

EMERGING AUTOMOTIVE AND INDUSTRIAL

Emerging Automotive and Industrial is a trusted partner for the next generation of sustainable mobility. Leveraging expertise in power electronic systems and propulsion systems, software and digital technologies for connected, autonomous vehicles, we deliver clean, efficient and integrated propulsion and energy solutions to support our clients in their energy transitions.



Specialists in energy transition propulsion, driveline, and controls design, optimisation, and prototype development.

HIGHLIGHTS*

-19%
Order intake

2022/23	£84.3m
2021/22 (CC)	£104.6m
2021/22	£101.3m

+3%
Order book

2022/23	£55.0m
2021/22 (CC)	£53.3m
2021/22	£55.4m

+16%
Revenue

2022/23	£82.3m
2021/22 (CC)	£71.1m
2021/22	£69.1m

+279%
Underlying operating profit

2022/23	£10.6m
2021/22 (CC)	£2.8m
2021/22	£2.7m

+9.0pp
Underlying operating profit margin

2022/23	12.9%
2021/22 (CC)	3.9%
2021/22	3.9%

-20%
Headcount

2022/23	435
2021/22	542

* Prior period results have been restated to reflect the fact that a share of central plc costs are no longer included in the operating profit measure for operating segments. See [Note 5](#) to the Group Financial Statements.

We solve the most complex mobility challenges

From strategic planning and policy, concept to manufacture, we work with clients across the globe in key automotive and industrial transport sectors: passenger and light vehicles, commercial vehicles, off-highway vehicles, motorcycles, marine and aerospace as well as stationary power generation and infrastructure. We bring sustainable mobility solutions to the market quicker while enhancing the overall performance across key transport sectors.

- **Electrification** – We enable our clients to de-risk electric vehicle (EV) development, while reducing time, cost and navigating stringent policies. We provide solutions across power electronics, emachines, edrives and batteries to accelerate EV adoption
- **Hydrogen fuel cell development** – We specialise in design and integration of fuel cell systems to decarbonise commercial vehicle, off-highway, aerospace, and marine applications.
- **Sustainable fuels** – We help clients navigate changing legislations, identify, and implement sustainable fuel solutions including hydrogen, biofuels, and synthetic fuels to reduce emissions across a wide range of transport applications
- **Hybrid** – We support the decarbonisation of transport through the design, development and implementation of hybridised powertrain and driveline systems.

A rapid shift to decarbonised sustainable transport technology

Zero emission propulsion is driving transformational change in all forms of transport driven by increased emissions regulation, country specific bans of fossil fuel vehicles and increasing consumer adoption of electrified vehicles. Across mobility, there are many propulsion technologies, working towards different time frames and different applications by industry, geography and application. Furthermore, new mobility solutions will only become viable for all stakeholders if energy sources are resilient, convenient and cost-effective at the point of need.

Our expertise supports the solution delivery across the value chain from policy, strategy and advisory services to design, engineering, testing and niche production and product launch. We develop strategies for the transport sector which address the biggest challenges of reducing green house gas emissions and we strive to deliver a better world through solutions that take a whole life cycle carbon neutral approach. As an example, Ricardo is working with the Sustainable Hydrogen Powered Shipping consortium (sHYpS) to design and develop hydrogen fuel cell propulsion technologies to power the next generation of zero emissions passenger ships. The project involving 13 partners in six European countries will accelerate the adoption of hydrogen as a renewable fuel in the maritime industry. The work has been funded by UK Research and Innovation (UKRI) under the UK Government's Horizon Europe funding guarantee.

Our performance in FY 2022/23

Emerging Automotive and Industrial built on its return to growth and delivered a good performance in both revenue and underlying operating profit in FY 2022/23. Revenue was up 16% and operating profit increased by 279% on an underlying basis. Headline operating profit margin was 12.9% up by 9.0pp, with the positive impact of volumes and the restructuring which was executed in H2. Throughout the year, we secured a number of significant contracts in both the US and Europe including Cranfield Aerospace Solutions, Toyota Hilux and Kalmar.

Order intake declined by 19% year-on-year, on a constant currency basis, reflecting the market challenges in the automotive industry resulting in timing uncertainties in new electrification and integrated mobility projects. Our order intake was geographically diverse with c.30% coming from North America, c.60% from EMEA and c.10% from Asia.

We expect a level of market uncertainty to continue as we move into Q1 FY 2023/24 but to grow thereafter as new projects become active and we win new contracts.

CASE STUDY

FUEL CELL POWERED TERMINAL TRACTOR

Kalmar offers a range of cargo handling solutions and services to ports, terminals, distribution centres and to heavy industry. To meet legislation requirements, manufacturers must shift to zero emission technologies

Ricardo supported Kalmar, in partnership with Toyota Tsusho America, with the design, integration and assembly of fuel cells into the Kalmar Ottawa platform. The project aims to offer Kalmar clients extended operational uptime and reduce the need for new investment in electrical grid infrastructure. Utilising extensive experience and design expertise in fuel cell systems and integration, Ricardo integrated a fuel cell system to deliver cleaner and more efficient propulsion.

