



CHARTING ECG™

a step change for subsea cable
monitoring and intelligence



Having identified a vital need in the market for a step change in cable asset management and real-time monitoring to reduce the incidence of cable and termination faults and failures, and their associated costs around time and money, a technology consortium, involving UK based partners, evolved. Initially, we forged a strategic alliance with power system monitoring experts Synaptec to develop an integrated holistic cable monitoring system...

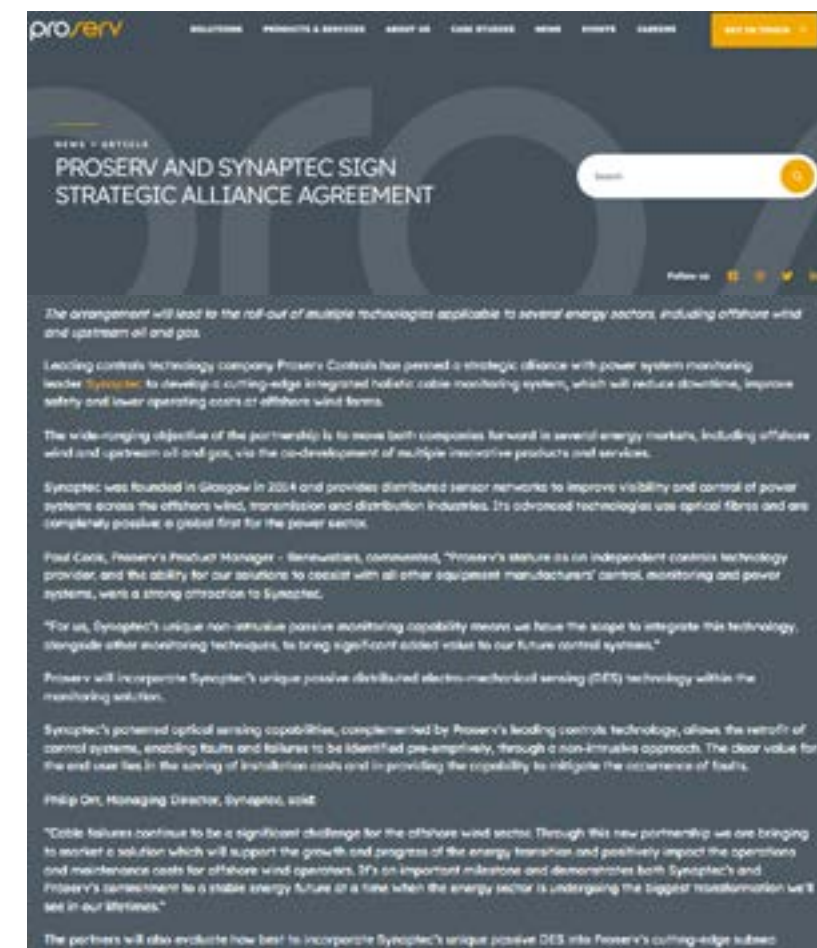
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Through this new partnership we are bringing to market a solution which will support the growth and progress of the energy transition and positively impact the operations and maintenance costs for offshore wind operators.

Philip Orr - Managing Director, Synaptec

PROSERV AND SYNAPTEC SIGN STRATEGIC ALLIANCE AGREEMENT

The arrangement will lead to the roll-out of multiple technologies applicable to several energy sectors, including offshore wind.

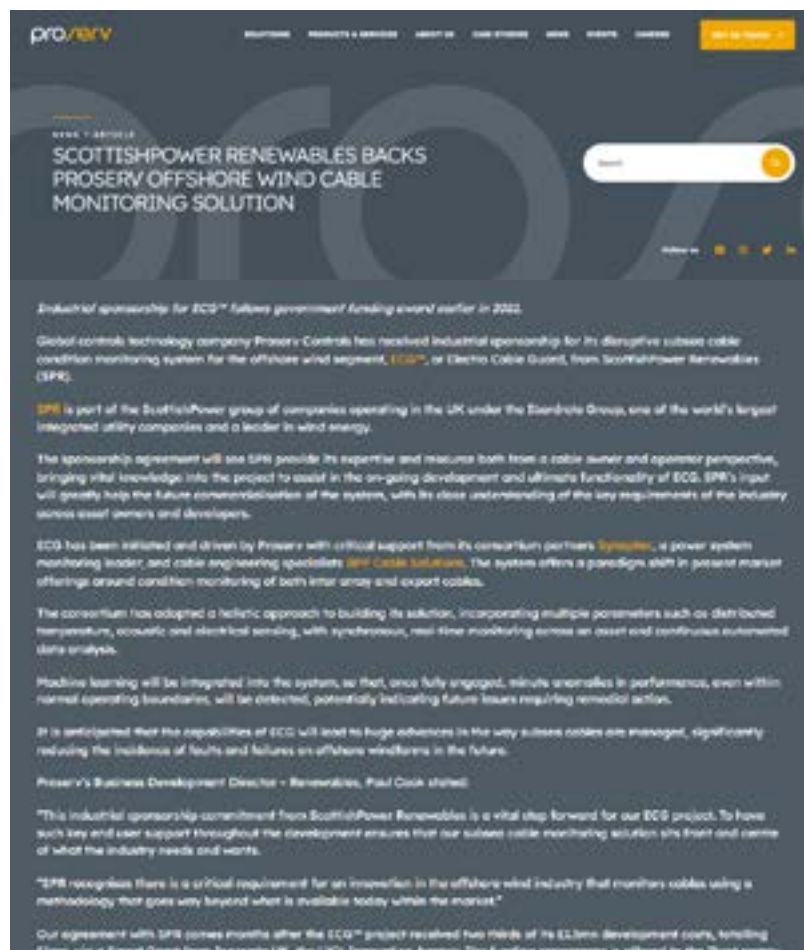


2020

2021

SCOTTISHPOWER RENEWABLES BACKS PROSERV OFFSHORE WIND CABLE MONITORING SOLUTION

Industrial sponsorship for ECG™ follows government funding award earlier in 2021.



ECG's evolution speaks to the power of collaboration and the positive impact of development funding and industrial sponsorship. Alongside Synaptec, we collaborated with BPP Cable Solutions, specialists in subsea power cable engineering and management. Numerous industry bodies and initiatives helped support, spark and propel the early development of our solution.

As it took shape, ECG's potential impact for the market and the support it offered for the accelerated future rollout of offshore wind saw leading industry figure ScottishPower Renewables provide its backing and sponsorship, while a Smart grant worth close to £1mn, had been awarded to the consortium by Innovate UK to drive forwards the new product development phase...

In early 2022, barely 12 months after it evolved, ECG won a landmark contract to monitor the inter-array cables on phases A and B of the vast Dogger Bank Wind Farm in the North Sea, set to become the world's biggest. Meanwhile, another offshore wind energy leader, Equinor, had also provided industrial sponsorship to this disruptive new subsea cable monitoring innovation...

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Our ECG technology is a combination of our subsea heritage and expertise being brought together with our renowned ability to innovate new solutions. It offers a real transformation in cable condition monitoring capabilities...

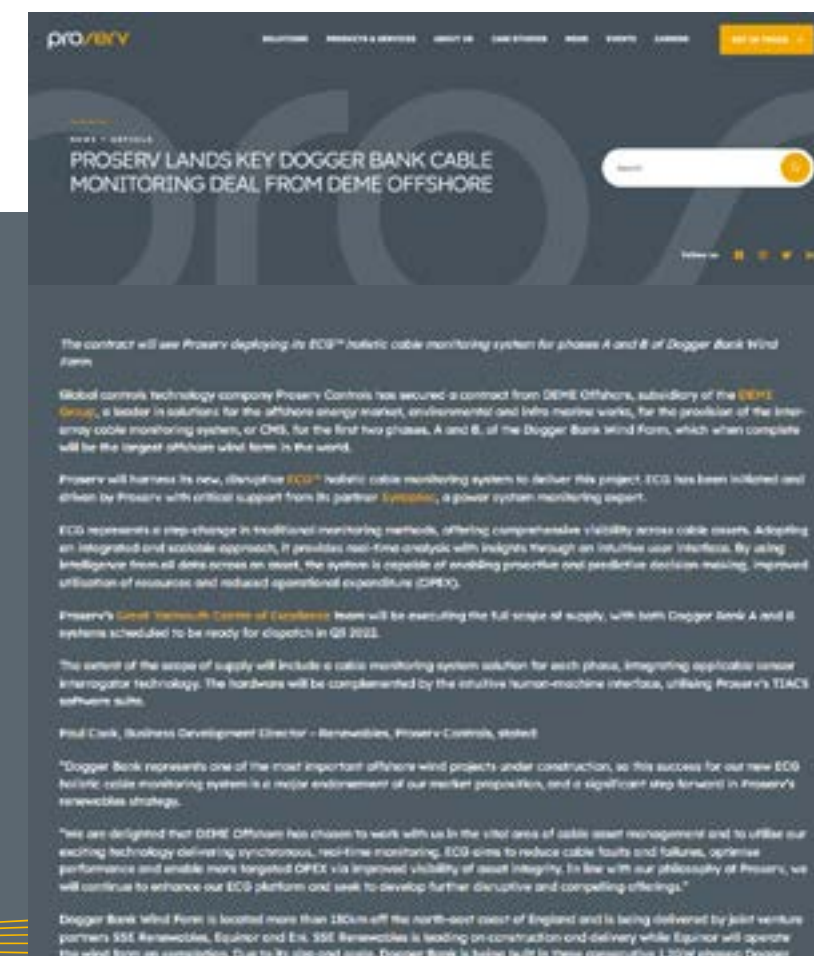
Davis Larssen - CEO Proserv

2022



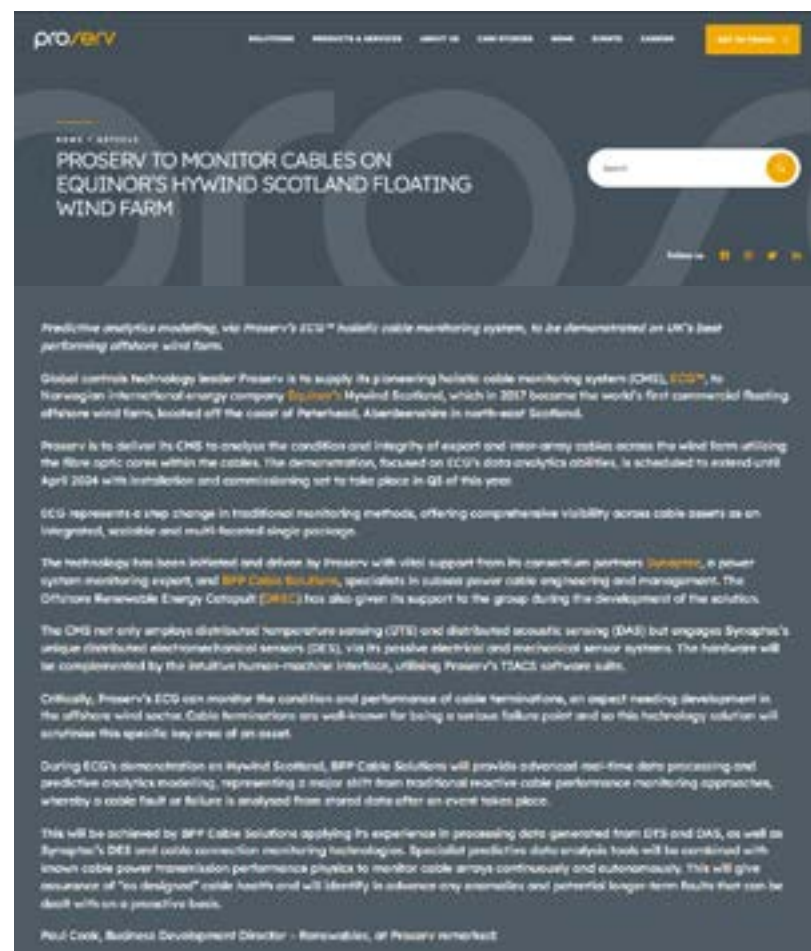
PROSERV LANDS KEY DOGGER BANK CABLE MONITORING DEAL FROM DEME OFFSHORE

Contract will see Proserv deploying its ECG™ holistic cable monitoring system for phases A and B of Dogger Bank Wind Farm.



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.



To demonstrate ECG's flexibility and adaptability, the cable monitoring system is this year being deployed on Equinor's Hywind Scotland, the world's first commercial floating wind farm, to analyse the condition and integrity of export and inter-array cables utilising their fibre optic cores.

This will incorporate advanced real-time data processing and predictive analytics modelling, signifying a major shift from traditional reactive cable performance monitoring approaches...



2023

Despite still being a new technology, ECG’s innovation has resonated strongly with industry stakeholders. It has already been highlighted and featured by several leading energy trade bodies in publications, impact statements and market reports.

Its progress drives on. Our ECG technology has just been awarded a further contract by Wood, a leader in consulting and engineering, for its monitoring and visualisation capabilities on another prominent floating asset, Equinor’s Hywind Tampen in the North Sea, to scrutinise its export and inter-array cables and support the on-going electrification of a mature oil and gas field..

Scottish Renewables Supply Chain Impact Statement 2022/3

PROSERV

Disruptive monitoring technology to support offshore wind cable assets

Aberdeen-based Proserv is employing independent control system intergeneration capabilities and its subsea experience to aid sustainable energy generation.

Through a collaborative technology consortium with Synaptic and BPP Cable Solutions and supported by the Offshore Renewable Energy Catapult, Proserv has pioneered an innovative holistic cable monitoring system for the offshore wind market, ECG.

Early in 2022, the company earned a landmark deal for ECG on the Dogger Bank offshore wind farm. In addition, the company is deploying ECG's full-scale hardware, software and data analytics abilities on Equinor's Hywind Scotland floating offshore wind farm.

The monitoring system provides real-time insights on the integrity and condition of cable assets, allowing operators to maximise transmission, improve efficiencies and reduce potential failures. The system's relevance in addressing a critical industry need around cable performance has led to sponsorship from ScottishPower Renewables and Equinor.

"PROSERV'S RENEWABLES METHODOLOGY COMBINES OUR LONG-STANDING HERITAGE IN CONTROL SYSTEM AND INTEGRATION EXPERTISE WITH THE SKILLSETS OF OUR PARTNERS, INCLUDING SCOTTISH TECHNOLOGY START-UPS, TO INNOVATE TRULY IMPACTFUL DIGITAL SOLUTIONS FOR OFFSHORE WIND."

Paul Cook, Vice President, Renewables, Proserv

Spotlight on technology

Proserv

www.proserv.com

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 the 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.

Get in touch Any ECG members who wish to be profiled in this section please contact Liliam de Castro... Email liliam.castro@the-etc.com

The technology has been initiated and driven by Proserv with vital support from its consortium partners Synaptic, 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.

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 50%.

20

04 What does great innovation look like?

A picture says a thousand words, and the below case studies give colour to what we mean by great innovation. All of these companies have found a niche and learnt on a range of support mechanisms to enable them to develop potentially game changing solutions.

Case Study: Proserv and ECG - a disruptive subsea cable monitoring system

Related Innovation priority: Minimising Cable Failures

Key enabler: Public R&D funding, Industrial Sponsorship

The ECG™ holistic cable monitoring system enables anomalies in cable performance at offshore wind farms to be automatically detected before faults occur.

A single cable failure in an offshore wind farm can cost £12 m to fix and lead to two months of downtime. An industry consortium led by Proserv set out to apply diverse expertise to address these challenges in offshore wind. With around £1m grant funding from InnovateUK and support from Offshore Renewable Energy Catapult (OREC), the consortium combined the expertise of Proserv, Strathclyde University spin-out Synaptic and BPP Renewables. The collaboration led to the development of a successful product which, in 2022 secured a contract to monitor inter-array cables on phases A and B of Dogger Bank wind farm – among the World's largest. The cable monitoring system will be utilised later in 2023 on export and inter array cables at Hywind Scotland floating wind farm – the first of its kind in the World. .

Case Study: BladeBUG

Related Innovation priority: O&M Robotics

Key enabler: Access to Test Facilities; Public R&D Funding

BladeBUG is a multifunctional compact robot designed to accelerate the green energy transition and presents its solution as a safe and efficient platform for inspecting and repairing wind turbine blades.

The roadmap to achieving commercial acceptance of their unique technology requires rigorous testing, verification and validation prior to piloting their technology with end users. BladeBUG has worked closely with the Offshore Renewable Energy Catapult to test and validate their prototype robots by utilising the open access Levenmouth Demonstration Turbine and the Blyth test facilities. As part of this collaboration, BladeBUG successfully performed the world's first robotic blade walk on an offshore wind turbine and were able to validate a lightning protection test on an offshore wind turbine whilst being operated remotely.

Offshore Wind Industry Council Innovation Focus 2023

Case Study: ELECTRODE

Related Innovation priority: Minimise Cable Failures

Key enabler: Data sharing & coordination

ELECTRODE is a mechanism for the collection of anonymous data around subsea cable failures in offshore wind.

This data will provide insight that will pave the way for advancements and innovative solutions. The new platform will track failures, service downtime, as well as the effectiveness of the repair and monitoring procedures, and use of technology in cable failures with anonymity as the core principle. Owner/ Operators will be able to identify recurring issues, accelerate innovation in reliability, and benchmark themselves against an industry average.

Case Study: Supergen ORE

Related Innovation priority: Various

Key enabler: Stakeholder leadership and coordination

Established in 2018, the Supergen Offshore Renewable Energy (ORE) Hub is a £9m Engineering and Physical Research Council (EPSRC) funded programme providing research leadership to connect academia, industry, policy and public stakeholders, inspiring innovation and maximising societal value in offshore wind, wave and tidal energy.

Led by the University of Plymouth, the Supergen ORE Hub brings together expertise from multiple UK institutions including University of Edinburgh, University of Aberdeen, University of Exeter, University of Hull, University of Manchester, University of Oxford, University of Southampton, University of Strathclyde and University of Warwick. The Supergen ORE Hub vision is to bring together and stimulate synergistic, adventurous research that supports and accelerates the development of offshore wind, wave and tidal technologies.

THE ELEPHANT IN THE ROOM: OFFSHORE WIND MUST FACE ITS CHALLENGES.

Paul Cook, Vice President, Renewables at Proserv explains how an industry workshop in London brought stakeholders together to spur fundamental change around cable assets and to initiate a path towards best practice standards.



First published on the [Energy Voice](#) news platform



As offshore wind pushes forward in the next decade, thousands of miles of cabling will be installed subsea around the UK's coasts and beyond, across both fixed bottom and floating assets. When cable failures represent by far the largest single reason for insurance claims in the industry, approaching 80% of them, ECG will have a pivotal role to play to mitigate downtime, reduce costs and enhance power generation.

We see tackling cable and termination faults and failures as the industry's "elephant in the room". They must be addressed effectively to enable offshore wind to meet its ambitious targets and to ensure a reliable and key source of sustainable energy in the years ahead...



The significance of ECG™ addressing a core market challenge is demonstrated by its industrial sponsorship by two offshore wind leaders – ScottishPower Renewables and Equinor. Barely 12 months after its development, it won a landmark contract last year, where ECG™ cabinets were installed on their offshore substation platforms to monitor the inter-array cables on phases A and B of the vast Dogger Bank Wind Farm.

To demonstrate its flexibility, ECG™ is being deployed on Equinor's Hywind Scotland this year, the world's first commercial floating wind farm, with ECG™ cabinets installed at onshore substation. Currently the system installation is 50% complete, with final remote commissioning to be completed within 2024 and will analyse the condition and integrity of export and inter-array cables.

2024



SEIZING OPPORTUNITY IN OFFSHORE WIND.

Paul Cook, Vice President, Renewables has provided a thought leader focusing on the progress of the ScotWind leasing round, conducted by Crown Estates Scotland in 2022, as these vast and transformative offshore wind developments take early steps forward.



INTRODUCING THE CABLE GUYS

Two key members of our renewables business development team, Jeff Williamson and Callum Maxwell, have been interviewed and featured in a two-page spread in OGV Group's June Offshore Wind special issue. In the piece, Jeff and Callum discuss offshore wind technologies and cable management strategies. Our very own ECG™ comes under the spotlight.



[CLICK HERE TO SEE OUR NEW ECG™ INTERACTIVE DIGITAL BROCHURE](#)

ECG™ has just secured a further contract from engineering and consulting leader Wood to monitor export and inter-array cables on international energy company Equinor's Hywind Tampen floating wind farm in the North Sea to aid the electrification of an O&G field. The system has been delivered, with final remote commissioning to be completed within 2024.

Ultimately, ECG™ is a disruptive innovation, developed through supply chain collaboration and unique within the market, that represents a template for dynamic British technology innovation in offshore wind that can be exported around the globe.





The controls technology company



CONTROL | MONITORING | INTELLIGENCE | OPTIMISATION