II

(Acts whose publication is not obligatory)

COUNCIL

COUNCIL DIRECTIVE

of 1 October 1991

amending Directive 88/77/EEC on the approximation of the laws of the Member States relating to the measures to be taken against the emission of gaseous pollutants from diesel engines for use in vehicles

(91/542/EEC)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100a thereof,

Having regard to the proposal from the Commission (1),

In cooperation with the European Parliament (2),

Having regard to the opinion of the Economic and Social Committee (3),

Whereas it is important to adopt measures with the aim of progressively establishing the internal market over a period expiring on 31 December 1992; whereas the internal market shall comprise an area without internal frontiers in which the free movement of goods, persons, services and capital is ensured;

Whereas the first programme of action of the European Communities on the protection of the environment, approved by the Council on 22 November 1973, called for account to be taken of the latest scientific advances in combating atmospheric pollution caused by gases emitted from motor vehicles and for Directives adopted previously to be amended accordingly; whereas the third programme of action provides for additional efforts to be made to reduce considerably the present level of emissions of pollutants from motor vehicles;

Whereas Directive 88/77/EEC (4) lays down the limit values for the emissions of carbon monoxide, unburnt hydrocarbons and nitrogen oxides from diesel engines for use in motor vehicles on the basis of a test procedure representative for European driving conditions for the vehicles concerned; whereas in accordance with Article 6 of that Directive these limit values should be further reduced in the light of technical progress and a limit value for particulate emissions fixed;

Whereas, in laying down the new standards and test procedures, it is necessary to take account of future traffic growth in the European Community; whereas an increase in vehicle registrations, particularly lorries, is to be expected in anticipation of the internal market;

Whereas the work undertaken by the Commission in that sphere has shown that the Community motor industry has had available for some time or is currently perfecting technologies which allow a considerable reduction of the limit values in question and the particulate standards; whereas, because of this and the likely increase in the number of motor vehicles in Europe as a result of the internal market, it is imperative to reduce emission limit values radically in the interests of environmental protection and public health;

Whereas it is appropriate to introduce these more stringent standards in two stages, the first coinciding with the implementation dates of the new stringent European emission standards for passenger cars; whereas the second stage aims at the establishment of a longer-term orientation for the European motor industry in fixing limit values which are based on the expected performance of technologies which

(1) OJ No C 187, 27. 7. 1990, p. 6.
(2) OJ No C 48, 25. 2. 1991, p. 162; and OJ No C 240, 16. 9. 1991, p. 106.
(3) OJ No C 41, 18. 2. 1991, p. 51.
(4) OJ No L 36, 9. 2. 1988, p. 33.

are still under development, granting to industry a sufficient lead time for perfecting such technologies; whereas the enforcement of the second stage requires as a prerequisite the meeting of certain framework conditions in relation to the availability of low-sulphur diesel fuel and of a corresponding reference fuel for emissions testing, to the progress achieved on emission control technologies, and to the availability of an improved method for the control of production conformity which the Commission adopts in application of the procedure for adaptation to technical progress set out in Article 4 of Directive 88/77/EEC; whereas the Commission will present, before the end of 1993, a comprehensive report on these matters to the Council enabling the latter to decide, if necessary, before 30 September 1994, the limit value for the particulate emissions to be retained for the second stage;

Whereas an addition to the European 13-mode test cycle for checking the limit values of gaseous pollutants should be considered to take account of dynamic processes such as acceleration; whereas the Commission will submit a report on this subject in due course;

Whereas, under the spot-check procedure in production testing, the production limit value for pollutants need only be maintained on average; whereas an improved sampling procedure would be highly desirable; whereas the Commission will submit appropriate proposals;

Whereas, so that the limit values laid down can be complied with effectively, a special annual mandatory exhaust test must be introduced for all the vehicles in question; whereas the Commission will submit appropriate proposals;

Whereas in order to allow the European environment to benefit to the maximum from these provisions and at the same time ensure the unity of the market, it is necessary to impose the new, very stringent standards;

Whereas it would be desirable for the Member States to take the initiative to encourage, by means of tax incentives, compliance with European emission standards ahead of time, it being understood that such incentives were applicable to all models marketed in a Member State;

Whereas the process of tightening up the standards would also be speeded up if Member States introduced schemes to encourage the purchasers of new cars to scrap their old vehicles or, as far as possible, surrender them for recycling;

Whereas the the Community should study and develop alternative systems of propulsion, alternative fuels and corresponding transport concepts and provide financial support for research and development in these fields,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Directive 88/77/EEC is hereby amended as follows:

1. The title is replaced by the following:

'Council Directive
of 3 December 1987
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 diesel engines for use in vehicles'

2. Annexes I, II, III, V and VIII are amended in accordance with the Annex to this Directive.

Article 2

1. From 1 January 1992 no Member State may, on grounds relating to the gaseous and particulate pollutants emitted from an engine:

— refuse to grant EEC type-approval, or to issue the document provided for in the last indent of Article 10 (1) of Council Directive 70/156/EEC [1], or to grant national type-approval for a type of vehicle propelled by a diesel engine, or

— prohibit the registration, sale, entry into service or use of such new vehicles, or

— refuse to grant EEC type-approval, or to grant national type-approval for a type of diesel engine, or

— prohibit the sale or use of new diesel engines,

if the requirements of the Annexes to Directive 88/77/EEC are satisfied.

2. Member States may no longer grant EEC type-approval or issue the document provided for in the last indent of Article 10 (1) of Directive 70/156/EEC, and shall refuse national type-approval, of types of diesel engines and types of vehicle propelled by a diesel engine:

— from 1 July 1992 where the emissions of gaseous and particulate pollutants from the engine do not comply with the limit values set out in line A,

— from 1 October 1995 where the emission of gaseous and particulate pollutants from the engine do not comply with the limit values set out in line B

of the table in section 6.2.1. of Annex I to Directive 88/77/EEC.

3. Until 30 September 1993, paragraph 2 shall not apply to types of vehicle propelled by a diesel engine if the latter is

[1] OJ No L 42, 23. 2. 1970, p. 1.

described in the Annex to a type-approval certificate granted before 1 July 1992 in accordance with Directive 88/77/EEC.

4. With the exception of vehicles and diesel engines intended for export to third countries, Member States shall prohibit the registration, sale, entry into service and use of new vehicles propelled by a diesel engine and the sale and use of new diesel engines:

— from 1 October 1993, where the emissions of gaseous and particulate pollutants from the engine do not comply with the limit values set out in line A,

— from 1 October 1996, where the emissions of gaseous and particulate pollutants from the engine do not comply with the limit values set out in line B

of the table in section 8.3.1.1. of Annex I to Directive 88/77/EEC.

Article 3

Member States may make provision for tax incentives for the vehicles covered by this Directive. Such incentives shall meet the provisions of the Treaty as well as the following conditions:

— they shall apply to all domestic car production and to vehicles imported for marketing in a Member State and fitted with equipment allowing the European standards to be met in 1996 to be satisfied ahead of time,

— they shall cease upon the date set in Article 2 (4) for the compulsory entry into force of the emission values for new vehicles,

— they shall be of a value, for each type of vehicle, substantially lower than the actual cost of the equipment fitted to meet the values set and of its fitting on the vehicle.

The Commission shall be informed of any plans to introduce or amend the tax incentives referred to in the first subparagraph in sufficient time to allow it to submit comments.

Article 4

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 1 January 1992. They shall forthwith inform the Commission thereof.

When these measures are adopted by the Member States they shall contain a reference to this Directive or be accompanied by such reference on the occasion of their official publication. The methods of making such a reference shall be laid down by the Member States.

Article 5

1. Before the end of 1991, the Council, acting by a qualified majority on the basis of a Commission proposal, shall decide on measures to ensure the availability in the Member States of improved diesel fuel with a maximum permitted sulphur content of 0,05 %.

2. Before the end of 1993 the Commission shall give an account, in a report to the Council, of the progress made regarding:

— the availability of techniques for controlling air-polluting emissions from diesel engines, particularly those of less than 85 kW,

— a new statistical method for the monitoring of production conformity to be adopted in accordance with Article 4 of Directive 88/77/EEC.

If necessary it shall submit to the Council a proposal for revising upwards the limit values for particulate emissions. The Council shall take a decision on the basis of the proposal not later than 30 September 1994.

3. Before the end of 1996, in the light of the technical progress achieved, the Commission shall submit to the Council a revision of the limit values for polluting emissions combined if necessary with a revision of the test procedure. The new limit values shall not be applicable before 1 October 1999 as regards new type-approvals.

Article 6

The Council, acting by a qualified majority on a proposal from the Commission, which shall take account of the results of current work on the greenhouse effect, shall decide on the measures to be taken to limit CO_2 emissions from motor vehicles.

Article 7

This Directive is addressed to the Member States.

Done at Luxembourg, 1 October 1991.

For the Council

The President

J. G. M. ALDERS

ANNEX

Amendments to the Annexes of Directive 88/77/EEC

ANNEX I

SCOPE, DEFINITIONS AND ABBREVIATIONS, APPLICATION FOR EEC TYPE-APPROVAL, REQUIREMENTS AND TESTS AND CONFORMITY OF PRODUCTION

1. *Section 1 is hereby replaced by the following:*

'1 SCOPE

This Directive applies to the emission of gaseous and particulate pollutants from all motor vehicles, as defined in Article 1, equipped with diesel engines and to diesel engines as specified in Article 1, with the exception of those vehicles of category N_1, N_2 and M_2 for which type-approval has been granted under Directive 70/220/EEC (1), as last amended by Directive 91/441/EEC (2).

(1) OJ No L 76, 6. 4. 1970, p. 1.
(2) OJ No L 242, 30. 8. 1991, p. 1.'

Section 2.1 is hereby replaced by the following:

'2.1 *"Approval of an engine"* means the approval of an engine type with regard to the level of emission of gaseous and particulate pollutants.'

Section 2.4 is hereby supplemented as follows:

'2.4 *"Particulate pollutants"* means any material collected on a specified filter medium after diluting diesel exhaust to gases with clean filtered air so that the temperature does not exceed 325 K (52 °C).'

Section 2.9 is hereby replaced by the following:

'2.9 **Abbreviations and units**

All volumes and volumetric flow-rates must be calculated at 273 K (0 °C) and 101,3 kPa.

P	kW	net power output non-corrected
CO	g/kWh	carbon monoxide emission
HC	g/kWh	hydrocarbon emissions
NO_x	g/kWh	emission of oxides of nitrogen
PT	g/kWh	particulate emission
$\overline{CO}$, $\overline{HC}$, $\overline{NO_x}$, $\overline{PT}$		weighted average of respective emissions
conc	ppm	concentration (ppm by volume)
mass	g/h	pollutant mass flow
WF		weighting factor
WF_E		effective weighting factor
G_{EXH}	kg/h	exhaust gas mass flow-rate on a wet basis
V'_{EXH}	m³/h	exhaust gas volume flow-rate on a dry basis
V''_{EXH}	m³/h	exhaust gas volume flow-rate on a wet basis
G_{AIR}	kg/h	intake air mass flow-rate
V''_{AIR}	m³/h	intake air volume flow-rate on a wet basis
G_{FUEL}	kg/h	fuel mass flow-rate
G_{DIL}	kg/h	dilution air mass flow-rate
V''_{DIL}	m³/h	dilution air volume flow-rate on a wet basis

M_{SAM}	kg	mass of sample through particulate sampling filters
V_{SAM}	m^3	volume of sample through particulate sampling filters on a wet basis
G_{EDF}	kg/h	equivalent diluted mass flow-rate
V''_{EDF}	m^3/h	equivalent diluted volume flow-rate on a wet basis
i		subscript denoting an individual mode
P_f	mg	particulate sample mass
G_{TOT}	kg/h	diluted exhaust gas mass flow-rate
V''_{TOT}	m^3/h	diluted exhaust-gas volume flow-rate on a wet basis
q		dilution ratio
r		ratio of cross sectional areas of sampling probe and exhaust pipe
A_p	m^2	cross sectional area of the isokinetic sampling probe
A_T	m^2	cross sectional area of the exhaust pipe
HFID		heated flame ionization detector
NDUVR		non-dispersive ultraviolet resonance absorption
NDIR		non-dispersive infra-red
CLA		chemiluminescent analyser
HCLA		heated chemiluminescent analyser
S	kW	dynamometer setting, as indicated in Annex III, section 4.6.4
P_{min}	kW	minimum net engine power as indicated in line (e) in the table of section 7.2 in Appendix 1 to Annex II
L		per cent load as indicated in section 4.1 of this Annex
P_{aux}	kW	maximum permissible power absorbed by the engine-driven equipment as specified in section 5 of Annex II, Appendix 1, minus the total power absorbed by the engine-driven equipment during the test as specified in section 6.2.2 of Annex II, Appendix 1.'

Section 3.1.1 is hereby replaced by the following:

'3.1.1 The application for approval of an engine type with regard to the level of the emission of gaseous and particulate pollutants is submitted by the engine manufacturer or by a duly accredited representative.'

Section 3.2.1 is hereby replaced by the following:

'3.2.1 The application for approval of a vehicle type with regard to emission of gaseous and particulate pollutants by its engine is submitted by the vehicle manufacturer or a duly accredited representative.'

Section 6.1 is hereby replaced by the following:

'6.1 **General**

The components liable to affect the emission of gaseous and particulate pollutants must be so designed, constructed and assembled as to enable the engine, in normal use, despite the vibration to which it may be subjected, to comply with the requirements of this Directive.'

Section 6.2 is hereby replaced by the following:

'6.2 **Requirements for the emission of gaseous and particulate pollutants**

The emission of gaseous and particulate pollutants by the engine submitted for testing must be measured by the method described in Annex III. Annex V describes the recommended analytical systems for the gaseous pollutants and the recommended particulate sampling systems. Other systems or analysers may be approved by the technical service if it is found that they yield equivalent results. For a single laboratory, equivalency is defined as the test results to fall within ± 5 % of the test results of one of the reference systems described herein. For particulate emissions only the full-flow-dilution system is recognized as the reference system. For introduction of a new system into the Directive, the determination of equivalency must be based upon the calculation of repeatability and reproducibility by an interlaboratory test, as described in ISO 5725.'