POLICY PAPER ON

„GREENING TRANSPORT BY THE USE OF MARKET-BASED INSTRUMENTS”

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1. The Environmental Impacts of Transport

The environmental impacts of transport are quite well known. These are the following: greenhouse gas emissions, other air pollution, noise, land use, soil and water pollution, devastation and fragmentation of natural habitats, special urban effects and accidents. The environmental impacts of up- and downstream processes of transport must also be taken into account. (These are the effects due to the production of energy, vehicles and transport infrastructure.) Because the most important of these effects is probably the impact on climate change, and also because the trends in greenhouse gas (GHG) emissions to a great extent reflect some important trends in other environmental effects, in the following we give a short overlook only about transport GHG emissions – its present situation and trends.

In the EU-27 transport is responsible for about one-fifth of the greenhouse gas (GHG) emissions. However, if we include the up- and downstream processes of transport (car-manufacturing, road building, oil extraction and refinery, disposal of old vehicles, etc.), then transport is responsible for an even higher share of all GHG emissions.

Fig. 1:


<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>30.9%</td>
</tr>
<tr>
<td>Energy</td>
<td>21.0%</td>
</tr>
<tr>
<td>Transport</td>
<td>19.3%</td>
</tr>
<tr>
<td>Households</td>
<td>9.4%</td>
</tr>
<tr>
<td>Services, etc.</td>
<td>3.6%</td>
</tr>
<tr>
<td>Other ***</td>
<td>15.7%</td>
</tr>
</tbody>
</table>

1 See for example the TERM 2008 Report (http://www.eea.europa.eu/publications/transport-at-a-crossroads/at_download/file) and other related publication of the European Environmental Agency.

2 The sources of the figures:
   Fig. 1-4: EU ENERGY IN FIGURES 2009. European Commission, Directorate-General for Energy and Transport (DG TREN)
   Fig. 5-6: Are trucks taking their toll? The environmental, safety and congestion impacts of lorries in the EU. CE Delft, January 2009
Furthermore, transport is the only sector, in which GHG emissions have been constantly (and, all the more, rather quickly) growing during the past years.

**Fig. 2:**

![Graph showing Greenhouse Gas Emissions (GHG)* by Sector, EU-27](image)

Within the transport sector road transport is responsible for far the largest share of GHG emissions: more than 70%. It is followed by navigation (15%) and civil aviation (12%). The emission of all other modes is practically negligible.

**Fig. 3:**

![Pie chart showing Greenhouse Gas Emissions (GHG)* from Transport by Mode, EU-27 (2006)](image)

The fastest growing emitters of GHG within the transport sector are aviation, navigation and road transport (in that order). The emissions for railways have been declining, and in 2006 they were about 40% less than in 1990.
Out of the total CO₂ emissions generated on roads, passenger transport is responsible for 69%, with heavy goods vehicles (HGV) emitting a further 23% and vans 8%.

According to past and projected future trends road freight transport is growing much faster than passenger transport.

Fig. 6: CO₂ emissions of passenger road vehicles, HGVs and vans between the years 1995 and 2030
2. The External Costs of Transport

External costs of transport are caused by transport users, but not paid (directly) by them. These costs are born by the larger community and/or the future generations. “Transport users are thus faced with incorrect incentives for transport supply and demand, leading to welfare losses.”

According to the above definition, the cost of all environmental damages which are not paid by the users are external costs. Furthermore external costs arise due also to other factors than environmental damages. External costs occur also if the transport infrastructure costs are not paid by their users. Regulations which distort competition can also result in external costs. (For example, if safety regulations largely differ between roads and railways, this – beside causing more external costs for a certain mode due to accidents – gives other competitive advantage to the mode concerned, which might be considered an external cost.) Perverse incentives, like tax exemptions and other financial benefits for commuters by car (especially without similar benefits for more environment-friendly transport modes) also distort the market in a wrong direction. Tax evasion, fraud and corruption is an important source of external costs, too. All these factors must be considered when taking into account the external costs of transport.

The external costs of transport concerning the environment, health and infrastructure have been already extensively investigated. There is some literature available also on the other aspects, but these are by far not satisfactory, although these types of external costs can be very significant. (For example, a recent study commissioned by the European Commission concluded that company cars

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4 Certainly the most thorough and up-to-date study on external costs of transport concerning the environment and health is the Handbook cited in the previous footnote. As far as the external costs related to infrastructure are concerned, another study within the IMPACT project can be recommended as a sound basis: Road infrastructure cost and revenue in Europe, [http://www.ce.nl/?go=home.downloadPub&id=702&file=08_4288_17.pdf](http://www.ce.nl/?go=home.downloadPub&id=702&file=08_4288_17.pdf)
are the largest category of fringe benefits in the EU. Only in the Netherlands the annual sum of this subsidy equals to EUR 2.6 billion. The sum of tax evasion yearly in Hungary by illegally accounting private car use as company use is estimated to be about 2-3 % of the GDP. Another example is the illegal dismantling of used cars in Hungary, which is an “industry” with an estimated yearly revenue equalling about 1.5 % of the GDP.

3. The Internalisation of the External Costs of Transport

Although the existing studies do not determine the external costs of transport with 100 % preciscity, they already provide an excellent scientific basis for the internalisation of external costs. In any case, we already know more than enough to act.

In order to determine the necessary size of the internalisation measure (e.g. the tax rate) most important is to decide on the environmental or other target to be reached. For example, it must be decided how much transport should reduce its CO$_2$ emissions until 2020, and set the tax rate on CO$_2$ (or use other Market Based Instrument) accordingly. This is the method that is compatible with market economy. Namely, in a well functioning market economy prices are practically always set in a way so that supply is higher than demand. This should be valid also for the natural resources. For example, if the Earth’s ecosystem is not capable of absorbing the necessary quantity of CO$_2$ then such a price should be set, which brings down the CO$_2$ emissions to a level that is suitable for the ecosystem of the planet. In this way the supply (the ecosystem) will be higher than demand (the CO$_2$ to be absorbed).

Already a wide range of Market Based Instruments (MBI’s) exists which can serve to internalise the external costs of transport. The most important of these are the following for road vehicles: infrastructure charge, fixed user charge (e.g. annual charge), toll on motorways and/or on specific parts of the network (e.g. bridges and tunnels) or on all roads, fuel excise duty, circulation tax, congestion charge, entrance fee, insurance tax, parking fees, vehicle purchase tax; for rail: infrastructure charge, diesel excise duty, electricity tax; for water: harbour due, dues for locks and bridges, fuel excise duty (in a few specific cases), NOx and SO2 emission charge; for aviation: landing and take-off charge (often differentiated according to noise emissions), en-route charge (for air traffic control services), noise surcharge, emission charge (at a few specific airports), fuel excise duty (although only in very few cases due to international agreements prohibiting such a duty), emission trading (planned in the EU), ticket tax. VAT differentiation is also used.

The type and size of MBI (or a combination of MBI’s) must be chosen and implemented always in such a way that the necessary environmental or other target is attained.

One of the most important measures to be taken by the EU is an appropriate revision of the Energy Tax Directive (see the separate common statement of GBE and EEB).

Another important task is to approve a new Eurovignette Directive which allows (and, hopefully, even makes it compulsory) to internalise all external costs caused by trucks.

The EU should also investigate the rules and practical applications concerning the purchase and use of cars for company purposes (or allegedly company purposes), and work out recommendations for eliminating perverse practices.

Tax exemptions and other benefits for commuters must be promoted in accordance with the environmental performance of the transport mode used.

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The EU should take serious measures in order to reduce fraud and other illegal activities in the transport sector and related sectors.

All EU financial aid for road and air transport must be put to an end once and for all. Investments into road and air transport should not be financed by the taxpayers, but by the users of these infrastructures.

All forms of state aid (including tax reductions) must be prohibited for industries related to the most polluting forms of transport (car manufacturing, oil industry, airport construction etc.).

We have an important lesson in Europe where gasoline and diesel taxes have cut emissions by way over 50% compared to the US and to what they most likely would have been otherwise. This has actually reduced the carbon content of the atmosphere more than any other policy instrument. We need to protect this lesson from those who might “put transport into the ETS” without giving the matter too much thought.

4. The Necessity of Balanced Information

At present there is an enormous imbalance between the propagation of environmentally harmful transport and that of sustainable transport (including the necessity to reduce the volume of motorized transport). The media and other means of communication (movies, Internet etc.) generally spread as models to be followed the unsustainable modes of transportation. The public knows very little about MBI’s, their concepts, effects and benefits for the society. If anything appears in the media about MBI’s, more often than not it is hostile and misinforming. This is due to a large extent to the enormous influence of certain industrial groups on the media.

The imbalance of information characterizes advertisements as well. This stems from the very nature of commercial advertisements. When advertising a car, the manufacturer or the advertising agency never warn about the serious environmental and health impacts of road transport (unless they are required to do so by law). This means that the interests of consumers are disregarded, and market competition is distorted. This also results in huge external costs. The damage caused can be removed by making the advertisers pay for the damage they caused, and by making funding available for non-commercial advertising for the purposes of protecting consumers, health, environment etc.

All this means that the EU should take measures to provide (and help to provide) a balanced information to its citizens concerning the harmful environmental, social and economic effects of transport, and about the possible solutions, including the benefits of applying MBI’s.

6 Here we cite just one example on how communication is distorted and the freedom of the press is jeopardised if the media are dependent upon commercial advertising. The International Institute of Journalists issued a publication in 1997 saying: “The Hungarian media have only been given the freedom of writing about what they really want to only on paper; actually, the borderline between advertisers and editors are vague due to the increasing pressure from the market… Ten of the eleven daily newspapers in Budapest are on their way to go bankrupt, and the management cannot but demand that journalists humiliate themselves in front of people on whom they depend for money, or else they take the risk of losing their jobs. Reporters write appealing ‘false reports’, and some of them are struggling for a salary rise, let’s say 20% of the income from the advertisement.” (Source: Hungarian Daily Magyar Nemzet, 6 January 1997.) The situation since that time became even worse.