

**Meeting Minutes**  
**31<sup>st</sup> Meeting of the Informal Group on Gaseous Fuelled Vehicles (GFV)**  
**29<sup>th</sup> January 2014**  
**DG Enterprise Brey Building, Brussels**  
**Room 5A**  
**10.00-17.30**  
**AND**  
**The Kick-off Meeting of the Heavy Duty Dual Fuel Task Force Retrofit**

**I. Welcome and Introductions**

1. Mr. Dekker (TNO) informed the group that Mr. Rjinders (Chairman, RDW-NL) would arrive late because of travelling problems. He takes over the GFV chairmanship temporarily and opens the meeting, in accordance with the agenda points.

**II. Agenda for today (changes/additions)**

2. No changes to the proposed agenda are suggested.

**III. Adoption of minutes of the 30<sup>th</sup> GFV on 7 January 2014 (Document GFV-30-05)**

3. Mr. Renaudin asked to postpone the adoption of the minutes because they were circulated and published only two days before the meeting. He added that the structure and the length of the minutes do not facilitate its reading and checking. He asked the secretariat, therefore, that future meeting minutes report briefly only the decisions rather than the entire discussion, unless controversial arguments require more detailed notes. Adoption of the minutes is postponed to the next meeting.

**IV. HDDF retrofit open issues list plus discussion (Document GFV 30-04)**

4. Mr. Dekker invited members to comment on the "open issues list" with particular reference to "pending" ones.
5. Mr. Renaudin made a presentation on "approvals" structure that focused, in particular, on the need to regulate the "conformity of production" of the retrofit kit installation into the vehicle, especially when that operation is carried out by a company different from the type-approval holder of the retrofit system. (His four slides are shown as an appendix to these minutes rather than a separate document.)
6. Doubts were expressed by several members about the legitimacy of possible UN/ECE technical requirements on issues that have always been subject to national authorities;
7. In order to comply with this subsidiarity principle, Mr. Renaudin suggested to provide Contracting Parties with general requirements for the implementation of a stringent and effective national COP schemes;
8. Mr. Rjinders proposed to address primarily the retrofit system "type-approval/COP" issues, due to be dealt with by the HDDF Task Force (HDDF TF) as its first priority. GFV will continue to discuss possible principles to be set on "retrofit system installation" COP.

9. Regarding the retrofit system type-approval, in addition to the type-approval procedure for the whole system, Mr. Renaudin requested to include the possibility to get two separated type-approvals; one for the engine-related part and the other for the vehicle-related part, both to be defined and distinguished in detail. That request arises from the reality of the market that presents generally two different sets of expertise and producers. Furthermore, that would guarantee a greater choice of supply to the end-installer.
10. The group agreed to deal with a possible split of the whole system into two parts after having defined the provisions for the whole system type-approval.
11. Following the examination of the “open issues list”, the temporary exclusion of Euro VI from the scope was debated
12. AEGPL noted that the potential loophole may be resolved by setting provisions aimed at ensuring a stringency level identical to that for new vehicles and forbidding the retrofit system installation before a certain mileage.
13. The group agreed to wait for a final decision of the Motor Vehicle Emissions Group (MVEG), also taking into account the results from the on-going field testing campaigns. In the meantime, the HDDF TF will concentrate on developing the Euro IV and V provisions.
14. Mr Bleuler (Federal Ministry Transport (Germany) proposed including Euro IV and V requirements in the original version of the new regulation and to evaluate the possibility to postpone Euro VI provisions for a next series of amendments to the regulation.

#### **V. Planning upcoming Meetings of GFV & Task Forces**

15. The following dates and venues are agreed:
  - 27 February 2014 – Brussels (EC offices); **(cancelled)**
  - 3 April 2014 – Brussels; DG Enterprise, Brey Building
  - 22-23 May 2014 (lunch to lunch meeting) – Lyon (Volvo offices);
  - 3 June 2014 – Geneva (Palais des Nations) 14.30-16.30.
16. A HDDF TF conference call is fixed on the 8<sup>th</sup> May 2014 from 09.30-12.30 (Central European Time-CET)

#### **VI. Closing the GFV Portion of the Meeting**

17. Mr Rijnders closed the GFV meeting and announced the formal start of the HDDF task-force under the chairmanship of Mr. Dekker.

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#### **Kick-off: Task Force HDDF TF (Retrofit)**

1. Two new members are invited to introduce themselves:
  - Mr. Lennart Pilskog is the new NGVA General Manager having replaced Mr Lage; He will attend GFV and HDDF TF meetings until a new technical manager is appointed. The NGVA, representing auto makers, retrofit manufacturers and fuel distributors, advocates for a ‘clever and reasonable, regulation.

- Mr. Andrew Whitehouse is the General Manager of Clean Air Power (CAP) and guaranteed the participation of CAP in GFV and HDDF task-force together with Steve Whelan, who is the Technical Director. In light of his 20-years experience in the engine/gas sector, he stresses the importance of technical harmonization, hoping that the work in progress achieves the same good results achieved in LNG task-force where he has been actively involved.
2. AEGPL was invited to present its document (see GFV-31-2) on major pending issues: dual-fuel types (possible exclusion of Type 3), non-compliant diesel engine and engine family definition and durability.
  3. AEGPL proposes to have one common Type B dual-fuel engine, with no distinction in relation to Gas Energy Ratio (GER).
  4. Other experts propose to exclude GER less than 10% in order to prevent possible loopholes in the certification of the engines. The manufacturer may choose to homologate its system as Type 3 (equivalent to diesel), while in-use the system could work with a much higher GER. No definitive decision is taken on this issue.
  5. Regarding non-compliant diesel engines, AEGPL stresses the practical necessity to set a less stringent engine family definition if non-compliant diesel engines are required to meet emission limits in the D-F mode, in order to ease the manufacturer having to search for complaint (or quasi compliant) parent engines to convert.
  6. Mr Dekker confirmed that compliance with emission limits will be required, also in case of originally non-compliant diesel engines.
  7. Mr Renaudin proposed to adopt the R49 engine family definition to ensure that the retrofit system performs well on any engine models.
  8. AEGPL pointed out that the combination of these two approaches would make the new regulation practically inapplicable as the engine performances in diesel mode impact heavily on the D-F mode.
  9. Regarding durability, the group agreed on the following approach:
    - Emission tests have to be carried out with emission-related gas components deteriorated in accordance with R 67 or R 110 endurance test and, in addition, DF have to be applied;
    - D-F may be adapted in counter-proportion with the actual mileage of the parent engine since it is an old engine.
  10. AEGPL, although agreeing with these principles, noted that D-F already includes deterioration of emission-related gas components and, thus, the use of deteriorated components during the tests and the contemporary application of D-F would add an additional burden for retrofit systems in respect to R 49 provisions.

### **Attendees**

André Rijnders, Chairman (RDW-Netherlands)  
Henk Dekker, Chairman HDDF-TF Retrofit (TNO)  
Salvatore Piccolo, Co-Secretariat, Federchimica/AEGPL  
Jean-François, Renaudin (Volvo)  
Alberto Castagnini, (AEB Technologies)  
Walter Bleuler, Federal Ministry Transport (Germany)  
Andrew Whitehouse (CAP)

Lennart Pilskog, (NGVA Europe)  
 Dirk Bosteel (AECC)  
 Bernardo Martinez (DG Enterprise)

## APPENDIX (J-F Renaudin presentation notes)

GFV 29/01/2014

Engine as separate technical unit	Engine Retrofit kit system
	Installation of the engine kit on the engine
Vehicle w/ an approved engine	Vehicle Retrofit kit system
	Installation of the retrofitted engine + vehicle kit
Vehicle emission requirements	(Engine + Vehicle) Retrofit kit system
	Installation of a complete kit

Engine as separate technical unit	<b>Engine Retrofit kit system</b> design requirements CoP requirements of the kit system Notice of installation (kit + engine )
	<b>Installation of the engine kit on the engine</b> installation design requirements CoP of the installation (kit)
Vehicle w/ an approved engine	<b>Vehicle Retrofit kit system</b> design requirements CoP requirements of the kit system Notice of installation (vehicle kit)
	<b>Installation of the HDOF engine + vehicle kit</b> installation design requirements CoP of the installation (engine + kit)
Vehicle emission requirements	<b>(Engine + Vehicle) Retrofit kit system</b> design requirements CoP requirements of the kit system Notice of installation (engine + vehicle kit)
	<b>Installation of a complete kit</b> installation design requirements CoP of the installation (kit)

En	<b>1.1.1</b> System family concept Emission requirements OBD emission requirements Durability requirements Etc...	<b>Engine Retrofit kit system</b> 1.1.1 design requirements 1.1.2 CoP requirements of the kit system 1.1.3 Notice of installation (kit + engine )
		<b>Installation of the engine kit on the engine</b> 1.2.1 installation design requirements 1.2.2 CoP of the installation (kit)
Ve	<b>2.1.1</b> Compliance w/ R110 OBD veh requirements (MIL) Durability requirements Etc...	<b>Vehicle Retrofit kit system</b> 2.1.1 design requirements 2.1.2 CoP requirements of the kit system 2.1.3 Notice of installation (vehicle kit)
		<b>Installation of the HDOF engine + vehicle kit</b> 2.2.1 installation design requirements 2.2.2 CoP of the installation (vehicle + kit)
Ve	<b>2.2.1</b> Exhaust requirements Etc...	<b>(Engine + Vehicle) Retrofit kit system</b> 3.1.1 design requirements 3.1.2 CoP requirements of the kit system 3.1.3 Notice of installation (engine + vehicle kit)
	<b>1.1.1 + 2.1.1 + 2.2.1 (partly)</b>	<b>Installation of a complete kit</b> 3.2.1 installation design requirements 3.2.2 CoP of the installation (kit)

En	<b>1.2.1</b> Compliance w/ instal notice of the engine kit Instal tests achievement Etc...	<b>Engine Retrofit kit system</b> 1.1.1 design requirements 1.1.2 CoP requirements of the kit system 1.1.3 Notice of installation (kit + engine )
		<b>Installation of the engine kit on the engine</b> 1.2.1 installation design requirements 1.2.2 CoP of the installation (kit)
Ve	<b>2.2.1</b> Compliance w/ instal notice - of the HDOF engine - of the vehicle kit Instal tests achievement Etc...	<b>Vehicle Retrofit kit system</b> 2.1.1 design requirements 2.1.2 CoP requirements of the kit system 2.1.3 Notice of installation (vehicle kit)
		<b>Installation of the HDOF engine + vehicle kit</b> 2.2.1 installation design requirements 2.2.2 CoP of the installation (vehicle + kit)
Ve	<b>3.2.1</b> Compliance w/ instal notice - of the complete kit Instal tests achievement Etc...	<b>(Engine + Vehicle) Retrofit kit system</b> 3.1.1 design requirements 3.1.2 CoP requirements of the kit system 3.1.3 Notice of installation (engine + vehicle kit)
		<b>Installation of a complete kit</b> 3.2.1 installation design requirements 3.2.2 CoP of the installation (kit)

possible Regulation structure