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agenda item 4(c))



GRPE Informal Group on Heavy Duty Hybrids

**Report to GRPE 62
Geneva, 09 June 2011**



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Report from 5th HDH Meeting

➤ The results of the 5th meeting are as follows:

- **US EPA presentation**
 - hybrid is part of Greenhouse gas (GHG) rule to be signed by 31/07/11
 - focus on CO₂ of hybrid vs. conventional vehicle incl. PTO assessment
 - testing options are powerpack and chassis
- **Environment Canada presentation**
 - close collaboration with US EPA
 - evaluation of different drive cycles showed significant cycle influence on CO₂ reduction potential
- **Cummins presentation**
 - simulation will be an essential part of hybrid certification
 - hybrid certification should build on existing engine certification
- **Japan presentation on open source model**
 - rigid model presented in detail
 - fluid coupling and torque converter model under development



UNITED NATIONS **Task List for HDH Research Program**

- **To accommodate with its mandate, HDH decided to conduct a research program on the major elements of the HILS method. The research program covers the following five tasks:**
 - **Task 1: Investigation and modification, if applicable, of the Japanese HILS model and interface including a proposal for a verification method w/o vehicle testing**
 - **Task 2: Investigation and modification, if applicable, of the HILS component testing**
 - **Task 3: Extension of HILS to non-electrical hybrids, which are currently not covered by the Japanese test procedure**
 - **Task 4: Inclusion of PTO operation, which normally takes place outside the test cycle**
 - **Task 5: Development of WHVC weighting/scaling factors to represent real world vehicle operation**



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HDH Research Program

➤ Quotes

- A request for quote on the five tasks was sent on 16/02/2011
- Offers were received by TU Graz / TU Vienna (joint program) and Chalmers University

➤ Project Overview

- HDH agreed at the 5th meeting that all three institutes be involved in the research program;
- The following project plan has been agreed at the 6th meeting
 - TU Vienna will cover tasks 1 and 2; budget by OICA
 - TU Graz will cover tasks 4 and 5; budget by EU COM
 - Chalmers will cover task 3 and contribute to tasks 1, 4 and 5; budget shared between OICA, Sweden and Swedish Hybrid Center (SHC)
 - TRL will coordinate the program
 - Total budget is 265 k€



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Cost Overview

Task	TU Vienna	TU Graz	Chalmers
1	40 k€	10 k€	4 k€
2	45 k€	-	-
3	-	-	47 k€
4	-	28 k€	2 k€
5	-	41 k€	3 k€
Travel	15 k€	15 k€	15 k€
TOTAL	100 k€	94 k€	71 k€
Budget by	OICA	EU-COM	OICA: 25 k€ Sweden: 19 k€ SHC: 27 k€



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Report from 6th HDH Meeting

- **The results of the 6th meeting on 06/06/11 are as follows:**
 - **TNO outlined the scope of the EU HCV project**
 - **TRL gave an overview on the overall project plan**
 - **TU Vienna presented the work program on tasks 1 and 2**
 - **TU Graz presented the work program on tasks 4 and 5**
 - **Chalmers university presented the work program on task 3**
 - **Project plan has been approved by HDH group**
 - **A kick-off meeting of the research institutes will take place on 30/06/11**
 - **A close collaboration between the institutes and Japan will be essential for a successful work progress**
 - **The 7th meeting will be from 12 to 14/10/11 in Vienna (to be confirmed)**

- **GRPE is asked to**
 - **Approve the project plan and research program**
 - **Reserve a half day for 8th HDH meeting during the 63rd GRPE in January 2012**