

Application of ECE Regulations to Hybrid Vehicles
Italian comments to document TRANS/WP.29/GRPE/2001/1

Transmitted by the expert from Italy

Italy agrees with the scope of the French delegation's document, which identifies the Regulations that must be amended in order to include hybrid vehicles in their field of application.

At the same time, the Italian delegation would like to bring to your attention the following comments

1. ECE Regulations involved

The Regulations, which are to be addressed, are listed in section 1. These Regulations essentially cover the following issues: environment (as R. 83 on vehicle emissions, R. 101 on fuel consumption/CO2 emissions; R. 51 on noise), electromagnetic compatibility (R.10), measurements of the vehicle max. speed (R. 68) and engine power (R. 85) and batteries for electric vehicles (R. 100).

In our opinion this list should be completed by also including R. 24 on smoke measurements and some Regulations concerning the vehicle safety such as R. 12 (frontal impact/steering column displacement) and R. 13 (braking).

2. Definition of hybrid vehicles

We would like to propose to improve the definition of a hybrid vehicle (item B 1) as follows:

"A hybrid vehicle is a vehicle equipped with at least two energy sources for traction purpose.

An electric hybrid vehicle is a hybrid vehicle equipped with an electric traction system and at least another energy source for traction purposes.

A thermal electric hybrid vehicle is an electric hybrid vehicle in which the other energy source (s) is (are) a thermal engine (thermal engines)."

3. Categories of hybrid vehicles

The table, which shows the different vehicle categories, lists, from left to right, the pure electric vehicle, four categories of hybrid vehicles and the pure thermal vehicle.

The text, then, continues with the definition of a pure electric vehicle and of each one of the four categories of hybrid vehicles. For sake of wholeness, we would also add the definition of a pure thermal vehicle, which is missing.

4. Amendments to existing ECE Regulations

With reference to the amendments which may be necessary to introduce in the existing Regulations, the ones, which will require an in depth discussion, are the amendments concerning R. 101 on fuel consumption/CO2 emissions.

The provisions relating to the fuel consumption measurements under pure electric or pure thermal operations are already in the present text. But it will prove complex to quantify the fuel consumption/CO2 emissions when, under

normal operating conditions, both the electric and the thermal power sources can contribute to the vehicle propulsion.

During the driving cycle, a fraction of the energy may be drawn from the batteries and, thus, the corresponding CO₂ emissions must be accounted for. At the same time, they will vary according to whether the electric energy will then be drawn from the distribution network or from the thermal engine when power demand by the vehicle is limited and, in this second case, according to at which engine running the battery recharging occurs.
