



PRESS RELEASE

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Ricardo wins funding to improve efficiency and performance of electric vehicles

Ricardo has been awarded funding from the Office of Low Emissions Vehicles (OLEV) – through a partnership with Innovate UK – to investigate the use innovative advanced thermal management methods to improve the performance and efficiency of the electric motors and power electronics used in electric and hybrid vehicles

Running for six months, the project aligns with the UK Government's aim of reducing greenhouse gas emissions by increasing electrification across a range of transport sectors. The focus of Ricardo's work in the project, for which grant funding of £190,000 has been provided by OLEV through partnership with Innovate UK, will be the development of an electric motor concept with the aim of achieving a 15-20 percent improvement in performance compared with that of current state of the art products. If successful, this will provide vehicle manufacturers as early as 2021, with the capability of developing products which are able to meet Automotive Council UK motor and power electronics specific power targets for 2030.

By virtue of its enhanced performance, the concept will enable 10-20 percent motor downsizing and weight reduction, providing improved vehicle packaging opportunities. Crucially, it will also help to bring down the total cost of each vehicle. This will help support the UK Government's drive to increase the rate of electrification across a range of transport sectors and is applicable to battery electric vehicles, hybrid electric

vehicles, plug-in hybrid electric vehicles and fuel cell drivelines. The design principles demonstrated in the new motor can also be applied across aerospace, off-highway and other markets.



Using Ricardo's Model Based Development advanced thermal and electromagnetic digital design and analysis tools, the company's engineers will develop the concept and then assess it in a relevant automotive environment, over both legislative and real-world driving cycles. During the project, they will take the opportunity to evolve and update the design and analysis tools so that they can reduce development time of motors and drives by 20 to 30 percent. This will provide tangible benefit to vehicle manufacturers: enabling them to bring their products to market sooner and at lower cost.

The final expected outcome from the project is a well-developed concept design with manufacturing considerations which, supported by analysis, will be used to guide global vehicle manufacturers as they develop electric vehicles. This technological advance will enable Ricardo to provide tangible benefit to vehicle manufacturers, enabling them to bring their products to market sooner and at lower cost, which is critical in the highly competitive electrification space.

Richard Gordon, Ricardo Head of R&D said: "Ricardo's R&D in novel and disruptive cooling technologies and thermal management is already much in demand with global vehicle manufacturers. We are very appreciative of this latest award of funding which will enable our research to deliver near-term, significant efficiency and performance benefits for global transport manufacturers as they seek innovative technology solutions to accelerate the development and introduction of electric and hybrid vehicles."

Within the same funding stream, Ricardo has recently received funding for another electric vehicle research and development project, to digitalise electric and hybrid vehicle development to reduce cost, risk and time to market for manufacturers.

Ends



NOTES TO EDITORS:

Ricardo plc is a global, world-class, multi-industry consultancy for engineering, technology, project innovation and strategy. Our people are committed to providing outstanding value through quality engineering solutions focused on high efficiency, low emission, class-leading product innovation and robust strategic implementation. With a century of delivering excellence and value through technology, our client list includes the world's major transportation original equipment manufacturers, supply chain organizations, energy companies, financial institutions and governments. Guided by our corporate values of respect, integrity, creativity & innovation and passion, we enable our customers to achieve sustainable growth and commercial success. Ricardo is listed in the FTSE4Good Index, which identifies global companies that demonstrate strong environmental, social and governance (ESG) practices. For more information, visit www.ricardo.com.

The Office for Low Emission Vehicles (OLEV) is a team working across government to support the market for ultra-low and zero emission vehicles. OLEV is providing over £2.5bn to position the UK at the global forefront of electric vehicle development, manufacture and use. This will contribute to economic growth and will help reduce greenhouse gas emissions and air pollution on our roads.

OLEV is part of the Department for Transport and the Department for Business, Energy & Industrial Strategy.

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