

## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on the Transport of Dangerous Goods

##### Ninety-eighth session

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Item 6 (a) of the provisional agenda

**Proposals for amendments to annexes A and B of ADR:  
construction and approval of vehicles**

30 April 2015

### **Safety considerations in the use of liquefied petroleum gas (LPG) as fuel for vehicles carrying dangerous goods: Response ECE/TRANS/WP.15/2015/INF.3 (Sweden)**

**Transmitted by AEGPL**

#### *Summary*

<b>Executive summary:</b>	This document answers questions submitted by the Government of the Kingdom of Sweden through ECE/TRANS/WP.15/INF.3 on behalf of AEGPL and NGV Global.
<b>Action to be taken:</b>	Modify amendment of 9.2.4.4 in order to clarify the use of gaseous fuels according to the vehicle classes.
<b>Related documents:</b>	ECE/TRANS/WP.15/2015/6 ECE/TRANS/WP.15/2015/INF.3

#### **Introduction**

1. The introduction of gaseous fuels for the transport of dangerous goods into the text of ADR needs to take into account possible interactions with provisions originally drafted for the use with liquid fuels. The possible utilisation of gaseous fuels across different ignition technologies (compression as well as spark ignition) poses the challenge to precisely describe the proposed intention.
2. As stated in INF.3 it has been clear from the beginning, that the use of gaseous fuels was not intended in EX/II and EX/III class vehicles. The method chosen for this, was to reference the fuel's flash point. Although literature knows flash points for methane (CNG and LNG) as well as for LPG, these substances are gases according to GHS, therefore by definition cannot have a flash point.
3. An alternate wording is suggested below to clearly exclude the use of gaseous fuels from EX/II and EX/III vehicles.

## Difference between proposed amendment and adopted text

4. It was not the purpose of the amendment to lower the level of safety by deleting the requirements for a flame trap at the filler opening or of hermetically sealing closure. The provisions apply to liquid fuel for spark ignition engines, which falls out of the scope of the amendment by AEGPL and NGV Global.

## Proposal

5. ECE/Trans/225 Vol. II. 9.2.4.4 Amend subsection 9.2.4.4 to read:

"9.2.4.4 Engine

The engine propelling the vehicle shall be so equipped and situated to avoid any danger to the load through heating or ignition. The use of *compressed natural gas (CNG) or liquefied natural gas (LNG)* as fuel shall be permitted only if the specific components for *CNG and LNG* are approved according *to* ECE Regulation No. 110<sup>7</sup> and their installation on the vehicle complies with the technical requirements of ECE Regulation No. 110<sup>7</sup>. *The use of liquefied petroleum gas (LPG) as fuel shall be permitted only if the specific components for LPG are approved according to ECE Regulation No. 67-01<sup>8</sup> and their installation on the vehicle complies with the technical requirements of ECE Regulation No. 67-01<sup>8</sup>.* In the case of EX/II and EX/III vehicles the engine shall be of compression-ignition construction using only fuels with a flashpoint above 55 °C, *gases or liquefied gases shall not be used as fuels.*

## Justification

### Safety

6. Vehicles of EX/II and EX/III classes pose higher risks due to the more sensitive load. Given the uncertainties some representatives still see, it is the more prudent approach to restrict the use of gaseous fuels to the transport of dangerous goods of classes FL and OX until enough experience has been accumulated.

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