

## News Release

7 September, 2018

### **SEA SUPPORTS INTEGRATED SUBSEA CABLE MONITORING SYSTEM TESTS AT EMEC**

Cohort plc company SEA has played an important role in the completion of an Innovate UK funded project focused on developing a smart integrated monitoring system for offshore energy subsea cables, following successful tests at the European Marine Energy Centre (EMEC) in Orkney.

The novel technology will ultimately lead to better maintenance and repair of underwater cables, reducing costs in the offshore energy sector.

The 15-month Innovate UK funded CLEMATIS (Cable Lifetime Enhancement via Monitoring using Advanced Thermal and electrical Infrastructure Sensing) project demonstrated the technical and commercial viability of a new multifunctional distributed sensor system for the monitoring of subsea cable infrastructure in the offshore renewable energy sector.

SEA and EMEC provided market intelligence, test equipment and facilities to enable the system to be tested in real life conditions, while technologies from Fraunhofer and Synaptec, were integrated into the system.

The project built on the 2016 desk-based ORCHIDS feasibility study which identified various breakthrough techniques that could be combined into a single power cable monitoring system and provide detailed fault prediction, dynamic thermal rating implementation and fault location.

CLEMATIS progressed this initial study from the desk to laboratory demonstrations and early field tests both on and offshore.

Field demonstrations took place at EMEC testing the distributed acoustic and thermal sensing capabilities with onshore sections of marine cable. Early success in these tests provided the impetus to test the system on an installed offshore power cable, thus expanding the original scope of the CLEMATIS project.

In June 2018, the system was demonstrated on a live subsea cable at EMEC's Fall of Warness tidal energy test site.

The CLEMATIS system is a holistic monitoring system that exploits the optical communications fibre in marine power cables. The system turns entire lengths of power cable into reconfigurable acoustic and temperature sensors. A quasi-distributed electrical system makes use of the same optical fibre to interrogate passive electrical current and voltage sensors distributed throughout the infrastructure.

This is the first time that such techniques have been combined into one monitoring system enabling end users to simultaneously monitor temperature and load on the energy network, and log any cable trauma such as anchor strike, scour related cable strumming or mistakes in cable installation.

Potential faults can be captured before turning catastrophic, and major faults or outages can be located immediately with accuracy. The system will therefore bring about a step change in offshore renewable energy

- Ends -

For further information please contact:  
Nadia Parham, Marketing Manager, SEA  
Tel: +44 (0)1373 852000  
[nadia.parham@sea.co.uk](mailto:nadia.parham@sea.co.uk)