335.pdf

11. http://reports.eea.eu.int/eea_report_2005_8/en