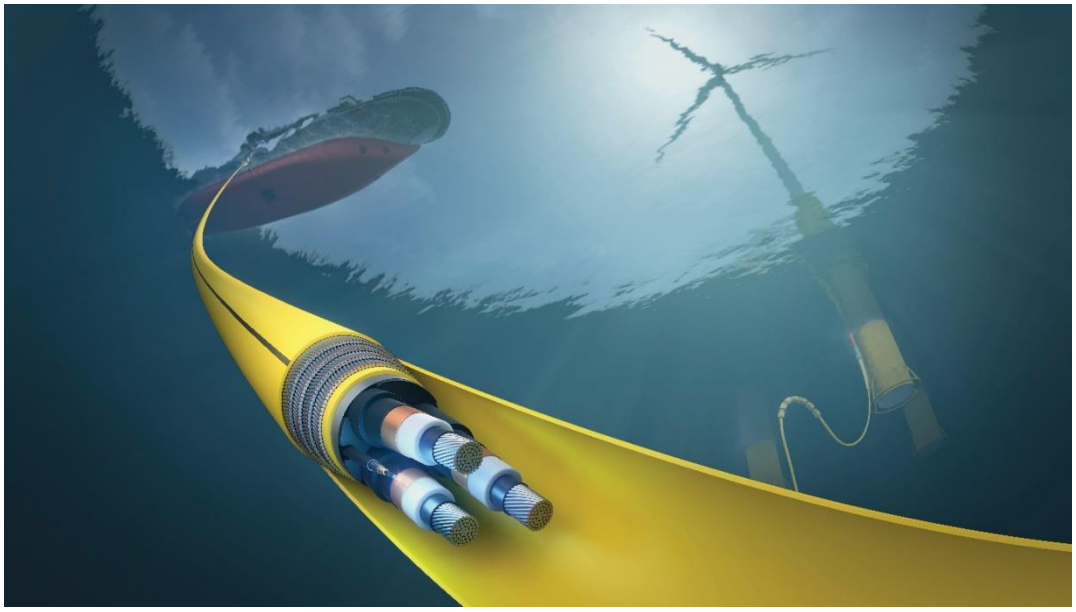

Project Title: Active Integrity Monitoring for Cables in Floating Offshore Wind Farms.

Application Deadline: 1st December 2023
Anticipated Starting Date: September 2024
Application and Funding Details: See https://research.ncl.ac.uk/marinezero/applicants/

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Floating offshore wind is of growing importance globally and particularly in the UK, with estimates of a worldwide capacity of 289 GW operational by 2050[1] and over half of the 2022 Scotwind Leasing projects being for floating technology[2]. Cables are an essential element of any offshore wind farm, and in the case of floating devices they must be dynamic to respond to the motions of the turbine structure and the ocean environment. There have already been numerous cable failures in fixed foundation wind farms and this fact, coupled with the moves to higher voltage operation and floating foundations, and therefore dynamic cables, is driving the need for cable integrity monitoring[3]. The project will be jointly supervised by Newcastle University and Technip FMC[4] addressing active integrity monitoring of high voltage cables for floating offshore wind applications.

TechnipFMC is a leading technology provider to the traditional and new energies industry; delivering fully integrated projects, products, and services. As a global leader with a 20,000 strong global team TechnipFMC delivers innovative technologies, systems, and services to meet the world's energy needs now and in the future. The project will be supported by the TechnipFMC R&D Center in Newcastle it's centre of excellence for Analysis, Design, Manufacture, Installation and Service of subsea power cable systems.

The project will focus on the analysis of data from distributed optical fibre sensors embedded in the cable, measuring temperature, strain and vibration/acoustic signals. Applicants should have a minimum of an Upper Second Class Honours degree in Electrical and Electronic Engineering or Offshore Engineering with a good understanding of signal processing and sensor systems.

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[1] https://www.dnv.com/focus-areas/floating-offshore-wind/index.html
[2] https://www.crownestatescotland.com/news/scotwind-offshore-wind-leasing-delivers-major-boost-to-scotlands-net-zero-aspirations
[3] *High Power Dynamic Cables* in UT-THREE-Issue-5-2023a.pdf (ut-2.com)

[4] https://www.technipfmc.com/en/what-we-do/new-energy/offshore-floating-renewables/