

Submitted by the experts from EC

Informal document No. GRPE-59-17
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Agenda item 4)

WORLDWIDE HARMONIZED MOTORCYCLE EMISSION TEST CYCLE
(WMTC)

Proposal for draft amendments to global technical regulation No. 2

Submitted by the Commission of the European Union

The text reproduced below was prepared by the EU Commission Services in order to introduce initial performance requirements into the existing global technical regulation (gtr) No. 2 on the Worldwide harmonized Motorcycle emission Test Cycle (WMTC).

A. STATEMENT OF TECHNICAL RATIONALE AND JUSTIFICATION

At the fifty-eighth session of the Working Party on Pollution and Energy (GRPE), the text of document ECE/TRANS/WP.29/2009/132 was adopted and will serve as a template related to the performance requirements in global technical regulation No. 2 (Worldwide harmonized motorcycle emission test cycle). The informal WMTC development group recommended starting discussions on the actual thresholds once the Commission of the European Union has proposed the next levels of Euro4 and Euro 5 emission limits, which is planned for April 2010.

A number of amendments are proposed for the following reasons:

1. The unit of the pollutant emission limits was changed from [g/km] into [mg/km] for better readability and transparency to compare with limits for e.g. passenger cars after Euro5&6 transposition.
2. In order to first allow the contracting parties to transition smoothly from their current used test cycle for motorcycles to actually apply the WMTC, additional alternative thresholds are proposed to be used for a to be defined transitional period.
3. Like many other contracting parties the EU suffers from environmental concerns owing to road transport emissions. Exposure to these pollutants is associated with a host of serious health effects including premature death, aggravated respiratory and heart disease, and neurological damage. The engines of L-category vehicles (different vehicle classes with 2, 3 and 4 wheels including mopeds and motorcycles) emit such undesirable side products as toxic air pollutants and also non-toxic Greenhouse Gasses. Also evaporative emissions from fuel storage are considered to be toxic. Polycyclic aromatic hydrocarbons (PAH) present in motorcycle emissions has been associated over the long term with increased cancer risk, while short term exposure is associated with respiratory and neurological effects.

The introduction of Euro 5&6 passenger car emission standards and Euro VI heavy-duty emission standards means that in the years to come the contribution of L-category vehicles will become increasingly important. For example total HydroCarbons (THC) emitted by L-category vehicles are estimated through modelling to increase from a share of **38%** today to **61%** of the total hydrocarbon emissions (sum of evaporative and exhaust emissions) from the entire road transport sector in the EU by 2020, if no additional measures are introduced. This is mainly owing to the significant reductions of hydrocarbon emissions from other road transport categories. Mopeds are already today one of the most significant contributors to hydrocarbon emissions, anticipated to be rising to **36%** of total emissions by all road transport in 2020.

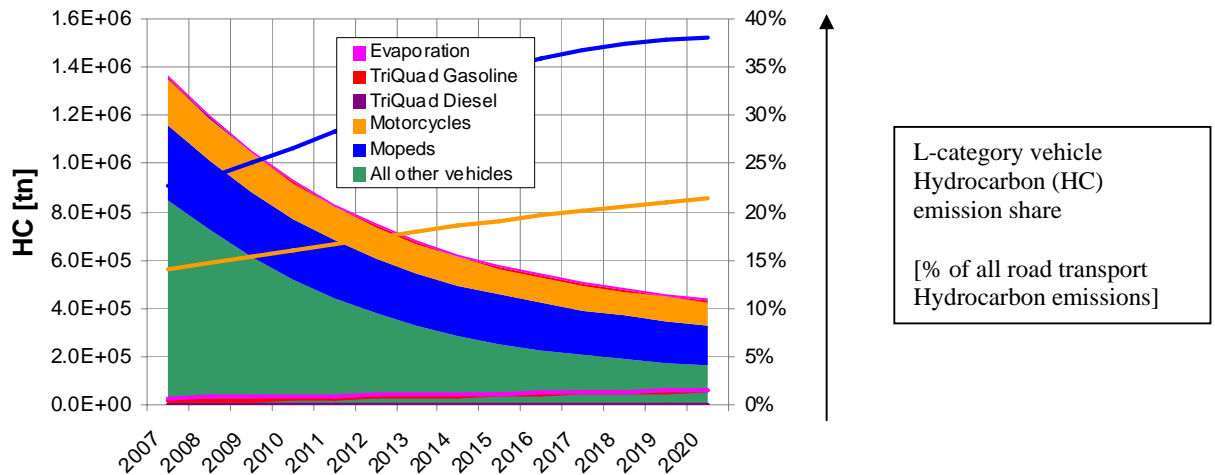


Figure 1: Trend over time of L-category vehicle, absolute and relative share of hydrocarbon emissions if no change in policy.

NB. The "all other vehicles" category includes passenger and delivery cars, trucks and busses.

Source: http://ec.europa.eu/enterprise/sectors/automotive/files/projects/report_measures_motorcycle_emissions_en.pdf

Primary Y-axis (left): HC = HydroCarbon emissions;

Secondary Y-axis (right): L-category vehicle Hydrocarbon (HC) emission share as % of all road transport emitting Hydrocarbon emissions

CO emissions are high and are expected to rise from about 20% now to a share of around **36%** of total road transport emissions in 2020.

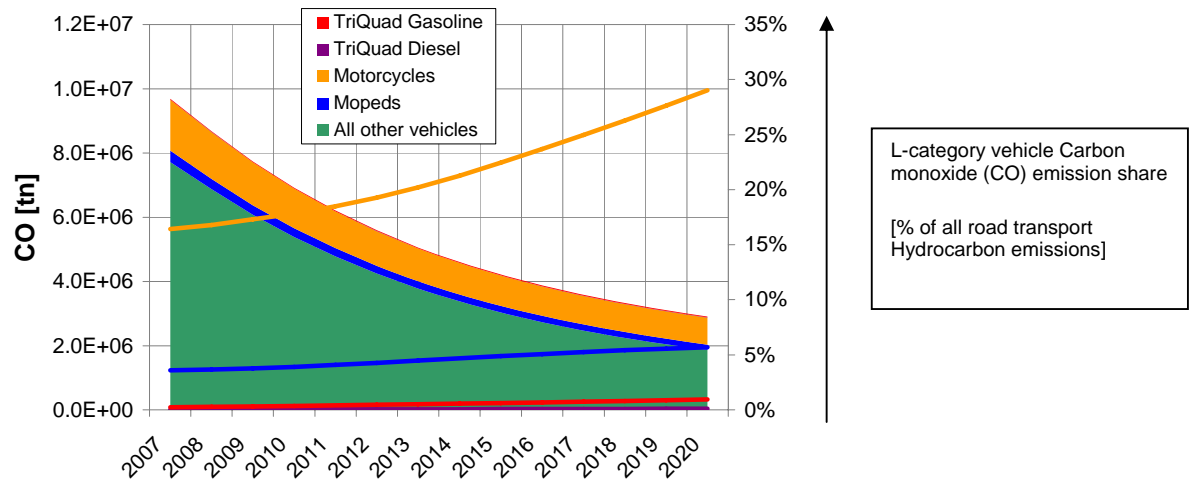


Figure 1: Trend over time of L-category vehicle, absolute and relative share of carbon monoxide emissions if no change in policy.

NB. The "all other vehicles" category includes passenger and delivery cars, trucks and busses. Source: the LAT report

Source: http://ec.europa.eu/enterprise/sectors/automotive/files/projects/report_measures_motorcycle_emissions_en.pdf

Primary Y-axis (left): CO = Carbon monoxide emissions; 2.0E+06 = 2,000,000 1.0E+07 = 10,000,000, 1tn=1000 kg.

Secondary Y-axis (right):: L-category vehicle Carbonmonoxide (CO) emission share as % of all road transport Hydrocarbon emissions

In a number of southern European cities powered two wheelers are banned from city traffic to prevent excessive particulate emissions in the event of a fine dust alarm during hot summer days. EU legislation for trucks and cars is proving successful in significantly bringing down overall emitted pollutant levels, according to recent measured and reported reductions in

emission levels throughout Europe. L-category vehicles must contribute proportionately to this success story, especially taking into account that for Total Hydrocarbons (from exhaust and evaporative emissions) emitted by these vehicles will produce significantly more air pollutants than passenger cars and trucks together in 2020. At the same time they are responsible for only 3% of total road transport mileage. The source of the disproportionately high emission levels are the polluting vehicles from the fleet in the market.

4. The TBD (to be discussed) values in tables 5-1 and 5- 2c will be proposed in a next revision of this informal document only after the Euro4 and 5 levels are adopted by the EU Commission. This informal document will be prepared for either the next GRPE in June 2010, the WP29 meeting in June 2010 or the WP29 meeting in November 2010, pending adoption of the Euro4 and Euro5 proposal by the Commission.

B. PROPOSAL

Document ECE/TRANS/WP.29/2009/132,

Paragraph 5.2., amend to read:

5.2. The principal performance requirements

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Table 5-1: WMTC limit values for gaseous emissions HC, CO and NOx

Category	(Euro level)	HC [mg/km]	CO [mg/km]	NOx [mg/km]
Class I & II	(5)	TBD	TBD	TBD
Class III	(5)	TBD	TBD	TBD

Note: the Euro level 5 column is just a proposed reference in this informal document, this column will disappear in the final proposal. TBD means " to be discussed"

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Paragraph 5.3 amend to read:

5.3.1. First alternative performance requirements

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Table 5-2a: Limit values for gaseous emissions HC, CO and NOx

Category	HC [mg/km]	HC + NOx [mg/km]	CO [mg/km]	NOx [mg/km]
Class I	-	1080	1870	-
Class 2.1	-	1080	1870	-
Class 2.2	-	920	2620	-
Class III	-	550	2620	-

Note: if necessary, at the request of a Contracting Party, further sub-paragraphs can be added to paragraph 5.3. in order to allow additional alternatives

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paragraph 5.3.2. add to read Second alternative performance requirements

Table 5-2b: Limit values for gaseous emissions HC, CO and NOx

Category	[Euro level]	HC [mg/km]	CO [mg/km]	NOx [mg/km]
Class I & II	3	750	2620	170
Class III	3	330	2620	220

Note: the Euro level 3 column is just a proposed reference in this informal document, this column will disappear in the final proposal.

paragraph 5.3.3. add to read Third alternative performance requirements

Table 5-2c: Limit values for gaseous emissions HC, CO and NOx

Category	[Euro level]	HC [mg/km]	CO [mg/km]	NOx [mg/km]
Class I & II	4	TBD	TBD	TBD
Class III	4	TBD	TBD	TBD

Note: the Euro level 4 column is just a proposed reference in this informal document, this column will disappear in the final proposal. TBD means "to be discussed"

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