

PRESS RELEASE



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Ricardo sets out pathways to reduce truck CO₂ emissions at TRA 2014

At the Transport Research Arena 2014 conference hosted in Paris today, Ricardo will present approaches to the reduction of CO₂ emissions from heavy duty engines used in long distance on-highway transportation

The paper presents some of the early work of the European Commission sponsored 'CO₂ REduction for long distance transport' (CORE) research project, in which Ricardo is collaborating with project leader Volvo and other industrial and academic partners. The CORE project aims to have a direct impact on the next generation of heavy duty transport vehicles, such that they are able to run more energy efficiently while meeting future emissions standards. By developing three advanced heavy duty engine systems – which are widely used in different vehicle configurations and can be provided on an industrial scale and commercial basis – the CORE project will have significant impact on the rate of emissions from the next generation European long distance heavy duty on-highway transport.

Currently half way through its planned four year duration, the CORE project has in its early stages focused on design, simulation, analysis, rig testing and single cylinder engine testing to investigate the selected concepts. A wide range of fuel saving technologies and innovations are being considered in this work, including engine down-speeding and downsizing, improved aftertreatment systems, variable valve activation, and the reduction of sources of engine friction. In addition, the project will address the applicability of hybrid systems to down-speeded engines to improve low speed torque and transient response as well as recover braking energy.



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Ricardo is actively engaged in reducing friction by changes to component design and surface coatings, supported by friction modeling using state-of-the-art software. In addition, a particular focus of Ricardo's involvement in the CORE project is in the use of the company's vehicle simulation technology, which is crucial in assessing the fuel saving (and hence CO₂ reduction) implications of different combinations of technologies and powertrain architectures, over a range of duty cycles and simulated vehicle routes.

In the paper to be presented today, it is confirmed that based on the results of the research obtained to-date, good progress has been made towards the CORE's target of achieving a 15 percent reduction in on-highway CO₂ emissions from trucks and other heavy duty vehicles, while achieving better than Euro VI emissions performance.

"I am grateful to our partners on the CORE project for allowing us to share some of the encouraging results arising from the early work of the project," commented Chris Such, Ricardo chief engineer responsible for the CORE project. "Trucks and other heavy duty vehicles are an essential element of the transportation mix of modern industrialized society, but are less amenable to many of the electrification and hybridization strategies that are more effective in the light vehicle sector. A key global imperative is therefore the substantial improvement of heavy vehicle engine fuel efficiency, and the early results of the CORE project are highlighting some of the options for achieving this."

The next phase of the CORE project will see component procurement and multi-cylinder engine testing to prove the concepts. For more information about the CORE project, including public reports, details of demonstration activities and other project news, visit: <http://www.co2re.eu/>.

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NOTES TO EDITORS:

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About the CO2 Reduction for long distance transport (CORE) project: European prosperity now and in the future depends on a strong and competitive transport sector. The long distance transport of goods and services is a significant direct and indirect contributor to European wealth, and its contribution and integration is steadily growing. At the same time the transport system of Europe faces significant challenges in order to become sustainable in the long term, and to decouple its significant positive effects from its impact on the environment.

With the aim to address these challenges the project CORE (CO2 Reduction for long distance transport) has started. CORE is a European founded collaborative large-scale integrated project, within FP7-SUSTAINABLE SURFACE TRANSPORT (SST)-2011-RTD-1. The consortium consists of 16 partners from truck manufacturers, automotive industries and universities; Volvo, CRF, Chalmers, Daimler, Federal-Mogul, Univ. Hannover, Honeywell, IAV, Johnsson Matthey, JRC, Metatron, POLIMI, POLITO, Rhodia, Ricardo and Umicore. The total CORE budget is about 17 MEuro, with approximately 50% funded by European Commission.

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