Executive Summary

1. The European Commission has commissioned a study to compile an overview of the level of external costs in the transport sector and to develop a concept for charging external costs. It is the so called CE Delft Handbook. The Commission is going to submit a proposal based upon the Handbook by 10/06/2008, as required by the Eurovignette Directive.

2. The Handbook does not perform any independent calculations of external costs. Rather, it is a meta-analysis of third-party studies. The Handbook therefore has to accept the same criticism that these studies received. It represents a list of cost values. It does not perform a plausibility test. The considerable spread shows a large amount of uncertainty concerning the level and structure of external costs.

3. The Handbook takes as external cost categories congestion costs, accident costs, air pollution, CO₂ emissions, noise costs and other costs. Critically, it has to be asked whether all cost items actually have the characteristics of external costs. The analysis shows that congestion costs are borne by the motorists who caused them. Therefore, they are actually internalised. Around two thirds of accident costs are covered by insurance companies, thus this proportion is also internalised. Noise costs are partly borne by motorists as they are used to finance noise protection measures. The residents affected receive partial compensation in the form of lower rents for their homes. Only air pollution, climate costs and, proportionally, noise costs and accident costs remain as external costs.
4. What remain as external costs have to be set against the external benefits of the transport mode. The economic welfare theory demands that motorists are only charged the costs minus the benefits. Road transport gives rise to a multitude of external benefits. Mobility improves the division of labour, increases productivity and leads to more growth, income and employment. The external benefits of transport are entirely neglected in the Handbook. In this respect, charging only external costs does not result in a welfare optimum.

5. In methodological terms, the Handbook can be criticised because of the excessive values for accident costs and partly for air pollution costs, especially the value of human life, due to the "willingness to pay" evaluation, and excessive CO₂ costs. Road transport is discriminated against because of the "noise bonus" offered to the railways. The Handbook also fails to take into consideration external cost increases in the railways' CO₂ costs with a changing mix of railway electricity.

6. The question as to who is responsible for causing the external costs is debatable. The "polluter pays principle" (Art. 174 EC Treaty) attributes sole responsibility to the motorist. However, there is actually joint causation of a reciprocal nature. This can be illustrated by considering the noise costs. The external costs only arise because residents live on the road and are annoyed by the noise. If nobody lived on the road, no external costs would arise. In addition, residents are compensated by lower rents because of the noise pollution. Welfare reaches a maximum level when the party who has the lowest avoiding costs performs the action to reduce the external costs. This is demanded by the "cheapest cost avoider principle". Negotiations concerning financial burden sharing must take place between the parties.

7. A market-based solution to the externality problem requires that not only the demand for transport is restricted, but also that the options on the supply side are made use of. These include an expansion of transport infrastructure, a more effective use of existing infrastructural capacities and the use of
information and communication technologies for a safe and clean mobility. Those measures resulting in the lowest costs should be implemented.

8. In the EU, considerable subsidies are paid for the railways and urban public transport in particular. Subsidies represent costs for the general public, who are not compensated for these by the recipients of the subsidies. Subsidies must therefore be added to the external costs. This improves the relative cost position for the roads.

9. The charging of external costs may entail a modal shift with greater market shares for the railways. A growing traffic volume on the railways leads to higher external costs. In this case, the railways have to approximate the quality profile of road transport (especially high-volume transport with smaller transport units). Furthermore, considerable expansions of railway infrastructure are required which eat up the advantages of the railways with regard to external costs.

10. Certain financial arrangements must be made for an internalisation of the external costs. These are left open in the Handbook as well as in the European Commission's political objectives. It is important that taxes and charges paid already are included in the external costs. Road transport pays more in taxes and charges than is necessary to cover infrastructure costs. This excess must be included as partial compensation for external costs. This reduces the payment charge for road transport.

11. In financial terms, the charges for external costs have the character of "fees" (earmarked) and not "taxes" (for the general budget). According to the "equivalence principle", earmarking is necessary for the road transport sector. In contrast, the European Commission wants to use the revenues for the transport sector in general, also with cross-subsidization for other modes of transport.

12. The political intention of the European Commission is to strengthen PPP financing within transport infrastructure. This too could give rise to conflicts as
the internalisation of external costs leads to a crowding out effect with revenue losses for private infrastructure operators.

13. A differentiated approach to charging external costs in road transport would require the introduction of electronic road pricing in Europe. Associated with this are the high implementation costs (operation and administration). A projection for the EU 27 results in equipment costs of €33 bn and annual operating costs of €22 bn. London Congestion Charging has also shown that this is an expensive solution. Around 60% of the charging revenues are spent on operating and administration. High costs arise for the public for the charging technology alone; there is no material improvement of transport infrastructure.

14. Key criteria for assessing the internalisation plans of the EC are the wider economic impacts. The Handbook does not provide an impact analysis. An estimate of the impacts in this study assumes two alternative internalisation scenarios ("Handbook proposal" and "modified proposal" with air pollution, CO₂ costs, noise and, partly, accidents).

- Internalisation according to the Handbook proposal of all external costs in passenger and freight transport would cause the inflation rate in the EU to skyrocket by 2 to 3% more than the current level. Internalisation according to the modified proposal would still result in an inflation rise of 1 percentage point. This would be associated with substantial risks to price stability in the EU.

- Job losses in the automotive industry arise as a result of charging external costs. A higher financial burden means that renewals of vehicle fleets are delayed since part of the mobility budget is absorbed by the higher charges. This conflicts with other proposals that aim towards a faster reduction of environmental impacts (CO₂ strategy). Internalisation according to the modified proposal for passenger cars would mean a loss of up to 100,000 jobs per year for the EU 27. Internalisation according to the Handbook proposal in freight transport
would mean a loss of 75,000 jobs in Germany (for example in road haulage, the logistics services industry and vehicle manufacturers).

- The internalisation of external costs conflicts with the principle of social fairness. An empirical distribution analysis for passenger cars shows that the additional costs affect people of mid-range incomes and multi-person households to a disproportionately high degree. In comparison, high-income earners and single households are less affected.

- The objective of cohesion in the EU also conflicts with the internalisation strategy. The rise in transport costs restricts regional accessibility. This impairs the competitiveness of industries in peripheral regions. In the long term, this could lead to a relocation of activities to more central locations in the EU.

15. The European Commission claims that a large majority of the population agrees with an internalisation of external costs. The Eurobarometer (2007), however, reveals a different picture. 60% of those surveyed voted against all users paying for congestion costs and environmental damage through road tolls; only 35% are in favour.

16. Whether or not an internalisation of external costs is beneficial for society would have to be clarified in a cost-benefit analysis which complements the impact assessment. Only when the benefits are set against the costs can an assessment be made as to whether internalisation is macroeconomically cost-effective. Costs must also include the macroeconomic losses due to restricted mobility. A case study for tolling passenger cars on motorways in Germany shows that a charging policy may be linked with macroeconomic losses. The Commission therefore must present a cost-benefit analysis.

17. In the public discussion of the Handbook, the European Commission has made its position clear for its next course of action. First, it is going to revise the Eurovignette Directive. It would be possible to charge the Eurovignette
on all road categories. Congestion costs, air pollution and noise costs are most likely going to be charged as external cost components.

For the **further development** of the Eurovignette Directive, certain basic principles must be taken into account, including charging transparency, intermodal fairness and interoperability. Political guidelines for the amendment of the Directive can be derived from the basic principles. The guidelines include validity of external costs, supply side improvements, intermodal fairness, no double charging, earmarking of revenues and enabling economic development.

The revision of the Eurovignette Directive must take into account the **macroeconomic consequences**. For an initial estimate a scenario is used where the cost of road goods transport rises by 9 cent/km on average. This scenario would be valid, if the revision of the Eurovignette Directive would take into account congestion costs, air pollution and noise costs. This moderate internalisation lessens the economic impacts compared to the Handbook proposal. The inflation effect amounts to 0.25 percentage points. Job losses total up to 24,000 jobs per year in Germany.