Proposal for amendments to Regulation No. 49 (compression ignition and positive ignition (LPG and CNG) engines)

Submitted by the expert from OICA

This document is a proposal to amend and complete the GRPE working document ECE/TRANS/WP.29/GRPE/2014/3, submitted by OICA.

The proposal in section I shall be understood as the modifications to Regulation N°49 (rev.6) that are proposed to be introduced, amending and completing thereby GRPE working document ECE/TRANS/WP.29/GRPE/2014/3. They are expressed by reference to the text of Regulation N°49 (rev.6).

The proposal in section II shall be understood as the proposals contained in GRPE working document ECE/TRANS/WP.29/GRPE/2014/3 that are becoming useless, and therefore that shall not be taken into consideration for amending Regulation N°49 (rev.6).

I. Proposal for amending Regulation N°49 (rev.6)

Paragraphs 13.2.1., amend to read:

"13.2.1. Contracting Parties applying this Regulation shall, from the date of entry into force of the 06 series of amendments to this Regulation, grant an ECE approval to an engine system or vehicle only if it complies with:

(a) The requirements of paragraph 4.1. of this Regulation;

(b) The performance monitoring requirements of paragraph 2.3.2.2. of Annex 9A **in the case of compression ignition and dual-fuel engines and vehicles**;

(c) The NO_x OTL monitoring requirements as set out in the row "phase in period" of ~~the~~ Table~~s~~ 1 ~~and 2~~ of Annex 9A, **in the case of compression ignition and dual-fuel engines and vehicles**;

(d) The NO_x OTL monitoring requirements as set out in the row "phase in period" of Table 2 of Annex 9A, in the case of positive ignition engines and vehicles;

(**e**) The Reagent quality ~~and consumption~~ "phase-in" requirements as set out in paragraph~~s~~ 7.1.1.1. ~~and 8.4.1.1.~~ of Annex 11."

Paragraph 13.3., amend to read:

"13.3. ~~Limit of validity of type approvals~~**Acceptance of already issued type approvals**

13.3.1. As from ~~the 1 January 2014~~ **31 December 2013**, **Contracting Parties may refuse** type approvals granted to this Regulation ~~as amended by the 05 series of amendments shall cease to be valid,~~ **which do not comply with the requirements mentioned in paragraph 13.2.1**. **above.**

13.3.2. As from 1 September 2015, **Contracting Parties may refuse** type approvals **of positive ignition engines and vehicles** granted to this Regulation, ~~as amended by the 06 series of amendments,~~ which do not comply with the requirements ~~of~~ **mentioned in** paragraph 13.2.2. above~~, shall cease to be valid~~.

13.3.3. As from 31 December 2016, **Contracting Parties may refuse** type approvals granted to this Regulation, ~~as amended by the 06 series of amendments,~~ which do not comply with the requirements ~~of~~ **mentioned in** paragraph 13.2.3. above~~, shall cease to be valid~~."

Annex 1, Part 1, in the table, delete paragraph 3.2.12.2.8.6.

Annex 3, Table 1, including reference notes, replace to read:

"Table 1

Letters with reference to requirements of OBD and SCR systems

Character	*NO_x OTL*[1]	*PM OTL*[2]	*CO OTL*[6]	*IUPR*[13]	*Reagent quality*	*Additional OBD monitors*[12]	*Implementation dates: new types*	*Date when Contracting Parties. may refuse Type.Approval*
A[9 10] **B**[10]	**Row "phase-in period" of Tables 1 and 2 of Annex 9A**	**Performance. monitoring**[3]	**N/A**	**Phase-in**[7]	**Phase in**[4]	**N/A**	**Date of entry into force of 06 series of R49**	**01 September 2015**[9] **31 December 2016**[10]
B[11]	**Row "phase-in period" of Tables 1 and 2 of Annex 9A**	**N/A**	**Row "phase-in period" of Table 2 of Annex 9A**	**N/A**	**Phase in**[4]	**N/A**	**1 September 2014**	**31 December 2016**
C	**Row "general requirements" of Tables 1 and 2 of Annex 9A**	**Row "general requirements" of Table 1 of Annex 9A**	**Row "general requirements" of Table 2 of Annex 9A**	**General**[8]	**General**[5]	**Yes**	**31 December 2015**	

Notes:

1 "NOx OTL" monitoring requirements as set out in Table 1 of Annex 9A for compression ignition and dual-fuel engines and vehicles and in Table 2 of Annex 9A for positive ignition engines and vehicles.

2 "PM OTL" monitoring requirements as set out in Table 1 of Annex 9A for compression ignition and dual-fuel engines and vehicles.

3 "Performance monitoring" requirements as set out in paragraph 2.3.2.2. of Annex 9A.

4 Reagent quality "phase-in" requirements as set out in paragraph 7.1.1.1. of Annex 11.

5 Reagent quality "general" requirements as set out in paragraph 7.1.1. of Annex 11.

6 "CO OTL" monitoring requirements as set out in Table 2 of Annex 9A for positive ignition engines and vehicles.

7 excluding the statement required by paragraph 6.4.1. of Annex 9A.

8 including the statement required by paragraph 6.4.1. of Annex 9A.

9 For positive-ignition engines and vehicles.

10 For compression-ignition and dual-fuel engines and vehicles.

11 Only applicable to positive-ignition engines and vehicles.

12 "Additional provisions concerning monitoring requirements" as set out in paragraph 2.3.1.2. of Annex 9A.

13 IUPR specifications are set out in Annexes 9A and 9C of this Regulation. PI engines are not subjected to IUPR."

Annex 9A

Table 2, amend to read:

"Table 2

OTLs (~~all~~ positive ignition engines ~~fitted to vehicles belonging to category M_3, to N_2 vehicles having a maximum permissible mass exceeding 7.5 tonnes, and to N_3 vehicles~~)

	Limit in mg/kWh	
	NO_x	*CO^1*
Phase-in period	1 500	**7 500**~~**1**~~
General requirements	1 200	**7 500**

[1] ~~The OTL for CO shall be set at a later stage~~. **The transitional provisions related to introduction of the CO OTLs are specified in paragraphs 13.2.2. and 13.3.2. of this Regulation.**"

Annex 11

Paragraph 8., title, amend, to read:

"8. Reagent consumption **and dosing activity** monitoring"

Paragraph 8.1. amend, to read:

"8.1. The vehicle shall include ~~a~~ means of determining reagent consumption**, interruption of the reagent dosing activity** and providing off-board access to consumption information."

Paragraph 8.3.1. amend, to read:

"8.3.1. The maximum detection period for insufficient reagent consumption is ~~48~~ **5** hours or the period equivalent to a demanded reagent consumption of at least ~~15~~ **2** litres, whichever is longer."

Insert new paragraph 8.3.1.1., to read:

"8.3.1.1. When the reagent consumption is monitored by using at least one of the following parameters:

(a) The level of reagent in the on-vehicle storage tank, or

(b) The flow of reagent or quantity of reagent injected at a position as close as technically possible to the point of injection into an exhaust after-treatment system,

the maximum detection period for insufficient reagent consumption is extended to 48 hours or to the period equivalent to a demanded reagent consumption of at least 15 litres, whichever is longer:"

Delete paragraph 8.3.2.

Paragraph 8.4.1., amend to read:

"8.4.1. The driver warning system described in paragraph 4. shall be activated if a deviation of more than ~~20~~ **fifty** per cent between the average reagent consumption and the average demanded reagent consumption by the engine system over a period to be defined by the manufacturer, which shall not be longer than the maximum period defined in paragraph 8.3.1., **or, when applicable, paragraph 8.3.1.1.,** is detected. When the warning system includes a message display system, it shall display a message indicating the reason for the warning (for example: "urea dosing malfunction", "AdBlue dosing malfunction", or "reagent dosing malfunction")."

Annex 15

Insert new paragraphs 4.2.2.3.1. to 4.2.2.3.3., to read:

"4.2.2.3.1. The power limitation option may only be activated if the system concludes that the gas tank is empty not later than 5 minutes after engine cranking, the engine being at idle.

4.2.2.3.2. The power limitation option shall not be activated when the system concludes that the gas tank is empty from a previous driving cycle and the gas tank has not been refilled.

4.2.2.3.3. The manufacturer shall demonstrate at type-approval that the power limitation option can only be activated during a repair or maintenance operation."

II. Further proposal for amending document GRPE/2014/3

Delete proposed insertion of paragraph 13.3.4.

III. Justification

This proposal aims at aligning the transitional provision contained in Regulation 49/Rev. 6 and, therefore, also in ECE/TRANS/WP.29/GRPE/2015/3 with the one contained in the General Guidelines for UN regulatory procedures and transitional provisions in UN Regulations (ECE-TRANS-WP29-1044r1e).

This alignment induces the deletion of the proposed paragraph 13.3.4. , which could create confusion, and to introduce instead a new amendment in Table 1 of Annex 3, in order to take into consideration the diesel and dual-fuel fuel engines bearing the letter B.

This proposal also aims at improving the neutrality of the requirements as regards the technology that may be used for monitoring the reagent consumption in Annex 11 of Regulation 49 (rev.6).

In order to achieve that neutrality, it is proposed to accept monitoring means other than monitoring the reagent level in the tank or monitoring the reagent flow, provided that these means permit the monitoring time requirement that is considered as necessary, but that the two old monitors could not permit, and therefore was not specified.

Finally this proposal also contains some minor editorial improvements to the modifications of Annex 15 proposed in document ECE/TRANS/WP.29/GRPE/2015/3.