



Diesel efficiency improvement with Particulates and emission Reduction

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**Project partners:**

- 1 - AVL - AVL List GmbH – AT
- 2 - REN - Renault SAS - FR
- 3 - IFP – Energies nouvelles – IFPEN – FR
- 4 - CMT - Universitat Politecnica de Valencia – ES
- 5 - JM - Johnson Matthey Plc - UK
- 6 – CONTI – Continental Automotive France SAS – FR
- 7 – BOSCH – Robert Bosch GmbH - DE
- 8 - CNR - Consiglio Nazionale delle Ricerche – IT
- 9 – FMF - FPT Motorenforschung AG – CH
- 10 – IVECO – IVECO S.p.A. - IT
- 11 - RCD - Ricardo Plc – UK
- 12 – ECN – ECOLE CENTRALE DE NANTES – FR
- 13 – SIE - SIEMENS INDUSTEY SOFTWARE SAS – FR
- 14 - VIF – Kompetenzzentrum – Das Virtuelle Fahrzeug, Forschungsgesellschaft mbH - AT
- 15 - UNR - Uniresearch BV - NL
- 16 - CRF – Centro Ricerche SCPA - IT

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## Executive summary

“Experimental evaluation of FIE impact on CO<sub>2</sub> emission” is one part within the WP6 “Robustness over lifetime”.

A methodology for experimental evaluation of mechanical drive power of the Fuel Injection Equipment on a hydraulic test bench will be developed.

Goal of the Bosch part of WP6 is to deliver a description of needed hardware, assembly and the process description to be able to measure within a given driving cycle.

The available report of deliverable D6.1 contains the list of needed hardware.

Deliverable D6.2 gives the description of the assembly and the measurement process for the partial system pump/rail/pressure control valve. Purpose of the measurement with the partial system is prove of capability of the developed measurement technique as well as offering an adequate method for measurement of mechanical drive power map over pump speed, delivery quantity and rail pressure. Measured maps can be used e.g. within data based simulations.

The development phase for the partial system measurement covers the following elements: procedure for offset calibration of the torque flange, evaluation of influencing parameters such as temperatures, check methods at reference operating points as well as the calculation of the measurement uncertainty specifying the quality of the procedure and finally the procedure for the pump map measurement with variation of speed, delivery and rail pressure.

The investigations are worked out with a pass-car high pressure Common Rail Pump.