

PRESS RELEASE



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Ricardo leads project to improve offshore wind turbine reliability and reduce operating cost

- **UK Government Department of Energy & Climate Change (DECC) project announced today will see the deployment of game-changing high reliability technologies**
- **Objective: to enable new offshore wind turbine drivetrains to survive a full 25 year life without significant maintenance intervention**
- **Ricardo's partners include wind farm operator ScottishPower Renewables and the Universities of Sheffield and Strathclyde**

Wind turbine drivetrain reliability remains one of the most pressing issues for developers and operators of wind farms. The drivetrain is a crucial element in the turbine system, allowing the energy captured from the wind to be converted to usable shaft power that can be fed to the electric generator. However, wind turbines are susceptible to levels of reliability that would be considered unacceptable in other industrial processes, compounded by the difficulties of carrying out significant maintenance on turbines once installed. Replacement part lead times and turbine access can be challenging for land based systems in remote locations, and even more so for offshore wind farms, where repairs are contingent upon the availability of support vessels and calm sea conditions.



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The OWDIn (Offshore Wind Drivetrain Innovation) project was announced today by the Rt Hon Edward Davey MP, Secretary of State for Energy and Climate, speaking at the annual RenewableUK conference in Birmingham. The Ricardo-led project takes a broad drivetrain approach to improving reliability through the development of sub-systems that will be applicable to a wide range of different drivetrain architectures.

The project will see the Ricardo MultiLife wind turbine bearing management system for gearbox planet bearings, deployed at a ScottishPower Renewables wind farm location that are known to experience aggressive wind conditions; a test bench environment has already demonstrated the system's potential to extend bearing life by in the region of 500 percent. In addition, the project will involve the development of a Ricardo concept for a unique, dual-function coupling that avoids drivetrain overloads: the Torque-Only Coupling and Torque Truncation system will be applicable only to new offshore wind turbines but offers the prospect of enabling them to survive in the harshest conditions for their full 25 year operating life without major maintenance intervention. Finally, the project aims to develop a next-generation condition monitoring and prognostics system targeted at Offshore Wind farms but capable of retrofit to existing wind farms. This system will use advanced sensors to provide early indications of potential fault development in order to enable preventative measures to be taken, hence avoiding the costs and lost production of enforced downtime through damage.

“These new Ricardo technologies offer the prospect of transformative improvements in wind power operational reliability, particularly in the offshore environment,” commented Paul Jordan, Ricardo’s global market sector head for clean energy & power generation. “The award of funding for this project by the Department for Energy and Climate Change provides the opportunity for industry to make significant progress in developing and demonstrating them through practical deployment in challenging wind farm environments. Our broad solutions approach to improving reliability also ensures that a wide range of future wind turbine drivetrains stand to benefit from the reduction in cost of energy that these Ricardo innovations can provide. We look forward to working with our partners ScottishPower Renewables and the Universities of Sheffield and Strathclyde on this exciting project.”

Ends



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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 almost a century of delivering 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. For more information, visit www.ricardo.com.

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