

# Eurovignette Directive

An alternative to the European Commission's proposal

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## **Amending the 'Eurovignette Directive'**

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# **Eurovignette** Amending the **Directive**

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## Foreword

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In July 2003 the European Commission released its proposal for amending Directive 1999/62/EC on the charging of heavy goods vehicles, commonly referred to as the "Eurovignette Directive". The European Federation for Transport and Environment (T&E) is disappointed with the proposal as it falls short of already agreed EU objectives and principles.<sup>1</sup>

T&E urges the European Parliament and the Council to substantially improve the current proposal by:

- allowing Member States to decide upon the use of the revenues;
- allowing Member States, without restrictions, to apply road tolls or user charges to the whole national road network;
- allowing Member States to incorporate all external costs in the charging system.

In order to facilitate the legislative process, T&E has asked Dr Per Kågeson, Nature Associates to redraft the amendments and present an alternative proposal for the revision of the directive. Dr Kågeson is an experienced economist with profound knowledge in transport externalities and road transport taxation. "Getting the Prices Right" (1993) and "Electronic Charging for Heavy Goods Vehicles in Europe" (1999) are among his reports.

Indirect support for this report has been provided by the Swedish government, as the author has drawn on an analysis of the Commission's proposal that he recently carried out on behalf of the Swedish Institute for Transport and Communications Analysis.<sup>2</sup>

*Brussels, December 2003*

**Sonja Klingberg**  
President

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<sup>1</sup> T&E, Position paper on the Eurovignette revision, Brussels October 2003.

<sup>2</sup> Per Kågeson, Efficient charging of heavy goods vehicles. A critical review of the Commission's proposal for amending the Eurovignette Directive, SIKÅ, Stockholm October 2003.

## Executive summary

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The aim of this paper is to provide an alternative proposal for the revision of Directive 1999/62/EC by removing some serious inconsistencies from the revision proposed by the Commission, and bringing the directive more in line with the general principles for internalisation of external costs.

The Commission's proposal for a revision takes account of the weighted average cost of constructing, operating, maintaining and developing the road network. The Commission thereby favours full cost recovery of road expenditure but neglects some of the indirect social costs of transport. This is a serious deviation from the principles laid down in the Commission's White Paper on infrastructure charging.

Thus, one important conclusion in this paper is that the revised directive should allow Member States an opportunity to choose between a scheme based on social marginal cost pricing and one based on full cost recovery. The proper functioning of the internal market is not affected by lack of harmonisation in this case.

A problem with the Commission's proposal is the occurrence of numerous inconsistencies. One of them concerns the extension of the tolls to roads other than those belonging to the trans-European network. The Member States are free to extend the toll system to their entire national road network with the exception of trunk roads running parallel to the TEN motorways. The inclusion of the latter is dependent on the Commission's approval. This paper proposes that this limitation should be removed from the directive.

Another serious deviation from the subsidiarity principle is the Commission's demand on Member States to earmark the toll revenues for maintenance of infrastructure and for investment in new roads. In a case where all or some of the charge elements are based on the social marginal cost, it is not self-evident that the revenues should be used entirely in the transport sector. The rev-

enues may be larger than what is needed to cover variable costs and investments that are clearly beneficial from a cost/benefit perspective. There may also be competing projects in other parts of society that have higher benefit/cost ratios. In such a case, earmarking the money for use in the transport sector would imply a loss of welfare. A rule requiring Member States to use the revenues of certain taxes and charges for particular purposes would clearly conflict with the Treaty's principle of subsidiarity.

It is important to keep in mind that the directive should be designed to work well in 25 different Member States, and that it must be able to take account of varying local and regional conditions with regard to scope, environmental impact, accident rates, degree of congestion and financial requirements. The Commission's proposals in some cases restrict Member States' decisions on charging levels to rates that may not allow social marginal costs to be included. Such limitations must be removed. It is better to require all rates to be proportionate to the objective pursued and specify that enforcing toll rates on international traffic in ways that distort competition is not allowed.

The Commission's proposal stipulating how Member States shall take account of traffic accident risks is far from straightforward. The Commission confuses average with marginal costs, and fails to distinguish between internal and external costs. This paper offers an alternative solution based on a methodology developed for the Commission by the UNITE project.

The idea is to make the tolls reflect the "traffic category externality" of each mode or type of vehicle. From a risk perspective, each category of vehicle should be liable for the risk that it inflicts on other categories of road users, including cyclists and pedestrians. In multi-party accidents involving different types of vehicle it would make sense for each category to be liable for the victims "at the other side". With this approach, the risk of accidents

between two vehicles belonging to the same category or mode would be considered to be internal. This would also be the case with single vehicle accidents. There is, in this case, no scope for subtracting insurance premiums, as the risk occurs regardless of who was at fault. The traffic accident unit values (e.g. 1 million per fatality) also clearly show that the Commission had in mind sums that reflect citizens' willingness to pay to avoid accidents, i.e. an ex ante evaluation.

The results from the Commission's ExternE-project could be used to assess the costs of air pollution. ExternE, however, is not yet fully developed and does not take into account all costs caused by air pollution. Some Member States currently use damage values that are higher than those presented in ExternE. They should be allowed to continue using their national values so long as they are proportionate to the objective pursued.

Decisions on the toll levels required for dealing with congestion should be left to the individual Member States. As the conditions vary from place to place, there is no room for harmonisation.

In line with the conclusions of the Commission's White Paper and the decision on the internalisation of the external costs of transport taken in Gothenburg by the European Council, the introduction of road tolls should be compulsory. However, in this proposal for a revision of the directive it is assumed that, at this stage, the majority of Member States may not agree to make road tolls mandatory. Thus the directive is proposed to be designed as a framework for Member States wishing to introduce tolls or user charges.

## Part I: Background

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### OBJECTIVES

The aim of this paper is to analyse the need for improvements over the Commission's proposal for amending the "Eurovignette directive" and to present an alternative proposal for the revision. It is important in this context to ensure that the directive does not in any way prevent Member States from internalising the social marginal costs of transport, and that it does not enforce rules that are in conflict with the principle of subsidiarity.

*The general principles for the internalisation of social costs can be summarised as follows:*

- Charges should be linked as closely as possible to underlying costs;
- Charges should reflect the social marginal cost of infrastructure use, accidents, environmental damage and congestion;
- The price structure should be clear to transport users (transparency);
- Charges should be non-discriminatory for the nationality of the vehicle and the origin or destination of the goods transported;
- Charging should be non-discriminatory across modes;

The revenues should flow to authorities in Member States where the costs are caused (principle of territoriality).

**It is important that all of these principles are reflected in the directive.**

When making an attempt to provide an alternative to the European Commission's proposal for a revision of the "Eurovignette directive" it is essential to remember that the current directive became obsolete the very moment it was born. The directive did not reflect the conclusions and recommendations of the Commission's 1998 White Paper "Fair Payment for Infrastructure Use" and made it impossible for Member States to introduce kilometre charging on their total road networks. The first demands for a revision of the directive came shortly after it had been adopted.<sup>3</sup>

To ensure that the results of the current revision last longer, it is important to avoid any restriction that is not needed for securing fairness and the proper functioning of the internal market. Thus, in undertaking the revision, one must always keep in mind that the directive should be designed to work well in 25 different Member States, and that it must be able to take account of varying local and regional conditions with regard to scope, environmental impact, accident rates, degree of congestion and financial requirements.

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<sup>3</sup> Per Kågeson, "Bringing the Eurovignette into the Electronic Age: The need to change Directive 1999/62/EC to allow kilometre charging for heavy goods vehicles", European Federation for Transport and Environment, T&E 00/4, Brussels.

<sup>4</sup> At least as long as no cross-financing of investment in other modes of transport takes place.

## ► THE CURRENT DIRECTIVE

Directive 1999/62/EC on the charging of heavy goods vehicles (HGVs) regulates the road tolls and user charges that Member States can apply to HGVs with a Gross Vehicle Weight (GVW) exceeding 12 tonnes for their use of motorways. The directive took effect on 1 July 2000.

According to the directive, Member States may maintain or introduce tolls or user charges on motorways and other multi-lane roads with characteristics similar to motorways, as well as on bridges, tunnels and mountain passes. In a Member State where no general network of motorways or dual carriageways with similar characteristics exists, tolls and user charges may be imposed on users of the highest category of road as defined from a technical point of view.

The directive defines **toll** as “payment of a specified amount for a vehicle travelling the distance between two points” and states that “the amount shall be based on distance travelled and the type of vehicle” (article 2b). A **user charge** is payment of a specified amount conferring the right for a vehicle to use the specified infrastructure “for a given period” (article 2c). From these definitions it is evident that km charging must be regarded a road toll even in the absence of traditional toll booths.

The weighted average toll shall, according to article 7(9), be related to the costs of constructing, operating and developing the infrastructure concerned. The toll can be differentiated for vehicle emission classes, provided that no toll is more than 50 per cent above the toll charged for equivalent vehicles meeting the strictest emission standards, and for the time of day, provided that no toll is more than 100 per cent above the toll charged during the cheapest period of the day.

Member States preferring user charges may differentiate the annual and monthly charges for vehicle emission classes. The directive, however, puts upper limits on the amounts of user charges. The annual maximum permissible amounts of user charges (other than vehicle tax) for vehicles fulfilling the requirements of EURO 2 is 750 and 1 250 for a maximum of three axles and a minimum of four axles respectively.

Directive 1999/62/EC also regulates the minimum levels of the annual vehicle tax for different categories of heavy goods vehicles. The minimum tax rate is differentiated according to Gross Vehicle Weight and number of driving axles, with a reduction for driving axles with air suspension (or recognised equivalent).

The directive does not prevent the application by Member States of parking fees and specific urban traffic charges or regulatory charges specifically designed to combat time- and place-related traffic congestion.



## ► THE COMMISSION'S PROPOSAL

The fast development in km charging in some Member States and the occurrence of some obvious defects in the current directive have led to repeated requests from Member States, the European Council and the European Parliament for a revision of the directive. The Commission underlines in the explanatory memorandum to its proposal, that the current directive links charges only to a very small extent, or not at all, to damage to infrastructure, congestion or accident risks.

The European Commission's proposal for a directive amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures (COM(2003) 448 final) contains a number of proposals. Some of them constitute important improvements over the current directive:

- coverage is extended to all vehicles above 3.5 tonnes of gross vehicle weight;
- the vehicle categorisation required for avoiding distortion to competition is more comprehensive;
- the costs of accidents are included,
- Member States are allowed to extend the geographical scope of road tolls and user charges to their entire national road network.

However, there are also some defects:

- Member States are not allowed to include in the toll system cost elements reflecting the social marginal cost of pollution or congestion, which leaves them with the option of differentiating the toll (calculated as the costs of constructing, operating, maintaining and developing the network + the cost of accidents) for differences in specific vehicle emissions and degree of congestion;
- Member States are prevented from making their own choice between a system designed for full cost recovery and a system that reflects the short term social marginal costs;
- extension of road tolls and/or user charges to other roads of the "primary road network" is conditional on approval by the Commission;
- the Member States' decisions on rates are in a few cases limited to certain levels that may in some circumstances not allow for social marginal cost pricing;
- the revenues from road tolls and user charges shall be earmarked "for the maintenance of the infrastructure concerned and for the benefit of the transport sector as a whole".

A more comprehensive analysis of the pros and cons of the Commission's proposal can be found in the author's recent paper *"Efficient charging of heavy goods vehicles, A critical review of the Commission's proposal for amending the Eurovignette Directive"*, commissioned by the Swedish Institute for Transport and Communications Analysis (SIKA), a government agency.

## ■ INCONSISTENCIES IN THE COMMISSION'S PROPOSAL

*A problem with the Commission's proposal is the occurrence of numerous inconsistencies. Some of them are between the explanatory memorandum and the directive, others between different parts of the directive.*

For instance, the memorandum says that the infrastructure charging system will generate more revenue than is currently the case, while the proposed directive proclaims that the shift must, if possible, be achieved without imposing additional burden on operators.

The memorandum states that the new charging system will finance trans-European network projects, while the draft directive says revenues *"shall be used for the maintenance of the infrastructure concerned and for the benefit of the transport sector as a whole"*.

The memorandum says that the introduction of road tolls and/or user charges may *"partially or totally"* replace the annual vehicle tax. According to the proposed amendment, Member States may provide compensation for the new toll and charges, but limited to a reduction of the rates of vehicle taxes.

In the memorandum, the Commission says that the proposal for a directive envisages *"requiring"* Member States to vary tolls on different roads for the level of congestion from July 2008. However, the proposed directive limits the required differentiation to environmental sensitivity of the area, population density and accident risk (Article 7(10c)). Where the level of congestion is concerned, Member States *"may"* vary the toll rates (Article 7(10b)).

Article 7, paragraph 2, of the Commission's proposal is difficult to understand. The first and second sections appear to be inconsistent. According to the first, the extension of road tolls and user charges to other roads of the primary road network than motorways is conditional on the approval of the Community (according to a procedure referred to in Article 9c(5)). The second section of paragraph 2, on the other hand, allows

Member States to apply tolls and/or user charges on roads other than those of the *"main road network"*, in this case without any prior approval. The main road network is defined (Article 2b(aa)) as *"the trans-European road network and any other road to which traffic may be diverted from the trans-European road network and which is in direct competition with certain parts of that network"*. This means that the Commission envisages a situation in which a Member State introduces tolls on roads that belong to the trans-European network **and** on its secondary road network but is prevented by the Community from extending the tolls to certain trunk roads that are in direct competition with the TEN-T network. This does not make sense, and the Commission does not provide any explanation for why these trunk roads should potentially be excluded from a national scheme of road tolls.

The Commission says that the weighted average tolls shall be related to the costs of constructing, operating, maintaining and developing the infrastructure concerned. In addition, the Commission wants Member States to introduce a charge that takes account of the external costs of traffic accidents. Where the revenue is concerned, the Commission proposes that the money from the basic infrastructure charge as well as the proceeds from traffic accident charge shall be used in the transport sector. That means that the Member States are required to use more money on maintenance and investment than the sum that they have based the calculation of the infrastructure charge on! And if they do, this will correspondingly raise the rate of the infrastructure charge to which they have to add the accident charge. This means that the toll has to increase for ever!<sup>4</sup>

Another strange feature of the Commission's proposal is that it wishes to maintain the freedom of Member States to choose **not** to introduce road tolls and, at the same time, wants to regulate in detail the scope of the tolls. The Commission, thus, does not propose a change of the wording of Article 7(1), which says Member States *"may"* maintain or introduce tolls and/or user charges. However, in the new paragraph 10 of the same article, the Commission proposes that no later than 1 July 2008,

Member States *"shall be required"* to vary the rates of road tolls according to the environmental sensitivity of the area, the population density and the accident risk.

In addition, it is unclear from the wording of Article 7, paragraph 10, what the rules for differentiation are meant to be. Paragraph 10(b) states that a provision for varying tolls for degree of congestion is that no toll is more than 100 per cent above the toll charged during the cheapest period of the day, while paragraph 10(c) says that any variation in tolls charged with respect to different types of vehicle, time of day and congestion level *"shall be proportionate to the objective pursued"*.

Furthermore, limiting the range of tolls to 100 per cent above the cheapest rate would in some cases make marginal social cost congestion pricing impossible. Congestion on a busy link may vary considerably over the hours of the day. In order to reduce traffic to a socio-economically optimal level, high charges may be required at peak hour. Then it is not self-evident that doubling the rate of the road toll would be sufficient. This is particularly obvious in a case where the capacity of a congested motorway for geophysical or environmental reasons

(e.g. the Community's air quality standards) cannot be expanded by construction of additional lanes. Such a motorway would have very low fixed costs and also low accident costs (as motorways are generally relatively safe). This means that the toll would be too low to allow for a meaningful differentiation.

There is also a serious discrepancy between the Commission's current proposal and the energy tax directive, decided upon by the Council in March 2003, with regard to weight limits. The tax directive allows Member States a possibility to set future fuel excise duties for commercial vehicles below the rates applied to non-commercial vehicles. Commercial vehicles are in this case defined as those having a gross vehicle weight of 7.5 tonnes or more. However, the proposal for a revision of the Eurovignette directive the Commission makes it compulsory to use a lower weight limit of 3.5 tonnes. This might create problems for Member States wishing to compensate commercial vehicles for the introduction of road tolls by allowing them to maintain the current diesel fuel duty, when in future the tax is raised for non-commercial vehicles.

## Part II: Explanatory memorandum

*A problem with the Commission's proposal is that in several instances it does not provide a background to or an explanation of the proposals. A revision of the current directive needs to depart from some basic assumptions and priorities.*

### ► SHOULD ROAD TOLLS BECOME MANDATORY?

An important first point of departure is whether the internalisation of external costs by road tolls should become mandatory or not. In the current directive, the introduction of road tolls on the main road network is optional (Article 7(1)). It is up to the individual Member States to choose between tolls, user charges or doing nothing.

The strongest argument in favour of a compulsory introduction is that an internalisation of the social marginal costs is needed in order to ensure fair competition between different modes of transport. In this case, limiting the charge to heavy goods vehicles makes sense, as it is generally only they that take part in international movements of goods. One problem in this context, though, is that the Commission did not follow its own intention to start the policy-making process by presenting a proposal for a framework directive covering all four modes of transport. In the absence of any steps towards internalisation of the external costs of aviation, rail transport and shipping, it might be difficult to justify a revision of the directive that makes the introduction of road tolls compulsory.

Other arguments in favour of making the introduction of road tolls compulsory include the large environmental impact of road transport that is international in character, and the risk that a unilateral introduction of tolls may distort competition between industries in different Member States. Thus, in line with the Commission's White Paper and the decision on the internalisation of the external costs of transport taken in Gothenburg by

the European Council, the introduction of road tolls should be compulsory.

However, in this proposal for a revision of the directive it is assumed that, at this stage, a majority of the Member States may not agree to make road tolls mandatory. Thus the directive is proposed to be designed as a framework for Member States wishing to introduce tolls or user charges.

### ► MARGINAL OR FULL COST PRICING?

A second important issue is the choice between marginal pricing and full cost recovery. If the directive were to allow Member States to apply social marginal cost pricing, that would not necessarily mean it should at the same time rule out any alternative of full cost recovery. According to the Commission's White Paper "Fair Payment for Infrastructure Use", charging traffic for infrastructure investment and other fixed costs should be avoided, as this type of financing would reduce the use of pre-existent roads to a sub-optimal level. There are, however, also arguments in favour of including the fixed costs.<sup>5</sup> Thus the revised directive should allow Member States an opportunity to choose between a scheme based on social marginal cost pricing and one on full cost recovery. The proper functioning of the internal market is not affected by lack of harmonisation in this case.

It should be noted in this context that the Commission's proposal for a revision of the directive is based on a mixture of marginal and full cost pricing.

Should geographical differentiation become compulsory? A third issue is whether the directive should make it mandatory for Member States to differentiate the tolls for environmental sensitivity of the area, population density and accident risk. The Commission proposes that no later than 1 July 2008, Member States shall be required to vary the rates according to these criteria. Although the idea of differentiating the tolls geographically is well founded, it

<sup>5</sup> See Kågeson, Efficient charging of heavy goods vehicles, A critical review of the Commission's proposal for amending the Eurovignette Directive, and in particular Jos Ding's contribution, for a more detailed analysis.

may not be wise to make the variation obligatory as long as it is not mandatory, in the first place, for Member States to introduce a scheme of road tolls. By restricting Member States on the scope and differentiation, the Community may make it less attractive for them to take a decision to develop a road toll system at all. Thus a mandatory geographical differentiation should only be considered in a case where the directive obliges all Member States to introduce road tolls. However, even in such a situation, forcing Member States to vary the tolls no later than a certain date may not turn out to be a good idea.

A first worry is the lack of precision in the Commission's proposal. What is the meaning of varying the charge according to population density? Is the Commission thinking of the number of people that would be affected by exhausts from a vehicle entering into different areas? A second concern is the difficulty that goes with any attempt to predict when all vehicles will be equipped with instruments that can communicate with GPS or Galileo satellites (and when the latter are in orbit). It might therefore be premature to decide today on a certain date when it will be feasible to make it compulsory to vary the rates according to time of the day, level of congestion or environmental sensitivity. In the absence of a widespread utilisation of GPS or Galileo techniques, Member States would have to rely on the deployment of thousands of beacons for signalling to the on-board units of vehicles that they have entered a new zone. This may turn out to be quite costly.

One should also be aware that a geographical differentiation would not always be meaningful. The Commission would therefore face considerable difficulties when trying to monitor the Member States' adherence to this rule. The conclusion is that for the time being the new directive should refrain from making geographical variation compulsory from a certain date. It is, however, a good idea to vary the fees as soon as the necessary equipment becomes available at a reasonable price. Therefore, the directive should strongly recommend Member States to consider varying the charges. This would be particularly important where the risk of traffic accidents is con-

cerned. The system should distinguish, as a minimum, between urban streets and roads, motorways and other roads with separate carriageways, and other rural roads.

## ► SHOULD RATE LEVELS BE LIMITED?

A fourth question of importance is whether the framework directive should include specific upper limits for the rates of tolls. From a theoretical as well as a practical point of view such limits should be avoided. From a theoretical point of view the social marginal cost should be internalised regardless of how low or high it might be. Any deviation from the true cost would result in a loss of welfare. From a practical point of view, it is almost impossible for the Community to know, *ex ante*, what is required in terms of range for the rates to sufficiently cover the true costs. Limiting the range in euros per vehicle kilometre or as a percentage of a certain basic rate (which needs to be defined) is equally problematic. Setting upper limits in euros would require constant revisions of the limit rates. A better solution, thus, would be to require that all rates must be proportionate to the objective pursued and that enforcing toll rates on international traffic above levels that reflect the social marginal cost is not, with some exemptions (see below), allowed.

It is difficult to envisage a situation in which a Member State would want to introduce tolls on its entire road network that are higher than what is justified from a social marginal cost perspective. The public opposition to such a move would probably be fierce. However, one possible situation where this might happen is when the revenues from short term marginal cost pricing do not sufficiently cover both the running costs and fixed costs, including new investment, of the infrastructure. This may be the case in sparsely populated Member States with little congestion. Such Member States should, according to the second principle laid out above, be free to choose the alternative of full cost recovery. In order to be able to fully recover its costs, a Member State would have to add an element to the toll that reflects the difference between the revenues from marginal cost pricing and the total road network expenditure.

The directive must be designed so that the tolls work well regardless of institutional arrangements and ownership of the infrastructure. Privately financed motorways exist in some Member States, and one can envisage a situation where a Member State would want to introduce a nationwide scheme for km charging and at the same time allow part of that network to be financed by private operators. In such a situation, the directive must allow the owner of the privately financed road to enforce tolls that cover both the social marginal cost and what might in addition be needed for achieving full cost recovery.

### ► IS THERE NEED FOR A MARK-UP IN SENSITIVE AREAS?

Mark-ups on the basic charge level may be needed for two reasons; for reducing the amount of traffic in a sensitive corridor, and for cross-financing investment in railway lines that will relieve the motorway of some of the burden of transit traffic.

If the rate of the road toll applied on the roads concerned is allowed to be set at a level that accurately reflects the (high) social marginal cost of air pollution, noise and congestion of that particular corridor, the part of the revenue not consumed by road maintenance expenditure should be sufficiently high to cover the cost of relatively large investments in rail capacity. However, local circumstances such as the need for tunnels may require additional funding.

In the case of motorways in narrow mountain valleys one could argue that the barrier caused by the motorway is particularly severe as the local people have little choice with regard to where they can build their houses and where they can spend their out-door time. However, there is at present no formula or methodology for how this impact on people's lives should be valued.

A general problem in this context is that the Commission has not presented a methodology for taking account of environmental costs. In the absence of such a methodology, the Commission's proposal for a maximum

mark-up of 25 % above the basic rate appears to be arbitrary. It might be better not to set an upper limit, and instead rule that the mark-up must be proportional to the objective pursued and that the consultative procedure proposed by the Commission in Article 9c must include an assessment of potentially negative effects on other Member States.

Some Austrian corridors are in direct competition with Swiss trans-Alpine motorways. In order to stop traffic being diverted from Switzerland, Austria should be granted the right to set its road tolls on par with those enforced by Switzerland, regardless of whether this implies a toll above actual expenditure plus the 25% mark-up or a toll in excess of the social marginal cost.

### ► IS THERE NEED FOR USER CHARGES?

The current directive puts an upper limit to the amount of user charges (i.e. charges for the use of the infrastructure during a certain period of time) that a Member State is allowed to impose on foreign operators. The fast development in km charging will probably make most or even all Member States abandon their motorway user charges. Several parties to the Eurovignette are currently considering a shift to km charging. However, during a transitional period, there may still be a need for user charges. This would also be the case in a situation where the new directive makes it mandatory for Member States to introduce road tolls no later than a certain date.

The likelihood that most Member States will shift to km charging argues in favour of leaving the common rules for motorway user charges as they are.

### ► SHOULD EARMARKING OF REVENUES BECOME COMPULSORY?

A sixth principle for the alternative revision is to avoid making earmarking of toll revenues compulsory. Some Member States may, for reasons of transparency and/or public acceptance, want to earmark some or all of the money for road transport expenditures. They should, of

course, be free to do so. Earmarking could be regarded as a natural consequence of charging for full cost recovery as in such a case the rates are based on the anticipated expenditure for constructing and maintaining the network.

However, in a case where all or some of the charge elements are based on the social marginal cost, it is not self-evident that the revenues should be used entirely in the transport sector. In such a situation, the revenues may, especially in the short term, be larger than what is needed for covering variable costs such as those for structural maintenance and traffic surveillance, and investments that are clearly beneficial from a cost/benefit perspective. There may also be competing projects in other parts of society that have higher benefit/cost ratios. In such a case, earmarking the money for use in the transport sector would imply a loss of welfare. Earmarking may also increase the risk that Member States invest more in road capacity than is socio-economically beneficial.

Governments should, regardless of how well the revenues match contemporary needs for infrastructure investment, be free to decide on how they want to spend the money. A common rule requiring Member States to use the revenues of certain taxes and charges for particular purposes would clearly conflict with the Treaty's principle of subsidiarity.<sup>6</sup> However, it would be a different situation if the use of the money would in any way risk distorting international competition, but that appears not to be the case.

## ▶ SHOULD COMPENSATION OF OPERATORS BE ALLOWED?

A seventh issue is to what extent road vehicle operators should be compensated for the increased overall cost associated with the introduction of road tolls. In a new article 7b to the directive the Commission proposes an opportunity for Member States who introduce an infrastructure toll system to provide compensation for these charges, in particular by reducing the rates of vehicle

taxes, where appropriate, to a level below the minimum rates in Annex 1 to the directive. It is not clear from the proposal whether Member States are allowed to scrap vehicle taxation altogether. Not allowing a complete shift from vehicle tax to km charging would force Member States to use two different tax regimes for more or less the same purpose. On the other hand, most governments probably want to sustain the vehicle tax at a minimal rate to keep track of the number of vehicles that are in actual use.

The Commission talks of compensation in general terms, which means that road users could potentially be compensated in some other way than by reduced vehicle tax. The Commission does not explicitly mention diesel tax. However, on 20 March 2003 the Economic and Finance Ministers agreed on new minimum rates for the taxation of road fuels by amending the "mineral oil directive" (92/81/EC). The new minimum rate on diesel as of 1 January 2004 will be 302 per 1000 litres, to be raised to 359 on 1 January 2010. The new directive provides an opportunity for Member States to reduce the tax rate on diesel fuel in cases where they introduce a system of road tolls or user charges on heavy duty trucks. However, the reduction is provisional on total taxation remaining at approximately the same level, on the Community's minimum rate not being violated and on the national excise duty on diesel fuel used for road transport that was in force on 1 January 2003 being at least twice as high (i.e. 604) as the minimum rate that will be applicable on 1 January 2004.<sup>7</sup>

In addition, the directive on fuel taxation allows Member States to use a lower level of fuel taxation for commercial vehicles than for non-commercial vehicles, provided that the rate applied to the former does not fall below the national duty that was in place on 1 January 2003. In practice, this means that a Member State can raise its current (2003) excise duty on fuels used by non-commercial vehicles without raising the rate for commercial vehicles.

<sup>6</sup> In some Member States, notably Sweden, earmarking is deemed unconstitutional as Parliament has been given the exclusive right to decide on how government revenues shall be used. To change the constitution would in many cases take years.

<sup>7</sup> The United Kingdom is the only Member State that fulfils this requirement.

It is essential in the context of compensation to remember that the tolls will not be used for internalising the social costs connected with the combustion of fossil road fuels. The reason is that taxing the fuel for its content of fossil carbon comes much closer to the underlying cost than would a climate element of the distance related toll. The Commission's proposal for allowing Member States to reduce the annual vehicle taxation appears to be justified. The reason for including a minimum level in the current directive was a wish to contribute to the elimination of distortions between trucks registered in different Member States. In a situation where the a proper functioning of the internal transport market is achieved by road tolls there is no longer need to force Member States to maintain a certain rate of vehicle tax.

## ► HOW MUCH OF A PROBLEM ARE DIFFERING WEIGHT LIMITS?

The difference in weight limits between the proposed directive and the recently adopted directive on the taxation of energy (2003/96/EC) constitutes a problem in two ways; it makes it impossible for Member States to compensate vehicles between 3.5 and 7.5 tonnes in a situation when they introduce road tolls and want to raise the excise duty on diesel fuel for non-commercial vehicles, and it might distort competition between vehicles in different weight segments.

Where compensation is concerned, one should keep in mind that the segment between 3.5 and 7.5 tonnes makes up a relatively small part of all registered light and heavy trucks and that vehicles below 7.5 tonnes are predominantly used for local distribution of goods. Thus, these vehicles generally do not cross borders between Member States, although in cases of cities situated close to a border this may sometimes be the case.

Some Member States already enjoy exemptions from the lower weight limit for non-commercial vehicles in the energy tax directive. According to Article 19 of the directive, the Council, acting unanimously on a proposal from the Commission, may authorise any Member State to

introduce further exemptions or reductions for specific policy considerations. Within three months of receiving all relevant and necessary information from a Member State, the Commission shall either present a proposal for the authorisation of such a measure by the Council or, alternatively, inform the Council of the reasons why it does not want to propose the authorisation.

An alternative would be to use the provisions of Article 29, under which the Council, acting on the basis of a report or a proposal from the Commission, shall periodically examine the exemptions and reductions and the minimum levels of taxation laid down in this Directive and, acting unanimously after consulting the European Parliament, shall adopt the necessary measures. The report by the Commission and the consideration by the Council shall take into account the proper functioning of the internal market, the real value of the minimum levels of taxation and the wider objectives of the Treaty. This procedure could be used for changing the lower weight limit for commercial vehicles in Article 7 of that directive from 7.5 to 3.5 tonnes.

The second problem might be more serious from an efficiency point of view. As long as it is not economically feasible, due to transaction costs, to include passenger cars in a scheme of distance-related road tolls, a limit needs to be drawn somewhere. To set the limit at 3.5 tonnes appears to be a good choice, as it means that all heavy goods vehicles will be included. The risk that this might make some companies shift to light duty vehicles for the delivery of goods may, if needed, be counter-balanced by an increase in annual vehicle tax of light trucks.

## ► DEGREE OF HARMONISATION OF TOLL RATES

Among the objectives of the amendments to Directive 1999/62/EC is, according to the Commission's proposal, the elimination of distortions of competition and to guarantee the proper functioning of the internal market. It is relevant in the light of the principle of subsidiarity in this context to establish to what extent common European regulation is needed for achieving this. One virtue of km charging is that it provides equal treatment to all vehicles (of the same



type), provided, of course, that no discrimination is allowed with regard to origin, destination or country of registration. From this it follows that differences in rates per vehicle kilometre between Member States will not in themselves distort competition. That means that decisions on the rates should be left to the Member States under the proviso that the measures that they take are non-discriminatory and proportionate to the objectives pursued.

However, the adoption of a common methodology for calculating the external costs of heavy goods vehicles is useful in several ways; it is needed for avoiding that traffic externalities are calculated very differently in different Member States and for different modes,<sup>8</sup> it will save Member States the task of developing methodologies of their own, and it will make it easier for operators involved in international traffic to calculate the economic effects of measures that they are considering undertaking in order to reduce their overall costs. Examples of the latter are choice of vehicle configuration (including number of axles) and decisions on investment in after-market equipment that would reduce, for instance, the amount of nitrogen oxides or particulates emitted.

For these reasons the Commission should adopt a set of guidelines for how the marginal social cost of air pollution and noise should be calculated. The Commission has already, in its proposal for amendments to the directive, published guidelines for how the costs of road traffic accidents may be calculated. Similar guidelines for the calculation of health effects and environmental costs should be developed.

However, providing recommendations for congestion pricing is a great deal more difficult as the charge required is dependent on local circumstances and on what traffic speed is considered to be optimal. In addition, positive results depend to a large extent on the inclusion of passenger cars in the local scheme for congestion pricing, as

this category of vehicle makes up most of the traffic at peak hour. Any attempt to decide the details of this matter on a European level is therefore doomed to failure.

Even in a case where a common methodology is used for calculating the costs, the rates will vary considerably as the underlying costs differ due to differences in, for instance, maintenance costs, accident rates and environmental impact.

Vehicle classification, however, is an area that requires harmonisation. It would be almost unworkable for the operators if Member States were to use different systems for the categorisation. Thus, the Commission is right when proposing, in Annex III to the directive, that all Member States should adopt the same system of vehicle and road damage classes. It also makes sense to use the existing European exhaust emission classes, EURO 0, EURO I, EURO II and so forth, as a common base for environmental differentiation of the tolls.

The Commission proposes the creation in each Member State of an independent infrastructure supervision authority to do three things; to oversee the operation of the national charging systems in a manner guaranteeing transparency and non-discrimination between operators, to verify that the revenues will be ploughed back into the transport networks, and to promote synergies between the different sources of funds earmarked for transport infrastructure. The first of the three tasks is relevant for the functioning of the road toll systems, the latter two, however, contradict the principle of subsidiarity. Where the first task is concerned, Member States should be free to place the responsibility with the finance ministry, the ministry of transport, the national road administration or any other relevant pre-existing body. Alternatively they can, if they so wish, create a new body for this purpose. It is not important from a European perspective to regulate how Member States should organise themselves.

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<sup>8</sup> One should recall in this context that aviation and sea transport are very international in character.

## ▀ VEHICLE CLASSIFICATION AND ROAD MAINTENANCE

To guarantee consistent, harmonised application of toll systems, the Commission, in an annex to the proposed directive, presents a common methodology for calculating the cost constituents of road maintenance and traffic accidents.

The Commission's proposal for amending the directive provides the necessary vehicle classification for a European system of road tolls. Differentiating the charges according to a harmonised classification makes different national schemes interoperable and would facilitate the allocation of revenues in a case where several Member States decide to operate a joint scheme in the future.

Where the charges for structural maintenance and regular maintenance are concerned, the Commission proposes a classification system that takes into consideration size, axle weight and type of suspension. However, there may be cause to consider additional classes for a fair allocation of the costs of structural maintenance. The steps between the different classes appear to be quite steep. However, the author of this paper is not an expert on vehicle classification and therefore refrains from making a proposal of his own.

## ▀ INTERNALISING THE SOCIAL COST OF ACCIDENTS

Traffic accidents are the only price relevant parameter besides maintenance for which the Commission presents a methodology. Unfortunately, the Commission does not in its proposal distinguish marginal from average cost recovery and in addition wants to subtract insurance premiums where this is unjustified. It is important that the directive is based on a scientifically solid methodology for the calculation of traffic accident externalities. Therefore this paper must devote a relatively large section to explain why and how the methodology should be differently designed.

The Commission says that the unit cost should be based on **the risk involved** per accident type and vehicle type. Accident type in this case refers to the risk for the occurrence of a fatality, a serious injury or a slight injury. The fact that focus is on risk avoidance rather than on expenditure is clear also from the size of the cost estimates. The Commission proposes that 1 million per case should be used for fatalities, 1 35 000 for severe injuries and 1 5 000 for slight injuries. As noted by Gunnar Lindberg,<sup>9</sup> these sums are much too high to reflect expenditure. The unit costs proposed by the Commission reflect the citizens' willingness to pay (WTP) for avoiding fatalities and injuries. The socio-economic valuation of the risk of accidents is usually based on surveys of the WTP for avoiding accidents. An ex post evaluation of traffic accident costs, on the other hand, would be based on actual expenditure and indirect costs (such as net-loss of income). In the latter case it makes sense to take account of insurance premiums, but not in the first.

One should also remember that insurance companies are charged for traffic accident costs on the basis of individual liability. Calculating the risk of accidents, on the other hand, is done without reference to who might be at fault. Deducting insurance premiums is not relevant in this case.

The Commission's UNITE project has developed a methodology<sup>10</sup> for traffic accident externalities that distinguishes between:

- (1) *System externalities* – the expected accident cost to the rest of society (mainly medical costs) when users expose themselves to risk by entering into the traffic flow;
- (2) *Traffic volume externalities* – the ex ante Willingness To Pay (WTP) among vehicle users, relatives and friends for avoiding a statistical fatality or injury, and costs for the rest of society related to the increase or decrease in the accident risk for all other users of the same mode, caused by an additional user;

<sup>9</sup> Gunnar Lindberg, *Uncovered costs of accidents in the Commission's proposal for a new Eurovignette Directive*, in Kågeson, *Efficient charging of heavy goods vehicles*, SIKÅ, Stockholm 2003.

<sup>10</sup> Gunnar Lindberg, *Marginal Cost Methodology for Accidents*, UNITE Interim Report 8.3, VTI, Borlänge, Sweden.

(3) *Traffic category externalities* – the WTP of the vehicle users, relatives and friends, and costs to the rest of society related to the altered accident risk in other modes of transport.

This categorisation (also used in the Commission's RECORDIT project) provides a theoretically correct determination of the external costs of accidents. However, from a practical point of view, it is currently difficult or even impossible to calculate and internalise all of them.

The system externalities (point 1 above) are presumably in most cases relatively small as a large part of private and government expenditure is already covered by insurance premiums. One might conclude that at the current stage there is little to gain in complicating the toll system by trying to include the remaining part. Where insurance coverage is relatively low, it makes more sense to stimulate Member States to raise the level of coverage. The Directive as amended by the Commission, allows them to enforce a tax on insurance premiums.

Where traffic volume externalities (point 2) are concerned, the problem is that the marginal cost varies greatly with local and regional circumstances, including road quality, time of day, weather and traffic density. The marginal cost may in cases of increasing congestion even be negative. Thus, there is currently no reliable way of calculating the traffic volume externality in a way that fully reflects differences in time and space.

However, it is important from a socio-economic view to take into consideration that the average risk of accidents varies greatly between modes of transport (point 3 above). By excluding from the toll system an element representing this risk, society would distort competition between road transport and low-risk modes such as rail, inland water and short sea shipping. Another important aspect is that the average traffic category externality differs greatly between categories of road users. The risk of

someone in a car being injured or killed is much greater, for example, if the driver encounters a truck during a hazardous manoeuvre than if he encounters a motorcycle. A heavier mode inflicts a much greater risk on a lighter (including unprotected road users) than vice-versa.

Considering these problems and the possibility of a future extension of the toll system to cars and light duty vehicles, an alternative could be to develop a simplified model for calculating the external cost of traffic accidents based on the traffic category externalities (point 3 above) of different modes of transport. From a risk perspective, each category of vehicle should be liable for the risk that it inflicts on other categories of road users. It would, in this context, be appropriate to distinguish between cars and other light duty vehicles and one or two classes of heavy duty vehicle (for instance vehicles above and below 7.5 tonnes) provided that national accident statistics are broken down into these categories.

In multi-party accidents involving different types of vehicle it would make sense to make each category liable for the victims "at the other side".<sup>11</sup> With this approach, the risk of accidents between two vehicles belonging to the same category or mode would be considered to be internal. This would also be the case with single vehicle accidents. In the case of Sweden, the *traffic category externality* of heavy road vehicles calculated in this way makes up around 10 per cent of the overall costs of road traffic accidents.<sup>12</sup>

Traffic accident statistics are notoriously unreliable where slight injuries are concerned. The "dark figures" (injuries not reported as resulting from traffic accidents) are known to be high. The same is to a lesser extent true for serious injuries. Slight injuries could be left out of consideration, as the sum that they represent would be small compared to the aggregate costs of fatalities and severe injuries.

<sup>11</sup> CE, *Efficient Prices for Transport*, Delft, the Netherlands.

<sup>12</sup> Own calculation based on data from "Vägtrafikskador 2001", published by SIKa and Statistics Sweden.

In most of the current Member States the risk value, based on recurrent surveys of the citizens' willingness to pay, is of the same magnitude or higher than the unit costs for fatalities and injuries proposed by the Commission in annex III. The values proposed by the Commission should be used only as a guide as WTP is known to vary with citizens' ability to pay. Thus, WTP is higher in Member States with a high GDP per capita. The values used for internalising the risk of accidents in the European Union should reflect such differences. The conclusion is that Member States should be allowed to use their own values derived from surveys of their citizens' willingness to pay, if they so wish.

The Commission's draft directive does not discuss the issue of calculating the accident risk for different categories of road in order to differentiate the charge. To do so becomes an interesting alternative in a case where the road toll system is extended to the entire public road network. The risk of fatalities and injuries is a great deal lower on motorways and dual carriageways (separated by a fence or a dividing strip) compared to other roads. The geographical differentiation of the accident element of the toll should reflect such differences as soon as this becomes technologically and economically feasible. It would also make sense to use differing fees on urban and rural roads.

## INTERNALISING ENVIRONMENTAL COSTS

The weighted average tolls shall, according to the Commission's proposal, include an element based on the infrastructure costs, designed to reduce nuisance related to noise and costs of actual payments made by the infrastructure operator corresponding to objective environmental elements, such as soil contamination. Such costs, however, are part of normal expenditure for regular maintenance and/or road investment and do not need to be represented by a constituent element of their own.

Indirect costs, such as those arising from damage to human health or crops or wildlife, are not included in the Commission's proposal, which is a deviation from the principles of marginal cost pricing. This need not be a major problem so long as the toll is high enough to allow for a variation that reflects the difference in environmental impact. The important point is for the toll system to be able to provide a correct incentive for upgrading engines, introducing additional exhaust after-treatment or shifting to vehicles of a higher EURO-class. In a case of full cost recovery, provided that the elements of the toll that correspond to the cost of regular maintenance and investment in new roads are based on the average cost of a network rather than the cost of an individual road (which might be very low), there should be no difficulty incorporating a differentiation that reflects environmental costs.

A better solution, though, would be to apply the principle of marginal cost pricing to the costs of air pollution and noise. This implies allowing a constituent element representing environmental costs to be *added* to those that reflect the structural maintenance cost and the accident risk.

To make it easier for operators of fleets used for long-distance transport to calculate the benefit of upgrading vehicles or shifting to a less polluting vehicle class, the Commission should consider presenting guidelines for how Member States shall calculate the environmental externalities. For this purpose it would probably be sufficient to divide roads into three geographical categories (dense urban, other urban and rural) and to allow Member States to use a higher fee in certain sensitive areas.

The results from the Commission's ExternE-project could be used for assessing the costs of nitrogen oxides, volatile organic compounds (VOC) and particles (PM10). ExternE, however, is not yet fully developed and does not take into account all costs caused by air pollution. Some

Member States currently use damage values that are higher than those presented in ExternE. They should be allowed to continue to use their national values so long as they are proportionate to the objective pursued.

## ► THE COSTS OF CONGESTION

As underlined above, decisions on the toll rates required for dealing with congestion should be left to the individual Member States. Differentiation of the basic toll is an option so long as the toll is large enough to allow for a variation that is sufficient for depressing peak hour demand to the target level. Marginal cost pricing should be allowed as an alternative option.

## ► INTERNALISING THE SOCIAL COSTS OF ALL MODES OF TRANSPORT

In the 2001 White Paper "European Transport Policy for 2010", the Commission said the aim of Community action should be "gradually to replace existing transport system taxes with more effective instruments for integrating infrastructure costs and external costs". The Commission decided to prepare legislation in three steps: (i) a methodology paper (to appear in 2002), (ii) a framework directive covering all modes of transport, and (iii) a daughter directive for each of the four modes of transport.

However, in 2003, the Commission scrapped its three-step-strategy in favour of a revision of the Eurovignette directive. The aim of the revision is more to raise money for infrastructure investment than to introduce fair and economically efficient regimes for charging road transport. In addition, there is no longer an emphasis on internalising the social marginal costs of all modes of transport.

In acting on the Commission's proposal for a revision of the Eurovignette directive, the Council and the European Parliament should remind the Commission about the strategy laid down in the White Paper. To make it possible for the Community to take into account the external costs of aviation, inland and short sea shipping, Commission proposals for specific directives for the remaining modes are urgently needed. The external costs of rail transport are partially covered by the rail directive.

## Part III: Proposal for a revision of Directive 1999/62/EC

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Please note that two columns are used whenever the alternative proposal deviates from the revision proposed by the Commission

2003/0175 (COD)

### Proposal for a **DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 71(1) thereof,

Having regard to the Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999 on the charging of heavy goods vehicles for the use of certain infrastructures, and in particular Article 7 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the Economic and Social Committee,

Having regard to the Opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

#### **Text by the Commission, parts proposed to be deleted in bold.**

(1) Eliminating distortions of competition between transport undertakings in the Member States, the proper functioning of the internal market and improved competitiveness all depend on fair mechanisms being established to charge hauliers for the cost of infrastructure use. A degree of harmonisation has already been achieved through the adoption of Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999

(2) A **fairer** system of charging for the use of road infrastructure is crucial in order to ensure sustainable transport in the Community. The objective of making optimum use of the existing road network and achieving a significant reduction in its negative impact **must, if possible, be achieved without imposing additional burdens on operators in the interests of sound economic growth and the proper functioning of the single market.**

#### **Amendments and deletions by the author of this report, all amendments in bold.**

(1) Eliminating distortions of competition between transport undertakings in the Member States, the proper functioning of the internal market and improved competitiveness all depend on fair mechanisms being established, **in accordance with the subsidiarity principle**, to charge hauliers for the cost of infrastructure use. A degree of harmonisation has already been achieved through the adoption of Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999

(2) A **fair** system of charging for the use of road infrastructure, **based on the polluter-pays principle**, is crucial in order to ensure sustainable transport in the Community. The objective of making optimum use of the existing road network and achieving a significant reduction in its negative impact **is best achieved by taking full account of the external costs when calculating road toll charges.**

Recital 2a (new)

**(2a) In paragraph 29 of the conclusions of its meeting of 15 and 16 June 2001 in Gothenburg, the European Council stated that a sustainable transport policy should tackle rising volumes of traffic and levels of congestion, noise and pollution, and encourage the use of environment-friendly modes of transport as well as the full internalisation of social and environmental costs.**

(3) The Commission announced its intention of proposing a directive on charging for the use of road infrastructure in the White Paper "European transport policy for 2010: time to decide". The European Parliament confirmed the need for infrastructure charging when it adopted the report on the conclusions of the White Paper on 12 February 2003. The Copenhagen European Council of December 2002 and the Brussels European Council of March 2003 also welcomed the Commission's intention of presenting a new "Eurovignette" Directive.

(4) For the purposes of setting tolls, Directive 1999/62/EC takes account of infrastructure construction, operating, maintenance and development costs. To avoid charging for construction costs more than once, the costs that may be taken into account for this purpose must be limited to those for new infrastructure, i.e. infrastructure to be built in future or which has **just** been completed. However, a special provision should be introduced, **so as not to cause prejudice**, with regard to taking into account construction costs, **to the rights relating to concession contracts in existence at the time of entry into force of the directive.**

(4) For the purposes of setting tolls, Directive 1999/62/EC takes account of infrastructure construction, operating, maintenance and development costs. To avoid charging for construction costs more than once, the costs that may be taken into account for this purpose must be limited to those for new infrastructure, i.e. infrastructure to be built in future or which has been completed **within an appropriate period prior to the entry into force of the new directive.** However, a special provision should be introduced with regard to taking into account construction costs **so that, even after the entry into force of the new directive, Member States can, when calculating toll charges take construction costs into account if they have concluded with infrastructure operators contracts for the construction of part the road network.**

Recital 4a (new)

**(4a) In light of the principles of internalisation of external costs and the subsidiarity principle, Member States may confine the toll charges to the social marginal costs of the infrastructure, e.g. the marginal costs of road damage, air pollution, noise and traffic accidents. However, Member States should in this case be free to add a constituent element of the toll that makes up for the difference in revenue between social marginal cost pricing and full cost recovery. The latter should in this context be calculated as the annual public expenditure for the road network.**

(5) When Member States decide to introduce tolls, they should also take account of **accident costs which are not covered by insurance but are borne by society as a whole.**

(6) International road transport operations are concentrated on the trans-European road transport network. **Furthermore, the operation of the internal market is vital to commercial transport. Consequently,** the Community framework must apply to commercial transport on the trans-European road network as defined in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network. In order to avoid traffic being diverted, with potentially serious consequences for road safety and the optimum use of the transport network, Member States must be able to introduce charging on any road which is in direct competition with the trans-European network (Main road network). In accordance with the principle of subsidiarity, Member States are free to apply tolls and/or user charges on roads other than those on the main road network, in compliance with the rules of the Treaty.

(7) **The fact that the user is able to take decisions which will influence the burden of tolls by choosing the least polluting vehicles, itineraries which are less ecologically sensitive, less congested periods or itineraries and safer vehicles, is central to a charging system.** States should therefore be able to differentiate tolls according to a vehicle's emission category ("EURO" classification) and the **level of damage it causes to roads, the place, the time and the amount of congestion. Such** differentiation in the level of tolls must be proportionate to the objective pursued.

(5) When Member States decide to introduce tolls **based on the average weighted costs of infrastructure construction, operating, maintenance and development,** they should also take account of **the external costs of traffic accidents.**

(6) International road transport operations are **to a large degree** concentrated on the trans-European road transport network. The Community framework must **therefore** apply to commercial transport on the trans-European road network as defined in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network. In order to avoid traffic being diverted, with potentially serious consequences for road safety and the optimum use of the transport network, Member States must be able to introduce charging on any road which is in direct competition with the trans-European network (Main road network). In accordance with the principle of subsidiarity, Member States are free to apply tolls and/or user charges on roads other than those on the main road network, in compliance with the rules of the Treaty **and guided by the principles laid down in this Directive.**

(7) **When Member** States differentiate tolls **for differences in exhaust pollution and damage to roads, the differentiation shall** be based on the vehicle's emission category ("EURO" classification) and the **vehicle classification laid down in this Directive. All** differentiation in the level of tolls must be proportionate to the objective pursued.



(8) **Where possible, the financial burden for the transport sector must not be increased, but distributed differently by replacing fixed taxes and charges by a system of charges related to use.** When Member States introduce tolls and/or user charges, they **must therefore be able to** reduce in particular the rates of annual taxes on vehicles, where appropriate to below the minimum levels provided for in Annex I to Directive 1999/62/EC.

(9) **With regard to infrastructure financing, efforts to reduce congestion and complete the trans-European network infrastructure should be stepped up. Consequently, the revenue from fees must be used for maintenance of the road infrastructure and for the benefit of the transport sector, in order to contribute to the balanced development of all infrastructure in the interests of the transport network as a whole.**

(10) Particular attention must be devoted to particularly sensitive areas, **in particular mountain regions such as the Alps or the Pyrenees.** The launch of major new infrastructure projects has often failed because the substantial financial resources they would require were not available. In **particularly sensitive** regions, users must therefore pay a mark-up to finance essential projects of very high **European** value, including those involving another mode of transport in the same corridor and area; the level of such a mark-up must be proportionate in order to safeguard freedom of movement. This amount must be linked to the financial needs of the project. It should also be linked to the basic value of the tolls in order to avoid artificially high charges in any one corridor, which could lead to traffic being diverted to other corridors, thereby causing local congestion problems and inefficient use of networks.

(8) When Member States introduce tolls and/or user charges, they **may** reduce in particular the rates of annual taxes on vehicles, where appropriate to below the minimum levels provided for in Annex I to Directive 1999/62/EC.

(9) **In accordance with the principle of subsidiarity, Member States are free to decide on how to use** the revenue from **road tolls and user charges.**

(10) Particular attention must be devoted to particularly sensitive areas, **for example mountain regions and conurbations.** The launch of major new infrastructure projects, designed to relieve the pressure on main arteries, has often failed because the substantial financial resources they would require were not available. In **such** regions, users must therefore pay a mark-up to finance essential projects of very high value, including those involving another mode of transport in the same corridor and area; the level of such a mark-up should be proportionate in order to safeguard freedom of movement. This amount must be linked to the financial needs of the project. It should also be linked to the basic value of the tolls in order to avoid artificially high charges in any one corridor, which could lead to traffic being diverted to other corridors, thereby causing local congestion problems and inefficient use of networks.

**Regardless of how the revenue is used, Member States should be free to set the toll on roads in a sensitive area so that it accurately reflects the costs of that corridor, including damage to human health and the environment.**

11) Fees must be non-discriminatory and not involve excessive formalities or create barriers at the internal borders. Appropriate measures must therefore be taken to make payment possible at any time and by various means, and to ensure that the electronic payment tool (on-board unit) is as accessible to the occasional user as to the frequent traveller.

(12) In order to ensure consistent, harmonised application of the infrastructure charging system, Member States will have to set the level of tolls with the aid of a common methodology to take account of the various costs which should be covered. Provision must also be made in this methodology for using estimates of accident costs where Member States have not assessed such costs in a manner that more appropriately reflects local or regional circumstances. Member States must also communicate to the Commission, for approval, the unit values and other parameters they intend to apply to calculate the various cost elements of the charges.

**(13) In order to ensure that the requirements of the Directive are correctly enforced, Member States must designate an independent infrastructure supervision authority. This body will have a key role in ensuring, through appropriate monitoring, balanced use of the available resources. Simple, clear rules must therefore be established regarding the possibility of promoting synergies between competing transport infrastructure modes in a single corridor.**

(12) In order to ensure consistent, harmonised application of the infrastructure charging system, Member States will have to set the level of tolls with the aid of a common methodology to take account of the various costs which should be covered. Provision must also be made in this methodology for using **common** estimates of accident **and environmental** costs where Member States have not assessed such costs in a manner that more appropriately reflects local or regional circumstances. Member States must also communicate to the Commission, for approval, the unit values and other parameters they intend to apply to calculate the various cost elements of the charges. **The Commission should develop uniform calculations principles, based on scientifically recognised data, which will clear the way for the full internalisation of all external costs.**

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(14) Further technical progress is still needed to develop the system of charging for the use of road infrastructure. There must be a procedure allowing the Commission to adapt the requirements of Directive 1992/62/EC to technical progress following consultation of the Member States for this purpose. The measures necessary to implement this Directive must be adopted in accordance with Council Decision No 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission.

(15) Given that the objectives of the proposed action, namely to harmonise the conditions applicable to tolls and user charges for the use of road infrastructure, cannot be satisfactorily achieved by the Member States and may therefore be better achieved at Community level by reason of their European dimension and with a view to safeguarding the internal transport market, the Community can take measures, in accordance with the principle of subsidiarity enshrined in Article 5 of the Treaty. In accordance with the principle of proportionality set out in that Article, this Directive does not exceed what is necessary to achieve those objectives,

(15) Given that the objectives of the proposed action, namely to harmonise **some of** the conditions applicable to tolls and user charges for the use of road infrastructure, cannot be satisfactorily achieved by the Member States and may therefore be better achieved at Community level by reason of their European dimension and with a view to safeguarding the internal transport market, the Community can take measures, in accordance with the principle of subsidiarity enshrined in Article 5 of the Treaty. In accordance with the principle of proportionality set out in that Article, this Directive does not exceed what is necessary to achieve those objectives,

HAVE ADOPTED THIS DIRECTIVE:

#### **Article 1**

Directive 1999/62/EC is amended as follows:

1) Article 2 is amended as follows:

a) point (a) is replaced by the following text:

“(a) “trans-European network” means the road network defined in Section 2 of Annex I to Decision No 1692/96/EC of the European Parliament and of the Council as illustrated by maps. The maps refer to the corresponding sections mentioned in the operative part and/or in Annex II to this Decision;

b) the following points (aa) and (ab) are inserted:

(aa) “main road network” means the trans-European road network and any other road to which traffic may be diverted from the trans-European road network and which is in direct competition with certain parts of that network; it includes the urban transit sections of these roads;”

(ab) “construction costs” means the costs related to construction, including; where appropriate, the cost of the interest on the capital invested, of new infrastructure or of infrastructure completed not more than ... [15 years before the entry into force of this Directive];”

c) in point (b), the phrase “the amount shall be based on the distance travelled and the type of vehicle” is replaced by “the amount shall be based on the distance travelled and the corresponding costs per kilometre”;

d) points (d) and (e) are replaced by the following text:

“(d) “vehicle” means a motor vehicle or articulated vehicle combination intended or used for the carriage by road of goods and having a maximum permissible laden weight of over 3.5 tonnes;

(e) vehicle of the «EURO 0», «EURO I»,«EURO II»,«EURO III»,«EURO IV»,«EURO V» category means a vehicle that complies with the emission limits set out in Annex 0 to this Directive”

e) point (f) is deleted.

2) Article 6 is amended as follows:

a) in paragraph 2, the phrase “Member States may apply reduced rates or exemptions for:”, is replaced by the following text: “Without prejudice to Article 7b, Member States may apply reduced rates or exemptions for:”

b) in paragraph 4, the phrase “Without prejudice to the second subparagraph of paragraph 1 and to paragraphs 2 and 3 of this Article”, is replaced by the following text: “Without prejudice to paragraphs 2 and 3 of this Article and to Article 7b,”

3) Article 7 is amended as follows:

a) paragraphs 1 and 2 are replaced by the following text:

“1. Member States may maintain or introduce **tolls and/or user charges** under the conditions set out in paragraphs 2 to 12.

“1. Member States may maintain or introduce **toll** charges under the conditions set out in paragraphs 2 to 12.

**In duly substantiated exceptional cases, Member States may for a limited period of time introduce or maintain user charges in place of toll charges. In that event, the procedure referred to in Article 9c(5) shall apply.**

### Justification

It should be clear from the first paragraph of this Article that road tolls is the only long-term option for internalising the external costs of road transport. User charges should be regarded as a transitional arrangement.

2. Tolls and user charges shall be imposed on the vehicles defined and on the trans-European road network. Member States may extend the imposition of tolls and user charges to other roads of the primary road network. **Without prejudice to paragraph 6, their extension to these other roads shall be subject to the procedure referred to in Article 9c(5).”**

This Directive shall be without prejudice to the right of Member States to apply tolls **and/or user rights** on roads other than those of the main road network, in compliance with rules of the Treaty.

2. Tolls and user charges shall be imposed on the vehicles defined and on the trans-European road network. Member States may extend the imposition of tolls and user charges to other roads of the primary road network.

This Directive shall be without prejudice to the right of Member States to apply tolls on roads other than those of the main road network, in compliance with rules of the Treaty **and guided by the principles laid down in this Directive.**

## Justification

The Commission has not provided any motive for why the extension of road tolls to other roads of the primary network should be treated differently than an extension to roads that are not part of that network.

b) paragraph 4 is replaced by the following text:

“4. Tolls and user charges may not discriminate, directly or indirectly, on the grounds of nationality of the haulier, the country or place of registration of the vehicle, or the origin or destination of the transport operation.”

c) a new paragraph 5a is inserted as follows:

“5a Member States using electronic systems to collect tolls and/or user charges shall make available to all vehicles, under reasonable administrative and economic arrangements, the appropriate vehicle on-board units (“OBU”). These arrangements should not, financially or otherwise, e.g. by imposing an additional administrative burden or requirements for other additional equipment, place non-regular users of the road network at a disadvantage.”

d) the second subparagraph of paragraph 7 is replaced by the following text :

“The maximum rates shall be reviewed every two years from ... [*date of entry into force of this Directive*]. When necessary, the Commission shall adapt the rates, in conformity with the procedure referred to in Article 9c(2).

e) the third subparagraph of paragraph 7 is deleted

f) paragraph 9 is replaced by the following text:

“9. The weighted average **tolls shall be related to the** costs of constructing, operating, maintaining and developing the infrastructure network concerned, including any infrastructure costs designed to reduce nuisance related to noise and costs of actual payments made by infrastructure operator corresponding to objective environmental elements such as for example soil contamination, and to the direct or indirect costs of accidents which, not being covered by an insurance system, are borne by society.

The weighted average tolls shall be calculated without prejudice, as regards taking into account construction costs, to rights relating to concession contracts existing at ... [*date of entry into force of this directive*].”

“9. **Member States may choose between a toll system where the setting of charges are based on the social marginal cost and one where the charges reflect** the weighted average costs of constructing, operating, maintaining and developing the infrastructure network concerned, including any infrastructure costs designed to reduce nuisance related to noise and costs of actual payments made by infrastructure operator corresponding to objective environmental elements such as for example soil contamination, and to the direct or indirect costs of accidents which, not being covered by an insurance system, are borne by society.

The weighted average tolls shall be calculated without prejudice, as regards taking into account construction costs, to rights relating to concession contracts existing at ... [*date of entry into force of this directive*].”

## Justification

Member States should be free to design tolls systems based on the social marginal costs of road traffic as outlined in the Commission's White Paper "Fair Payment for Infrastructure Use".

g) Paragraph 10 is replaced by the following text:

"10. Without prejudice to the weighted average tolls referred to in paragraph 9, Member States may vary the toll rates according to:

(a) vehicle type, based on its road damage class in conformity with Annex III **and its EURO emission class in accordance with Annex 0**

(b) time of day and level of congestion on the road concerned, **provided that no toll is more than 100% above the toll charged during the cheapest period of the day;**

(c) the particular road in the network, depending on the environmental sensitivity of the area, the population **density** or the accident risk;

Any variation in tolls charged with respect to different types of vehicle, time of day and congestion level and the particular route taken in the road network shall be proportionate to the objective pursued.

**No later than 1 July 2008, Member States shall be required to vary the rates at which tolls are charged according to the particular route in the road network, in conformity with point (c)."**

"10. Without prejudice to the weighted average tolls referred to in paragraph 9 **and in conformity with the theory of social marginal pricing**, Member States may vary the toll rates according to:

(a) vehicle type, based on its road damage class in conformity with Annex III;

(b) **vehicle type, based on its EURO emission class in accordance with Annex 0**

(c) time of day and level of congestion on the road concerned;

(d) the particular road in the network, depending on the environmental sensitivity of the area, the population **exposed to air pollution and noise** or the accident risk;

Any variation in tolls charged with respect to different types of vehicle, time of day and congestion level and the particular route taken in the road network shall be proportionate to the objective pursued."

## Justification

In accordance with the subsidiarity principle, the variation of the tolls for degree of congestion should be decided by the Member States.

So long as the introduction of road tolls is optional, there is no point in making a geographical variation of the tolls compulsory on a certain day.

h) paragraphs 11 and 12 are added as follows:

“11. In **exceptional cases** concerning infrastructure in particularly sensitive regions, **in particular mountainous regions**, and after consulting the Commission in conformity with the procedure referred to in Article 9c(5), a mark-up may be added to the tolls to allow for cross-financing the investment costs of other transport infrastructures of a high European interest in the same corridor and in the same transport zone. **The mark-up may not exceed 25 % of the tolls.** The application of this provision shall be subject to the presentation of financial plans for the infrastructure concerned and a cost/benefit analysis for the new infrastructure project. Application of this provision to new transfrontier projects shall be subject to the agreement of the Member States concerned.

Should the Commission consider that the planned mark-up does not meet the conditions set in this paragraph, it shall seek the opinion of the Committee referred to in Article 9c(1). It may reject the plans for charges submitted by the Member State concerned in conformity with the procedure referred to in Article 9c(2).

When the Commission informs the Member State concerned that it intends to seek the opinion of the Committee, the deadline of 30 days mentioned in Article 2 of the Council Decision referred to in Article 9c(5) shall be suspended.

11. In cases concerning infrastructure in particularly sensitive regions **and conurbations**, and after consulting the Commission in conformity with the procedure referred to in Article 9c(5), a mark-up may be added to the tolls to allow for cross-financing the investment costs of other transport infrastructures in the same corridor and in the same transport zone. The application of this provision shall be subject to the presentation of financial plans for the infrastructure concerned and a cost/benefit analysis for the new infrastructure project. Application of this provision to new transfrontier projects shall be subject to the agreement of the Member States concerned.

Should the Commission consider that the planned mark-up does not meet the conditions set in this paragraph, it shall seek the opinion of the Committee referred to in Article 9c(1). It may reject the plans for charges submitted by the Member State concerned in conformity with the procedure referred to in Article 9c(2).

When the Commission informs the Member State concerned that it intends to seek the opinion of the Committee, the deadline of 30 days mentioned in Article 2 of the Council Decision referred to in Article 9c(5) shall be suspended.

### Justification

It is very difficult to estimate the level of mark-ups that may be required for the purpose of cross-financing infrastructure investment. Above 25%, the risk that traffic will be diverted to other roads, including those of neighbouring Member States, may increase. This, however, does not justify a specific limit, as the Member States can reject the plan according to the procedure laid down in this paragraph.

12. Each Member State shall ensure that the emission classification and the road damage classification of vehicles registered on their territory can easily be identified.

Where a driver is unable to produce the necessary documents in the event of a check, Member States may apply tolls as for the most polluting and damaging vehicle category, i.e. EURO 0 and damage class III."

4) Articles 7a and 7b are inserted as follows:

"Article 7a

1. In determining the levels of tolls to be charged, Member States shall take account of the various costs to be covered, according to the common methodology set out in Annex III. The estimates of accident costs given in point 2 of the Annex shall be used in cases where a Member State has not assessed these costs in a manner that more appropriately reflects local or regional circumstances.

2. Member States shall communicate to the Commission the unit values and other parameters they use in calculating the various cost elements. After consulting the Committee referred to in Article 9c(1), the Commission shall approve these values and parameters in accordance with the procedure referred to in Article 9c(2).

"Article 7a

1. In determining the levels of tolls to be charged, Member States shall take account of the various costs to be covered, **where appropriate**, according to the common methodology set out in Annex III. The estimates of accident costs given in point 2 of the Annex shall be used in cases where a Member State has not assessed these costs in a manner that more appropriately reflects local or regional circumstances.

2. Member States shall communicate to the Commission the unit values and other parameters they use in calculating the various cost elements.

Article 7b

1. Without prejudice to Articles 87 and 88 of the Treaty, and subject to other provisions of Community law, Member States may, on introducing a system of tolls and/or user charges for infrastructure, provide compensation for these charges, in particular by reducing the rates of vehicle taxes, where appropriate, to a level below the minimum rates in Annex I to the Directive.

2. The level of compensation must be proportionate to the level of the tolls and/or user charges paid. Member States may, however, average out the compensation paid to the various categories of vehicles referred to in the Annex.

3. Member States shall include both the system of tolls and/or user charges and the compensation scheme in a common programme. Any compensation scheme must be implemented in the year following the introduction of the new system of tolls and/or user charges."



6) Article 8a and 8b are inserted as follows:

**“Article 8a**

**1. Each Member State shall ensure that an independent infrastructure supervision authority is designated.**

**2. The independent infrastructure supervision authority shall monitor the system of tolls and/or user charges to ensure that it functions in a manner that guarantees transparency and non-discrimination between operators.**

**3. Without prejudice of the autonomy of private concessionaries, the independent infrastructure supervision authority shall verify that the revenue from tolls and user charges are used for sustainable projects in the transport sector.**

**4. The independent infrastructure supervision authority shall promote synergy in financing by coordinating the various transport infrastructure funding resources.**

**5. Member States shall inform the Commission of the designation of the independent infrastructure supervision authority and of its areas of responsibility.”**

**Deleted**

**Justification**

The proposed authority is not necessary and the proposal violates the principle of subsidiarity.

Article 8b

Any discounts or reductions in tolls shall be limited to the actual saving in administrative costs by the infrastructure operator. In setting the level of any discount, no account may be taken of the cost savings already internalised in the tolls levied.”

6) Article 9 is amended as follows:

a) point (c) of paragraph 1 is replaced by the following text:

“(c) insurance taxes.”

b) paragraph 2 is replaced by the following text:

**“2. Without prejudice to Article 7(11), revenue from tolls and/or user charges shall be used for the maintenance of the infrastructure concerned and for the benefit of the transport sector as a whole, taking account of the balanced development of the transport networks.”**

Deleted

### Justification

Harmonisation of the rules for how the revenue shall be used is not necessary for the proper functioning of the internal market or for eliminating distortions to competition between transport undertakings in the Member States. The proposal violates the subsidiarity principle.

7) Articles 9a, 9b and 9c are inserted as follows:

“Article 9a

Member States shall establish appropriate controls and determine the penalty system applicable to infringements of the national provisions adopted under this Directive; they shall take all necessary measures to ensure that they are implemented. The penalties established must be efficient, proportionate and dissuasive.

Article 9b

The Commission shall update the Annexes in the light of technical progress or of inflation, in accordance with the procedure referred to in Article 9c(3).

Article 9b

The Commission shall update the Annexes in the light of technical progress or of inflation, in accordance with the procedure referred to in Article 9c(3). **When doing so the Commission shall aim at developing a set of uniform calculation principles that can be used for the full internalisation of all external costs.**

Article 9c

1. The Commission shall be assisted by the Committee established by Article 9 of Regulation (EEC) No 1108/70, hereinafter referred to as the Committee.
2. Whenever reference is made to this paragraph, Articles 3 and 7 of Council Decision 1999/468/EC shall apply, subject to the provisions of Article 8 thereof.
3. Whenever reference is made to this paragraph, Article 5 and 7 of Council Decision 1999/468/EC shall apply, subject to the provisions of Article 8 thereof.

The period provided for in Article 5(6) of Decision 1999/468/EC shall be [three] months.

4. The Committee shall adopt its rules of procedure.
5. Whenever reference is made to this provision, the Council Decision of 21 March 1962 instituting a procedure for prior examination and consultation in respect of certain laws, regulations and administrative provisions concerning transport proposed in Member States shall apply.”

8) Article 11 is replaced by the following text:

“Article 11

No later than 1 July 2008, the Commission shall present a report to the European Parliament and the Council on the implementation and the effects of this Directive, taking account of developments in technology and of the trend in traffic density.

Member States shall forward the necessary information to the Commission no later than twelve months before this date”.

“Article 11

No later than 1 July 2008, the Commission shall present a report to the European Parliament and the Council on the implementation and the effects of this Directive, taking account of developments in technology and of the trends in traffic density, **traffic accidents and the environmental and health effects of road transport**.

Member States shall forward the necessary information to the Commission no later than twelve months before this date”.

9) The table in Annex II indicating the amount of annual charges is amended as follows:

“Annual charge

	Max. of 3 axles	Min. of 4 axles
EURO 0	1 020	1 648
EURO 1	904	1 488
EURO II and less polluting	797	1 329

10) Annex 0, the text of which appears in Annex I to this directive is inserted.

11) Annex III, the text of which appears in Annex II to this directive is added.

### Article 2

1) Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 1 July 2005. They shall forthwith inform the Commission thereof and communicate a table of equivalence between those provisions and this Directive.

When Member States adopt such measures, they shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such a reference shall be adopted by Member States.

2) Member States shall communicate to the Commission the text of the provisions of domestic law which they adopt in the field covered by this Directive.

### Article 3

This Directive shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

### Article 4

This Directive is addressed to the Member States.

Done at Brussels, [...]

*For the European Parliament*  
The President

*For the Council*  
The President

# ANNEX I

## ANNEX O

### EMISSION LIMITS

#### 1. "EURO 0" vehicle

Mass of carbon monoxide (CO) g/kWh	Mass of hydrocarbons (HC) g/kWh	Mass of nitrogen oxides (NOx) g/kWh
12.3	2.6	15.8

#### 2. "EURO I"/"EURO II" vehicles

	Mass of carbon monoxide g/kWh	Mass of hydrocarbons (HC) g/kWh	Mass of nitrogen oxides (NOx) g/kWh	Mass of particulates (PT) g/kWh
"EURO I" vehicle	4.9	1.23	9.0	0.4 <sup>(1)</sup>
"EURO II" vehicle	4.0	1.1	7.0	0.15

(1) A coefficient of 1.7 is applied to the particulate emission limit value in the case of engines with a power rating of 85 kW or less.

#### 3. "EURO III"/"EURO IV"/"EURO V" vehicles

The specific masses of carbon monoxide, total hydrocarbons, nitrogen oxides and particulates, determined by the ESC test and the exhaust gas opacity, determined by the ERL test, must not exceed the following values<sup>(1)</sup>:

	Mass of carbon monoxides (CO) g/kWh	Mass of hydrocarbons (HC) g/kWh	Mass of nitrogen oxides (NOx) g/kWh	Mass of particulates (PT) g/kWh	Exhaust gas m <sup>-1</sup>
"EURO III" vehicle	2.1	0.66	5.0	0.10 <sup>(2)</sup>	0.8
"EURO IV" vehicle	1.5	0.46	3.5	0.02	0.5
"EURO V" vehicle	1.5	0.46	2.0	0.02	0.5

(1) A test cycle consists of a sequence of test points, each point being defined by a speed and a torque which the engine must respect in steady state (ESC test) or transient operating conditions (ETC and ELR tests).

(2) 0.13 for engines whose unit cylinder capacity is less than 0.7 dm<sup>3</sup> and the nominal speed is in excess of 3 000 min<sup>-1</sup>.

In the case of diesel engines which also undergo the ETC test, and especially in the case of gas emissions, the specific masses of carbon monoxide, non-methane hydrocarbons, methane (where appropriate), nitrogen oxides and particulates (where appropriate) must not exceed the following values:

	Mass of carbon monoxide (CO) g/kWh	Mass of non-methane hydrocarbons (NMHC) g/kWh	Mass of methane (CH <sub>4</sub> ) <sup>(1)</sup> g/kWh	Mass of nitrogen oxides (NOx) g/kWh	Mass of particulates (PT) <sup>(2)</sup> g/kWh
"EURO III" vehicle	5.45	0.78	1.6	5.0	0.16 <sup>(3)</sup>
"EURO IV" vehicle	4.0	0.55	1.1	3.5	0.03
"EURO V" vehicle	4.0	0.55	1.1	2.0	0.03

(1) For engines operating with natural gas only.

(2) Not applicable to gas engines.

(3) 0.21 for engines whose unit cylinder capacity is less than 0.75 dm<sup>3</sup> and normal speed is in excess of 3 000 min<sup>-1</sup>.

## ANNEX II

### ANNEX III

## COST CALCULATION AND ALLOCATION

This Annex stipulates the method for calculating the various constituent elements of tolls. The cost estimates and figures used in point 2 are intended as a guide. However, they must be used if a Member State has not evaluated these costs in a manner that more appropriately reflects local or regional circumstances.

### 1. Infrastructure costs

#### 1.1. Investment costs

Infrastructure investment costs, calculated as the costs of constructing the infrastructure concerned and expressed as an annual figure (including an appropriate rate of interest on the invested capital) throughout the design lifetime of the infrastructure, must be allocated in proportion to the number of annual vehicle-km for each vehicle category.

**Unit investment cost (euros per vehicle-km) =**  
**annual amortisation of investment plus interest on invested capital**  
**? share of commercial traffic**  
**÷ distance in km travelled by the commercial vehicles**

#### 1.2. Infrastructure damage costs

Infrastructure damage costs, calculated as the average (over a maximum of five years) annual expenditure for the maintenance and operation of the infrastructure concerned, must be allocated in proportion to the annual vehicle-km for each vehicle category, weighted by an

equivalence factor. This factor, which is given in point 1.3 of this Annex, expresses the influence of each vehicle category on the maintenance and operating costs of the infrastructure concerned. It is determined on the basis of the vehicles' weight, suspension system and number of axles.

**Unit infrastructure cost (euros per vehicle-km) =**  
**annualised expenditure on maintenance and operation**  
**? share of the traffic by vehicle category weighted by equivalence factors**  
**÷ distance in km travelled by vehicle category**

#### 1.3. Vehicle classes and equivalence factors

The following table gives the equivalence factors:

Vehicle class	Equivalence factors	
	Structural maintenance <sup>1</sup>	Regular maintenance
< 3.5t	0.0001	1
Between 3.5t and 7.5t, Class 0	1.46	3
> 7.5 t, Class I	2.86	3
> 7.5 t, Class II	5.06	3
> 7.5 t, Class III	8.35	3

<sup>1</sup> The vehicle classes correspond to axle weights of 0.5; 5.5; 6.5; 7.5 and 8.5 tonnes respectively.

**Structural maintenance**, such as resurfacing, reinforcement of civil engineering works and renewal of road beds, is carried out occasionally. These costs are proportional to the infrastructure damage caused by the traffic. The damage varies according to the axle weight. According to an accepted rule, this damage is equivalent to the fourth power of the axle weight. Consequently, a doubling of the weight leads to a sixteenfold increase in the damage to the road.

**Regular maintenance**, such as road marking, cleaning of ditches, winter maintenance, etc. is carried out each year. Although this expenditure is not linked to the vehicle weight, it reflects the overall traffic intensity and composition. If the expenditure on structural maintenance cannot be determined from other expenditure in the infrastructure

manager's accounts, the default value for the latter is 20% of total expenditure.

The vehicle classes are defined by the table below.

Vehicles must be classed in subcategories 0, I, II and III according to the damage they cause to the road surface, in ascending order (Class III is thus the category causing most damage to road infrastructure). The damage increases exponentially with the increase in axle weight.

All motor vehicles and vehicle combinations of a maximum permissible laden weight below 7.5 tonnes belong to damage class 0.

### Motor vehicles

Driving axles with air suspension or recognised equivalent <sup>2</sup>		Other driving axle suspension systems		Damage class
Number of axles and maximum permissible gross laden weight (in tonnes)		Number of axles and maximum permissible gross laden weight (in tonnes)		
Not less than	Less than	Not less than	Less than	
<b>Two axles</b>				I
7.5	14	7.5	12	
12	15	12	13	
13	18	13	14	
14		14	15	
15		15	18	
12				
13				
<b>Three axles</b>				II
15	17	15	17	
17	19	17	19	
19	21	19	21	
21	23	21	23	
23	25			
25	26	23	25	
		25	26	
<b>Four axles</b>				I
23	25	23	25	
25	27	25	27	
27	29			II
		27	29	
29	31	29	31	
31	32	31	32	

<sup>2</sup> Suspension recognised as equivalent according to the definition in Annex II to Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorized dimensions in national and international traffic and the maximum authorized weights in international traffic (OJ L 235, 17.9.1996, p. 59).

### Vehicle combinations (articulated vehicles and road trains)

Driving axles with air suspension or recognised equivalent		Other driving axle suspension systems		Damage class
Number of axles and maximum permissible gross laden weight (in tonnes)		Number of axles and maximum permissible gross laden weight (in tonnes)		
Not less than	Less than	Not less than	Less than	
<b>2 + 1 axles</b>				I
7.5	12	7.5	12	
12	14	12	14	
14	16	14	16	
16	18	16	18	
18	20	18	20	
20	22	20	22	
22	23	22	23	
23	25	23	25	
25	28	25	28	
<b>2 + 2 axles</b>				II  III
23	25	23	25	
25	26	25	26	
26	28	26	28	
28	29	28	29	
29	31	29	31	
31	33	31	33	
33	36	33	36	
36	38	36	38	

<b>2 + 3 axles</b>				II III  II III  I II
36	38	36	38	
38	40	38	40	
<b>3 + 2 axles</b>				
36	38	36	38	
38	40	38	40	
40	44	40	44	
<b>3 + 3 axles</b>				
36	38	36	38	
38	40	38	40	
40	44	40	44	

## 2. Accident costs

The unit cost per accident type is adjusted **by the risk involved** per accident type and vehicle type. **The insurance premium per vehicle type is then subtracted.** The final charge element is expressed in euros per kilometre travelled. A distinction must be made between motorways, urban roads and other non-urban roads.

The unit cost per accident type is adjusted, **as a minimum, for the risk inflicted by one mode or category of vehicle on another (the traffic category externality)** per accident type and vehicle type. The final charge element is expressed in euros per kilometre travelled. A distinction should, **when possible,** be made between motorways, urban roads and other non-urban roads.

### Justification

The Commission's proposal does not accurately distinguish between external/internal and marginal/average costs. The marginal risk inflicted by one mode on another is currently the only external accident cost that can be estimated with a scientifically established methodology. The risk, however, is not in any way related to fault. Therefore, subtraction of insurance premiums is not relevant.

In the near-term a distinction between different types of road is not always feasible. Making a geographical variation compulsory should wait until the required technology (GPS or Galileo and a national road data base) is in place.

The following is a simplified formula for taking account of the accident costs **not covered by insurance**:

External unit cost of accidents by infrastructure type (euros per vehicle-km) =  
(**total costs** per accident type for all types of accident ? number of accidents per type involving a heavy goods vehicle - **insurance premiums**)  
÷ vehicle-km

The following is a simplified formula for taking account of the **external** accident costs:

External unit cost of accidents by infrastructure type (euros per vehicle-km) =  
**(the traffic category externality, as defined above,** per accident type for all types of accident ? number of accidents per type involving a heavy goods vehicle)  
÷ vehicle-km

Estimated costs by accident type:

Accident risk	
Fatal	€1 million/case
Serious injury	€135 000/case
Slight injury	€15 000/case



## Part IV: The directive after inclusion of amendments

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### Proposal for a **DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL** amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures

Consolidated version of the articles of the modified Directive

(Directive 1999/62/EC and **an alternative Proposal** for a Directive amending Directive 1999/62/EC)

#### CHAPTER I

##### General provisions

###### Article 1

This Directive applies to vehicle taxes, tolls and user charges imposed on vehicles as defined in Article 2.

This Directive shall not affect vehicles carrying out transport operations exclusively in the non-European territories of the Member States.

It shall also not affect vehicles registered in the Canary Islands, Ceuta and Melilla, the Azores or Madeira and carrying out transport operations exclusively in those territories or between those territories and, respectively, mainland Spain and mainland Portugal.

###### Article 2

For the purposes of this Directive:

- (a) “trans-European network” means the road network defined in Section 2 of Annex I to Decision No 1692/96/EC of the European Parliament and of the Council<sup>3</sup> as illustrated by maps. The maps refer to the corresponding sections mentioned in the operative part and/or in Annex II to this Decision;
- (aa) “main road network” means the trans-European road network and any other road to which traffic may be diverted from the trans-European road network and which is in direct competition with certain parts of that network; it includes the urban transit sections of these roads;”
- (ab) “construction costs” means the costs related to construction, including, where appropriate, the cost of the interest on the capital invested, of new infrastructure

or of infrastructure completed not more than ... [15 years before the entry into force of this Directive];

- (b) «toll» means payment of a specified amount for a vehicle travelling the distance between two points on the infrastructures referred to in Article 7(2); the amount shall be based on the distance travelled and the corresponding costs per kilometre ;
- (c) «user charge» means payment of a specified amount conferring the right for a vehicle to use for a given period the infrastructures referred to in Article 7(2);
- (d) “vehicle” means a motor vehicle or articulated vehicle combination intended or used for the carriage by road of goods and having a maximum permissible laden weight of over 3.5 tonnes;
- (e) vehicle of the «EURO 0», «EURO I»,«EURO II»,«EURO III»,«EURO IV»,«EURO V» category means a vehicle that complies with the emission limits set out in Annex 0 to this Directive.

#### CHAPTER II

##### Vehicle taxation

###### Article 3

1. The vehicle taxes referred to in Article are as follows:

- *Belgium:*  
taxe de circulation sur les véhicules automobiles/ verkeersbelasting op de autovoertuigen,
- *Denmark:*  
vaegtafgift of motorkeretrajer m.v.,
- *Germany:*  
Kraftfahrzeugsteuer,

<sup>3</sup> OJ L 228, 9.9.1996, p. 1.

- *Greece:*  
???
  - *Spain:*
    - (a) impuesto sobre vehiculos de traccion mecanica;
    - (b) impuesto sobre actividades economicas (solely as regards the amount of the levies charged for motor vehicles),
  - *France:*
    - (a) taxe spéciale sur certains véhicules routiers;
    - (b) taxe différentielle sur les véhicules a moteur,
  - *Ireland:*  
vehicle excise duty,
  - *Italy:*
    - (a) tassa automobilistica;
    - (b) addizionale del 5 % sulla tassa automobilistica,
  - *Luxembourg:*  
taxe sur les véhicules automoteurs,
  - *Netherlands:*  
motorrijtuigenbelasting,
  - *Austria:*  
Kraftfahrzeugsteuer,
  - *Portugal:*
    - (a) imposto de camionagem;
    - (b) imposto de circulação,
  - *Finland:*  
varsinainen ajoneuvovero/egentlig fordonsskatt,
  - *Sweden:*  
fordonsskatt,
  - *United Kingdom:*
    - (a) vehicle excise duty;
    - (b) motor vehicles licence.
2. Member States which replace any tax listed in paragraph 1 with another tax of the same kind shall notify the Commission, which shall make the necessary amendments.

#### **Article 4**

Procedures for levying and collecting the taxes referred to in Article 3 shall be determined by each Member State.

#### **Article 5**

As regards vehicles registered in the Member States, the taxes referred to in Article 3 shall be charged solely by the Member State of registration.

#### **Article 6**

1. Whatever the structure of the taxes referred to in Article 3, Member States shall set the rates so as to ensure that the tax rate for each vehicle category or subcategory referred to in Annex I is not lower than the minimum laid down in that Annex.

Until two years after entry into force of the Directive, Greece, Italy, Portugal and Spain shall be authorised to apply rates that are lower than, but not less than, 65 % of the minima laid down in Annex I.

2. Without prejudice to Article 7b, Member States may apply reduced rates or exemptions for:

- (a) vehicles used for national or civil defence purposes, by fire and other emergency services and by the police, and vehicles used for road maintenance;
- (b) vehicles which travel only occasionally on the public roads of the Member State of registration and are used by natural or legal persons whose main occupation is not the carriage of goods, provided that the transport operations carried out by these vehicles do not cause distortions of competition, and subject to the Commission's agreement.

3. (a) The Council, acting unanimously on a proposal from the Commission, may authorise a Member State to maintain further exemptions from or reductions in taxes on vehicles on the grounds of specific policies of a socio-economic nature or linked to that State's infrastructure. Such exemptions or reductions may apply only to vehicles registered in that Member State which carry out transport operations exclusively inside a well-defined part of its territory.

(b) Any Member State wishing to maintain such an exemption or reduction shall inform the Commission thereof and shall also forward to it all necessary information. The Commission shall inform the other Member States of the proposed exemption or reduction within one month.

The Council shall be deemed to have authorised maintenance of the proposed exemption or reduction if, within a period of two months from the date on which the other Member States were informed in accordance with the first subparagraph, neither

the Commission nor any Member State has requested that the matter be examined by the Council.

4. Without prejudice to paragraphs 2 and 3 of this Article and to Article 7b or to Article 6 of Council Directive 92/106/EEC of 7 December 1992 on the establishment of common rules for certain types of combined transport of goods between Member States<sup>4</sup>, Member States may not grant any exemption from, or any reduction in, the taxes referred to in Article 3 which would render the chargeable tax lower than the minimum referred to in paragraph 1 of this Article.

## CHAPTER III

### Tolls and user charges

#### Article 7

1. Member States may maintain or introduce toll charges under the conditions set out in paragraphs 2 to 12. In duly substantiated exceptional cases, Member States may for a limited period of time introduce or maintain user charges in place of toll charges. In that event, the procedure referred to in Article 9c(5) shall apply.
2. Tolls and user charges shall be imposed on the vehicles defined and on the trans-European road network. Member States may extend the imposition of tolls and user charges to other roads of the primary road network. This Directive shall be without prejudice to the right of Member States to apply tolls on roads other than those of the main road network, in compliance with rules of the Treaty and guided by the principles laid down in this Directive.
3. Tolls and user charges may not both be imposed at the same time for the use of a single road section. However, Member States may also impose tolls on networks where user charges are levied for the use of bridges, tunnels, and mountain passes.
4. Tolls and user charges may not discriminate, directly or indirectly, on the grounds of nationality of the haulier,

the country or place of registration of the vehicle, or the origin or destination of the transport operation.

5. Tolls and user charges shall be applied and collected and their payment monitored in such a way as to cause as little hindrance as possible to the free flow of traffic and avoid any mandatory controls or checks at the Community's internal borders. To this end, Member States shall cooperate in establishing methods for enabling hauliers to pay user charges 24 hours a day, at least at the major sales outlets, using all common means of payment, inside and outside the Member States in which they are applied. Member States shall provide adequate facilities at the points of payment for tolls and user charges so as to maintain normal road-safety standards.

5a. Member States using electronic systems to collect tolls and/or user charges shall make available to all vehicles, under reasonable administrative and economic arrangements, the appropriate vehicle on-board units ("OBU"). These arrangements should not, financially or otherwise, e.g. by imposing an additional administrative burden or requirements for other additional equipment, place non-regular users of the road network at a disadvantage.

6. A Member State may provide that vehicles registered in that Member State shall be subject to user charges for the use of the whole road network in its territory.
7. User charges, including administrative costs, for all vehicle categories shall be set by the Member State concerned at a level which is not higher than the maximum rates laid down in Annex II.  
The maximum rates shall be reviewed every two years from ...[*date of entry into force of this Directive*]. When necessary, the Commission shall adapt the rates, in conformity with the procedure referred to in Article 9c(2).
8. User-charge rates shall be in proportion to the duration of the use made of the infrastructure.  
A Member State may apply only annual rates for vehicles registered in that State.

<sup>4</sup> OJ L 368, 17.12.1992, p. 38.

9. Member States may choose between a toll system where the setting of charges are based on the social marginal cost and one where the charges reflect the weighted average tolls shall be related to the costs of constructing, operating, maintaining and developing the infrastructure network concerned, including any infrastructure costs designed to reduce nuisance related to noise and costs of actual payments made by infrastructure operator corresponding to objective environmental elements such as for example soil contamination, and to the direct or indirect costs of accidents which, not being covered by an insurance system, are borne by society.

The weighted average tolls shall be calculated without prejudice, as regards taking into account construction costs, to rights relating to concession contracts existing at ... [date of entry into force of this directive].

10. Without prejudice to the weighted average tolls referred to in paragraph 9 and in conformity with the theory of social marginal pricing, Member States may vary the toll rates according to:

- (a) vehicle type, based on its road damage class in conformity with Annex III and its EURO emission class in accordance with Annex 0
- (b) vehicle type, based on its EURO emission class in accordance with Annex 0
- (c) time of day and level of congestion on the road concerned;
- (d) the particular road in the network, depending on the environmental sensitivity of the area, the population exposed to air pollution and noise or the accident risk.

Any variation in tolls charged with respect to different types of vehicle, time of day and congestion level and the particular route taken in the road network shall be proportionate to the objective pursued.

In cases concerning infrastructure in particularly sensitive regions and conurbations, and after consulting the Commission in conformity with the procedure referred to in Article 9c(5), a mark-up may be added to the tolls to allow for cross-financing the investment costs of other transport infrastructures in the same corridor and in the same transport zone. The

application of this provision shall be subject to the presentation of financial plans for the infrastructure concerned and a cost/benefit analysis for the new infrastructure project. Application of this provision to new transfrontier projects shall be subject to the agreement of the Member States concerned.

Should the Commission consider that the planned mark-up does not meet the conditions set in this paragraph, it shall seek the opinion of the Committee referred to in Article 9c(1). It may reject the plans for charges submitted by the Member State concerned in conformity with the procedure referred to in Article 9c(2).

When the Commission informs the Member State concerned that it intends to seek the opinion of the Committee, the deadline of 30 days mentioned in Article 2 of the Council Decision referred to in Article 9c(5) shall be suspended.

11. Each Member State shall ensure that the emission classification and the road damage classification of vehicles registered on their territory can easily be identified.

Where a driver is unable to produce the necessary documents in the event of a check, Member States may apply tolls as for the most polluting and damaging vehicle category, i.e. EURO 0 and damage class III.

#### Article 7a

1. In determining the levels of tolls to be charged, Member States shall take account of the various costs to be covered, where appropriate, according to the common methodology set out in Annex III. The estimates of accident costs given in point 2 of the Annex shall be used in cases where a Member State has not assessed these costs in a manner that more appropriately reflects local or regional circumstances.
2. Member States shall communicate to the Commission the unit values and other parameters they use in calculating the various cost elements. After consulting the

Committee referred to in Article 9c(1), the Commission shall approve these values and parameters in accordance with the procedure referred to in Article 9c(2).

#### **Article 7b**

1. Without prejudice to Articles 87 and 88 of the Treaty, and subject to other provisions of Community law, Member States may, on introducing a system of tolls and/or user charges for infrastructure, provide compensation for these charges, in particular by reducing the rates of vehicle taxes, where appropriate, to a level below the minimum rates in Annex I to the Directive.
2. The level of compensation must be proportionate to the level of the tolls and/or user charges paid. Member States may, however, average out the compensation paid to the various categories of vehicles referred to in the Annex.
3. Member States shall include both the system of tolls and/or user charges and the compensation scheme in a common programme. Any compensation scheme must be implemented in the year following the introduction of the new system of tolls and/or user charges.

#### **Article 8**

1. Two or more Member States may co-operate in introducing a common system for user charges applicable to their territories as a whole. In that case, those Member States shall ensure that the Commission is closely involved therein and in the system's subsequent operation and possible amendment.
2. A common system shall be subject to the following conditions in addition to those in Article 7:
  - (a) the common user-charge rates shall be set by the participating Member States at levels that are not higher than the maximum rates referred to in Article 7(7);
  - (b) payment of the common user charge shall give access to the network as defined by the participating Member States in accordance with Article 7(2);
  - (c) other Member States may join the common system;

- (d) a scale shall be worked out by the participating Member States whereby each of them shall receive a fair share of the revenues accruing from the user charge.

#### **Article 8a**

Any discounts or reductions in tolls shall be limited to the actual saving in administrative costs by the infrastructure operator. In setting the level of any discount, no account may be taken of the cost savings already internalised in the tolls levied.

## **CHAPTER IV**

### **Final provisions**

#### **Article 9**

1. This Directive shall not prevent the application by Member States of:
  - (a) specific taxes or charges:
    - levied upon registration of the vehicle, or
    - imposed on vehicles or loads of abnormal weights or dimensions;
  - (b) parking fees and specific urban traffic charges;
  - (c) insurance taxes.

#### **Article 9a**

Member States shall establish appropriate controls and determine the penalty system applicable to infringements of the national provisions adopted under this Directive; they shall take all necessary measures to ensure that they are implemented. The penalties established must be efficient, proportionate and dissuasive.

#### **Article 9b**

The Commission shall update the Annexes in the light of technical progress or of inflation, in accordance with the procedure referred to in Article 9c(3). When doing so the Commission shall aim at developing a set of uniform calculation principles that can be used for the full internalisation of all external costs.

#### Article 9c

1. The Commission shall be assisted by the Committee established by Article 9 of Regulation (EEC) No 1108/70<sup>5</sup>, hereinafter referred to as the Committee.
2. Whenever reference is made to this paragraph, Articles 3 and 7 of Council Decision 1999/468/EC<sup>6</sup> shall apply, subject to the provisions of Article 8 thereof.
3. Whenever reference is made to this paragraph, Article 5 and 7 of Council Decision 1999/468/EC shall apply, subject to the provisions of Article 8 thereof. The period provided for in Article 5(6) of Decision 1999/468/EC shall be [*three*] months.
4. The Committee shall adopt its rules of procedure.
5. Whenever reference is made to this provision, the Council Decision of 21 March 1962 instituting a procedure for prior examination and consultation in respect of certain laws, regulations and administrative provisions concerning transport proposed in Member States<sup>7</sup> shall apply.

#### Article 10

1. For the purpose of this Directive, the rates of exchange between the euro and the national currencies of the Member States which have not adopted the euro shall be those in force on the first working day of October and published in the *Official Journal of the European Communities*; they shall have effect from 1 January of the following calendar year.
2. Member States which have not adopted the euro may maintain the amounts in force at the time of the annual adjustment made pursuant to paragraph 1 if the conversion of the amounts expressed in euro would

result in a change of less than 5 % when expressed in national currencies.

#### Article 11

No later than 1 July 2008, the Commission shall present a report to the European Parliament and the Council on the implementation and the effects of this Directive, taking account of developments in technology and of the trends in traffic density, traffic accidents and the environmental and health effects of road transport.

Member States shall forward the necessary information to the Commission no later than twelve months before this date.

#### Article 2 of the amending proposal

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 1 July 2005. They shall forthwith inform the Commission thereof and communicate a table of equivalence between those provisions and this Directive.

When Member States adopt such measures, they shall contain a reference to this Directive or shall be accompanied by such reference at the time of their official publication. The procedure for such a reference shall be adopted by Member States.

Member States shall communicate to the Commission the text of the provisions of domestic law which they adopt in the field covered by this Directive.

#### Article 3 of the amending proposal

This Directive shall enter into force on the day following that of its publication in the *Official Journal of the European Union*.

#### Article 4 of the amending proposal

This Directive is addressed to the Member States.

Done at Brussels, [...]

*For the European Parliament*  
The President

*For the Council*  
The President

<sup>5</sup> OJ L 130, 15.6.1970, p.4. | <sup>6</sup> OJ L 184, 17.7.1999, p.23.

<sup>7</sup> OJ L 23, 3.4.1962, p. 720. Decision amended by Council Decision 73/402/EEC of 22 November 1973 (OJ L 347, 17.12.1973, p. 48).

## ANNEX O

### EMISSION LIMITS

#### 1. "EURO 0" vehicle

Mass of carbon monoxide (CO) g/kWh	Mass of hydrocarbons (HC) g/kWh	Mass of nitrogen oxides (NOx) g/kWh
12.3	2.6	15.8

#### 2. "EURO I"/"EURO II" vehicles

	Mass of carbon monoxide g/kWh	Mass of hydrocarbons (HC) g/kWh	Mass of nitrogen oxides (NOx) g/kWh	Mass of particulates (PT) g/kWh
"EURO I" vehicle	4.9	1.23	9.0	0.4 <sup>(1)</sup>
"EURO II" vehicle	4.0	1.1	7.0	0.15

(1) A coefficient of 1.7 is applied to the particulate emission limit value in the case of engines with a power rating of 85 kW or less.

#### 3. "EURO III"/"EURO IV"/"EURO V" vehicles

The specific masses of carbon monoxide, total hydrocarbons, nitrogen oxides and particulates, determined by the ESC test and the exhaust gas opacity, determined by the ERL test, must not exceed the following values<sup>(1)</sup>:

	Mass of carbon monoxides (CO) g/kWh	Mass of hydrocarbons (HC) g/kWh	Mass of nitrogen oxides (NOx) g/kWh	Mass of particulates (PT) g/kWh	Exhaust gas m <sup>-1</sup>
"EURO III" vehicle	2.1	0.66	5.0	0.10 <sup>(2)</sup>	0.8
"EURO IV" vehicle	1.5	0.46	3.5	0.02	0.5
"EURO V" vehicle	1.5	0.46	2.0	0.02	0.5

(1) A test cycle consists of a sequence of test points, each point being defined by a speed and a torque which the engine must respect in steady state (ESC test) or transient operating conditions (ETC and ELR tests).

(2) 0.13 for engines whose unit cylinder capacity is less than 0.7 dm<sup>3</sup> and the nominal speed is in excess of 3 000 min<sup>-1</sup>.

In the case of diesel engines which also undergo the ETC test, and especially in the case of gas emissions, the specific masses of carbon monoxide, non-methane hydrocarbons, methane (where appropriate), nitrogen oxides and particulates (where appropriate) must not exceed the following values:

	Mass of carbon monoxide (CO) g/kWh	Mass of non-methane hydrocarbons (NMHC) g/kWh	Mass of methane (CH <sub>4</sub> ) <sup>(1)</sup> g/kWh	Mass of nitrogen oxides (NOx) g/kWh	Mass of particulates (PT) <sup>(2)</sup> g/kWh
"EURO III" vehicle	5.45	0.78	1.6	5.0	0.16 <sup>(3)</sup>
"EURO IV" vehicle	4.0	0.55	1.1	3.5	0.03
"EURO V" vehicle	4.0	0.55	1.1	2.0	0.03

(1) For engines operating with natural gas only.

(2) Not applicable to gas engines.

(3) 0.21 for engines whose unit cylinder capacity is less than 0.75 dm<sup>3</sup> and normal speed is in excess of 3 000 min<sup>-1</sup>.

## ANNEX I

### MINIMUM RATES OF TAX TO BE APPLIED TO VEHICLES

#### Motor vehicles

Number of axles and maximum permissible gross laden weight (in tonnes)		Minimum rate of tax (in euro/year)	
Not less than	Less than	Driving axle(s) with air suspension or recognised equivalent <sup>8</sup>	Other driving axle(s) suspension systems
<b>Two axles</b>			
12	13	0	31
13	14	31	86
14	15	86	121
15	18	121	274
<b>Three axles</b>			
15	17	31	54
17	19	54	111
19	21	111	144
21	23	144	222
23	25	222	345
25	26	222	345
<b>Four axles</b>			
23	25	144	146
25	27	146	228
27	29	228	362
29	31	362	537
31	32	362	537

<sup>8</sup> Suspension recognised as equivalent in accordance with the definition in Annexe II to Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (OJ L 235, 17.9.1996, p. 59).

<sup>9</sup> Suspension recognised as equivalent in accordance with the definition in Annexe II to Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorised dimensions in national and international traffic and the maximum authorised weights in international traffic (OJ L 235, 17.9.1996, p. 59).



## VEHICLE COMBINATIONS (ARTICULATED VEHICLES AND ROAD TRAINS)

Number of axles and maximum permissible gross laden weight (in tonnes)		Minimum rate of tax (in euro/year)	
Not less than	Less than	Driving axle(s) with air suspension or recognised equivalent <sup>9</sup>	Other driving axle(s) suspension systems
<b>2 + 1 axles</b>			
12	14	0	0
14	16	0	0
16	18	0	14
18	20	14	32
20	22	32	75
22	23	75	97
23	25	97	175
25	28	175	307
<b>2 + 2 axles</b>			
23	25	30	70
25	26	70	115
26	28	115	169
28	29	169	204
29	31	204	335
31	33	335	465
33	36	465	706
36	38	465	706
<b>2 + 3 axles</b>			
36	38	370	515
38	40	515	700
<b>3 + 2 axles</b>			
36	38	327	454
38	40	454	628
40	44	628	929
<b>3 + 3 axles</b>			
36	38	186	225
38	40	225	336
40	44	336	535

## ANNEX II

### MAXIMUM AMOUNTS IN EURO OF USER CHARGES, INCLUDING ADMINISTRATIVE COSTS, REFERRED TO IN ARTICLE 7(7)

#### Annual

	maximum three axles	minimum four axles
NON-EURO	1020	1648
EURO I	904	1488
EURO II and cleaner	797	1329

#### Monthly and weekly

Maximum monthly and weekly rates are in proportion to the duration of the use made of the infrastructure.

#### Daily

The daily user charge is equal for all vehicle categories and amounts to EUR 8.

## ANNEX III

### COST CALCULATION AND ALLOCATION

This Annex stipulates the method for calculating the various constituent elements of tolls. The cost estimates and figures used in point 2 are intended as a guide. However, they must be used if a Member State has not evaluated these costs in a manner that more appropriately reflects local or regional circumstances.

#### 1. Infrastructure costs

##### 1.1. Investment costs

Infrastructure investment costs, calculated as the costs of constructing the infrastructure concerned and expressed as an annual figure (including an appropriate rate of interest on the invested capital) throughout the design lifetime of the infrastructure, must be allocated in proportion to the number of annual vehicle-km for each vehicle category.

**Unit investment cost (euros per vehicle-km)=**  
**annual amortisation of investment plus interest on invested capital**  
**? share of commercial traffic**  
**÷ distance in km travelled by the commercial vehicles**

##### 1.2. Infrastructure damage costs

Infrastructure damage costs, calculated as the average (over a maximum of five years) annual expenditure for the maintenance and operation of the infrastructure concerned, must be allocated in proportion to the annual vehicle-km for each vehicle category, weighted by an

equivalence factor. This factor, which is given in point 1.3 of this Annex, expresses the influence of each vehicle category on the maintenance and operating costs of the infrastructure concerned. It is determined on the basis of the vehicles' weight, suspension system and number of axles.

**Unit infrastructure cost (euros per vehicle-km) =**  
**annualised expenditure on maintenance and operation**  
**? share of the traffic by vehicle category weighted by equivalence factors**  
**÷ distance in km travelled by vehicle category**

##### 1.3. Vehicle classes and equivalence factors

The following table gives the equivalence factors:

Vehicle class	Equivalence factors	
	Structural maintenance <sup>10</sup>	Regular maintenance
< 3.5t	0.0001	1
Between 3.5t and 7.5t, Class 0	1.46	3
> 7.5 t, Class I	2.86	3
> 7.5 t, Class II	5.06	3
> 7.5 t, Class III	8.35	3

<sup>10</sup> The vehicle classes correspond to axle weights of 0.5; 5.5; 6.5; 7.5 and 8.5 tonnes respectively.

**Structural maintenance**, such as resurfacing, reinforcement of civil engineering works and renewal of road beds, is carried out occasionally. These costs are proportional to the infrastructure damage caused by the traffic. The damage varies according to the axle weight. According to an accepted rule, this damage is equivalent to the fourth power of the axle weight. Consequently, a doubling of the weight leads to a sixteenfold increase in the damage to the road.

**Regular maintenance**, such as road marking, cleaning of ditches, winter maintenance, etc. is carried out each year. Although this expenditure is not linked to the vehicle weight, it reflects the overall traffic intensity and composition. If the expenditure on structural maintenance cannot be determined from other expenditure in the infrastructure

manager's accounts, the default value for the latter is 20% of total expenditure.

The vehicle classes are defined by the table below.

Vehicles must be classed in subcategories 0, I, II and III according to the damage they cause to the road surface, in ascending order (Class III is thus the category causing most damage to road infrastructure). The damage increases exponentially with the increase in axle weight.

All motor vehicles and vehicle combinations of a maximum permissible laden weight below 7.5 tonnes belong to damage class 0.

### Motor vehicles

Driving axles with air suspension or recognised equivalent <sup>11</sup>		Other driving axle suspension systems		Damage class
Number of axles and maximum permissible gross laden weight (in tonnes)		Number of axles and maximum permissible gross laden weight (in tonnes)		
Not less than	Less than	Not less than	Less than	
<b>Two axles</b>				I
7.5	14	7.5	12	
12	15	12	13	
13	18	13	14	
14		14	15	
15		15	18	
12				
13				
<b>Three axles</b>				II
15	17	15	17	
17	19	17	19	
19	21	19	21	
21	23	21	23	
23	25			
25	26	23	25	
		25	26	
<b>Four axles</b>				I
23	25	23	25	
25	27	25	27	
27	29			II
		27	29	
29	31	29	31	
31	32	31	32	

<sup>11</sup> Suspension recognised as equivalent according to the definition in Annex II to Council Directive 96/53/EC of 25 July 1996 laying down for certain road vehicles circulating within the Community the maximum authorized dimensions in national and international traffic and the maximum authorized weights in international traffic (OJ L 235, 17.9.1996, p. 59).

**Vehicle combinations (articulated vehicles and road trains)**

Driving axles with air suspension or recognised equivalent		Other driving axle suspension systems		Damage class
Number of axles and maximum permissible gross laden weight (in tonnes)		Number of axles and maximum permissible gross laden weight (in tonnes)		
Not less than	Less than	Not less than	Less than	
<b>2 + 1 axles</b>				I
7.5	12	7.5	12	
12	14	12	14	
14	16	14	16	
16	18	16	18	
18	20	18	20	
20	22	20	22	
22	23	22	23	
23	25	23	25	
25	28	25	28	
<b>2 + 2 axles</b>				II  III
23	25	23	25	
25	26	25	26	
26	28	26	28	
28	29	28	29	
29	31	29	31	
31	33	31	33	
33	36	33	36	
36	38	36	38	

<b>2 + 3 axles</b>				II III
36	38	36	38	
38	40	38	40	
<b>3 + 2 axles</b>				
36	38	36	38	
38	40	38	40	
40	44	40	44	
<b>3 + 3 axles</b>				I II
36	38	36	38	
38	40	38	40	
40	44	40	44	

## 2. Accident costs

The unit cost per accident type is adjusted **by the risk involved** per accident type and vehicle type. **The insurance premium per vehicle type is then subtracted.** The final charge element is expressed in euros per kilometre travelled. A distinction must be made between motorways, urban roads and other non-urban roads.

In the near-term a distinction between different types of road is not always feasible. Making a geographical variation compulsory should wait until the required technology (GPS or Galileo and a national road data base) is in place.

The following is a simplified formula for taking account of the accident costs **not covered by insurance**:

External unit cost of accidents by infrastructure type (euros per vehicle-km) =  
(**total costs** per accident type for all types of accident  
? number of accidents per type involving a heavy goods  
vehicle - **insurance premiums**)  
÷ vehicle-km

Estimated costs by accident type:

Accident risk	
Fatal	€1 million/case
Serious injury	€135 000/case
Slight injury	€15 000/case

"1. Member States may maintain or introduce **toll** charges under the conditions set out in paragraphs 2 to 12.

**In duly substantiated exceptional cases, Member States may for a limited period of time introduce or maintain user charges in place of toll charges. In that event, the procedure referred to in Article 9c(5) shall apply.**

2. Tolls and user charges shall be imposed on the vehicles defined and on the trans-European road network. Member States may extend the imposition of tolls and user charges to other roads of the primary road network.

This Directive shall be without prejudice to the right of Member States to apply tolls on roads other than those of the main road network, in compliance with rules of the Treaty **and guided by the principles laid down in this Directive.**

In July 2003 the European Commission released its proposal for amending Directive 1999/62/EC on the charging of heavy goods vehicles, commonly referred to as the 'Eurovignette Directive'. This revision offers a unique opportunity to ensure that road freight pays its true costs; as it stands, the European Commission proposal for the revision fails to provide this.

T&E has commissioned this thorough and far-reaching report by Per Kågeson, a leading economist and specialist on road pricing, which sets out a series of amendments to the current proposal. Each justification is fully backed up from both an economic and environmental point of view, and at the same time ensures that EU principles of subsidiarity can be met.

This publication is essential reading for everyone involved in the planned revision to the Eurovignette proposal. It guides policy-makers through the legislation, providing an expert perspective on how the planned revision can be made more rigorous, ensuring that its true purpose is fulfilled.

T&E is Europe's primary NGO campaigning on a Europe wide level for an environmentally responsible approach to transport. Contact: [markus.liechti@t-e.eu](mailto:markus.liechti@t-e.eu)

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