


SME SUPPORT SERVICES

ore.catapult.org.uk

CATAPULT
Offshore Renewable Energy

ORE Catapult wants to support your SME or innovative business

The Offshore Renewable Energy Catapult wants to work with and support SMEs who are developing the next generation of cutting-edge innovations in offshore wind, wave and tidal energy sectors.

Small to Medium Sized Enterprises (SMEs) are the innovation engine of the economy. Often more agile than large companies, SMEs are capable of delivering cutting edge products or services to market rapidly and can pivot to take advantage of new opportunities. For this reason, supporting SMEs and innovative companies to progress their technologies is a crucial part of ORE Catapult's activities.

At ORE Catapult we use our unique facilities, research, and engineering knowledge to bring together industry and academia and drive forward innovation in renewable energy.

This brochure highlights how ORE Catapult can help your company to develop and commercialise new products and services.

Our support is split into three key areas:

Research, Development and Innovation

// Innovation Challenges
// Academic Engagement
// Technology Assessment
// Test and Validation
// Collaborative Research and Development

Commercialisation

// Offshore Wind 101
// Analysis and Insight
// Investor Readiness
// Accelerator Programmes

Company Growth

// Cross Sector Transfer
// Enabling Exports
// Supply Chain Readiness
// Supply Chain Growth

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CATAPULT
Offshore Renewable Energy

Helping companies develop their innovations through our expert knowledge, facilities and industry connections

Research, Development and Innovation

Innovation Challenges

Focus innovation where it's needed most by working with end-users to identify and run innovation challenges through the Offshore Wind Innovation Exchange and prove detailed technology roadmaps through the Offshore Wind Innovation Hub.

Academic Engagement

Access globally recognised academic expertise through ETP and collaborative Research Hubs focussed on Blades, Powertrains, and Electrical Infrastructure

Technology Assessment

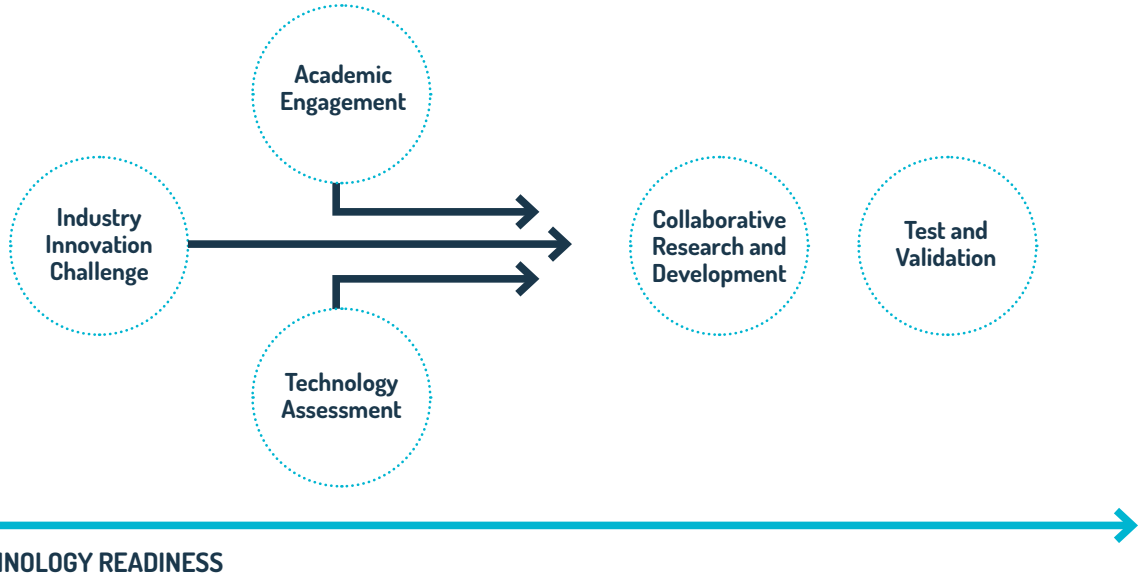
Conduct Technology Assessment Processes to independently benchmark innovations both technically and commercially, enabling technology road mapping and identification of key development risks

Test and Validation

Physically test and benchmark technology with access to dedicated, world-class test facilities to validate performance de-risk adoption and accelerate the technology readiness level

Collaborative Research and Development

Collaborate with SMEs on technology development projects using engineering, testing and commercialisation expertise, supporting with identification of suitable funding, preparing proposals and identifying other suitable partners



Helping companies launch new innovations into the market

Commercialisation

Offshore Wind 101

Provision of market entry information, market size and dynamics, key players, supply chain structures, growth predictions and common contracting strategies

Analysis and Insight

Development of detailed offshore wind business cases specific to your technology, including possible exploitation strategies and financial modelling and analysis of new technology adoption

Investor Readiness

Access to private investment through sector-specific investor introductions and pitch/executive summary preparation support

Accelerator Programmes

Technology focused national and regional Launch Academy accelerator programmes facilitating end-user engagement, investor readiness and access to business expertise through a delivery partner network

Helping companies to win work through improved competitiveness

Company Growth

Cross Sector Transfer

Identification of opportunities to diversify into offshore wind from other sectors including possible market entries, and bring in technologies already deployed in other sectors

Enabling Exports

Seeking export opportunities to emerging markets with the TORC Joint Research Centre in Yantai, China and working with SDI/DIT

Supply Chain Readiness

Fit 4 Offshore Renewables facilitates competitiveness and maximises contracts won by developing business processes and systems

Supply Chain Growth

OWGP delivers the aims of the offshore wind sector deal by supporting UK supply chain companies to increase competitiveness and productivity.
Offshore Wind Growth Partnership will provide expert advisory services, analysis and grant funding to enable companies to grow

F4OR Fit For Offshore Renewables

Offshore Wind Growth Partnership

启迪中英海洋科技研究院 TUS-ORE CATAPULT RESEARCH CENTRE

Cross Sector Transfer

Enabling Exports

Supply Chain Readiness

Supply Chain Growth

SUPPLY CHAIN READINESS

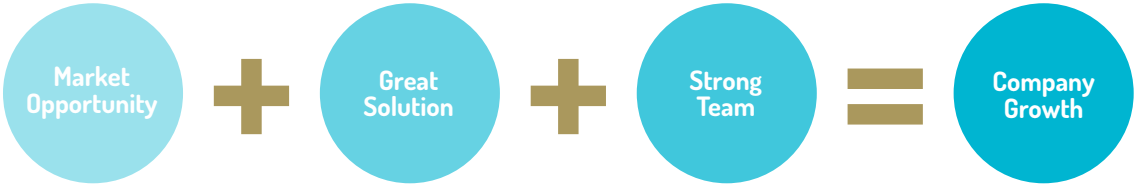
High Growth Assessment Process

An SME's engagement with ORE Catapult will often begin with a High Growth Assessment. This structured process explores the key aspects of a company and their technology to determine where support is required.

The three key ingredients: market opportunity; a great solution; and a strong team are all required to successfully enter and grow within the offshore renewable energy market.

A High Growth Assessment will be undertaken by a member of the ORE Catapult Team in discussion with your business and give a Red, Amber, Green (RAG)rating against a number of factors under these three key categories, as well as alignment with ORE Catapult's remit and capability to support your business.

The results of this assessment will help us to identify where the key support needs lie and identify opportunities to help grow your business.



Key Programmes

ORE Catapult's support for SMEs is delivered in a number of different ways, from one-to-one bespoke interventions (such as collaborative R&D projects) through to structured accelerators and business transformation programmes that encourage collaboration between companies as they develop together

> "As a start up coming from oil and gas we had limited knowledge or exposure to offshore wind, the [Launch Academy] programme has opened our eyes to the huge market opportunity for our products. We've been able to develop our proposition with the support of a wind turbine OEM and Red Rock Power who have gone on to partner in an R&D project worth £560k."
>
> **Ross McLeod**
> **Founder, Intebloc**

Launch Academy

The Launch Academy is a national technology accelerator programme for the offshore wind industry, focusing on near to market solutions. It is designed to enhance the UK's offshore wind supply chain, enable greater UK content and support cost reduction through innovation. Launch Academy also runs targeted, regional programmes to support local companies in their development journeys. Launch Academy North East was established alongside the national programme with further regions to follow.

Fit for Offshore Renewables

F4OR is a unique service to help the UK supply chain get ready to bid for work in the offshore renewable energy sector. We work with capable, competent and competitive UK supply chain companies to support their entry and growth in the offshore renewable energy industry. The objective of the programme is to support the development of an increasingly competent, capable and competitive UK offshore renewable energy supply chain – maximising opportunity for the UK supply chain, both domestically and globally.

Offshore Wind Growth Partnership

The Offshore Wind Growth Partnership (OWGP) is a long-term business transformation programme that has been established as part of the UK Offshore Wind Sector Deal. It will promote closer collaboration across the supply chain, implement structured productivity improvement programmes and facilitate shared growth opportunities between developers and the supply chain.

TUS ORE Catapult Research Centre

The £2million Centre is developing collaborative research programmes, support market entry and incubation for UK businesses in China, provide commercial support for Chinese offshore wind developers and support the demonstration of new technologies on a 300MW wind farm in the Shandong Province.

Centres of Excellence

ORE Catapult hosts several centres of excellence to bring together projects focussed on a particular area. These focussed programmes coordinate their projects to deliver maximum benefit to the sector and provide an excellent opportunity for companies developing solutions in these areas to become involved.

> **“With expert support we’ve secured investment and won two grants to support our technology development, we’ve got an IP strategy and we really understand our value proposition to the offshore wind sector.”**
>
> **Sam Mayall**
> **Founder, Offshore Survival Systems**

Testing and Validation

Our National Renewable Energy Centre in Blyth, Northumberland, is a Centre of Excellence in testing and validation. It is a concentration of leading expertise and infrastructure dedicated to the acceleration of new and innovative offshore renewable energy technology in order to drive down the cost of energy.

Operations and Maintenance

We’ve established a national Operations and Maintenance Centre of Excellence (OMCE), based in the Humber, that specialises in helping UK businesses create and commercialise technologies for the offshore renewables sector. The Centre sits amidst one of the world’s most significant offshore wind clusters, where 22 local businesses are gearing up to service 11GW of planned future installed capacity in nearby waters.

Floating Offshore Wind

Floating Offshore Wind Centre of Excellence (FOWCoE) aims to develop an internationally recognised initiative to reduce the cost of energy from floating wind. The Centre will accelerate the build-out of floating farms, create opportunities for the UK supply chain, and drive innovations in manufacturing, installation and O&M. The FOWCoE looks to support the wider economy, creating immense opportunities for the UK supply chain. Our Macroeconomic Benefits report identified that in Scotland and South West England, in particular, there is massive potential for this next-gen technology. These locations will benefit tremendously from floating offshore wind, creating an estimated 17,000 jobs and generating a staggering £33.6 billion for the UK economy by 2050.

Marine Energy Engineering

MEECE is providing expert knowledge for the marine energy industry, supporting Welsh SMEs to develop new products and services, creating new jobs and reducing the cost of marine energy by carrying out collaborative marine energy research, development and demonstration (RD&D) projects. Working alongside the Marine Energy Test Area (META), the Port of Milford Haven, local universities and the local supply chain, the Centre offers unique facilities and capabilities to marine energy developers, fostering innovation to reduce the cost of marine energy, reduce risks and capture export opportunities.

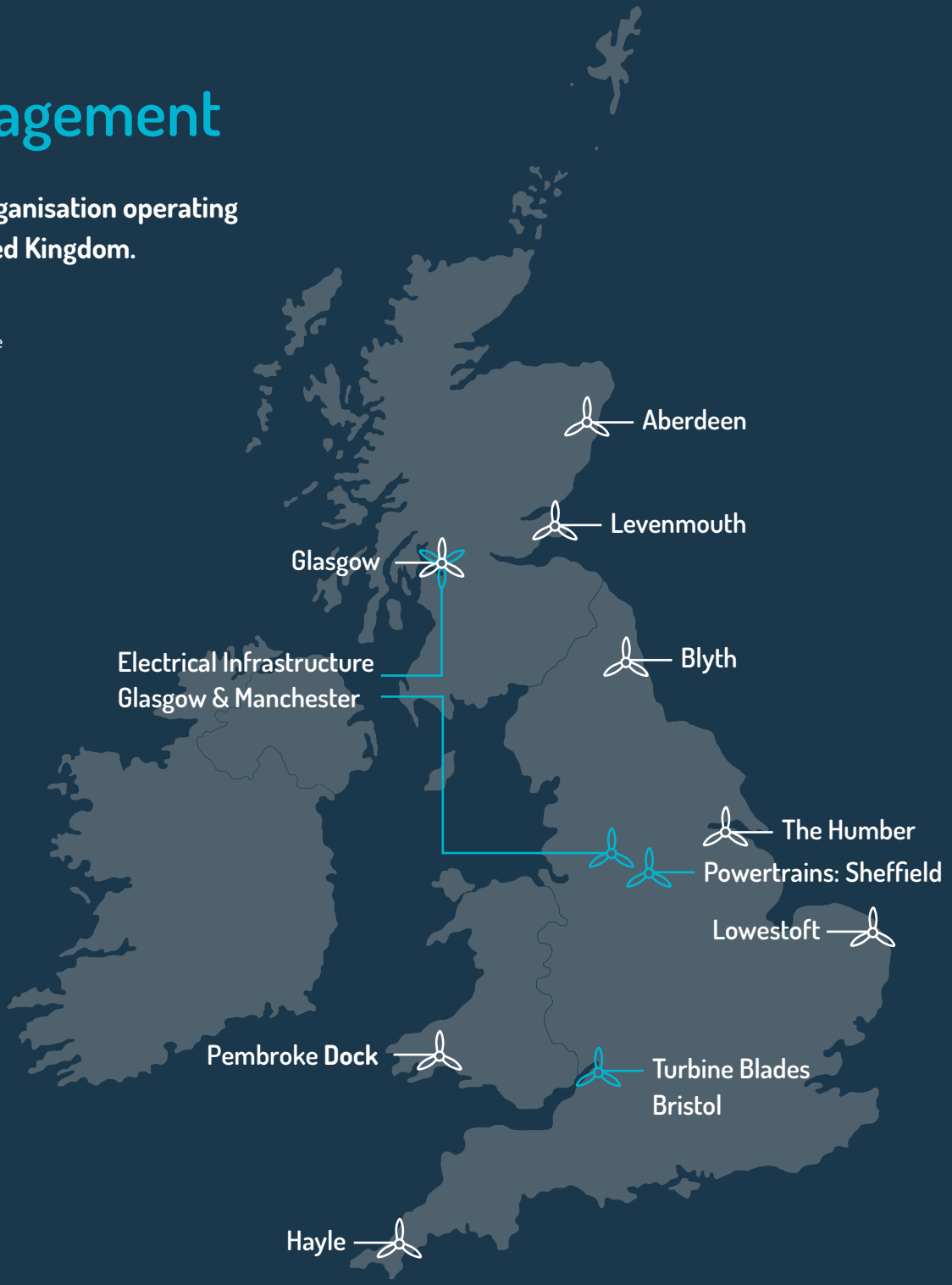
Regional Engagement

ORE Catapult is a national organisation operating across the whole of the United Kingdom.

To drive engagement in hotspots of offshore renewable energy we have established regional presences from Hayle in the Southwest to Aberdeen in the Northeast.

Or regional teams are able to provide targeted support to companies located in these areas, whilst reaching back into the rest of ORE Catapult to deliver leading expertise from the whole organisation.

Our research hubs are collaborative programmes between ORE Catapult's leading research team and the leading UK Universities in the fields of Electrical Infrastructure, Blades and Power Trains.



Principle Site

Research Hub

Aberdeen
Our regional partnership manager in Aberdeen is focussed on supporting oil and gas supply chain companies to identify and exploit opportunities in offshore renewable energy.

Levenmouth
The 7MW Levenmouth Demonstration Turbine is the world's largest turbine dedicated to R&D and provides excellent opportunities to demonstrate more developed technologies

Glasgow
Our Glasgow HQ is home to an experienced engineering team, and innovation, project management and analysis expertise as well as much of the organisations professional services.

Blyth
Blyth plays home to our £250m National Renewable Energy Centre, where a range of technologies can be tested and validated as well as the expertise required to operate these cutting edge facilities and the research team.

The Humber
The Operations and Maintenance Centre of excellence is located in one of the UK's leading bases for servicing the huge fleet of assets in the North Sea. Their work revolves around solving the operational challenges of current wind farms.

Lowestoft
East Anglia is another crucial hub for the servicing of wind turbines in the Southern North Sea, and our regional partnership manager is there to engage with all of the companies engaged in these activities.

Pembroke
Pembroke houses the Marine Energy Engineering Centre of Excellence to support companies across Wales to develop their technologies for wave, tidal, and floating wind.

Hayle
Our team in Cornwall and the Southwest lead ORE Catapult's collaboration with a growing supply chain in the region, delivering a several engagement programmes and the largest ever Intereg-funded project: TIGER; supporting the cost reduction and deployment of tidal stream energy.

Technical Areas and Test Facilities

ORE Catapult's expertise spans a wide range of technical and engineering disciplines across the offshore renewable energy industry to ensure your business has the support it needs when developing its technology. Here's a summary of our expertise to give you a flavour of the areas we may be able to help. Please get in touch to find out more, or enquire about other technical areas.

Blades

Turbine blade experts can support with testing of blades from small-scale innovative designs through to certification of 100m models.

// Up to 50m and up to 100m blade test facilities
// Leading edge erosion expertise and testing facilities
// Advanced materials and materials analysis
// Blade modelling

Powertrains

Our powertrains expertise supports with accelerated lifetime testing of the latest and greatest nacelles in offshore wind and tidal energy.

// Validating novel generators
// 1MW, 3MW and 15MW powertrain test facilities
// Grid compliance
// Powertrain reliability, health monitoring and prognostics
// Development of new componentry
// 18MVA Grid Emulation System

Technical Areas and Test Facilities

Electrical Infrastructure

Between our advanced high voltage test facilities and research, our electrical infrastructure expertise can support with all things power cable.

// HV testing, type certification
// Dynamic cables and dynamic cable testing
// Fault diagnostics, prognostics and benchmarking
// Reliability
// System optimisation
// Future energy systems including hydrogen
// Electrical materials laboratory

Data and Digital

Our data and digital team are responding to the ever increasing amount of data produced by offshore renewable energy assets and supporting its usage for data driven decision making and reliability improvements.

// Operational data analytics including machine learning and AI tools
// Power performance assessment
// Dashboarding and data exploration
// Industry performance benchmarking
// Cybersecurity
// Access to operational data (POD)
// Offshore anemometry hub and onshore met-mast

Operations and Maintenance

The operations and maintenance required to keep offshore wind spinning accounts for a quarter of the lifetime cost of offshore wind. Our engineering team have the expertise to support your new developments in this area.

// Benchmarking against current methods
// Inspection technologies
// Intervention technologies
// Planning and optimisation
// Cable insights

Floating Offshore Wind

Floating wind has huge potential has huge potential in high wind speed, deep water sites and we can support you to develop products and services for this emerging market

// Novel floating substructures
// Technical and commercial risk assessments
// Ports and logistics
// Floating offshore wind operations and maintenance

Foundations and Substructures

Foundations are crucial as the platforms which turbines are built upon. Our team can help with:

// Condition monitoring systems
// Novel foundations
// Survey and inspections
// Analysis
// Dock facilities with simulated seabed

Robotics and Autonomous Systems

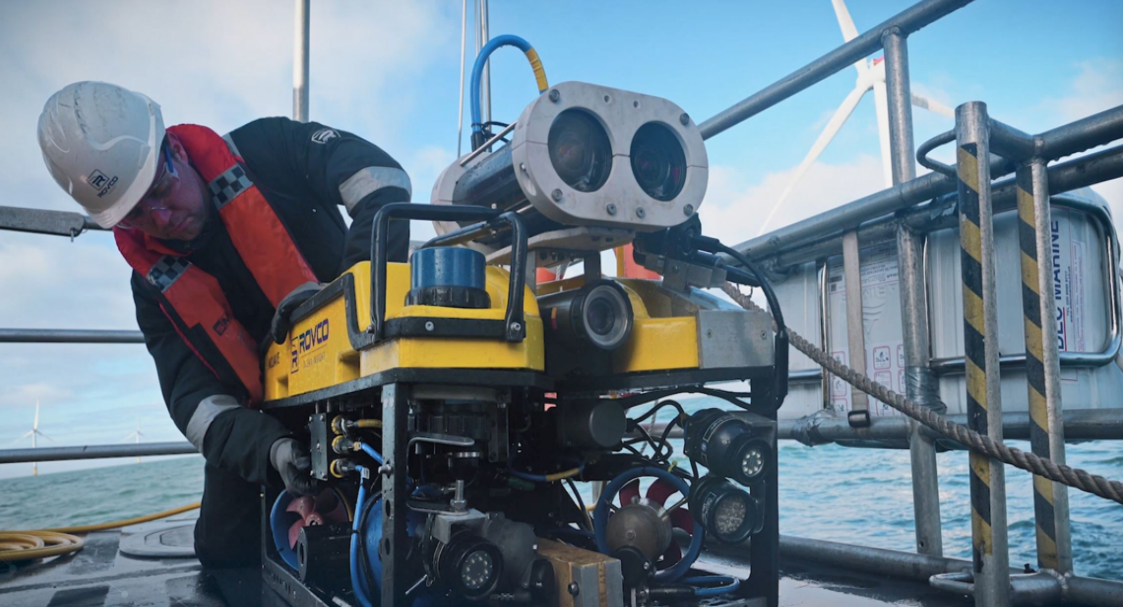
Robotics and autonomous systems are part of the future of safe and low-cost offshore operations, and we are using our expertise and facilities to support its development and implementation.

// Offshore renewable energy use cases
// Validation in low-risk environments
// Testing and demonstration in realistic environments
// 7MW Levenmouth Demonstration Turbine
// Training Tower
// Dock Facilities

Marine Energy

Wave and tidal energy have the potential to generate a vast amount of reliable and predictable power from our oceans. Our teams have a wealth of experience to support technology development and optimisation in marine energy.

// Simulation and modelling of devices
// Array optimisation
// Wake effects and optimisation
// Mechanical design and optimisation
// Tidal turbine nacelle testing
// Cost modelling
// Technology assessment
// Resource modelling
// Electrical systems



CASE STUDY

ROVCO OCEAN INSIGHT

ROVCO

INNOVATION CHALLENGES
// Innovation challenge winner
// Introduction to end users

COLLABORATIVE RESEARCH AND DEVELOPMENT
// £1.44m Grants Secured with ORE Catapult and SPR as partners
// Trial in shallow water test facility
// Offshore trial planned Q1 2020

INVESTOR READINESS
// Introduction to private investors
// £1.1m Seed
// Sold 13% share to Global Marine
// £5 million Series A

SUPPLY CHAIN DEVELOPMENT
//£10m contracts secured during 2019/20

CASE STUDY

synaptec

SYNAPTEC

INNOVATION CHALLENGES
// Innovation challenge winner
// Introduction to end users

COLLABORATIVE RESEARCH AND DEVELOPMENT
// £250k i:UK grant secured with ORE Catapult as partner

TEST AND VALIDATION
// Trial at 7MW turbine
// Offshore trial with end user

INVESTOR READINESS
// Joined ORE Catapult Gamechangers
// Introduction to Williams Foresight resulted in £2.1m investment

CATAPULT
Offshore Renewable Energy

The Offshore Renewable Energy Catapult wants to work with and support SMEs who are developing the next generation of cutting-edge innovations in offshore wind, wave and tidal energy sectors.

To find out more please complete the Collaborations enquiry form.

ENQUIRE

A member of the team will be in touch.