

Proserv to monitor cables on Equinor's Hywind Scotland floating wind farm

Predictive analytics modelling, via Proserv's ECG™ holistic cable monitoring system, to be demonstrated on UK's best performing offshore wind farm.

Global controls technology leader Proserv is to supply its pioneering holistic cable monitoring system (CMS), ECG™, to Norwegian international energy company Equinor's Hywind Scotland, which in 2017 became the world's first commercial floating offshore wind farm, located off the coast of Peterhead, Aberdeenshire in north-east Scotland.

Proserv is to deliver its CMS to analyse the condition and integrity of export and inter-array cables across the wind farm utilising the fibre optic cores within the cables. The demonstration, focused on ECG's data analytics abilities, is scheduled to extend until April 2024 with installation and commissioning set to take place in Q3 of this year.

ECG represents a step change in traditional monitoring methods, offering comprehensive visibility across cable assets as an integrated, scalable and multi-faceted single package.

The technology has been initiated and driven by Proserv with vital support from its consortium partners Synaptec, a power system monitoring expert, and BPP Cable Solutions, specialists in subsea power cable engineering and management. The Offshore Renewable Energy Catapult (OREC) has also given its support to the group during the development of the solution.

The CMS not only employs distributed temperature sensing (DTS) and distributed acoustic sensing (DAS) but engages Synaptec's unique distributed electromechanical sensors (DES), via its passive electrical and mechanical sensor systems. The hardware will be complemented by the intuitive human-machine interface, utilising Proserv's TIACS software suite.

Critically, Proserv's ECG can monitor the condition and performance of cable terminations, an aspect needing development in the offshore wind sector. Cable terminations are well-known for being a serious failure point and so this technology solution will scrutinise this specific key area of an asset.

During ECG's demonstration on Hywind Scotland, BPP Cable Solutions will provide advanced real-time data processing and predictive analytics modelling, representing a major shift from traditional reactive cable performance monitoring approaches, whereby a cable fault or failure is analysed from stored data after an event takes place.

This will be achieved by BPP Cable Solutions applying its experience in processing data generated from DTS and DAS, as well as Synaptec's DES and cable connection monitoring technologies. Specialist predictive data analysis tools will be combined with known cable power

transmission performance physics to monitor cable arrays continuously and autonomously. This will give assurance of "as designed" cable health and will identify in advance any anomalies and potential longer-term faults that can be dealt with on a proactive basis.

Paul Cook, Business Development Director – Renewables, at Proserv remarked:

"We are most grateful to Equinor for enabling us to supply our ECG cable monitoring solution to the Hywind Scotland wind farm and to display the potential and power of this technology, including its data analytics capabilities. Owners and operators urgently need a cohesive O&M strategy around their cable assets and with its scrutiny of terminations, alongside its unique predictive insights, ECG offers unrivalled visibility of this key part of an offshore wind farm's infrastructure.

"Equally, as floating wind scales up rapidly, this arrangement on Hywind Scotland represents perfect timing for us to show what ECG can do."

Earlier this year, it was announced that Proserv had secured a contract for ECG to be implemented on the bottom-fixed Dogger Bank Wind

Farm phases A and B to monitor the condition and integrity of the asset's inter-array cables, representing the technology's first commercial sale. Dogger Bank will become the world's largest offshore wind farm once completed.

Hywind Scotland has a reputation for being the UK's top performing offshore wind farm, holding the best rolling 12-month capacity factor across the nation for the past few years, and currently performing comfortably above 55%.

Davis Larssen, Chief Executive Officer, Proserv Controls added:

"The deployment of ECG to Hywind Scotland marks another important stepping stone towards this disruptive technology becoming the benchmark solution for cable asset management in offshore wind.

"In a few short months we have seen ECG selected to support the operation of the world's biggest offshore wind farm, due to the strength of its proposition, and now it will be supplied to a well-established floating asset, indicating its flexibility, versatility and relevance to the entire offshore wind sector."

proserv

Image credit: Michal Wachucik ©Equinor