IMPROVE CABLE MONITORING AND PROTECTION

RWE is the UK's second largest power producer and third largest renewable generator in the UK supplying around 12% of UK electricity with a diverse operational portfolio of onshore wind, offshore wind, hydro, biomass and gas, amounting to over 9.3GW. In the UK, RWE employs around 2,600 people and plays a key role in RWE's strategy to grow its renewables portfolio and to become carbon neutral by 2040. **Sofia Offshore Wind Farm** is 100% owned by RWE and is now under construction, onshore in Teesside and offshore on Dogger Bank in the central North Sea.

RWE is actively exploring offshore wind related innovations with the potential to support not only Sofia, but other projects across the organisation's existing portfolio, and within its future development pipeline.

Challenge Background

Cable failures have become a high-profile topic in the offshore industry. Although they don't happen often, their consequences are considerable: failing inter array and export cables are very costly and complicated to repair and until repair is achieved, the wind farm can experience significant losses in energy production.

With our new Growing Green Strategy, RWE Renewables is planning to reach 8 GW of Offshore Wind capacity by 2030. To ensure continuity of energy production in our operating and new assets and to avoid additional HSE risks and costs that cable failure entails, RWE is looking for further ideas and innovations in the cable monitoring and protection space, aiming to secure a reduction in the number of OWF cable failures.

Solution Requirements

Functional Requirements	We are looking for solutions that correspond to challenges that include but are not limited to the following themes: • Standardisation of existing Cable Protection System (CPS) solutions • Cable subsea monitoring solutions either installed at day 1 or retrofitted to monitor cable health throughout life – monitoring movement, vibrations, excessive strain or bending, etc. • Cable monitoring for de-burial of cables • Improved modelling techniques to accurately reflect cable / CPS interaction with the seabed between the point of exit from the structure to the point of burial Innovative materials which can improve cable design / CPS design
Technical Characteristics	The main requirements for the solutions are for it to be: • safe – the technology should not have high operations risks associated with it. Diverless solutions are preferred for retrofitted cable monitoring solutions.

	• easily integrated into the OWF (Offshore Wind Farm) - possible to integrate on a large scale into future windfarms, and preferably the ability to be retrofitted into operational OWFs All solutions should pose no harm to the environment and put a high importance on sustainability. The technology or concept should ideally: • have low carbon footprint • include end-of-life concept with a focus on recyclability or material reuse
Operating Conditions	Technologies should be prepared for harsh offshore environment i.e. be durable in salt water, high waves and strong winds, and therefore require minimal maintenance. If these conditions are not suitable for the operation, clear weather limits need to be defined.

Market Opportunity
Although the topic has recently attracted a lot of attention, further work is needed for improved security of the offshore cables to ensure continued energy production. If technology proves to be successful, it will likely be implemented across industry.

Eligibility and Further Information	
Eligibility	Entrants to this competition must be: • Established businesses, start-ups, SMEs (Small-Medium Enterprises) or individual entrepreneurs • UK based or have the intention to set up a UK base • Minimum of TRL (Technology Readiness Level) Four. See link for further detail on the TRL scale https://enspire.science/trl-scale-horizon-2020-erc-explained/
Assessment	Applications will be assessed on: • Applicability to the challenge • Innovativeness of the solution • Coherence of proposed business model and company vision • Feasibility and economic viability, including ability of the team to progress the solution • Development potential • Maturity of the solution • Ability to launch product and ease of implementation
IP & Commercial Route	• Existing background IP associated with a potential solution will remain with Launch Academy Applicant(s)/Participant(s). Where any new IP generation is envisaged during the Launch Academy programme, it will be subject to the mutual IP agreement of the

	Launch Academy Participant(s) and Launch Academy Sponsors if it is jointly developed. If new IP is developed solely by the Participant then it will remain with the Participant. • Where necessary, a non-disclosure agreement (NDA) may be signed to uphold confidentiality in the engagement between the Launch Academy Participant(s) and Launch Academy Sponsors. • ORE Catapult do not take any share of IP ownership or enter commercial ventures through the Launch Academy programme.