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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 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.

* 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⁻³ (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. UN Regulations No. 83 and 49 specify the Wobbe Index of NG reference fuels based on the net calorific value whereby UN Regulation No. 85 specifies the Wobbe Index based on the gross calorific value.
 2. An accurate calculation from one basis to the other is specific to the gas within the permitted tolerances. Although G20 is in theory pure Methane, it is permitted to contain up to 1% inerts and therefore is also not possible to calculate a general factor.
 3. Enabling the usage of the specification in UN Regulation No. 83 for all testing allows reference gas suppliers to certify their fuels to a single basis (net calorific value) and thereby avoid confusion.
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