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Light vehicles: UN Regulations Nos. 68 (Measurement of the maximum speed, including electric vehicles), 83 (Emissions of M₁ and N₁ vehicles), 101 (CO₂ emissions/fuel consumption) 103 (Replacement pollution control devices) and 154 (Worldwide harmonized Light vehicles Test Procedures (WLTP))

Proposal for a new Supplement to the 01 series of amendments to UN Regulation No. 101 (CO₂ emissions/fuel consumption)

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 aims to harmonize the requirements for the determination of CO₂, fuel and electric energy consumption of the discharge requirement for OVC-HEV with an operating mode switch with its stop criterion. The preconditioning requirement is also harmonized between the 01 series of amendments of UN Regulation No. 101 (Annex 9, determination of electric range) and 06 and 07 series of amendments of UN Regulation No. 83 (Annex 14, provisions for emissions test procedures for HEV). The modifications to the current text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2022 as outlined in proposed programme budget for 2022 (A/76/6 (Sect.20), para 20.76), 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

Annex 8, Paragraph 4.2.2.1., amend to read:

"4.2.2.1. The electrical energy/power storage device of the vehicle is discharged while driving with the switch in pure electric position (on the test track, on a chassis dynamometer, etc.) at a steady speed of 70 per cent \pm 5 per cent of the maximum speed of the vehicle in pure electric mode, which is to be determined according to the test procedure for electric vehicles defined in Regulation No. 68. **At the request of the manufacturer a steady speed of 70 per cent \pm 5 per cent of the maximum thirty minutes speed of the vehicle in pure electric mode may be applied.**

Stopping the discharge occurs:

- (a) When the vehicle is not able to run at 65 per cent of the maximum thirty minutes speed; or
- (b) When an indication to stop the vehicle is given to the driver by the standard on-board instrumentation; or
- (c) After covering a distance of 100 km.

If the vehicle is not equipped with a pure electric mode, the electrical energy/power storage device discharge shall be achieved by driving the vehicle (on the test track, on a chassis dynamometer, etc.):

- (a) At a steady speed of 50 km/h until the fuel consuming engine of the HEV starts up;
- (b) Or if a vehicle cannot reach a steady speed of 50 km/h without starting up the fuel consuming engine, the speed shall be reduced until the vehicle can run a lower steady speed where the fuel consuming engine just does not start up for a defined time/distance (to be specified between technical service and manufacturer);
- (c) Or with manufacturer's recommendation.

The fuel-consuming engine shall be stopped within 10 seconds of it being automatically started."

II. Justification

1. The discharge speed (70 per cent \pm 5 per cent of the **maximum speed**) requirement for Condition A and B of OVC-HEV with an operating mode switch in Annex 8 "Method of measuring the emissions of carbon dioxide, fuel consumption and the electric energy consumption of vehicles powered by a hybrid electric power train" in the 01 series of UN Regulation No. 101 does not fit to one of its stop criteria (65 per cent of the **maximum thirty minutes speed**).

2. The discharge speed and speed stop requirement:

- (a) for condition A of OVC-HEV with an operating mode switch in Annex 9 "Method of measuring the electric range of vehicles powered by an electric power train only or by a hybrid electric power train", paragraphs 4.1.1.3.2. and 4.1.1.3.3. of the 01 series of amendments of UN Regulation No. 101; and
- (b) for condition A and B OVC-HEV with an operating mode switch in Annex 14 "Emissions test procedure for hybrid electric vehicles (HEV)", paragraphs 3.2.2.2. and 3.2.3.2. of the 06 and 07 series of amendments of UN Regulation No. 83

are both referring to the maximum thirty minutes speed.

3. The preconditioning requirement of UN Regulation No. 101 and UN Regulation No. 83 are harmonized with this proposal.
