

Fully remote ROV inspection of offshore wind farm completed by Fugro's Blue Essence



Fugro recently achieved a milestone by conducting the world's first fully remote inspection of offshore wind farm assets. The successful inspection took place at the Aberdeen offshore wind farm, also known as the European Offshore Wind Deployment Centre, in the North Sea. Fugro utilized its Blue Essence uncrewed surface vessel (USV) in conjunction with the Blue Volta, an electrical remotely

operated vehicle (eROV), for the operation.

The joint funding for this inspection came from Vattenfall and Offshore Renewable Energy (ORE) Catapult. This partnership provides a valuable opportunity for innovators in the offshore wind supply chain to test and demonstrate their technologies in real-world conditions, supporting innovation in operations and maintenance.

Deepwater multibeam echosounder

Blue Essence is the first USV to receive approval from the Maritime and Coastguard Agency (MCA) to operate fully remotely with an eROV and undertake surveys in UK waters.

The eROV, which was remotely launched and recovered from Fugro's remote operations centre (ROC) in Aberdeen, delivered a number of inspections on the structure of the wind turbines to assess their stability and safety. A detailed map of the seabed was also created using data gathered from a deepwater multibeam echosounder sensor mounted on the hull of the vessel. The acquired geodata was accessed in real time, allowing Vattenfall to make quick decisions about its asset maintenance programme.

Blue Essence forms part of Fugro's wider strategy towards more uncrewed operations for greater agility, safety and sustainability; the vessel can spend up to two weeks executing inspection activities at sea without refuelling, resulting in a 95% reduction in carbon emissions compared to conventional ROV support vessels.

Increased safety and lower carbon emissions

Håkan Borgström, deputy director, O&M Product Line, Offshore Wind at Vattenfall, said: "This is a technology that could signify a real step forward for the industry, particularly from a safety perspective – reducing the need to deploy teams offshore, with survey work instead able to be managed from onshore. As projects move increasingly far out to sea, this will also mean significantly lower carbon emissions, which is a vital part of Vattenfall's mission to deliver fossil-free living within a generation."

Nick Simmons, Fugro's USV and remote working director for Europe and Africa, said: "This is a landmark moment for offshore operations and demonstrates how remote technologies are bringing significant benefits to the offshore wind industry. Our USVs can be operated from our global network of ROCs, allowing us to deliver faster and more sustainable inspection and geophysical services from onshore locations, which are also much safer for the crew than the offshore environment."



Fugro Blue Essence carrying out the first fully remote wind farm inspection using the Blue Volta eROV. (Image courtesy: Fugro)