

## **SECOND MEETING OF THE GRPE INFORMAL GROUP ON HEAVY DUTY HYBRIDS (HDH)**

**Geneva, 07 June 2010**

### **MINUTES OF THE MEETING**

Venue: Palais des Nations, Geneva

Chairman: Petter Åsman (European Commission)

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#### **1.- INTRODUCTION**

The Chairman welcomed the participants and gave a short feedback of the first HDH meeting held on 19/05 in Brussels. He was pleased about the large number of participants indicating a high interest in the dossier.

#### **2.- DRAFT MINUTES OF THE FIRST MEETING**

(Working paper HDH-02-04)

The draft minutes of the 1<sup>st</sup> meeting were approved with the following amendment under item 2.1:

"Mr. Khile (Tata): HILS model needs verification procedure on Chassis Dynamometer. Also indicated concern that for Plug-in hybrids normalising SOC will not reflect real world situation."

#### **3.- DRAFT TEXT FOR PROPOSAL FOR WP.29**

(Working paper HDH-02-03)

The Secretary introduced working paper HDH-02-03. The paper is an updated version of working paper HDH-01-03, which was discussed at the first HDH meeting. It includes the changes agreed at the first HDH meeting.

#### **4.- DRAFT PROPOSAL FOR TERMS OF REFERENCE AND RULES OF PROCEDURE**

(Working paper HDH-02-02)

The secretary introduced working paper HDH-02-02. The paper is an updated version of working paper HDH-01-02, which was discussed at the first HDH meeting. The content is in line with working paper HDH-02-03.

#### **4.1 EPA presentation**

(Working paper HDH-02-06)

Mr. Oleciw introduced working paper HDH-02-06. He emphasized EPA's view that different test cycles for criteria pollutants (CO, HC, NO<sub>x</sub>, PM) and CO<sub>2</sub> are not appropriate. Also, the

use of distinct duty cycles would need to be revisited. With respect to the terms of reference, EPA proposed to add the four key elements for a certification system or methodology given in working paper HDH-02-06. He finally proposed to specifically address PTO operation.

It was agreed to include the EPA proposal into the final ToR version.

#### **4.2 NL presentation**

(Working paper HDH-02-05)

Mr. Rijnders introduced working paper HDH-02-05. The NL are mainly concerned with two aspects of the HDH proposal. First, the scope of gtr n°4 is limited to criteria pollutants and could not be extended to CO<sub>2</sub>. Therefore, it would be better to develop a separate gtr rather than an amendment to gtr n° 4, as proposed by OICA. Second, the major focus of the work program should be the method development. The decision on the appropriate test cycle should be taken at a later stage. Also, a chassis dyno based test procedure should be investigated in parallel to the HILS method.

#### **4.3 China presentation**

(Working paper HDH-02-07)

Mr. Qin introduced working paper HDH-02-07. He presented the current status of the work program on hybrid vehicles in China. The path selected for certification will be a chassis based test procedure. For city buses, a specific China City Bus Cycle (CCBC) was developed and compared to various other test cycles with respect to vehicle speed, acceleration and deceleration, and idle time. Further work is to conduct comparison tests between chassis dyno and engine test bench and to set chassis dyno specific emission limit values equivalent to those of current HD emission regulation.

#### **4.4 Discussion**

The Chairman indicated that the NL proposal might take more time than foreseen within the current mandate. The major focus should be on HILS, and the WHVC seems to be a good basis for global harmonization.

Mr. Schulte (Germany) agreed with the WHVC as basic cycle, any other solutions would extend the time line, considerably.

Mr. Signer (OICA) confirmed OICA's view that WHDC should be the basis for the work program. The same basic drive cycle should be used for hybrids and conventional vehicles, like with passenger cars. Therefore, OICA would have severe problems if the WHVC is put into question.

UK has some sympathy for the NL proposal, but we would have to find good reason for not using the WHVC. Some opening to the mandate is supported.

India confirmed their view that a chassis dyno based test procedure should be allowed as an option.

Mr. Schulte responded that in general options are not preferred by type approval authorities.

Mr. Lindgren (Sweden) agreed with NL that method development should be the key priority. The urban part of the WHVC is not considered appropriate for city buses.

Canada would prefer HILS over a chassis dyno based test procedure.

Mr. Narusawa (Japan) supports the HILS approach, which was developed in Japan in order to facilitate certification of hybrid vehicles. He indicated that Japan introduced modifications to the JE05 cycle for low speed vehicles, and this might also be needed for the WHVC. But WHVC should be in any case the starting point for the work program. He repeated the high interest of Japan in the development of the HILS method as a gtr and offered Japan to become co-sponsor of the dossier.

Korea fully supports the HILS approach and the WHVC basis.

The Chairman summarized that based on the discussion the main work program should start with the WHVC and the HILS method. However, a certain opening of the mandate should be considered.

#### **4.5 Agreement**

The following amendments to the ToR were agreed:

- Objective is to establish an amendment to gtr n°4, but group will consider, if scope of gtr n°4 or a separate gtr is appropriate, and then report its conclusions to the January 2011 GRPE for consideration;
- The HILS approach will be investigated as prime path;
- The WHVC will be used as starting point, but modifications to the cycle will be investigated;
- The feasibility of a chassis based test procedure will be assessed during the course of the work program.

These agreements are reflected in the final ToR (informal document GRPE-60-11) and work proposal (informal document GRPE-60-12).

#### **5.- NEXT STEPS**

##### **5.1 Roadmap and project planning**

The roadmap and project planning will be discussed at the next HDH meeting.

##### **5.2 Contributions from contracting parties**

Japan offered to provide data from their experience of HILS development and application for type approval at the next HDH meeting.

##### **5.3 Meetings**

The 3<sup>rd</sup> HDH meeting will take place on invitation of the European Commission

- on 25<sup>th</sup> and 26<sup>th</sup> October 2010
- in Brussels, Belgium, Rue Belliard 100, room 06/SDR

#### **6.- OTHER BUSINESS**

None.