

Minutes of the 7<sup>th</sup> meeting of the GFV informal group on Gaseous Fuelled Vehicles  
Held 9 June 2009 at Palais des Nations, Geneva

The GRPE informal group on Gaseous Fuelled Vehicles (GFV) held its seventh meeting in Geneva at the United Nations on 9<sup>th</sup> June 2009 under the chairmanship of Mr. André Rijnders (Netherlands). All working papers of the informal group are publicly available at the GRPE website at:

<http://www.unece.org/trans/main/wp29/wp29wgs/wp29grpe/gfv07.html>

Field Code Changed

## **I. WELCOME**

1. The Chairman opened the seventh informal group meeting, welcoming all participants and thanking them for their attendance. This meeting today generally is informative and will report on activities that have occurred in previous meetings, and to deal with new items and information as required.

## **II. REVIEW AND ADOPTION OF THE AGENDA**

Documentation: Working paper GFV-07-01 (Agenda).

2. The agenda is approved without changes.

## **III. ADOPTION OF MEETING MINUTES OF THE SIXTH GFV MEETING**

Documentation: Working paper GFV-06-04 (minutes).

3. The Minutes of the 6<sup>th</sup> meeting have been sent out and are on the UN internet. The Chairman asks that the participants look at the minutes of the 26<sup>th</sup> May 2009 meeting and, within the next two weeks (prior to 23<sup>rd</sup> June 2009), send any written comments to the secretariat so they can be adjusted.

## **IV. INFORMATION FROM THE CHAIRMAN ON DOCUMENT GRPE-2009-19 AND GRPE-2009-14 (TABLED AT 58<sup>TH</sup> GRPE SESSION)**

Documentation: Working paper GFV-07-04

4. Mr. Rijnders reported the results of the 5<sup>th</sup> GFV meeting on 4-5 March 2009 and the 6<sup>th</sup> meeting on 26<sup>th</sup> May 2009 at the European Commission. Separate meetings to discuss OBD were held on 3<sup>rd</sup> March 2009 and a two day meeting was held on 17<sup>th</sup> and 18<sup>th</sup> March 2009.
5. Document ECE/TRANS/WP.29/GRPE 2009/19 is a draft amendment to Regulation 115 as a complete revision/consolidation.
  - Clarified the scope of Euro 3, 4 and 5;
  - Deleted the concept of 'non-intrusive' retrofit systems;
  - Improved provisions on dynamometer settings and testing conditions.

6. Non-methane hydrocarbon (NMHC) provisions were removed from the draft document due to a lack of data that previously was anticipated from the NGV industry. There is an emissions test program in the Netherlands with RDW, Teleflex/GFI and TNO where an OEM gasoline vehicle will be tested with and without a methane catalyst and also an OEM NGV with and without methane catalysts to determine the results. Retrofit vehicles provided by Teleflex/GFI also will be tested, but without a methane catalyst. Also there is a test program in Italy with Italian NGV stakeholders and the Joint Research Center of the European Commission to obtain methane/NMHC data to support the amendments on NMHC.
7. 3<sup>rd</sup> and 4<sup>th</sup> Task Force of On Board Diagnostics for Heavy Duty Vehicles Meeting (Regulation 49). (Document ECE/TRANS/WP29/GRPE/2009/14.) Natural gas engines were included in the regulation 49 (which has the scope for gas engines) new provisions. A new Annex 9C was included for diesel HDVs on OBD as well. (The GRPE agreed that the gaseous fuel work could be included in the OBD group in this instance.)
8. Annex 9B OBD (Global Technical Regulation [GTR]-OBD requirements). At its 57<sup>th</sup> session GRPE agreed that the GFV group could address Annex 9B of Regulation No.49 together with the applicability of Annex 4B.
9. Annex 9B has been amended in order to be applicable to gaseous-fuelled vehicles: only engines fuelled with a single fuel (diesel, LPG or NG), but the structure permits in a further stage the ability to adopt other multi-fuelled vehicles (fuel flexible vehicles, dual fuel natural gas vehicles, etc.).
10. Open Issues:
  - Electric/electronic components monitoring (Appendix 3, Item 1). The wording of this paragraph should be reviewed during the 58<sup>th</sup> session of the GRPE.
  - Annex 9B OBD (GTR OBD requirements) and performance monitoring of gas engines: EGR flow rate (Appendix 3-Item 6); turbo boost (Appendix 3 – Item 8) and misfire (Appendix 3-Item 10). Performance monitoring requirements will be discussed further with the European Commission.
11. Editorial amendments:
  - Appropriate corrections are proposed.
  - The demonstration test (7.2 AND 7.2.2) is amended.
  - Proposed to use the word “re-agent” and not "reductant“ throughout Annex 9B
12. Annex 9C, In-Use Performance Requirements (IUPR): A new Annex 9c specifies technical requirements for providing in-use performance data of OBD systems for diesel engines. This is based on informal documents Nos. GRPE 57-15 and GRPE 57-29. At the moment this does not include information on gaseous fuelled engines.
13. Some provisions for spark ignited, gaseous fuelled engines regarding monitoring and after treatment systems still have to be dealt with in the OBD provisions. But this exercise will, ultimately, incorporate gaseous fuelled engines into the provisions. There are no data requirements at this time and the experiences of the heavy duty natural gas engine manufacturers have added to the benefit of the changes being made with OBD.
14. AECC asks a question on definition of ‘re-agent’. Does it cover SCR re-agents? The Chairman is not sure and they will have to examine this. But TNO indicates that the definition is in R.49.
15. Mr. Laguna-Gomez asks if petrol engines will be introduced into Euro 6. The question is better put to the European Commission. But at the moment Regulation 49 is not covering petrol, which is a separate task.

## V. PROPOSED CHANGES IN REGULATION 115 BY THE EXPERT FROM POLAND

Working Documents: GFV-07-05 (spreadsheet/template) and originally GFV-06-02 (Comments on Regulation 115 from the Polish Delegate), all agreed changes based on this document are integrated into working document GFV-07-02.

Please note that several discrepancies against GRPE-2009-19 have been found in GFV-06-04.

### V.1 Discussions on the forthcoming working document GFV-07-02

16. Mr. Radzimirski proposed a large number of changes to the regulation. A number of changes were taken into consideration at the 6<sup>th</sup> GFV meeting (the document now is GFV-07-02). Unfortunately, this document was not based upon the R.115 consolidated version of the document (ECE/TRANS/WP29/GRPE/2009/19). This made it more difficult to follow the discussion of the document by the Polish delegate including the suggested changes and amendments.
17. Mr Duvielguerbigny, co-secretariat of the GFV group, explains that the GFV will attempt, using a template spread sheet (working document GFV-07-05), to handle priorities among various proposed amendments to ensure that all things are handled but in an appropriate order. It was decided to take into consideration different categories of changes in the document: substantive changes; editorial changes; and structural changes. Each recommended amendment then can be viewed in the full context of other proposed amendments to ensure there is complete coverage but eliminate confusion when various changes are made. Then it is up to the Chairman to decide on the appropriate priorities and set forth a work program upon which new formal documents can be made for the next GRPE and future meetings. The Secretariat of the GFV will keep track of the overview in order to help provide improved structure and substance in the documents. The Informal Group on Hydrogen Fuel Cell Vehicles is doing something similar.
18. Mr. Radzimirski restates that the GRPE-2009-19, to be approved during the GRPE session, while improving the current Regulation 115, still contains unclear provisions and several errors. For example the definition of the retrofit type is unclear due to different interpretations by technical services and manufacturers. He also indicates that sometimes a change in one place results in the need for other changes within the document.
19. Mr. Rijnders explains that these complications make it very difficult to deal with each issue, requiring the document to be re-screened to ensure that all provisions that also are referenced in other sections of the document can be changed appropriately. This is also complicated by other reference documents, such as Regulation 83, that might or might not be changed as expected in the forthcoming weeks.
20. There is a general discussion about the need for GFV participants to make sure that amendments desired are put into the original template on an item-by-item basis rather than putting a large number of changes for consideration into the original regulation, which is going to be much more difficult to manage. The new categorization into substance, structure and editorial changes should help the GFV manage the amendments and make sure that amendments requiring interrelated and associated changes in the document can be dealt with accurately.

**V.2. The Way Forward**

- Results of test programs for CH4 and NMHC are anticipated so the amendment on NMHC can be deliberated and prepared as a formal document for January 2010.
- Mr. Rijnders asks participants to continue to use the template (GF-07-05) shown by Mr Duvielguerbigny for the past (GFV-06-02+GFV-07-03) and their forthcoming proposed changes to R115. In light of the spreadsheets received, the Chairman will examine them, along with their appropriate prioritization. (Note: The new 'template' is for prioritizing proposed amendments. The original 'template' for introducing amendments remains the same.)

**VI. NEXT MEETING OF GFV: END OF SEPTEMBER 2009**

21. The next meeting of the GFV is scheduled tentatively on Monday, 28 and Tuesday 29 September 2009 in Brussels. The secretariats will attempt to arrange appropriate logistics in. If this cannot be done then we will look at a meeting time during week 39 (the previous week).

**VII. OTHER ISSUES**

22. Mr. Chaudhari asks about the use of hydrogen in natural gas and in what regulation that would be addressed. The hydrogen group is dealing with 100% hydrogen and not blended hydrogen and natural gas. R.110 deals with the natural gas fuel composition. R.115 deals with natural gas as a reference fuel. So there is some uncertainty about where this issue might fit. This needs to be discussed with the informal group on hydrogen vehicles.
23. Mr. Laguna-Gomez reminds the Chairman that there needs to be clarification on the scope of vehicle classifications (GFV-07-03). This issue can be properly tabled, resulting from an email from Mr. Laguna Gomez, at the next GFV meeting as a New Work Item.

**VIII. CLOSURE**

24. Mr. Rijnders thanks the participants for attending and for their input and discussion.

**Annex 1****Participants 9 JUNE 2009**

- André Rijnders, Chairman (NL. RDW)
- Arnaud Duvielguerbigny, Co-secretariat (AEGPL)
- Jeff Seisler, Co-secretariat (IANGV/Clean Fuels Consulting)
- Stanislaw Radzimirski, (Poland, MTI)
- Henk Dekker, (TNO)
- M.K. Chaudhari, (Automotive Research Association of India)
- T.M. Balaramin, (Baja Auto, Ltd.)
- Carlo Dellacasa, OICA
- Marc Kwanten (FOD Mobility & Transport, Belgium)

- Theun Stoffels (RDW/MUT, Netherlands)
- Jose Pablo Laguna Gomez, (Official Spanish Technical Service)
- Younsik Song, (KATECH, Korea)
- Junhong Park, (NIER, Korea)
- Uwe Thiew, (Delegate, Austria)
- John May, (AECC)
- Susanne Witt, (Federal Environment Agency, Germany)
- Stephan Redmann, (Ministry of Transport, Germany)
- Yuki Toba, (JASIC)
- Kazuyuki Naruswa, (NTSEL)
- Anjue Hirachund, (South Africa)