

[REDACTED] (GROW)

From: [REDACTED] (ENTR)
Sent: 24 April 2012 11:46
To: [REDACTED] (JRC-ISPRA); [REDACTED] (JRC-ISPRA); [REDACTED] (ENV);
[REDACTED] (ENV)
Cc: [REDACTED] (ENTR); [REDACTED] (ENTR)
Subject: RDE-LDV meeting with Member States on 3 May

Colleagues,

Please find attached a note I would like to distribute in advance of the RDE-LDV meeting with Member States on 3 May to the participants in order to guide us through the main topics of discussion. Please send me your comments until the end of this week, DG ENV also and in particular on point 3.2.

Regards,

[REDACTED]



Brussels, 18 April 2012
ENTR.F1/KS D(2012)

Real Driving Emissions of Light Duty Vehicles:

Meeting with Member States of 3 May 2012

1. RDE test procedure

The guiding criterion for the RDE test procedure has to be that it delivers emission results, which can be closely correlated to emissions of vehicles under normal conditions of use, regardless of the design or calibration of the vehicle. It should also be easily integrated in existing type approval processes (initial type approval, in-service conformity and possibly conformity of production) at reasonable costs.

The RDE test procedure consists of several, independent elements:

- (1) "Proper" test method for measuring emissions, for which two candidates are examined: the use of portable emission measurement systems (PEMS) while driving on the road, and a randomized lab test cycle. The JRC, in collaboration with stakeholders, has developed a matrix, which assesses the two candidate test methods against a series of agreed criteria. At the Member States meeting for some of the criteria in the matrix draft assessments will be provided and should be discussed. After taking into account the results of this meeting, a completed assessment matrix together with first conclusions on the RDE test method(s) to develop further, should be presented at the RDE-LDV plenary meeting of 24 May with a view to taking a final decision by June 2012. The full RDE test method would then have to be developed until mid 2013.
- (2) Boundary conditions: certain parameters, such as test temperature and humidity, the share of up- and down-hill driving or driving speed distribution etc., will inevitably have to vary from one RDE test cycle to another to implement the necessary randomness. For a RDE test to be valid these parameters would have to lie within certain ranges. The quantitative choice of these boundary conditions has to be inspired by the need to cover a wide range of normal driving conditions. Stakeholders will provide a first list of boundary conditions and quantitative parameter ranges until 2 May for discussion at the Member State meeting of 3 May.
- (3) Evaluation of RDE test results: emission measurements obtained with the test method will have to be evaluated, delivering either a pass/fail or a quantitative (e.g. RDE compliance category, see below) result for the RDE performance of a vehicle. Apart from just taking into account the total emissions measured over the whole test other approaches exist, e.g. moving

reference window approach (with different possible reference quantities such as distance travelled or CO₂ emitted). During the evaluation process it is also possible to exclude certain parts of the test, which correspond to extreme situations not covered by the normal conditions of use of a vehicle.

2. Definition of regulatory RDE not-to-exceed (NTE) limits

In a second step, once the RDE test procedure has to be developed, regulatory NTE limits that shall not be exceeded by the emissions of the different criteria pollutants have to be defined. The following aspects have to be taken into account:

- (1) Legal provisions of Regulation 715/2007/EC, which relates the regulatory Euro 5/6 emission limits to "normal conditions of use".
- (2) Statistical variations of the emission measured at the RDE test procedures, which will be inevitably higher than at a fixed test cycle, as well as a certain lack of knowledge of "normal conditions of use" of the vehicle. Given that the probability of rejecting vehicles by the RDE test procedure, which would actually comply with Euro 6 provisions of Regulation 715/2007/EC, has to be kept low, one can conclude that the NTE limits normally should be somewhat higher than the regulatory Euro 6 emission limits.
- (3) Objectives resulting from existing and future air quality legislation
- (4) Costs and benefit analysis, which will have to weigh the previous aspects.

3. Regulatory implementation

3.1. Implementation as part of the type approval test procedure

The future RDE test procedure should be integrated comprehensively in the type approval process, in particular at the initial type approval of a representative vehicle type but also at in-service conformity. Whether it should also be applied at the conformity of production process still needs to be investigated. Besides deciding for either PEMS or the randomized lab test cycle exclusively, it could also be envisaged to use a randomized test cycle at initial type approval and to assess compliance with a PEMS procedure against well-defined pass/fail criteria at in-service conformity.

Basically the RDE test procedure should be applied as from the mandatory Euro 6 dates (1 September 2014/15 for new type approvals and all new vehicles). It will however probably be difficult to require compliance with NTE limits by these dates due to necessary lead time for manufacturers, therefore the RDE test procedure might only be applied for monitoring and recording purposes initially. The final application of the RDE test procedure with binding emission limits would then be at the second phase of Euro 6, i.e. as from 1 September 2017/18.

3.2. Alternative: implementation as "soft-law"

The European automotive industry is currently facing one of the most serious economic crises in its history. As a consequence it may not be politically opportune to implement RDE measures in type approval legislation at the current stage or during the next couple of years. While this decision has to be taken on a high

political level and not by technical experts, an alternative "soft-law" approach should already be considered for its practicability by Member State experts:

- (1) The developed RDE test procedure (i.e. PEMS, a random test cycle or a combination of both) would be performed for each new vehicle type. Depending on a future political decision such test could be mandated either under vehicle type approval or air quality legislation. Vehicles would be placed in a certain harmonised "RDE compliance category" according to their RDE performance. However, the RDE performance of a vehicle would not be a criterion for its type approval.
- (2) In order to comply with air quality legislation locally or on their entire territory, Member States could take into account RDE performance of vehicles, determined by the "RDE compliance category", for a series of national measures such as access to environmental driving zones in urban areas, tax incentives, road tolls etc. These measures could also be agreed with the Commission (DG ENV) to remedy non-compliance with air quality legislation in order to avert infringement procedures.

It should be mentioned that due to market forces already the potential of restrictive national measures in the future addressing vehicles in a bad "RDE compliance category" is likely to lead to a better emission performance of vehicles much earlier, since the re-sale value of vehicles is strongly influenced, e.g. by its access to environmental driving zones. In addition, the "soft-law" approach would in principle allow to gear the emission performance of a vehicle to the individual needs, e.g. the installation of highly performing NO_x abatement technology (with high reagent consumption etc.) could be limited to vehicles actually operating in urban areas affected by high NO₂ concentrations. Since the "soft-law" approach does not set any mandatory requirements, it could be implemented faster than binding type approval requirements and would probably also show faster, first results.

On the other hand this approach would to some extent "de-harmonise" regulatory requirements for vehicles and may lead to confusing rules in different Member States. In addition its final overall effectiveness on real driving emissions of the whole vehicle fleet is difficult to assess a priori and would depend on the national measures chosen by the Member States.