

## **PRESS RELEASE**

**20 March 2023**

# **Ricardo supports industry leaders to develop innovative dedicated hydrogen engine**

Ricardo, a global strategic, environmental, and engineering consulting company, has delivered a hydrogen-fuelled research engine to global engine specialist Cummins and automotive supplier BorgWarner, as part of Project BRUNEL part funded by the Advanced Propulsion Centre (APC).

Cummins is a global specialist in diesel and alternative fuel engines and generators, and related components and technology. BorgWarner is an automotive tier 1 supplier and specialist in the design and manufacture of systems for electrified and conventional propulsion types, that includes injection equipment for conventional and renewable fuels. BorgWarner recently announced the intention to spin off its Fuel Systems segment. The intended company name is PHINIA Inc. PHINIA is expected to be a product leader in fuel systems, starters, alternators and aftermarket distribution.

The project aims to support internal combustion engine (ICE) sub-system suppliers to increase their use of hydrogen as an alternative zero-emissions fuel solution across the light commercial vehicle market.

The engine is specifically designed to burn only hydrogen - with no supporting fuels that could give rise to any carbonaceous, or excessive air quality emissions.

Experts in hydrogen technology and integration, Ricardo has provided an engine based upon its world-renowned series of single cylinder research units, which can help the research teams evaluate a wide variety of fuels. The engine is designed to help engineers evaluate a variety of injector types and will support increased fuel efficiency, reduced air quality emissions and the move towards carbon-free heavy-duty propulsion.

Matt Beasley, President of Established Mobility at Ricardo, said: "We were delighted to work as part of a group of internationally renowned businesses to develop a new hydrogen propulsion engine. The project has been achieved through strong collaboration between the organisations involved and yet again demonstrates our expertise and experience in hydrogen technologies, where we are working with a range of customers to provide clean, efficient solutions. Our engineering experts are advising customers in several areas, across automotive and industrial, as well as in the aerospace sector, on hydrogen. We look forward to continuing to support advancements in the application of this technology."

Matt Shillito, Senior Project Delivery Lead, APC, said: "Ricardo's contribution to this collaborative R&D project highlights the world-class capability of the UK automotive sector as the industry continues to pivot towards sustainable, zero-carbon propulsion technologies. The research engine delivered by Ricardo will enable the BRUNEL consortium to push hydrogen combustion technology to the next level, ensuring the cleanest possible combustion while delivering high performance and increased efficiency. The project is a fantastic opportunity for the partner companies to leverage their existing knowledge to the meet the challenges of zero-carbon transportation here in the UK."

Ends

### **About Ricardo**

Ricardo plc is a global strategic, environmental, and engineering consulting company, listed on the London Stock Exchange. With over 100 years of engineering excellence and employing close to 3,000 employees in more than 20 countries, we provide exceptional levels of expertise in delivering innovative

cross-sector sustainable outcomes to support energy transition and scarce resources, environmental services together with safe and smart mobility. Our global team of consultants, environmental specialists, engineers and scientists support our customers to solve the most complex and dynamic challenges to help achieve a safe and sustainable world. Visit [www.ricardo.com](http://www.ricardo.com)

**Media contacts:**

**For Ricardo:**

Kathryn Bellamy  
Group Senior Communications Manager  
Email: [Kathryn.bellamy@ricardo.com](mailto:Kathryn.bellamy@ricardo.com)  
Telephone: +44(0)7921 941824

Amanda Woolley, Communications Manager, A&I and PP  
Email: [amanda.woolley@ricardo.com](mailto:amanda.woolley@ricardo.com)  
Telephone: +44 (0) 07548 110920

**About the Advanced Propulsion Centre**

The Advanced Propulsion Centre (APC) collaborates with UK government, the automotive industry and academia to accelerate the industrialisation of technologies, supporting the transition to deliver net-zero emission vehicles.

Since its foundation in 2013, APC has funded 188 low-carbon projects involving 426 partners, working with companies of all sizes, and will have helped to create or safeguard over 50,000 jobs in the UK. The technologies developed in these projects are projected to save over 312 million tonnes of CO<sub>2</sub>, the equivalent of removing the lifetime emissions from 12.6 million cars.

With its deep sector expertise and cutting-edge knowledge of new propulsion technologies, APC's role in building and advising project consortia helps projects start more quickly and deliver increased value. In the longer term, its work to drive innovation and encourage collaboration is building the foundations for a successful and sustainable UK automotive industry.

In 2019 the UK government committed the Automotive Transformation Fund (ATF) to accelerate the development of a net-zero vehicle supply chain, enabling UK-based manufacturers to serve global markets. ATF investments are awarded through the APC to support strategically important UK capital and R&D investments that will enable companies involved in batteries, motors and drives, power electronics, fuel cells, and associated supply chains to anchor their future.

For more information go to [apcuk.co.uk](http://apcuk.co.uk) or follow us @theapcuk on Twitter and Advanced Propulsion Centre UK on LinkedIn.

The term 'safeguarded jobs' means continued employment for existing roles that otherwise might be lost in some sectors rather than new jobs created.

**NOTES TO EDITORS:**

All job and CO<sub>2</sub> figures are cumulative forecasts and cover a 10-year range from the start of the project. A percentage 'risk' calculation is applied to these forecast figures to account for unknown market forces that may change how a business operates. It also ensures that we are not overstating the benefits. We adjust this weighting periodically as more analysis becomes available.

Throughout the lifetime of the project, we regularly reassess and adjust the figures and apply risk methodology to the metrics in line with Department for Business and Trade guidelines.

Lifetime emissions comparison metrics are calculated based on an average annual mileage of 7,400 miles, in a vehicle with CO<sub>2</sub> emissions at 149.6 g/km and vehicle life of 13.9 years. This is in line with the latest SMMT data.

For media enquiries contact:

Laurah Hutchinson-Strain

Senior PR Manager

Email: [Laurah.hutchinson-strain@apcuk.co.uk](mailto:Laurah.hutchinson-strain@apcuk.co.uk)