



# PRESS RELEASE

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## Project FEVER to develop 48V through-the-road hybrid vehicle technology

- **Forty-Eight Volt Electrified Rear-axle (FEVER) project will be led by Control Power Technologies (CPT) in partnership with Ricardo, Tata Motors European Technical Centre (TMETC) and Provector**
- **FEVER will apply CPT's SpeedTorq technology to an ultra-lightweight rear axle module to significantly improve the fuel economy of a city car**
- **Offers comparable fuel and CO<sub>2</sub> saving to high voltage hybrid architectures, but saving significant (circa £1,000) manufacturing cost compared to a full HEV**

Controlled Power Technologies, a developer of vehicle driveline electrification based on state-of-the-art switched-reluctance machines (SRMs), has partnered with Ricardo, Tata Motors European Technical Centre (TMETC) and Provector, to apply its low voltage electric motor technology to the rear driveline of a B-segment city car.

The consortium has secured a funding award from Innovate UK, the UK's innovation agency, who will be contributing £1.8 million of the total £3.4 million investment.

The investment will help to further introduce advanced mild hybrid functionality to mainstream vehicles at significantly reduced cost to that of high voltage plug-in hybrid or pure electric vehicles (EVs). The innovative electrified rear axle technology will be an important step in enabling OEMs to further improve both regulated and real world fuel economy in modern urban city driving conditions.

The objective of the two-year project is to achieve a CO<sub>2</sub> reduction of up to 15 percent, over the regulatory cycle, through the development of two through-the-road hybrid demonstrator vehicles. Integrating the electric motor within the rear axle will enable features such as low speed electric driving or e-creep, as well as electrically assisted all-wheel drive, which will deliver additional significant savings over a typical representative city drive cycle. The technology will allow a carmaker to reduce the in-use carbon dioxide emissions of such vehicles by approximately 25g/km.

CPT will lead the project and will be responsible for developing the electric motor and control system, and will support their integration into the rear axle module. Provector has extensive experience in the control and management of advanced lead-carbon battery chemistry through projects such as ADEPT and its involvement with the Advanced Lead Acid Battery Consortium. Ricardo's key responsibilities within the project will be the design and analysis of the integrated 48V rear axle module, development of the supervisory vehicle control system, sub-system testing and project management support, building on its previous work on the ADEPT and ULTRAN projects. TMETC will supply the base vehicles, develop the suspension solution, and provide support for the application of the technology and overall vehicle integration and testing.

“This programme will require a high level of project management and engineering cooperation,” says project director Peter Scanes, senior manager responsible for vehicle OEM mild hybrid programmes at CPT, “not least in the unique application of a low voltage high temperature tolerant SRM, which has to be oil-cooled and packaged as efficiently as possible into a rear axle and suspension module complete with advanced lead-carbon battery.”

Stephen Doyle, Ricardo hybrid and electronic systems product group head, added: “The mass roll-out of electrification within the urban transportation fleet will require new and innovative power architectures that provide a performance, value and emissions trade-off that will be attractive to potential customers. Ricardo believes that a 48V electrified rear axle offering through-the-road hybrid performance – including significant ‘engine-off’ operation – will be highly attractive for many market segments but particularly for those that predominate in urban transportation.”

The FEVER project will run for two years and will culminate in the development of two through-the-road, 48V electrified rear axle demonstration vehicles.

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## NOTES TO EDITORS:

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**Controlled Power Technologies** is an independent, clean-tech, company, based at Laindon in Essex and in Coventry in the West Midlands with subsidiaries in Germany and the USA, which specialises in the development of cost-effective CO2 reduction measures for the global automotive industry. Its core competencies include low voltage power electronics, advanced control software and the application of safe low voltage switched-reluctance machines (SRMs) to a vehicle powertrain and driveline, providing intelligent electrification of the propulsion system with near full hybrid vehicle capability. CPT is at the forefront of practical exploitation of SRM technology in vehicle applications and has already issued a number of patents in machine design and construction in the UK, Europe, USA, India, Korea and Japan. For more information, visit [www.cpowert.com](http://www.cpowert.com).

**Provector Limited** is a small, high-capability company specialising in power-electronics, control and battery systems for hybrid and electric vehicles. Its main activities are focused on battery management systems, battery selection and pack system design, high-performance high-voltage inverters and electronics for F1 and military applications. Most of its work since its start-up in 1999 has involved development of systems, generally working from a top-level requirement to develop a concept through to a working solution. Because a lot of its work has involved extensive data collection, Provector has built in a range of facilities to its products that help with system and whole vehicle development. For more information, visit [www.provector.co.uk](http://www.provector.co.uk).

**Tata Motors European Technical Centre PLC (TMETC)**, based in Coventry, is a wholly-owned subsidiary of Tata Motors Ltd. Created in 2005, as a UK-based centre of excellence for automotive design and engineering, TMETC provides research and development principally for Tata Motors but also for selected partners in the automotive industry. For more information, visit [www.tmetc.com](http://www.tmetc.com).

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