

# MARINE ELECTRIFICATION SOLUTIONS FROM CONCEPT TO PRODUCTION

Ricardo is a trusted provider of advanced electrification solutions for the marine sector, offering propulsion system technologies that prioritise reliability, durability, cost effectiveness and high performance.

With Ricardo's **comprehensive engineering expertise across the full propulsion system**, we are ideally positioned to deliver truly end-to-end technical and manufacturing solutions to help you seamlessly transition to electrification.

From **high-performance boats and workboats to rescue vessels and leisure craft**, Ricardo's engineering and manufacturing capabilities support your shift to a sustainable, zero-carbon future, positioning fleets and pleasure craft alike to meet rising standards for efficiency and environmental responsibility.



HIGH-PERFORMANCE BOATS



WORK BOATS



INTEGRATED ON-BOARD POWER



RESCUE CRAFT



LEISURE CRAFT

## OUR OFFERING

- **Design and engineering** solutions of full propulsion systems or individual components including battery systems, power electronics, motors, inverters, controls and transmissions
- **Test and validation** of electric powertrain
- **Manufacture and supply** of high precision transmissions and gearboxes, supplied in niche volumes
- **Industrialisation support** to assist clients with production challenges, supply chain management and new product introduction
- **Through life support** of programmes including spares provision and supply chain management support
- **Life cycle assessment** of the full electric propulsion system to help to meet sustainability goals

**CONTACT US ABOUT YOUR BESPOKE SOLUTION**

INFO@RICARDO.COM | WWW.RICARDO.COM/MARINEELECTRIFICATION

## WHY ELECTRIFICATION?

As the drive to combat climate change accelerates, the marine sector is under increasing pressure to reduce carbon emissions, with regulations and market demands intensifying and electrification becoming an increasingly more attractive option for decarbonisation of small and medium sized high-performance vessels for both commercial and leisure applications. These vessels tend to operate in environmentally sensitive coastal and inland areas, and can benefit significantly from the reduced emissions, noise, and fuel costs that electrification can offer.



For leisure craft, electrification enhances the user experience with quieter, smoother operation, aligning with growing customer demand for eco-friendly recreational options. In workboats and smaller commercial vessels, electric propulsion reduces operating costs and minimises maintenance requirements, creating long-term value for operators.

TRUE END-TO-END  
CAPABILITY ACROSS  
THE FULL PRODUCT  
DEVELOPMENT CYCLE,  
FROM CONCEPT, THROUGH  
DESIGN AND INTO  
QUALITY ASSURED SERIES  
PRODUCTION INCLUDING  
SPARES AND WARRANTY  
MANAGEMENT.

## CAPABILITY ACROSS THE FULL ELECTRIC PROPULSION SYSTEMS

Ricardo's expertise lies in the development of electric propulsion systems for the most challenging of applications.

Whether for industry or for leisure, we provide truly end-to-end technical and manufacturing solutions across the full powertrain which are reliable, durable, and compact, whilst being capable of withstanding harsh marine conditions.

Our capability in the marine market spans the full electrified propulsion system, including battery systems, transmissions, power electronics, motors, and inverters.

## PRODUCT FOCUS

# ELEMENT MODULAR TRANSMISSION SYSTEM

Tailored to niche applications, the Element transmission range is designed to reduce time and cost of product development of electrified propulsion systems for high performance and specialised platforms including the marine, defence, off-highway, and industrial sectors.

With an adaptable range of torque variants and gear ratio options and compatible with a range of motors, Element offers a selection of ready-to-deploy pre-engineered baseline configurations which can be fully customised to meet unique project requirements.

Choose from our baseline designs\* for low-volume rapid prototyping, or customise for efficient, low-engineering effort product development.



\*datasheet available on request

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