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PROPOSAL FOR DRAFT AMENDMENTS TO REGULATION No. 83

(Emissions of M1 and N1 categories of vehicles)

Transmitted by the experts from the European LPG Association (AEGPL),
the European Association of Automobile Suppliers (CLEPA) and
the European Natural Gas Vehicle Association (ENGVA)

Note: The document reproduced below has been prepared by the experts from AEGPL, CLEPA and ENGVA in order to amend the requirements for bi-fuelled gas vehicles that fulfil all the primary goals of on-board diagnostic (OBD) systems. This proposal also removes unnecessary restrictions and leads to similar costs as for mono-fuel gas vehicles, therefore reducing the barrier for the introduction of bi-fuel vehicles into the market. The modifications to the current text of the Regulation are marked in **bold** characters.

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Note: This document is distributed to the Experts on Pollution and Energy only.

A. PROPOSAL

Annex 11,

Paragraphs 3.9. and 3.9.1., amend to read:

"3.9. Bi-fuelled gas vehicles

In general, for bi-fuelled gas vehicles for each of the fuel types all the OBD requirements as for a mono-fuelled vehicle are applicable. To this end one of the following two options in paragraphs 3.9.1. or 3.9.2. or any combination thereof shall be used.

3.9.1. One OBD system for both fuel types.

3.9.1.1. The following procedures shall be executed for each diagnostic in a single OBD system for both fuel operations, either independent of the fuel currently in use or fuel type specific:

- **activation of malfunction indicator (MI) (see paragraph 3.5. of this annex),**
- **fault code storage (see paragraph 3.6. of this annex),**
- **extinguishing the MI (see paragraph 3.7. of this annex),**
- **erasing a fault code (see paragraph 3.8. of this annex).**

For components or systems to be monitored, either separate diagnostics for each fuel type can be used or a common diagnostic.

3.9.1.2. The OBD system can reside in either one or more computers."

Insert new paragraphs 3.9.2. to 3.9.4., to read:

3.9.2. Two separate OBD systems, one for each fuel type.

3.9.2.1. The following procedures shall be executed independently of each other when the vehicle is operated on petrol or on gas:

- **activation of malfunction indicator (MI) (see paragraph 3.5. of this annex),**
- **fault code storage (see paragraph 3.6. of this annex),**
- **extinguishing the MI (see paragraph 3.7. of this annex),**
- **erasing a fault code (see paragraph 3.8. of this annex).**

3.9.2.2. The separate OBD systems can reside in either one or more computers.

3.9.3. Specific requirements regarding the transmission of diagnostic signals from bi-fuelled gas vehicles.

3.9.3.1. On a request from a diagnostic scan tool, the diagnostic signals shall be transmitted on one or more source addresses. The use of source addresses is described in ISO DIS 15031-5 "Road vehicles - communication between vehicles and external test

equipment for emissions-related diagnostics - Part 5: Emissions-related diagnostic services", dated 1 November 2001.

3.9.3.2. Identification of fuel specific information can be realized:

- by use of source addresses and/or
- by use of a fuel select switch and/or
- by use of fuel specific fault codes.

3.9.4. Regarding the status code (as described in paragraph 3.6. of this annex), one of the following two options has to be used:

- the status code is fuel specific, i.e. use of two status codes, one for each fuel type;
- the status code shall indicate fully evaluated control systems for both fuel types (petrol and gas) when the control systems are fully evaluated for one of the fuel types."

Paragraphs 4.5. to 4.5.2., should be deleted.

Paragraphs 4.6. and 4.6.1. (former), renumber as paragraphs 4.5. and 4.5.1.

Paragraph 4.6.1.1., should be deleted.

Paragraphs 4.6.2. and 4.7. (former), renumber as paragraphs 4.5.2. and 4.6.

Annex 11, Appendix 1, paragraphs 6.6. to 6.6.3., should be deleted.

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B. JUSTIFICATION

The current OBD requirement for bi-fuelled gas vehicles was realized at a very late stage through modifications of the original legislation which only differentiated between positive and compression ignited engines. Originally, the adaptation for bi-fuelled gas vehicles described a single technical solution. Due to time constraints and the knowledge that other solutions were being developed, these solutions were incorporated by the use of "allowed deficiencies".

After two years of developing OBD systems for mono- and bi-fuelled gas vehicles according to the requirements of Regulation No. 83, the industry associations CLEPA, ENGVA, AEGPL and the vehicle manufacturers members of ACEA have come to the conclusion that the OBD requirements for bi-fuelled gas vehicles compared to those for mono-fuelled gas vehicles require significant additional hardware, software and development efforts and associated costs without benefits for the environment, the vehicle owner and the repair industry.

The OBD requirements for bi-fuelled gas vehicles of the current regulation still prescribe a single technical solution. At the present time, several other solutions have been realized and type-approved, which fulfil all primary goals of OBD successfully.

Therefore, the Associations would like to propose an amendment for the requirements for bi-fuelled gas vehicles that fulfils all the primary goals of OBD, but removes unnecessary restrictions and leads to similar costs (hardware, software, development) as for mono-fuel gas vehicles, therefore reducing the barrier for the introduction of bi-fuel vehicles (OEM) into the market.

This amendment is based on the idea of removing the need for deficiencies defined in Annex 11, paragraph 4.5. of the Regulation by allowing alternatives to the current requirements. Finally, paragraph 3.9. of Annex 11 is amended to cover all the specific requirements for bi-fuelled gas vehicles. Paragraphs 4.5. and 4.6.1.1. of Annex 11 and paragraph 6.6. of Appendix 1 of Annex 11 are, therefore, not necessary any more and are deleted.
