

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

The Informal Group on Heavy Duty Hybrids (HDH) held two meetings since the 61<sup>st</sup> GRPE session. The 5<sup>th</sup> meeting took place from 16 to 18 March 2011 at EPA in Ann Arbor and was dedicated to an exchange of information with EPA and to the discussion of the offers from potential research institutes. The 6<sup>th</sup> meeting took place on 06 June 2011 in Geneva with the goal of finalizing the project plan and research program.

EPA is currently in the middle of their Greenhouse Gas (GHG) rulemaking. The final rule is expected to be signed at the end of July 2011. EPA indicated that the HILS procedure is not advanced enough to go into the final rule for now, but they are very interested in the progress of the HDH group..

Japan presented the open source model proposed as input to the HDH activities. The open source model was developed by JAMA/JARI, since the current HILS certification model used in Japan can not be disclosed due to intellectual property rights. The model presented is a rigid model for a parallel hybrid vehicle. The model is not the same as the model currently used in Japan, but its accuracy verification is nearly completed. In addition, a fluid coupling and torque converter model is under development, and the verification underway.

Based on the decision taken at the 4<sup>th</sup> meeting, the secretary had sent a request for quote to the institutes that had expressed interest in the research program. The research program should cover the following five tasks:

- Task 1: HILS model verification
- Task 2: HILS component testing verification
- Task 3: extension to non-electrical hybrids
- Task 4: PTO operation
- Task 5: WHVC weighting and scaling factors.

On the basis of the request for quote, two offers were received. TU Vienna and TU Graz submitted a joint proposal whereby TU Vienna would mainly cover tasks 1 and 2, and TU Graz would work on tasks 4 and 5. Chalmers University Gothenburg submitted an offer over the complete five tasks. After thorough discussion, HDH agreed that all three institutes should be involved in the research program. Taking this agreement and the budget available into account, chairman and secretary presented the following proposal to the 6<sup>th</sup> HDH 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€

A more detailed overview is shown in the table below:

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€

The institutes presented in detail their contribution. Based on this input, HDH approved the proposed project plan and research program.

Currently, the work program is slightly behind schedule w/o jeopardizing the approved roadmap.

Due to the heavy earthquake in Japan, it was agreed that the location of the 7<sup>th</sup> HDH meeting, originally planned to take place in Japan, would be moved to another place. At the 6<sup>th</sup> HDH meeting, Japan invited the group to meet in Japan in spring 2012.

Therefore, the next meetings are scheduled as follows:

- 7<sup>th</sup> meeting: 12, 13, 14 October 2011, Vienna (to be confirmed)
- 8<sup>th</sup> meeting: 17 January 2012, Geneva
- 9<sup>th</sup> meeting: February/March 2012, Japan (date and place to be confirmed)

GRPE is asked

- to approve the project plan and research program
- to reserve a half day for the 8<sup>th</sup> HDH meeting during the 63<sup>rd</sup> GRPE session.

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