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**Economic Commission for Europe****Inland Transport Committee****World Forum for Harmonization of Vehicle Regulations****Working Party on Pollution and Energy****Eightieth session**

Geneva, 14-17 January 2020

Item 5 of the provisional agenda

**UN Regulations Nos. 24 (Visible pollutants, measurement of power of C.I. engines (Diesel smoke)), 85 (Measurement of the net power), 115 (LPG and CNG retrofit systems), 133 (Recyclability of motor vehicles) and 143 (Heavy Duty Dual-Fuel Engine Retrofit Systems (HDDF-ERS))****Proposal for a new Supplement to the original version of UN Regulation No. 85 (Measurement of the net power)****Submitted by the expert from the International Organization of Motor Vehicle Manufacturers\***

The text reproduced below was prepared by the expert from the International Organization of Motor Vehicle Manufacturers (OICA). This document proposes to permit the usage of the gaseous reference fuels described in UN Regulation No. 83 in order to reduce potential testing complexity. The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

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\* In accordance with the programme of work of the Inland Transport Committee for 2020 as outlined in proposed programme budget for 2020 (A/74/6 (part V sect. 20) para 20.37), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.



## I. Proposal

Paragraph 5.2.3.3.1., amend to read:

"5.2.3.3.1. In the case of an engine with self-adaptive fuelling:

The fuel used shall be the one available on the market. In any case of dispute the fuel shall be one of the references fuels specified in Annex 8 **or at the choice of the manufacturer one of the references fuels specified in paragraph 1.2. of Annex 10a to Regulation No. 83 or in the table "Type: Natural Gas/ Biomethane" in Annex 5 to Regulation No. 49;**"

Paragraph 5.2.3.3.2., amend to read:

"5.2.3.3.2. In the case of an engine without self-adaptive fuelling:

The fuel used shall be the one available on the market with a Wobbe index at least 52.6 MJm<sup>-3</sup> (4 °C, 101.3 kPa). In case of dispute the fuel used shall be the reference fuel G20 specified in Annex 8 **or at the choice of the manufacturer the reference fuel G20 specified in paragraph 1.2. of Annex 10a to Regulation No. 83 or the reference fuel G20 specified in the table "Type: Natural Gas/ Biomethane" in Annex 5 to Regulation No. 49, i.e. the fuel with the highest Wobbe Index, or"**

## II. Justification

1. There is no overlap between the reference fuels currently in UN Regulation No. 85 and those in UN Regulation No. 83 or UN Regulation No. 49 (see below):

		G20	G23	G25
Composition:				
CH4	% vol	100	92.5	86
N2	% vol	0	7.5	14
Wobbe Index*	MJ/m <sup>3</sup>	53.6 ± 2 %	48.2 + 2 %	43.9 ± 2 %
		<b>52.5 – 54.7</b>	<b>47.2 – 49.2</b>	<b>43.0 – 44.8</b>
		<b>47.2 – 49.2</b>		<b>38.2 – 40.6</b>
		<b>47.2 – 49.2</b>		

2. An allowance to use the emissions reference fuels would avoid the need for sourcing and storage of 2 reference fuels in type approval facilities.