

DIRECTIVE 2006/40/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 17 May 2006
relating to emissions from air-conditioning systems in motor vehicles and amending Council
Directive 70/156/EEC
(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,

Having regard to the opinion of the European Economic and Social Committee ⁽¹⁾,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽²⁾, in the light of the joint text approved by the Conciliation Committee on 14 March 2006,

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, and to that end a Community type-approval system for motor vehicles is in place. The technical requirements for the type-approval of motor vehicles with regard to air-conditioning systems should be harmonised to avoid the adoption of requirements that differ from one Member State to another and to ensure the proper functioning of the internal market.
- (2) A growing number of Member States intend to regulate the use of air-conditioning systems in motor vehicles as a consequence of Council Decision 2002/358/EC of 25 April 2002 concerning the approval, on behalf of the European Community, of the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the joint fulfilment of commitments thereunder ⁽³⁾. The Decision commits the Community and its Member States to reduce their aggregate anthropogenic emissions of greenhouse gases listed in Annex A to the Kyoto Protocol by 8 % compared to 1990 levels in the period from 2008 to 2012. The uncoordinated implementation of these commitments carries the risk of creating barriers to the free movement of

motor vehicles in the Community. Therefore it is appropriate to lay down the requirements to be fulfilled by air conditioning systems fitted to vehicles in order to be allowed on the market and to prohibit from a certain date air conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150.

- (3) Emissions of hydrofluorocarbon-134a (HFC-134a), which has a global warming potential of 1 300, from air-conditioning systems in motor vehicles are of growing concern because of their impact on climate change. Cost-effective and safe alternatives to hydrofluorocarbon-134a (HFC-134a) are expected to be available in the near future. A review should be carried out to establish, in the light of progress in potential containment of emissions from, or replacement of, fluorinated greenhouse gases in such systems, whether this Directive should be extended to other categories of motor vehicle and whether the provisions concerning the global warming potential of these gases should be amended, taking account of technological and scientific developments and the need to respect industrial product planning timescales.
- (4) In order to ensure that the prohibition of certain fluorinated greenhouse gases is effective, there is a need to limit the possibility of retrofitting motor vehicles with air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150 and to prohibit filling air-conditioning systems with such gases.
- (5) In order to limit the emissions of certain fluorinated greenhouse gases from air conditioning systems in motor vehicles it is necessary to establish limit values for leakage rates and the test procedure for the assessment of leakage in air conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150 which are fitted to motor vehicles.
- (6) In order to contribute to the fulfilment of the commitments of the Community and its Member States under the UN Framework Convention on Climate Change, the Kyoto Protocol and Decision 2002/358/EC, Regulation (EC) No 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases ⁽⁴⁾ and this Directive, which both contribute to the reduction of emissions of fluorinated greenhouse gases, should be adopted and published in the *Official Journal of the European Union* simultaneously.

⁽¹⁾ OJ C 108, 30.4.2004, p. 62.

⁽²⁾ Opinion of the European Parliament of 31 March 2004 (OJ C 103 E, 29.4.2004, p. 600), Council Common Position of 21 June 2005 (OJ C 183 E, 26.7.2005, p. 17) and Position of the European Parliament of 26 October 2005 (not yet published in the Official Journal). Legislative Resolution of the European Parliament of 6 April 2006 and Council Decision of 25 April 2006.

⁽³⁾ OJ L 130, 15.5.2002, p. 1.

⁽⁴⁾ See page 1 of this *Official Journal*.

- (7) Any manufacturer of vehicles should make available to the approval authority all relevant technical information regarding the installed air-conditioning systems and the gases used in them. In the case of air conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150, the manufacturer should also make available the leakage rate of these systems.
- (8) The measures necessary for the implementation of this Directive 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 ⁽¹⁾.
- (9) This Directive is one of the separate directives of the EC type-approval procedure which was established by Council Directive 70/156/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers ⁽²⁾. Consequently, Directive 70/156/EEC should be amended accordingly.
- (10) Since the objectives of this Directive, namely to control the leakage of the specific fluorinated greenhouse gases in the air-conditioning systems fitted to vehicles and to prohibit from a certain date air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150, cannot be sufficiently achieved by the Member States acting alone and can therefore, by reason of the scale and effects of this Directive, be better achieved at 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 Directive does not go beyond what is necessary in order to achieve those objectives.
- (11) In accordance with paragraph 34 of the Interinstitutional Agreement on better law-making ⁽³⁾, Member States are encouraged to draw up, for themselves and in the interests of the Community, their own tables which will, as far as possible, illustrate the correlation between this Directive and the transposition measures, and to make them public,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Subject matter

This Directive lays down the requirements for the EC type-approval or national type-approval of vehicles as regards

emissions from, and the safe functioning of, air-conditioning systems fitted to vehicles. It also lays down provisions on retrofitting and refilling of such systems.

Article 2

Scope

The Directive shall apply to motor vehicles of categories M₁ and N₁ as defined in Annex II of Directive 70/156/EEC. For the purpose of this Directive, vehicles of category N₁ are limited to those of class I as described in the first table in point 5.3.1.4 of Annex I to Council Directive 70/220/EEC of 20 March 1970 on the approximation of the laws of the Member States on measures to be taken against air pollution by emissions from motor vehicles ⁽⁴⁾, as inserted by Directive 98/69/EC of the European Parliament and of the Council ⁽⁵⁾.

Article 3

Definitions

For the purposes of this Directive the following definitions shall apply:

1. 'vehicle' means any motor vehicle falling within the scope of this Directive;
2. 'vehicle type' means a type as defined in section B of Annex II of Directive 70/156/EEC;
3. 'air-conditioning system' means any system whose main purpose is to decrease the air temperature and humidity of the passenger compartment of a vehicle;
4. 'dual evaporator system' means a system where one evaporator is mounted in the engine compartment and the other in a different compartment of the vehicle; all other systems shall be considered 'single evaporator systems';
5. 'fluorinated greenhouse gases' means hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆) as referred to in Annex A of the Kyoto Protocol and preparations containing these substances, but excludes substances controlled under Regulation (EC) No 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer ⁽⁶⁾;
6. 'hydrofluorocarbon' means an organic compound consisting of carbon, hydrogen and fluorine, and where no more than six carbon atoms are contained in the molecule;

⁽¹⁾ OJ L 184, 17.7.1999, p. 23.

⁽²⁾ OJ L 42, 23.2.1970, p. 1. Directive as last amended by Commission Directive 2006/28/EC (OJ L 65, 7.3.2006, p. 27).

⁽³⁾ OJ C 321, 31.12.2003, p. 1.

⁽⁴⁾ OJ L 76, 6.4.1970, p. 1. Directive as last amended by Commission Directive 2003/76/EC (OJ L 206, 15.8.2003, p. 29).

⁽⁵⁾ OJ L 350, 28.12.1998, p. 1.

⁽⁶⁾ OJ L 244, 29.9.2000, p. 1. Regulation as last amended by Commission Regulation (EC) No 29/2006 (OJ L 6, 11.1.2006, p. 27).

7. 'perfluorocarbon' means an organic compound consisting of carbon and fluorine only, and where no more than six carbon atoms are contained in the molecule;

8. 'global warming potential' means the climatic warming potential of a fluorinated greenhouse gas relative to that of carbon dioxide. The global warming potential (GWP) is calculated in terms of the 100 year warming potential of one kilogram of a gas relative to one kilogram of CO₂. The relevant GWP figures are those published in the third assessment report adopted by the Intergovernmental Panel on Climate Change (2001 IPCC GWP values) ⁽¹⁾;

9. 'preparation' means a mixture composed of two or more substances at least one of which is a fluorinated greenhouse gas. The total global warming potential ⁽²⁾ of the preparation shall be determined in accordance with Part 2 of the Annex;

10. 'retrofitting' means installing an air-conditioning system in a vehicle after it has been registered.

Article 4

Obligations of the Member States

1. Member States shall grant, as appropriate, EC type-approval or national type-approval, with regard to emissions from air conditioning systems, only to vehicle types that satisfy the requirements of this Directive.

2. For the purpose of granting whole vehicle type-approval pursuant to Article 4(1)(a) of Directive 70/156/EEC, Member States shall ensure that manufacturers supply information on the type of refrigerant used in air-conditioning systems fitted to new motor vehicles.

3. For the purpose of type-approval of vehicles fitted with air-conditioning systems designed to contain a fluorinated greenhouse gas with a global warming potential higher than 150, Member States shall ensure that, in accordance with the harmonised leakage detection test referred to in Article 7(1), the leakage rate of such gases shall not exceed the maximum permissible limits laid down in Article 5.

⁽¹⁾ IPCC Third Assessment Climate Change 2001. A Report of the Intergovernmental Panel on Climate Change (<http://www.ipcc.ch/pub/reports.htm>).

⁽²⁾ For the calculation of the GWP of non-fluorinated greenhouse gases in preparations, the values published in the First IPCC Assessment shall apply, see: Climate Change, The IPCC Scientific Assessment, J.T. Houghton, G.J. Jenkins, J.J. Ephraums (ed.), Cambridge University Press, Cambridge (UK) 1990.

Article 5

Type-approval

1. With effect from six months from the date of adoption of a harmonised leakage detection test, Member States may not, on grounds relating to emissions from air conditioning systems:

- (a) refuse, in respect of a new type of vehicle, to grant EC type-approval, or national type approval; or
- (b) prohibit registration, sale or entry into service of new vehicles,

if the vehicle fitted with an air-conditioning system designed to contain fluorinated greenhouse gases with a global warming potential higher than 150 complies with the requirements of this Directive.

2. With effect from 12 months from the date of adoption of a harmonised leakage detection test or 1 January 2007, whichever is later, Member States shall no longer grant EC type-approval or national type-approval for a type of vehicle fitted with an air-conditioning system designed to contain fluorinated greenhouse gases with a global warming potential higher than 150, unless the rate of leakage from that system does not exceed 40 grams of fluorinated greenhouse gases per year for a single evaporator system, or 60 grams of fluorinated greenhouse gases per year for a dual evaporator system.

3. With effect from 24 months from the date of adoption of a harmonised leakage detection test or 1 January 2008, whichever is later, in respect of new vehicles fitted with air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150, unless the rate of leakage from that system does not exceed 40 grams of fluorinated greenhouse gases per year for a single evaporator system or 60 grams of fluorinated greenhouse gases per year for a dual evaporator system, Member States shall:

- (a) consider certificates of conformity to be no longer valid for the purposes of Article 7(1) of Directive 70/156/EEC; and
- (b) refuse registration and prohibit sale and entry into service.

4. With effect from 1 January 2011 Member States shall no longer grant EC type-approval or national type-approval for a type of vehicle fitted with an air conditioning system designed to contain fluorinated greenhouse gases with a global warming potential higher than 150.

5. With effect from 1 January 2017, in respect of new vehicles which are fitted with an air-conditioning system designed to contain fluorinated greenhouse gases with a global warming potential higher than 150, Member States shall:

- (a) consider certificates of conformity to be no longer valid for the purposes of Article 7(1) of Directive 70/156/EEC; and
- (b) refuse registration and prohibit sale and entry into service.

6. Without prejudice to relevant Community law, in particular Community rules on State aid and Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services ⁽¹⁾, Member States may promote the installation of air-conditioning systems which are efficient, innovative and further reduce the climate impact.

Article 6

Retrofitting and refilling

1. With effect from 1 January 2011, air-conditioning systems designed to contain fluorinated greenhouse gases with a global warming potential higher than 150 shall not be retrofitted to vehicles type-approved from that date. With effect from 1 January 2017, such air-conditioning systems shall not be retrofitted to any vehicles.

2. Air-conditioning systems fitted to vehicles type-approved on or after 1 January 2011 shall not be filled with fluorinated greenhouse gases with a global warming potential higher than 150. With effect from 1 January 2017 air conditioning systems in all vehicles shall not be filled with fluorinated greenhouse gases with a global warming potential higher than 150, with the exception of refilling of air-conditioning systems containing those gases, which have been fitted to vehicles before that date.

3. Service providers offering service and repair for air-conditioning systems shall not fill such equipment with fluorinated greenhouse gases if an abnormal amount of the refrigerant has leaked from the system, until the necessary repair has been completed.

Article 7

Implementing measures

1. By 4 July 2007, the Commission shall adopt the measures for the implementation of Article 4 and Article 5, and in particular:

- (a) the administrative provisions for the EC type-approval of vehicles; and

⁽¹⁾ OJ L 204, 21.7.1998, p. 37. Directive as last amended by the 2003 Act of Accession.

- (b) a harmonised leakage detection test for measuring the leakage rate of fluorinated greenhouse gases with a global warming potential higher than 150 from air-conditioning systems.

2. The Commission shall adopt the measures in accordance with the procedure referred to in Article 13 of Directive 70/156/EEC.

3. The Commission shall publish these measures in the *Official Journal of the European Union*.

4. The procedure referred to in paragraph 2 shall apply to the adoption, where appropriate, of:

- (a) measures needed to ensure the safe functioning and proper servicing of refrigerants in mobile air-conditioning systems;
- (b) measures relating to the retrofitting of in-use vehicles with air-conditioning systems and the refilling of in-use air-conditioning systems to the extent not covered by Article 6;
- (c) the adaptation of the method for determining the relevant global warming potential of preparations.

Article 8

Review

1. On the basis of progress in potential containment of emissions from, or replacement of, fluorinated greenhouse gases in air-conditioning systems fitted to motor vehicles, the Commission shall examine whether:

- the present legislation should be extended to other categories of vehicles, in particular categories M₂ and M₃ as well as classes II and III of category N₁ and
- Community provisions concerning the global warming potential of fluorinated greenhouse gases should be amended; any changes should take account of technological and scientific developments and the need to respect industrial product planning timescales,

and shall publish a report by 4 July 2011. Where necessary, it shall present appropriate legislative proposals.

2. Where a fluorinated greenhouse gas with a global warming potential higher than 150, which is not yet covered by the IPCC report referred to in Article 3(8), is included in a future report of the IPCC, the Commission shall assess whether it is appropriate to amend this Directive in order to include that gas. If the Commission considers it necessary, it shall, in accordance with the procedure referred to in Article 13 of Directive 70/156/EEC:

- adopt the necessary measures and
- define transition periods for the application of these measures. In doing so the Commission shall strike a balance between the need for an appropriate lead-time and the risk that the fluorinated greenhouse gas poses to the environment.

Article 9

Amendments to Directive 70/156/EEC

Directive 70/156/EEC is hereby amended in accordance with Part 1 of the Annex to this Directive.

Article 10

Transposition

1. Member States shall adopt and publish by 4 January 2008 the laws, regulations and administrative provisions necessary to comply with this Directive.

They shall apply those measures from 5 January 2008.

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

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

Article 11

Entry into force

This Directive shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

Article 12

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 17 May 2006.

*For the European
Parliament
The President*

J. BORRELL FONTELLES

*For the Council
The President
H. WINKLER*

ANNEX

PART 1

Directive 70/156/EEC is amended as follows:

1. In Annex IV, part I, a new item numbered 61, and footnote, is inserted as follows:

Subject	Directive No	Official Journal reference	Applicability										
			M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄	
'61. Air-conditioning system	(2006/40/EC)	L 161, 14.6.2006, p. 12	X			X ⁽⁸⁾							

⁽⁸⁾ Only for vehicles of category N₁, class I as described in the first table in point 5.3.1.4 of Annex I to Directive 70/220/EEC as inserted by Directive 98/69/EC.'

2. Annex XI is amended as follows:

- (a) in Appendix 1 a new item numbered 61 is inserted as follows:

Item	Subject	Directive No	M ₁ ≤ 2 500 (l) kg	M ₁ > 2 500 (l) kg	M ₂	M ₃
'61	Air-conditioning system	2006/40/EC	X	X'		

- (b) in Appendix 2 a new item numbered 61 is inserted as follows:

Item	Subject	Directive No	M ₁	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
'61	Air-conditioning system	2006/40/EC	X			W'						

- (c) in Appendix 3 a new item numbered 61 is inserted as follows:

Item	Subject	Directive No	M ₂	M ₃	N ₁	N ₂	N ₃	O ₁	O ₂	O ₃	O ₄
'61	Air-conditioning system	2006/40/EC			W'						

- (d) in 'Meaning of letters' the following letter is added:

'W Only for vehicles of category N₁, class I as described in the first table in point 5.3.1.4. of Annex I to Directive 70/220/EEC as inserted by Directive 98/69/EC.'

PART 2**Method of calculating the total global warming potential (GWP) for a preparation**

The total GWP for a preparation is a weighted average, derived from the sum of the weight fractions of the individual substances multiplied by their GWPs.

$$\Sigma (\text{Substance X \%} \times \text{GWP}) + (\text{Substance Y \%} \times \text{GWP}) + \dots (\text{Substance N \%} \times \text{GWP})$$

where % is the contribution by weight with a weight tolerance of +/- 1 %.

For example: applying the formula to a theoretical blend of gases consisting of 23 % HFC-32; 25 % HFC-125 and 52 % HFC-134a;

$$\Sigma (23 \% \times 550) + (25 \% \times 3\,400) + (52 \% \times 1\,300)$$

→ Total GWP = 1 652,5.
