GRPE Informal Group on Heavy Duty Hybrids

Report to GRPE 62
Geneva, 09 June 2011
Contents

- Report from 5th HDH meeting
- Research program
- Roadmap & project planning
- Report from 6th 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
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
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€
## Cost Overview

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<th>Task</th>
<th>TU Vienna</th>
<th>TU Graz</th>
<th>Chalmers</th>
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<th>EU-COM</th>
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<tr>
<td></td>
<td>OICA: 25 k€</td>
<td>Sweden: 19 k€</td>
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No change to approved roadmap, so far; project is largely on schedule
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