



## Economic and Social Council

Distr.: General

Original: English

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### Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on General Safety Provisions

104<sup>th</sup> session

Geneva, 15-19 April 2013

Item... of the provisional agenda

**Regulation No. 110 (Specific equipment for CNG)**

**and Regulation No. 67 (Equipment for liquefied petroleum gas (LPG))**

### **Proposal for amendments to Regulations No. 110 and No. 67**

### **Submitted by the expert from the CLEPA**

The text reproduced below was produced by the expert from European Association of Automotive Suppliers (CLEPA) to introduce type approval provisions of fuel selection system. The modification to the current text of the Regulation is marked in bold or new or strikethrough or deleted characters.

**I. Proposal Regulation No. 110 “Fuel selection system”**

*Part II, paragraph 17.10.2, insert new paragraph 17.10.3 to read:*

- “17.10.2. Vehicles with more than one fuel system shall have a fuel selection system ~~to ensure that no more than one fuel at the same time is supplied to the engine for more than 5 seconds~~ **which shall prevent both a flow of gaseous fuel into the petrol or diesel tank and a flow of petrol or diesel into the gaseous fuel tank also in case of a fault of the fuel selection system.** ~~“Dual fuel” vehicles, using diesel as the primary fuel for igniting the air/gas mixture, are allowed in cases where these engines and vehicles meet mandatory emission standards.~~“
- 17.10.3. **The measures shall be demonstrated during the type approval.”**

**II. Justification Regulation No. 110 “Fuel selection system”**

Reference paragraph, 17.10.2

Mixed fuel operation can provide advantages for bi-fuel vehicles. There is also no safety risk in running in a mixed fuel operation mode. However, for safety reasons it shall be ensured that there is no flow of one fuel into the other fuel tank. This proposal therefore replaces the restriction for mixed fuel operation by a prohibition of a flow of gaseous fuel into the petrol or diesel tank and a prohibition of a flow of petrol or diesel into the gaseous fuel tank. This shall be avoided under all temperature and pressure conditions and also in case of a single fault.

UN-R110 regulates only safety issues. The requirements for mandatory emission standards are part of UN-R83 (e.g. with regard to mixed fuel operation).

### III. Proposal Regulation No. 67 “Fuel selection system”

*Part II, Paragraph 17.11.5, 17.11.6 and insert new 17.11.7, amendment to read:*

- "17.11.5. Vehicles with more than one fuel system shall have a fuel selection system **which shall prevent both:**
- 1. any flow of gaseous fuel into the petrol or diesel tank**
  - 2. a flow of petrol or diesel into the LPG fuel tank which could lead to an overfilling of the LPG tank (i.e. above 80 % of its capacity).**
- ~~to ensure that no more than one fuel is supplied to the engine at any time. A short overlap time to allow switching over is allowed.~~
- 17.11.6. **The provisions of paragraph 17.11.5 shall be considered under all operating temperature and pressure conditions and also in case of a fault of the fuel selection system, e.g. by use of redundant components, activation of limp home mode or of a malfunction indication to the driver. Notwithstanding the provisions of paragraph 17.11.5, in case of pilot operated dual fuel engines, it is permitted to supply more than one fuel."**
- 17.11.7. **The measures shall be demonstrated during the type approval."**

### IV. Justification Regulation No. 67 “Fuel selection system”

Reference paragraph 17.11.5

Mixed fuel operation can provide advantages for biofuel vehicles. There is also no safety risk in running in a mixed fuel operation mode. However for safety issues it shall be ensured that there is no flow of fuel into the other fuel tank. This proposal therefore replaces the restriction for mixed fuel operation by a prohibition of a flow of gaseous fuel into the petrol or diesel tank and a prohibition of a flow of petrol or diesel into the gaseous fuel tank which could determine the overfilling of the LPG tank above the maximum degree of 80 % of its capacity also by the accumulation of very small flow over long time. This shall be avoided under all temperature and pressure conditions and also in case of a single fault. UN-R67 regulates only safety issues. The requirements for mandatory emission standards are part of UN-R83.