

Meeting Minutes
INFORMAL GROUP GASEOUS FUELLED VEHICLES (GFV)
15 JANUARY 2008

André Rijnders, Chairman

1. Welcome and Round Table introductions

Mr. Rijnders welcomed all the attendees in Geneva and was impressed by the number of participants in attendance.

Romain Hubert (UNECE, Secretariat GRPE) provided information about the role of this group and the rules of procedure.

List of attendees: (See Annex 1 at the end of the document)

2. Review of the agenda and the minutes of preparation meeting 19th September 2007 (See Document GFV-01-00 Minutes of September meeting; Document GFV-01-01, Agenda of this meeting, 15 January 2008))

- 19 September 2007 preparation meeting in Brussels to create the 'mandate' for this new informal group dealing with Gaseous Fuelled Vehicles (GFV), as suggested in the WP29/Group of Experts on Pollution and Energy (GRPE).
- At this time, no comments were made to the agenda and these minutes.

3. Mandate creating informal Group on Gaseous Fuelled Vehicles (GFV) (See Document GFV-01-02: [Submitted at Informal document No. GRPE-55-03 submitted to 55th GRPE 15-18 January 2008])

Following the exchange of views Mr. Rijnders recalled to attendees the main elements of the mandate:

- Duration of the group's activities: 2 years.
- *This informal group does not have the mandate to have the goal of preparing a single, end-document.* This group will work on a variety of issues and amendments prior to being launched to the GRPE.
- It is not mandatory that everything going to GRPE must be launched through this group. But this group is designed to create a 'common view' of documents and issues submitted to GRPE.
- Meetings will tend to be before the GRPE meeting. In between meetings, when necessary, additional meeting could be held in a central location.
- The mandate deals only with emissions items. Regulation 49 (Emissions of CI, NG and PI (LPG) engines; Reg.83 Emissions of M1/N1 vehicles; Reg.101, Measurements of fuel consumption (CO₂, emissions M1/N1 vehicles);Reg. 115

- Specific LPG/CNG retrofit systems. Safety no longer is a consideration (since it is now assigned to the Group of Experts on General Safety – GRSG).
- Proposals should be sent to the co-secretariats Jeff Seisler and Arnaud Duvielguerbigny as early as possible.
 - Light duty vehicles regulations are the priority; however heavy duty issues will also be dealt with.
 - There is agreement, therefore, on the mandate to be presented to GRPE.

Discussion:

CLEPA confirms that they would provide adequate meeting space for additional meetings if needed. The Polish delegate asked questions about the internal rules of this group and warned that this group might reflect the views of industry, and not necessarily that of Contracting Parties. Mr. Rijnders replied that documents will go through the GRPE and second through the WP29/AC1 process where only the Contracting Parties vote. The highly technical issues could benefit from being discussed in advance in this informal group.

As stated during the preparation meeting in September, hydrogen fuel will not be discussed in this group. Mixtures of hydrogen and methane could, however, be discussed in conjunction with the HFCV-SGE group. Other gaseous fuels like DME issues could be dealt in this group if needed.

4. Review and agreement on the template *(See Document GFV-01-03)*

A template has been created so that anyone submitting a new work item does so in a consistent. No concerns from attendees as regards the template.

5. New Euro5/6 emission standards
(See Document GFV-01-04 Euro 5/6 Powerpoint presentation)

This item concerns the European Community area only. This regulation will lead to major changes regarding pollutants emissions limits and repair and maintenance information.

Dates of entry into force:

- Euro 5 1st Sept 2009
- Euro 6 1st Sept 2014

(Plus some other dates related to OBD provision)

A table summarizing the tests to be passed for mono-fuel, bi-fuel and flex-fuel vehicles was shown to participants. (see referenced document, above)

As soon as the Commission regulations will be issued a set of amendments will have to be brought to Geneva in order to align ECE Regulations accordingly.

Some participants asked for some clarifications concerning the retrofitting of cars, it was stated that there is no European Directive for retrofit. R115 is recognized by most of the contracting parties and by the European Community in particular. Furthermore R115 is connected to R83.

Request from ENI:

Some markets are not yet ready for the take off of the NGV OEM market. Therefore, the retrofiting of cars to NG is a very valid option. But since the entry into force of the Euro 4 standard, it is difficult to retrofit petrol fuelled vehicles due to catalyst not designed to convert unburned methane. Then the Total Hydrocarbon (THC) limit is difficult to meet by many retrofit vehicles. The Italian NGV industry would like to modify R115 and keep only the NMHC Non Methane Hydro Carbon limit.

Mr. Rijnders replied that he does not see any problem from a procedural point of view to propose an amendment. But the NGV industry should bring very robust rationale. Mr. Good from the EC DG Enterprise reminded the participants that the political will of the EU is not to weaken the environment standards. No release of pressure on the methane exhaust will be considered very carefully. Mr. Seisler, said that there is also a need to take into account the other approaches in the World (India, China, etc.) aiming at helping the market to develop.

Mr. Chaudhari, ARAI, India, raised the following points:

- The reactivity factor of LPG at the local level should be investigated (due to its role as a Smog precursor). Some data from the Commission DG Environment should be forwarded by Mr. Good. It seems that in the US, they use a reactivity factor for each hydrocarbon
- With Euro 5-6 regulation, do we have to measure PM for LPG and NGV retrofitted cars
- Driveability
- There are some questions about the way the tests are carried out for E85 vehicles, due to the range of petrol and ethanol.

The chair asked India if they will discuss these items in this group and that they should forward further information for consideration.

6. On Board Diagnostics (OBD) (See Document GFV-01-05 Euro 5/6 OBD and GFV-01-06, introduced as ECE/TRANS/WP.29/GRPE/2008/2 5 November 2007 and GFV-01-07 OBD Concept by Alex Lawson)

Main elements from the slides shown during the meeting

Expanded monitoring requirements and for in-use performance (NOx for petrol 3 ways catalysts)

Petrol thresholds: no major changes; No exemption for mono-fuel and bi-fuel gaseous vehicles

Discussion on the document GRPE/2008/2 from CLEPA :

- Rational: to use the same OBD for petrol cars with less than 15 liters (monofuel +) or more than 15 liters (bi-fuel) in order to simplify the industry development and cut costs.

- No opposition was raised about the goal of this amendment, Nevertheless, some slight modifications of the text in the document should be made by CLEPA for the GRPE session on Thursday.

Document from Alex Lawson (Chairman, IANGV Technology Committee) regarding the aftermarket NGV conversion and OBD language. Mr.Dekker, TNO, raised the point that there is no need to propose an amendment on this topic, because the current regulations allows what Mr .Lawson is asking for.

7. CNG Fuel Consumption, Measurement and Display units (See Document GFV-01-08 CLEPA proposal standard CNG units)

- A wide range of measurement and display units are used worldwide. CLEPA as well as NGVA Europe would like to propose a harmonization of the fuel measurement and display.
- Poland recommends keeping the standard cubic meter unit.
- This is going to be a challenging political decision to change the reference used in Member States.
- NGVA Europe stated that m^3 alone is confusing because it must be clear if *normal* m^3 or *standard* m^3 is meant.

8. Reference fuel specification: deleting wobbe index
(See Document GFV-01-09 CLEPA Fuel Specification)

This item was submitted late by CLEPA and will be discussed next time.

9 and 10. Mixed operation; Amendment on mixed operation (Mr. Tappe, CLEPA) (See Document GFV-01-10 CLEPA fuel use options)

Some clarifications were given about mixed operations and the difference between flexible fuels and dual fuel systems:

- Flexible fuels: the two (or more) fuels are mixed in one storage system and brought as a mixer to the combustion chamber. An example is petrol/ethanol (E85).
- Dual fuel: A dual fuel system is defined as two fuels with two separate storage systems where the fuels are mixed in the combustion chamber and burned simultaneously. Dual fuel has two injection systems. This is possible with gas/petrol or gas/diesel.

CLEPA stressed that following the Euro 5-6 discussions, there is need to give flexibility to the industry in order to allow new development related to mixed operations, petrol trim and component protection, and dual fuels technology or other possible development. Different fuel types on vehicle can be mixed and matched in the vehicle.

- Allow use of petrol during nominal CNG use, i.e. fuel switch/selection is set to CNG as fuel, but under certain circumstance and for defined purposes operation is temporarily switched to petrol as fuel
- Allow mixed fuel use, i.e. operation with petrol and CNG at the same time using two sets of injectors, under defined conditions

For instance, when the CNG tank is almost empty, there is loss of pressure leading to a loss of power. Mixing NG with petrol should be an option to empty the tank completely.

The paperwork arrived on Monday 14 January 2008. This will be considered for the next meeting.

11. Dual Fuel Systems gas/diesel (Mr. Boisen, NGVA Europe) *(See Document GFV-01-11 Dual Fuel Boisen)*

Mr. Boisen informed the participants that this is currently a growing market on dual fuel systems for Heavy Duty Vehicles. The engine starts on diesel and as the power curve rises more natural gas is injected, up to over 90% natural gas. It is a retrofit market for but it moves to the LDV on an OEM basis.

Main interests:

- reduction of oil consumption
- better energy of the engine over a spark ignited natural gas engine
- 26% less CO₂ emissions (NG/Diesel)

Mr. Boisen raised the fuel consumption calculation issue during the type approval tests. For such engines, there is need to define rules. Mr. Rijnders asks Mr. Boisen to prepare something for the next session for further discussion.

12. Discussion on the informal document GRPE 55-20 from AEGPL *(See Document GFV-01-12, submitted as Informal Document GRP-55-20, for 55th GRPE, 15-18 January 2008)*

The participants agreed on the purpose of this proposal even if from a legal point of view some participants expressed doubts, in particular regarding paragraphs 11.3 and 11.4:

11.4: With effect from 1 January 2011 Contracting Parties applying this Regulation shall prohibit the fitting on a vehicle of a retrofit system which does not meet the requirements of this Regulation.

AEGPL stated that this informal document aims to motivate a discussion about the target and the way we would like to achieve it, at least in the European Union.

Mr. Rijnders mentions the document WP29/1044: Guidance how to make specific transitional provisions could help find out the proper wording. Legal advice may be required to resolve the legitimacy of the proposed language.

Final statement and closing remarks from the Chair:

Mr. Rijnders reminds the participants to use the template from the secretariat and to send it to the secretariat well ahead of the next meetings in order to be able to process it and send it to the members of the GFV group. Mr. Rijnders asked people to clearly state the purpose of each proposed amendment.

These topics will be discussed next time when people will be more aware about the proposals.

ANNEX 1

The Netherlands (RDW)	Mr. Rijnders
TNO	Mr. Dekker
AEGPL (Assogasliquididi)	Mr. Piccolo, chair of the AEGPL Automotive Commission
ISO	Mr. Bassi
ENGVA (ENI)	Mr. Mariani, chair of ENGVA Technology Committee
Poland (ITS)	Mr. Radzimirski
CLEPA	Mr. Laurent
CLEPA/BOSCH	Mr. Martin
CLEPA/BOSCH	Mr. Tappe
Fed. Ministry Transport	Mr. Kwanten
India (BAJAJ)	Mr. Balaraman
India (ARAI)	Mr. Chaudhari
CLEPA (VDO Automotive)	Mr. Henke
CLEPA (Bosch)	Mr. Gerstl
Germany (BMVBS)	Mr. Albus
Germany (BMVBS)	Mr. Redmann
OICA	Mr. Morita
IMMA	Mr. Rogers
IMMA	Mr. Chesnel
FIA	Mr. Van West
TUV Nord	Mr. Matakko
TUV Nord	Mr. Schulte
AECC	Mr. May
OICA	Mr. Showler
NGVA Europe	Mr. Boisen
JAMA	Mr. Morita
Japan (JASIC)	Mr. Toba
Japan (JASIC)	Mr. Inomata
European Commission	Mr. Good, DG Enterprise and Industry
Dekkra	Mr. Woitsch,

Informal Group on Gaseous
Fuelled Vehicles

AEGPL	Mr. Duvielguerbigny (Co-secretariate GFV)
IANGV(Clean Fuels Consulting)	Mr. Seisler (Co-secretariate GFV)
Swiss Water & Gas Assoc.	Mr.Seifert
<i>Affiliation undetermined</i>	<i>Mr.Hugh Menge</i>

Some participants from China arrived late and did not identify themselves.