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Proposal for a

**REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**on type-approval of motor vehicles and engines with respect to emissions from heavy duty vehicles (Euro VI) and on access to vehicle repair and maintenance information**

(presented by the Commission)

{SEC(2007)1718}

{SEC(2007)1720}

## EXPLANATORY MEMORANDUM

### 1) CONTEXT OF THE PROPOSAL

#### **Grounds for and objectives of the proposal**

The objective of the proposal is to lay down harmonised rules on the construction of motor vehicles with a view to ensuring the functioning of the internal market while at the same time providing for a high level of environmental protection regarding atmospheric emissions.

The proper functioning of the single market in the European Union requires common standards limiting the emission of atmospheric pollutants from motor vehicles. Action at Community level prevents varying product standards emerging across Member States which results in fragmentation of the internal market and imposition of unnecessary barriers to intra-Community trade.

Member States and their citizens are concerned about the risks to human health and the environment that results from air pollution. Although air quality has improved over the past decade, there are still significant air quality problems throughout the European Union, especially in urban areas and in densely populated regions.

#### **General context**

Euro IV emission limits for trucks and buses are applicable as from 9 November 2006 and Euro V emission limits will apply from 1 October 2008 for new type-approvals<sup>1</sup> in both cases.

With no change in the policy of reducing emission levels for heavy duty motor vehicles, there is a high risk that the functioning of the internal market would be impaired with Member States seeking to take unilateral action. Poor air quality will also remain an issue in the European Union with atmospheric pollution continuing to have a detrimental impact on human health.

#### **Existing provisions in the area of the proposal**

The requirements for emissions from heavy duty vehicles and engines are presently governed by Directive 2005/55/EC<sup>1</sup> as implemented by Directive 2005/78/EC<sup>2</sup>.

#### **Consistency with the other policies and objectives of the Union**

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<sup>1</sup> Directive 2005/55/EC of the European Parliament and of the Council of 28 September 2005 on the approximation of the laws of the Member States relating to the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive-ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles (OJ L 275, 20.10.2005, p. 1).

<sup>2</sup> Commission Directive 2005/78/EC of 14 November 2005 implementing Directive 2005/55/EC of the European Parliament and of the Council on the approximation of the laws of the Member States relating to the measures to be taken against the emission of gaseous and particulate pollutants from compression-ignition engines for use in vehicles, and the emission of gaseous pollutants from positive ignition engines fuelled with natural gas or liquefied petroleum gas for use in vehicles and amending Annexes I, II, III, IV and VI thereto (OJ L 313, 29.11.2005, p. 1).

The proposal has been developed in the context of the "Clean Air For Europe" (CAFE) programme that provided the technical basis for the preparation of the Thematic Strategy on Air Pollution<sup>3</sup>. CAFE assessed levels of emissions, current and future air quality and the costs and benefits of further measures to improve air quality. On this basis, the Commission has identified measures which are required in order to attain the necessary air quality levels. Euro VI is one among several such measures that are important to reduce emissions of ozone precursors (such as nitrogen oxides-NO<sub>x</sub> and hydrocarbons-HC) and particulate matter.

Moreover, the proposal is fully in line with the aims of the European Union's Sustainable Development Strategy and contributes significantly to the objectives of the Lisbon strategy.

## **2) CONSULTATION OF INTERESTED PARTIES AND IMPACT ASSESSMENT**

### **Collection and use of expertise**

#### *Scientific/expertise domains concerned*

The proposal required analysis of vehicle technologies to be used to reduce emissions and the associated costs of achieving the various scenarios for Euro VI emission limit values.

#### *Methodology used*

In the year 2004, the Commission services sent out a questionnaire to stakeholders on new Euro VI emission limits for heavy duty vehicles. The questionnaire developed a number of scenarios for new limit values and sought data on the technology that would be required to meet those values and the associated costs. An expert panel of independent consultants was engaged to review responses to the questionnaire. The aim was to assess and validate the stakeholder responses and reach a common position on the technology required and cost for each scenario. This information was used to model the impacts of a number of the emission limit scenarios.

#### *Main organisations/experts consulted*

Data were collected from a range of stakeholders in the automotive area and collated by a group of consultants led by TNO in The Netherlands.

#### *Summary of advice received and used*

The panel of consultants summarised the cost data provided by stakeholders. The Commission used the panel's report as an input to the analysis of the various emission limit value scenarios. The preferred limit values have been selected on the basis of their technical feasibility and cost-effectiveness.

#### *Means used to make the expert advice publicly available*

The report of the expert panel is available on the DG Enterprise and Industry web site<sup>4</sup>.

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<sup>3</sup> COM (2005) 446 final, 21.9.2005.

<sup>4</sup> [http://europa.eu.int/comm/enterprise/automotive/pagesbackground/pollutant\\_emission/index.htm](http://europa.eu.int/comm/enterprise/automotive/pagesbackground/pollutant_emission/index.htm)

## Impact assessment

An Impact Assessment is currently under development, in which five policy options are being considered:

- (1) *'No policy change' approach*: the emission limit values of Euro V (Directive 2005/55/EC as amended) remain in force for heavy duty vehicles.

With no change in the policy of reducing emission levels for motor vehicles, there is a high risk that the functioning of the internal market would be impaired. It is likely that in the absence of stricter emission standards at European level, Member States would start legislating themselves or would start using other measures, such as bans on certain types of vehicle entering cities or creation of low emission zones.

Poor air quality will remain an issue in the European Union as atmospheric pollution will continue to have a detrimental impact on human health. The CAFE Programme showed that despite the improvements in pollutant emissions, health impacts from air pollution across the EU are still projected to be considerable in 2020.

Therefore, this policy option is not considered to be viable.

- (2) *Regulatory approach at the European level*: revising the existing Euro V legislation through setting new Euro VI emission limit values at European Union level.

In comparison with the no policy change scenario, the regulatory option will have the clear benefits of ensuring the proper functioning of the internal market and improving air quality. This will improve public health and, thus, will reduce healthcare costs.

The indirect impacts of the regulatory option might be positive in terms of the international competitiveness of EU industry, especially in markets with strict environmental regulation in force.

Within this approach, the possibility of applying the Euro VI stage in one single step or in two steps has been considered but according to the vast majority support expressed in the replies to the public consultation, it has been decided to introduce the Euro VI stage in one single step.

Thus, the option of regulatory approach is pursued in the proposal.

- (3) *Regulation in Member States*: Member States develop their own emissions standards and/or impose other policy measures (e.g. temporary driving restrictions on vehicles not complying with more ambitious standards)

This approach would have detrimental effects on the functioning of the internal market, for example regarding the market of commercial vehicles, but also in the free movement of goods transported by these vehicles. Therefore this approach has been rejected.

- (4) *Fiscal incentives by Member States*: Member States introduce on a voluntary basis fiscal incentives for vehicles that fulfil stricter emission limit values than Euro V.

The sustainability of such measures can be questioned on the long term. Therefore, this policy could lead to considerable uncertainty for manufacturers as to the demand for cleaner vehicles.

In addition, different types of incentive regimes in neighbouring countries could result in unpredictable cross border effects, both in terms of vehicle purchasing patterns and air pollution impacts. The continued existence of the single market for vehicles could therefore be put at risk.

Thus, this option does not ensure that the policy objectives are attained and could even have a negative impact on the functioning of the internal market through reducing the certainty as to the demand for specific types of vehicles.

Therefore, this is not the approach to be followed.

- (5) *Non-regulatory approach*: self-regulation through negotiated commitments with the automotive industry to reduce the emissions from new vehicles.

It is not clear that a self commitment provides an adequate guarantee that a specific emission level will be reached or that there will be appropriate sanctions available if the self-commitment were to be breached. In addition, it is not apparent that the use of a voluntary approach would offer any additional benefits to the industry, governments or the general public.

The Euro series of emissions regulations are widely used in many emerging markets. Therefore, developments in the regulatory system for emissions established in the EU have important implications around the world. A move away from a regulatory approach to a voluntary approach would therefore be disruptive to the process of global harmonisation.

The option of non-regulatory approach will therefore not be considered further.

### **3) LEGAL ELEMENTS OF THE PROPOSAL**

#### **Summary of the proposed action**

The main aspect of this Regulation is that it requires a further tightening of vehicle emission limits for particulate matter (PM) and nitrogen oxides (NO<sub>x</sub>).

A reduction of 66% in the mass of particulate emissions from compression-ignition engined vehicles will be required. While this lower emission limit does not prescribe a particular technology, it will de facto require the introduction of diesel particulate filters (DPFs).

The emission limit selected for particulates can be met by open or closed filters. Close filters have the benefit of reducing the ultra fine particles that are considered most harmful to health. To prevent the possibility that in the future open filters are developed that meet the new particulate mass limit but enable a high number of ultra fine particles to pass, it is planned to introduce at a later stage a new standard limiting the number of particles that can be emitted. At the moment, it is not appropriate to define a number standard as research is being conducted at the UN/ECE under the Particulate Measurement Programme (PMP). The UN/ECE working party is still examining this issue. Once the results of the PMP programme are available, a number standard should be implemented.

For compression-ignition engines, a reduction of 80% in NO<sub>x</sub> is planned. To comply with this emission limit, internal engine measures (e.g. Exhaust Gas Recirculation - EGR) and after-treatment devices (e.g. Selective Catalytic Reduction - SCR) will be needed at the current state of the art. The proposal also includes reductions in emissions from positive-ignition engines.

The proposal includes a requirement that vehicle on-board diagnostic (OBD) information and vehicle repair and maintenance information be made available through websites in the standardised format developed by a technical committee of stakeholders (the so-called 'OASIS format').

Introduction of World-Wide Harmonised requirements is an important element in order to reduce the testing costs of the automotive industry and will favour the competitiveness of the European engine and vehicle manufacturers. In this context, this proposal is introducing requirements, developed in the framework of the UN-ECE WP.29 – World Forum for Harmonisation of Vehicle Regulations – relating to:

1. Use of world-wide harmonised steady state (WHSC) and transient (WHTC) driving cycles for the evaluation of pollutant emissions.
2. Emissions testing and measurement methodology.
3. World-Wide Harmonised on-board diagnostic (WWH-OBD) systems

The proposal is also introducing requirements for the type-approval of exhaust after-treatment components such as catalysts and diesel particulate filters (DPFs).

### **Legal basis**

The legal basis of the proposal is Article 95 of the Treaty.

### **Subsidiarity principle**

The subsidiarity principle applies insofar as the proposal does not fall under the exclusive competence of the Community.

The objectives of the proposal cannot be sufficiently achieved by actions of Member States, because of the need to avoid the emergence of barriers to the single market and because of the trans-boundary implications of air pollution.

Atmospheric modelling shows that the pollution emitted in one Member State contributes to measured pollution in other Member States so, in order to solve the problem of air pollution, concerted action at the EU scale is required

Community action will better achieve the objectives of the proposal because it will avoid fragmentation of the internal market which would otherwise arise. By setting uniform standards for the level of pollutant emissions from motor vehicles, the proposal ensures better air quality in the European Union and addresses the problem of trans-boundary air pollution.

The proposal therefore complies with the subsidiarity principle.

## **Proportionality principle**

The proposal complies with the proportionality principle because it does not go beyond what is necessary in order to achieve the objectives of ensuring the proper functioning of the internal market while at the same time providing for a high level of environmental protection.

The cost-benefit analysis that is being carried out in the framework of the impact assessment of the proposal demonstrates that the selected emission limit values provide benefits for the society as a whole.

## **Choice of instruments**

The proposed instrument is a Regulation. Other means would not be adequate for the following reason:

- The use of a Regulation is considered to be appropriate in providing the required assurance for compliance whilst not requiring the transposition into Member States legislation.

The proposal uses the "split-level approach" that has been used in other pieces of legislation, e.g. in the case of the previous Directive for heavy duty vehicle emissions<sup>5</sup>. This approach foresees that the proposal and adoption of legislation will be made according to two different, but parallel, routes:

- first, the main provisions will be laid down by the European Parliament and the Council in a Regulation based on Article 95 of the EC Treaty through the co-decision procedure (the 'co-decision proposal');
- secondly, the technical specifications implementing the main provisions will be laid down in a Regulation adopted by the Commission with the assistance of a regulatory committee (the 'comitology proposal').

## **4) BUDGETARY IMPLICATION**

The proposal has no implications for the Community budget.

## **5) ADDITIONAL INFORMATION**

### **Simulation, pilot phase and transitory period**

There are general transitory periods in the proposal in order to allow sufficient lead times for vehicle manufacturers.

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<sup>5</sup> Directive 2005/55/EC (OJ L 275, 20.10.2005, p.1) as implemented by Directive 2005/78/EC (OJ L 313, 29.11.2005, p.1)

## **Simplification**

The proposal provides for simplification of legislation.

The Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions having the title “updating and simplifying the Community acquis”<sup>6</sup> identifies, as a priority area for simplification of Community legislation, the type-approval system for motor vehicles. Directives 2005/55/EC, 2005/78/EC and 2006/51/EC will be repealed. In addition, Directive 80/1269/EEC<sup>7</sup>, and its amendments, relating to the engine power of motor vehicles will also be repealed and its technical requirements will be included in this proposal.

The proposal provides for simplification of administrative procedures for public authorities (EU or national). The proposal is included in the Commission's rolling programme for up-date and simplification of the acquis communautaire and its Legislative Work Programme under the reference 2007/ENTR/009.

## **Repeal of existing legislation**

The adoption of the proposal will lead to the repeal of existing legislation. This is detailed in Article 15 of the proposal.

## **European Economic Area**

The proposed act concerns an EEA matter and should therefore extend to the European Economic Area.

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<sup>6</sup> COM (2003) 71 final, 11.2.2003.

<sup>7</sup> Council Directive 80/1269/EEC of 16 December 1980 on the approximation of the laws of the Member States relating to the engine power of motor vehicles (OJ L 375, 31.12.1980, p. 46).



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**(Text with EEA relevance)**

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission<sup>8</sup>,

Having regard to the opinion of the European Economic and Social Committee<sup>9</sup>,

Acting in accordance with the procedure laid down in Article 251 of the Treaty<sup>10</sup>,

Whereas:

- (1) The internal market comprises an area without internal frontiers in which the free movement of goods, persons, services and capital must be ensured. To that end a comprehensive Community type-approval system for motor vehicles is in place. The technical requirements for the type-approval of motor vehicles with regard to emissions should therefore be harmonised to avoid requirements that differ from one Member State to another and to ensure a high level of environmental protection.
- (2) This Regulation is a new separate regulation in the context of the Community type-approval procedure under Directive 2007/46/EC of the European Parliament and of the Council establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (Framework Directive)<sup>11</sup>. Therefore, Annexes IV, VI and XI to that Directive should be amended accordingly.
- (3) Following the request of the European Parliament, a new regulatory approach has been introduced in the EC vehicle legislation. This Regulation should therefore lay down only fundamental provisions on vehicle emissions, whereas the technical specifications should be laid down by implementing measures adopted following comitology procedures.

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<sup>8</sup> OJ C , , p. .

<sup>9</sup> OJ C , , p. .

<sup>10</sup> OJ C , , p. .

<sup>11</sup> OJ L 263, 9.10.2007, p.1.

- (4) The Sixth Community Environment Action Programme adopted by Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 establishes the need to reduce pollution to levels which minimise harmful effects on human health, paying particular attention to sensitive populations and the environment as a whole. Community legislation has established appropriate standards for ambient air quality for the protection of human health and sensitive individuals in particular, as well as for national emissions ceilings. The Clean Air For Europe (CAFE) programme has led to the adoption of a thematic strategy on air pollution<sup>12</sup>. One of the conclusions of that thematic strategy is that further reductions in emissions from the transport sector (air, maritime and land transport), from households and from the energy, agricultural and industrial sectors are needed to achieve EU air quality objectives. In this context, the task of reducing vehicle emissions should be approached as part of an overall strategy. The Euro VI standards are one of the measures designed to reduce the actual in-use emissions of air pollutants such as particulate pollutants (PM) as well as ozone precursors such as nitrogen oxides and hydrocarbons.
- (5) Achieving EU air quality objectives requires a continuing effort to reduce vehicle emissions. For that reason, industry should be provided with clear information on future emission limit values.
- (6) In particular, reduction in nitrogen oxide emissions from heavy duty vehicles is necessary to improve air quality and comply with limit values for pollution and national emissions ceilings. Setting limit values for nitrogen oxide emissions at an early stage should provide long-term, Europe-wide planning security for vehicle manufacturers.
- (7) In setting emissions standards it is important to take into account the implications for competitiveness of markets and manufacturers, the direct and indirect costs imposed on business and the benefits that accrue in terms of stimulating innovation, improving air quality, reducing health costs and increasing life expectancy.
- (8) Unrestricted access to vehicle repair information, via a standardised format which can be used to retrieve the technical information, and effective competition on the market for vehicle repair and maintenance information services are necessary to improve the functioning of the internal market, particularly as regards the free movement of goods, freedom of establishment and freedom to provide services. A great proportion of such information is related to on-board diagnostic systems and their interaction with other vehicle systems. It is appropriate to lay down technical specifications to be followed by the manufacturers in their websites, along with targeted measures to ensure reasonable access for small and medium-sized enterprises (SMEs).
- (9) The Commission should keep under review emissions which are as yet unregulated and which arise as a consequence of the wider use of new fuel formulations, engine technologies and emission control systems and, where necessary, submit a proposal to the European Parliament and to the Council with a view to regulating such emissions.

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<sup>12</sup> COM(2005)0446, 21.9.2005.

- (10) It is appropriate to encourage the introduction of alternative fuel vehicles, which can have low nitrogen oxides and particulate emissions. Thus, limit values for hydrocarbons, non-methane hydrocarbons and methane should be introduced.
- (11) In order to ensure that emissions of ultra fine particulate pollutants (PM 0,1 µm and below) are controlled, power should be given to the Commission to adopt a number based approach to emissions of particulate pollutants in addition to the mass based approach which is currently used. The number based approach to emissions of particles should draw on the results of the UN/ECE's Particulate Measurement Programme (PMP) and be consistent with the existing ambitious objectives for the environment.
- (12) The Commission should adopt world-wide harmonised driving cycles in the test procedure that provides the basis of EC type-approval emissions regulations. The application of portable emissions measurement systems for verifying the actual in-use emissions and the introduction of procedures to control off cycle emissions (OCE) should also be considered.
- (13) On board diagnostic (OBD) systems are important to control the emissions during the use of a vehicle. Due to the importance of controlling real world emissions, the Commission should keep under review the requirements for such systems and the tolerance thresholds for monitoring faults.
- (14) In order to monitor the contribution of this sector to the global emissions of greenhouse gases (GHG) the Commission should introduce measuring of fuel consumption and carbon dioxide emissions of heavy duty vehicles.
- (15) In order to better control actual in-use emissions including OCE and to facilitate the in-service conformity process, a testing methodology and performance requirements based on the use of portable emission measuring systems (PEMS) should be adopted.
- (16) With a view to meeting the air quality objectives, the Commission should introduce harmonised provisions to ensure that off-cycle emissions from heavy duty engines and vehicles are appropriately controlled over a broad range of engine and ambient operating conditions.
- (17) Correct functioning of the after-treatment system, and more specifically in the case of NO<sub>x</sub>, is the basic requirement to fulfil the established standards for pollutant emissions. In this context, measures to guarantee the proper operation of systems relying in the use of a reagent should be introduced.
- (18) Member States are able, by means of financial incentives, to accelerate the placing on the market of vehicles which satisfy the requirements adopted at Community level. This Regulation should not affect the right of the Member States to include emissions in the basis for calculating taxes levied on vehicles.
- (19) The Member States should lay down rules on penalties applicable to infringements of the provisions of this Regulation and ensure that they are implemented. Those penalties should be effective, proportionate and dissuasive.

- (20) The requirements of engine power of motor vehicles contained in Directive 80/1269/EC should be introduced in this Regulation and in Regulation (EC) No 715/2007. Therefore, Regulation (EC) No 715/2007 should be amended accordingly and Directive 80/1269/EC should be repealed.
- (21) Article 14(6) of Regulation No 715/2007 should be deleted as this Regulation repeals the Directive referred to. Therefore, Regulation (EC) No 715/2007 should be amended accordingly.
- (22) In order to simplify community legislation, it is appropriate to replace the existing Directives by a Regulation. The use of a regulation should ensure that the detailed technical provisions are directly applicable to manufacturers, approval authorities and technical services and that they can be updated in a fast and efficient way. The existing heavy duty emissions legislation, Directives 2005/55/EC 2005/78/EC and 2006/51/EC, should be repealed.
- (23) The measures necessary for the implementation of this Regulation should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission<sup>13</sup>.
- (24) In particular, power should be conferred on the Commission to introduce particle number based limit values in Annex I, to specify the value of the admissible level of NO<sub>2</sub> component in the NO<sub>x</sub> limit value, to establish specific procedures, tests and requirements for type-approval, as well as a measurement procedure for particle number, and to adopt measures concerning off cycle emissions, access to vehicle repair and maintenance information and test cycles used to measure emissions. Since those measures are of general scope and are designed to supplement this Regulation by the addition of new non-essential elements, they should be adopted in accordance with the regulatory procedure with scrutiny provided for in Article 5a of Decision 1999/468/EC.
- (25) The objectives of this Regulation, namely the realisation of the internal market through the introduction of common technical requirements concerning emissions from motor vehicles and guaranteed access to vehicle repair and maintenance information for independent operators on the same basis as for authorised dealers and repairers, cannot be sufficiently achieved by the Member States and can therefore be better achieved at a Community level, the Community may adopt measures, in accordance with the principle of subsidiarity, as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives,

HAVE ADOPTED THIS REGULATION:

*Article 1*

*Subject matter*

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<sup>13</sup> OJ L184, 17.7.1999, p. 23. Decision as amended by Decision 2006/512/EC (OJ L200, 22.7.2006, p.11).

This Regulation establishes common technical requirements for the type-approval of motor vehicles, engines and replacement parts with regard to their emissions.

This Regulation also lays down rules for in-service conformity of vehicles and engines, durability of pollution control devices, on-board diagnostic (OBD) systems, measurement of fuel consumption and carbon dioxide (CO<sub>2</sub>) emissions and diesel smoke and accessibility of vehicle OBD and vehicle repair and maintenance information.

## *Article 2*

### *Scope*

This Regulation shall apply to vehicles of categories M<sub>1</sub>, M<sub>2</sub>, N<sub>1</sub> and N<sub>2</sub> as defined in Annex II of Directive 2007/46/EC with a reference mass exceeding 2 610 kg and all motor vehicles of categories M<sub>3</sub> and N<sub>3</sub>, as defined in that Annex.

This Regulation shall apply without prejudice to Article 2(2) of Regulation (EC) No 715/2007.

## *Article 3*

### *Definitions*

For the purposes of this Regulation, the following definitions shall apply:

- (1) “engine” means the motive propulsion source of a vehicle for which type-approval as a separate technical unit, as defined in point (25) of Article 3 of Directive 2007/46/EC, may be granted;
- (2) “gaseous pollutants” means the exhaust gas emissions of carbon monoxide, oxides of nitrogen, expressed in nitrogen dioxide (NO<sub>2</sub>) equivalent, and hydrocarbons;
- (3) “particulate pollutants” means components of the exhaust gas which are removed from the diluted exhaust gas at a maximum temperature of 325 K (52°C) by means of the filters described in the test procedure for verifying average tailpipe emissions;
- (4) “tailpipe emissions” means the emission of gaseous and particulate pollutants;
- (5) “crankcase” means the spaces in, or external to, an engine which are connected to the oil sump by internal or external ducts through which gases and vapours can be emitted;
- (6) “pollution control device” means those components of a vehicle that control and/or limit tailpipe emissions;
- (7) “on-board diagnostic” or “OBD system” means a system for controlling emissions which has the capability of identifying the likely area of malfunction by means of fault codes stored in computer memory;

- (8) “defeat strategy” means an emission control strategy that reduces the effectiveness of the emission controls under ambient or engine operating conditions encountered either during normal vehicle operation or outside the type approval test procedures;
- (9) “original pollution control device” means a pollution control device or an assembly of such devices covered by the type-approval granted for the vehicle concerned;
- (10) “replacement pollution control device” means a pollution control device or an assembly of such devices intended to replace an original pollution control device and which can be approved as a separate technical unit as defined in Article 3 of Directive 2007/46/EC;
- (11) “vehicle repair and maintenance information” means all information required for diagnosis, servicing, inspection, periodic monitoring, repair, re-programming or re-initialising of the vehicle and which the manufacturers provide for their authorised dealers and repairers, including all subsequent amendments and supplements to such information. This information includes all information required for fitting parts or equipment on to vehicles;
- (12) “independent operator” means undertakings other than authorised dealers and repairers which are directly or indirectly involved in the repair and maintenance of motor vehicles, in particular repairers, manufacturers or distributors of repair equipment, tools or spare parts, publishers of technical information, automobile clubs, roadside assistance operators, operators offering inspection and testing services, operators offering training for installers, manufacturers and repairers of equipment for alternative fuel vehicles;
- (13) "alternative fuel vehicle" means a vehicle designed to be capable of running on at least one type of fuel that is either gaseous at atmospheric temperature and pressure, or substantially non-mineral oil derived;
- (14) "reference mass" means the mass of the vehicle in running order less the uniform mass of the driver of 75 kg and increased by a uniform mass of 100 kg.

#### *Article 4*

##### ***Obligations of the manufacturers***

1. Manufacturers shall demonstrate that all new vehicles sold, registered or put into service within the Community, all new engines sold or put into service within the Community and all new replacement pollution control devices requiring type-approval pursuant to Article 8, which are sold or put into service within the Community, are type approved in accordance with this Regulation.
  
2. Manufacturers shall ensure that type-approval procedures for verifying conformity of production, durability of pollution control devices and in-service conformity are followed.

The technical measures taken by the manufacturer shall be such as to ensure that the tailpipe emissions are effectively limited, pursuant to this Regulation, throughout the normal life of the vehicles under normal conditions of use.

For that purpose, the mileage and period of time by reference to which the tests for durability of pollution control devices undertaken for type-approval and testing of conformity of in-service vehicles or engines are to be carried out shall be the following:

- (a) 160 000 km or five years, whichever is the sooner, in the case of engines fitted to vehicles of category M<sub>1</sub>, N<sub>1</sub> and M<sub>2</sub>;
  - (b) 300 000 km or six years, whichever is the sooner, in the case of engines fitted to vehicles of category N<sub>2</sub>, N<sub>3</sub> with a maximum technically permissible mass not exceeding 16 tonnes and M<sub>3</sub> Class I, Class II and Class A, and Class B with a maximum technically permissible mass not exceeding 7.5 tonnes;
  - (c) 700 000 km or seven years, whichever is the sooner, in the case of engines fitted to vehicles of category N<sub>3</sub> with a maximum technically permissible mass exceeding 16 tonnes and M<sub>3</sub>, Class III and Class B with a maximum technically permissible mass exceeding 7.5 tonnes.
3. The Commission shall, in accordance with the procedure referred to in Article 39(9) of the Directive 2007/46/EC, establish specific procedures and requirements for the implementation of paragraphs 1 and 2 of this Article.

#### *Article 5*

##### ***Requirements and tests***

1. Manufacturers shall ensure compliance with the emission limits set out in Annex I.
2. Manufacturers shall equip engines and vehicles so that the components likely to affect emissions are designed, constructed and assembled so as to enable the engine or vehicle, in normal use, to comply with this Regulation.
3. The use of defeat strategies that reduce the effectiveness of emission control equipment shall be prohibited.
4. The Commission shall, in accordance with the procedure referred to in Article 39(9) of Directive 2007/46/EC, adopt measures for the implementation of this Article. These measures shall concern the following:
  - (a) tailpipe emissions, including test cycles, off cycle emissions, particle number, emissions at idling speed, smoke opacity and correct functioning and regeneration of pollution control devices;
  - (b) crankcase emissions;
  - (c) OBD systems and in-service performance of pollution control devices;

- (d) durability of pollution control devices, replacement pollution control devices, conformity of in-service engines and vehicles, conformity of production and roadworthiness;
- (e) carbon dioxide emissions and fuel consumption;
- (f) granting extension of type-approvals;
- (g) test equipment;
- (h) reference fuels;
- (i) measurement of engine power;
- (j) specific provisions to ensure the correct operation of NOx control measures; such measures shall ensure that vehicles, which need a reagent in order to respect the limit values for NOx emissions, cannot be operated without such reagent.

The Commission may, in accordance with the procedure referred to in Article 39(9) of Directive 2007/46/EC, adopt other measures concerning specific procedures, tests and requirements for type-approval.

#### *Article 6*

##### ***Access to information***

1. Manufacturers shall provide unrestricted and standardised access to on-board diagnostic (OBD) information and vehicle repair and maintenance information to independent operators.

Articles 6 and 7 of Regulation (EC) No 715/2007 shall apply.

2. The Commission shall, in accordance with the procedure referred to in Article 39(9) of Directive 2007/46/EC, establish and update, for the implementation of paragraph 1 of this Article, the technical specifications relating to the way in which OBD information and vehicle repair and maintenance information shall be provided.

The Commission may, in accordance with the procedure referred to in Article 39(9) of Directive 2007/46/EC, adopt other measures necessary for the implementation of paragraph 1 of this Article.

#### *Article 7*

##### ***Obligations concerning systems using a consumable reagent***

1. Manufacturers, repairers and operators of the vehicles shall not tamper with systems which use a consumable reagent.



2. Operators of the vehicles shall ensure that the vehicle is not being driven without consumable reagent.

#### *Article 8*

##### ***Time table for application of type-approval of vehicles and engines***

1. With effect from the date set out in the first sentence of the second paragraph of Article 16, national authorities shall refuse, on grounds relating to emissions, to grant EC type-approval or national type-approval in respect of new types of engine or vehicle which do not comply with this Regulation.

Type-approval technical certificates corresponding to emission stages previous to Euro VI may be granted to vehicles and engines intended for export to third countries, provided such certificates clearly state that the vehicles and engines in question cannot be placed on the Community market.

2. With effect from 1 October 2014, national authorities shall, in the case of new vehicles which do not comply with this Regulation, consider certificates of conformity to be no longer valid for the purposes of Article 26 of Directive 2007/46/EC and shall, on grounds relating to emissions, prohibit the registration, the sale and entry into service of such vehicles.

With effect from the same date and except in the case of replacement engines for in-service vehicles, national authorities shall prohibit the sale or use of new engines which do not comply with this Regulation.

3. Without prejudice to paragraphs 1 and 2 of this Article, and subject to entry into force of the implementing measures referred to in Article 4(3), in the first subparagraph of Article 5(4) and in the first subparagraph of Article 6(2), if a manufacturer so requests, national authorities may not, on grounds relating to emissions of vehicles, refuse to grant EC type-approval or national type-approval for a new type of vehicle or engine, or prohibit the registration, sale or entry into service of a new vehicle and the sale or use of new engines, where the vehicle or engines concerned comply with this Regulation .

#### *Article 9*

##### ***Obligations of Member States concerning type-approval of replacement parts***

National authorities shall prohibit the sale or installation on a vehicle of new replacement pollution control devices intended to be fitted on vehicles approved under this Regulation if they are not of a type in respect of which a type-approval has been granted in compliance with this Regulation.

#### *Article 10*

##### ***Financial incentives***

1. Subject to the entry into force of the implementing measures to this Regulation, Member States may provide for financial incentives that apply to motor vehicles in series production, which comply with this Regulation.

Those incentives shall apply to all new vehicles put on the market of the Member State concerned, which comply with this Regulation. However, they shall cease to apply on 1 October 2014 at the latest.

2. Subject to the entry into force of the implementing measures to this Regulation, Member States may grant financial incentives for the retrofitting to the emission limit values set out in Annex I of in-use vehicles and for scrapping vehicles which do not comply with this Regulation.
3. For each type of motor vehicle, the financial incentives referred to in paragraphs 1 and 2 shall not exceed the additional cost of the technical devices introduced to ensure compliance with the emission limits specified in Annex I, including the cost of installation on the vehicle.
4. The Commission shall be informed of plans to institute or change the financial incentives referred to in paragraphs 1 and 2.

#### *Article 11*

##### ***Penalties***

1. Member States shall lay down the provisions on penalties applicable for infringement of the provisions of this Regulation and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission by [DATE 18 months after entry into force of this Regulation] at the latest and shall notify it without delay of any subsequent amendment affecting them.
2. The types of infringements by manufacturers which are subject to a penalty shall include:
  - (a) making false declarations during the approval procedures or procedures leading to a recall;
  - (b) falsifying test results for type-approval or in-service conformity;
  - (c) withholding data or technical specifications which could lead to recall or withdrawal of type-approval;
  - (d) use of defeat strategies;
  - (e) refusal to provide access to information.

The types of infringements by manufacturers, repairers and operators which are subject to a penalty shall include tampering with systems which use a consumable reagent.

The types of infringements by operators which are subject to a penalty shall include driving a vehicle without consumable reagent.

## *Article 12*

### ***Redefinition of Specifications***

1. After the completion of the UN/ECE Particulate Measurement Programme, conducted under the auspices of the World Forum for Harmonization of Vehicle Regulations, the Commission shall, without lowering the level of environment protection within the Community:
  - (a) introduce particle number based limit values, and if appropriate to specify the value of the admissible level of NO<sub>2</sub> component in the NO<sub>x</sub> limit value; therein, in accordance with Article 39(2) of Directive 2007/46/EC;
  - (b) adopt a measurement procedure for particle number
2. The Commission shall establish correlation factors between the European transient cycle (ETC) and the European steady state cycle (ESC) as described in Directive 2005/55/EC, and the world-wide harmonised transient driving cycle (WHTC) and the world-wide harmonised steady state driving cycle (WHSC) and shall adapt the limit values accordingly.
3. The Commission shall keep under review the procedures, tests and requirements referred to in Article 5(4) as well as the test cycles used to measure emissions.

If the review finds that those procedures, tests, requirements and test cycles are no longer adequate or no longer reflect actual world emissions, they shall be adapted so as to adequately reflect the emissions generated by real driving on the road.
4. The Commission shall keep under review the pollutants listed in point 2 of Article 3. If the Commission concludes that it is appropriate to regulate the emissions of additional pollutants, it shall amend this Regulation accordingly.

## *Article 13*

### ***Amendments to Regulation (EC) No 715/2007***

Regulation (EC) No 715/2007 is amended as follows:

1. Article 5(3) is amended as follows:
  - (i) after point (h), the word “and” is deleted;
  - (ii) the following point (j) is added:

‘(j) measurement of engine power.’

2. Article 14(6) is deleted.

*Article 14*

***Amendments to Directive 2007/46/EC***

Annexes IV, VI and IX to Directive 2007/46/EC are amended in accordance with Annex II to this Regulation

*Article 15*

***Repeal***

1. Council Directive 80/1269/EEC, Commission Directives 88/195/EEC, 97/21/EC, 1999/99/EC and 2005/78/EC, and Directive 2005/55/EC are repealed with effect from 1 October 2014.
2. References made to the repealed Directives shall be construed as references to this Regulation.

*Article 16*

***Entry into force***

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

It shall apply from 1st April 2013. However, Articles 8(3) and 10 shall apply from the date of entry into force and points 1(a)(i), 1(b)(i), 2(a), 3(a)(i), 3(b)(i), 3(c)(i) and 3(d)(i) of Annex II shall apply from 1 October 2014.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

*For the European Parliament*  
*The President*

*For the Council*  
*The President*

## ANNEX I

### Euro VI Emission Limits

	Limit values							
	CO (mg/kWh)	THC (mg/kWh)	NMHC (mg/kWh)	CH <sub>4</sub> (mg/kWh)	NO <sub>x</sub> (3) (mg/kWh)	NH <sub>3</sub> (ppm)	PM mass (mg/kWh)	PM (1) number (#/kWh)
ESC (CI)	1500	130			400	10	10	
ETC (CI)	4000	160			400	10	10	
ETC (PI)	4000		160	500	400	10	10	
WHSC (2)								
WHTC (2)								

Note:

PI = Positive Ignition,

CI = Compression Ignition

(1) A number standard is to be defined at a later stage

(2) The limit values relating to WHSC and WHTC will be introduced, at a later stage, once correlation factors with respect to the current cycles (ESC and ETC) have been established

(3) The admissible level of NO<sub>2</sub> component in the NO<sub>x</sub> limit value may be defined at a later stage

## ANNEX II

### Amendments to Directive 2007/46/EC

Directive 2007/46/EC is amended as follows:

1. Part I of Annex IV is amended as follows:

(a) the table is amended as follows:

(i) point 40 is deleted;

(ii) the following point 41a is inserted:

Subject	Regulatory act reference	Official Journal reference	Applicability											
			M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>		
41a Emissions (Euro VI) heavy duty vehicles/access to information	[EC) No .../... number of this Regulation to be inserted]	[L ..., ..., p... reference to this Regulation to be inserted]	X <sup>12</sup>	X <sup>12</sup>	X	X <sup>12</sup>	X <sup>12</sup>	X						

(iii) the following note is added:

<sup>12</sup>

For vehicles with a reference mass exceeding 2610 kg which are not type-approved (at the manufacturer's request and provided their reference mass does not exceed 2840 kg) under Regulation EC (No) 715/2007"

(b) in the Appendix, the table is amended as follows:

(i) point 40 is deleted;

(ii) the following point 41a is inserted:

	Subject	Regulatory act reference	Official Journal reference	M <sub>1</sub>
41a	Emissions (Euro VI) heavy duty vehicles, with the exception of the whole set of requirements relating to On Board Diagnostics (OBDS) and access to information /Access to information	[EC) No .../... number of this Regulation to be inserted]	[L ..., ..., p... reference to this Regulation to be inserted]	A

2. In the Appendix to Annex VI, the table is amended as follows:

(a) point 40 is deleted;

(b) the following point 41a is inserted:

Subject	Regulatory act reference	As amended by	Applicable to versions
41a Emissions (Euro VI) heavy duty vehicles/access to information	[EC] No .../... <i>number of this Regulation to be inserted</i>		

3. Annex XI is amended as follows:

(a) In Appendix 1, the table is amended as follows:

(i) point 40 is deleted

(ii) the following point 41a is inserted:

Item	Subject	Regulatory act reference	M <sub>1</sub> ≤ 2 500 (1) kg	M <sub>1</sub> > 2 500 (1) kg	M <sub>2</sub>	M <sub>3</sub>
41a	Emissions (Euro VI) heavy duty vehicles/access to information	[EC] No .../... <i>number of this Regulation to be inserted</i>	G+H	G+H	G+H	G+H

(b) In Appendix 2, the table is amended as follows:

(i) point 40 is deleted;

(ii) the following point 41a is inserted in the table:

Item	Subject	Regulatory act reference	M <sub>1</sub>	M <sub>2</sub>	M <sub>3</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>
41a	Emissions (Euro VI) heavy duty vehicles/access to information	[EC] No .../... <i>number of this Regulation to be inserted</i>	X	X	X	X	X	X				

(c) In Appendix 4, the table is amended as follows:

(i) point 40 is deleted;

(ii) the following point 41a is inserted:

Item	Subject	Regulatory act reference	M <sub>2</sub>	M <sub>3</sub>	N <sub>1</sub>	N <sub>2</sub>	N <sub>3</sub>	O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	O <sub>4</sub>
41a	Emissions (Euro VI) heavy duty vehicles/access to information	[EC] No .../... <i>number of this Regulation to be inserted</i> ]	H	H	H	H	H				

(d) In Appendix 5, the table is amended as follows:

(i) point 40 is deleted;

(ii) the following point 41a is inserted :

Item	Subject	Regulatory act reference	Mobile crane of category N3
41a	Emissions (Euro VI) heavy duty vehicles/access to information	[EC] No .../... <i>number of this Regulation to be inserted</i> ]	X