

GRPE – HDH Meeting

Working Paper No. HDH-06-05
(6th HDH meeting, 06 June 2011)

HDH Work Programme for EC Contract

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Overview

1. Objectives
2. Participants
3. Tasks
4. Co-ordination

Objectives

- Deliver EC-funded programme on an emissions test procedure for heavy-duty hybrids
- Co-ordinate delivery of overall HDH research programme

Participants

- Ecorys
- TRL
- TU Graz

- Chalmers
- IFA

Tasks

- Task 0 – Co-ordination
- Task 1 – Investigation and modification, if applicable, of the HILS model and interface
- Task 2 – Investigation and modification, if applicable, of the HILS component testing
- Task 3 – Extension of HILS to non-electrical hybrids
- 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

Project Co-ordination/ Joint Working

- All tasks
 - Observing/ exchange of information
- Stakeholder meetings
 - All relevant parties to be involved
- Critical tasks (1-3, 2-2, 2-3)
 - Detailed discussions and research group workshop(s) to ensure that all important elements are robustly captured

Tasks

| | | |
|---------------|--|---------------|
| Task 1 | Investigation and modification, if applicable, of the HILS model and interface | |
| 1-1 | Review of interface and software setup | IFA |
| 1-2 | Review of vehicle related data and methods | TUG |
| 1-3 | Analysis of improvements and relevant gaps for a global regulation | IFA |
| 1-4 | Meetings with OEMs and stakeholders | IFA/ TUG/ TRL |
| 1-5 | Analysis of the necessary preparation work run a HILS system | IFA |
| Task 2 | Investigation and modification, if applicable, of the HILS component testing | |
| 2-1 | Detailed review of the test procedure for obtaining HIL input parameters | IFA |
| 2-2 | Analysis of improvements and relevant gaps concerning component testing | IFA |
| 2-3 | Improvements for future technological development | IFA |
| Task 3 | Extension of HILS to non-electrical hybrids | |
| 3-1 | Technology overview and selection of scope | Chalmers |
| 3-2 | Development of HIL elements (models) for non-electrical hybrids | Chalmers |
| 3-3 | Test methods for input data to non-electrical component models | Chalmers |
| 3-4 | Definition of control signals | Chalmers |
| 3-5 | Alignment with HILS for HEV and verification | Chalmers |
| Task 4 | Inclusion of PTO operation, which normally takes place outside the test cycle | |
| 4-1 | Options to simulate PTO power demand | TUG |
| 4-2 | Options to transfer different engine work into a benefit system | TUG |
| 4-3 | Collection of data for one vehicle mission profile | TUG |
| Task 5 | Development of WHVC weighting/scaling factors to represent real world vehicle operation | |
| 5-1 | Analysis of typical profiles for vehicle speed and propulsion power | TUG |
| 5-2 | Elaboration of weighting factors for the different parts of the WHVC | TUG |
| 5-3 | Elaborate option(s) to use the HILS method also in the HDV CO2 certification procedure | TUG |

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