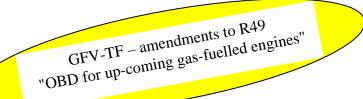
GFV-TF – amendments to R49
"OBD for EURO VI gas-fuelled engines"

<u>Informal document No.</u> **GRPE-57-34** (57th GRPE, 13-16 January 2009, agenda item 2)

UN-ECE GFV informal group Task-Force "OBD for gas fuelled engines"

Status Report to GRPE 15 January 2009



GFV Sept.08 decision

- Launch a dedicated Task-Force to adapt Annex 9B of R49 rev.4 to gas engines;
- Present an informal amending proposal to GRPE (January 2009);
- Have the final amendments approved:
 - By GRPE in June 2009;
 - By WP29 in November 2009.

GFV-TF – amendments to R49
"OBD for up-coming gas-fuelled engines"

TF Meetings

- 13 November 2008 phone conference
 - Review of the technical work to be achieved
 - Share of the work
- 03 and 04 December 2008 Brussels meeting
 - Elaboration of the amendments to Annex 9B
 - Editorial modifications to Annex 9B
 - Draft informal GRPE document 15
- Participants
 - Chair: André Rijnders (Netherlands)
 - Secretary: Jean-Francois Renaudin (OICA/Volvo)
 - Commission: Petter Asman, José Laguna, Klaus Steininger
 - TNO representative
 - OICA, CLEPA, AECC and NGVA-EU representatives



Amendments considered necessary

• Applicability of Annex 9B (section 1)

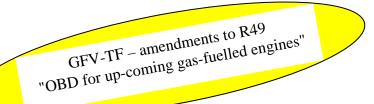
• Amendments outside the GFV scope

- Amendments to permit gas fuelled engines
 - Some of them need advice from the Contracting Parties having undersigned Regulation 49

GFV-TF – amendments to R49
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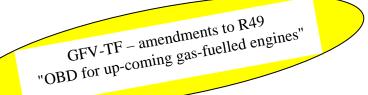
Applicability of Annex 9B

- The TF agreed to limit its contribution to (mono-fuelled) gas engines and not to address dual- or bi-fuelled engines
- The Commission formulates its expectation to further extend Annex 9B to other fuels such as gasoline and ethanol
 - Agreed the lay-out of the modifications introduced for gas fuelled engines will address the Commission needs
 - Note: the Commission may decide to request a further extension of Annex 9B at the January 2009 GRPE
- The simultaneous applicability of Annexes 9A and 9B creates an administrative difficulty
 - The TF recommends to involve GRPE secretariat in solving the issue
 - The TF recommends the Applicability of Annexes 4A and 4B shall be solved at the same time



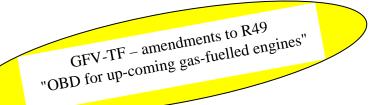
Amendments outside the scope

- Editorial mistakes in Annex 9B
 - The TF took the initiative to correct editorial mistakes
 - WWH-OBD chairman and secretary will be kept informed in case these errors would also exist in GTR#5
- Concept of performance monitoring
 - The performance monitoring concept like specified in GTR #5 appeared quite difficult to understand.
 - The group recommends some examples be given in a dedicated appendix to Annex 9B to provide clarification and guidance during the certification process.



Proposed amendments

- Adaptation to gas engines of the monitoring requirements as regards
 - Fuel injection systems
 - Oxygen sensors
 - Three-way catalysts
 - EGR flow and turbo boost (pending).
- Adaptation of the temporary disablement requirements to gas engines as regards
 - Low fuel level
 - Refuelling
- A new section is added concerning the selection of the reference fuel in the case of a gas engine



Amendments needing further consideration

- Adaptation to gas engines of the monitoring requirements as regards EGR flow and turbo boost
 - Diesel engines require emission threshold monitoring
 - A scenario requesting performance monitoring instead of threshold monitoring has been considered (for cost-efficiency reasons)
 - Comments from CPs are requested (to be sent to chair and secretary)
- Introduction for gas engines of requirements for monitoring misfiring
 - A scenario requesting monitoring misfire that may cause catalyst damage (e.g. by monitoring a certain percentage of misfiring in a certain period of time) via performance monitoring has been considered
 - Comments from CPs are requested (to be sent to chair and secretary)

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Conclusion

- GFV recommendations for adapting Annex 9B of R49 to gas engines are included in informal Document 15.
- Some issues remain to be solved that need further consideration from the Contracting Parties
- Some issues are clearly outside the mandate of GFV
- GRPE guidance is very welcome