



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 25.02.1997  
COM(97) 77 final

96/0164 (COD)

Amended proposal for a

EUROPEAN PARLIAMENT AND COUNCIL DIRECTIVE

**relating to measures to be taken against air pollution by emissions from  
motor vehicles and amending Council Directives 70/156/EEC and  
70/220/EEC.**

(presented by the Commission pursuant to Article 189 a (2)  
of the EC-Treaty)

## **EXPLANATORY MEMORANDUM**

### **1. Background**

The objective of the proposed amendments is to complete the proposal relating to measures to be taken against air pollution by emissions from motor vehicles and amending Council Directives 70/156/EEC and 70/220/EEC (COM(96) final 248) with the statistical selection procedure for the control of compliance of vehicles in service.

### **2. Legal basis**

The proposed measures amend the Commission's earlier proposal (COM(96) 248 final) based on Article 100A of the Treaty. Consequently they are made under Article 189a of the Treaty of the Union.

### **3. Content of the proposal**

The proposed amendments provide for Appendix 1 to Annex X of COM(96) final 248 sets the statistical test criteria for the sequential testing of emissions of vehicles taken from service. It provides for a procedure to deal with gross emitters and a statistical test criteria to determine whether the vehicle sample passes or fails the test.

**Amended proposal for a European Parliament and Council Directive relating to measures to be taken against air pollution by emissions from motor vehicles and amending Council Directives 70/156/EEC and 70/220/EEC.**

**Appendix 1 of Annex X reads as follows:**

*Appendix 1*

1. This Appendix describes the procedure to be used to verify the conformity of compliance of vehicles in service for the type I tailpipe emissions test. The procedure deals with the case where there are gross emitters in the sample due to an emissions related defect.
2. A vehicle is classified as a gross emitter when, for any regulated pollutant, the appropriate limit value given in section 5.3.1.4. of Annex I to this Directive is exceeded by more than 50%.
3. Starting with a minimum sample of three vehicles, the sample is examined for the occurrence of gross emitters (according to the definition given in section 2 of this Appendix).
  - 3.1. If no gross emitter is found, the statistical procedure of section 4 of this Appendix applies.
  - 3.2. If a vehicle is found to be a gross emitter, the reason for the excess emissions shall be determined by the approval authority.
  - 3.3. If more than one vehicle is found to be a gross emitter due to the same reason, a fail result for the vehicle sample shall be recorded.
  - 3.4. When only one gross emitter is found, or more than one gross emitter is found but due to different reasons, the sample is increased by one vehicle, unless a cumulative sample size greater than the maximum sample size of 15 would be reached.
    - 3.4.1. When, in the increased sample, more than one vehicle is found to be a gross emitter, due to the same reason, a fail result for the sample shall be recorded.
    - 3.4.2. If the maximum sample size of 15 is reached, provided no more than one gross emitter has been found in the sample, a pass or fail decision will be reached according to the statistical procedure of section 4 of this Appendix.
  - 3.5. Whenever the sample is increased due to the requirements of section 3.4, the statistical procedure of section 4 to this Appendix shall be applied to the increased sample size.
4. Statistical procedure
  - 4.1. With a minimum sample size of 3 and a maximum sample size of 15, the sampling procedure is set so that the probability of a lot passing a test with 40% of the production defective is 0.89 (producer's risk = 11%) while the probability of a lot being accepted with 65% of the production defective is 0.15 (consumer's risk = 15%).
  - 4.2. The measurements of the pollutants given in section 5.3.1.4. of Annex I to this Directive are considered to be log normally distributed and must first be transformed by taking their natural logarithms. Let  $n$  denote the current sample number.

4.3. If the natural logarithms of the measurements in the series are  $x_1, x_2, \dots, x_j$  and  $L$  is the natural logarithm of the limit value for the pollutant, then define:

$$d_j = x_j - L$$

$$\bar{d}_n = \frac{1}{n} \sum_{j=1}^n d_j$$

$$v_n^2 = \frac{1}{n} \sum_{j=1}^n (d_j - \bar{d}_n)^2$$

4.4. Table 1 shows the values of the pass ( $A_n$ ) and fail ( $B_n$ ) decision numbers against current sample number. The test statistic is the ratio  $\bar{d}_n/v_n$  and must be used to determine whether the series has passed or failed as follows:

For  $3 \leq n < 15$ :

- pass the series if  $\bar{d}_n/v_n \leq A_n$ ,
- fail the series if  $\bar{d}_n/v_n \geq B_n$ ,
- sample another vehicle and test for a gross emitter if  $A_n < \bar{d}_n/v_n < B_n$

For  $n = 15$ ,

- pass the series if  $\bar{d}_{15}/v_{15} \leq 0,15474$ ,
- fail the series if  $\bar{d}_{15}/v_{15} > 0,15474$ .

Table 1

Sample size $n$	Pass decision threshold $A_n$	Fail decision threshold $B_n$
3	- 0,80381	16,64743
4	- 0,76339	7,68627
5	- 0,72982	4,67136
6	- 0,69962	3,25573
7	- 0,67129	2,45431
8	- 0,64406	1,94369
9	- 0,61750	1,59105
10	- 0,59135	1,33295
11	- 0,56542	1,13566
12	- 0,53960	0,97970
13	- 0,51379	0,85307
14	- 0,48791	0,74801
15	0,15474	

## IMPACT STATEMENT ON COMPETITIVENESS AND JOBS

- I. What is the main justification of the measure?  
**The objective of the proposed amendments is to complete the proposal relating to measures against air pollution by emissions from motor vehicles and amending Council Directive 70/156/EEC and 70/220/EEC (COM(96) final 248), by a statistical appendix to be used by official services for the implementation of the new additional control of conformity measures proposed in the initial proposal.**
- II. Characteristics of the companies involved, more particularly:
  - Do they include a large number of small- and medium-sized businesses? **No**
  - eligible for Member State regional aid? **No**
  - eligible under the European Regional Development Fund? **No**
- III. What obligations are imposed on those companies? **No obligations**
- IV. What obligations are likely to be imposed indirectly upon those companies via the local authorities? **No additional obligation**
- V. Do any special measures apply to small- and medium-sized businesses? **No**
- VI. What is the foreseeable outcome:
  - on company productivity? **No negative effect**
  - on jobs? **No negative effect**
- VII. Have both sides of industry been consulted? **No**

ISSN 0254-1475

COM(97) 77 final

# DOCUMENTS

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Catalogue number : CB-CO-97-070-EN-C

ISBN 92-78-16274-4

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Office for Official Publications of the European Communities

L-2985 Luxembourg