

# UK Maritime

## Technology capabilities



Department for  
International Trade





**Graham Stuart**  
**Minister for Exports**

# Foreword

**“The UK’s maritime sector is a fantastic source of innovative solutions for many of the technological and operational challenges facing the industry.**

We are proud of the fact that the UK has some of the world’s leading maritime research and development institutions and a strong pedigree in shipbuilding and engineering as well as a leading cluster of maritime services companies and is the unrivalled capital of marine insurance. By 2030 the “Ocean economy” is expected to be double in size compared to 2010 and increasing demand for shipping and growth in trade will mean further opportunities for a sector which contributed £46.1bn to the UK economy in 2017. The companies highlighted in this “UK Maritime Technology Capabilities” publication include exemplars of wind-assisted propulsion to reduce carbon emissions, ferries of the future and businesses that provide effective defence against cyber-attacks on ships or shipping. There are also companies leading in marine autonomy, ocean science and environmental monitoring.

The Department for International Trade’s global network, based out of UK embassies all over the world, is available to connect foreign ship owners and other marine specialist businesses to the UK’s innovative suppliers. Please get in touch.”

**Graham Stuart**  
**Minister for Exports**  
**Department for International Trade**

# Shaping the future of ship technology



As global shipping faces unprecedented change, UK's marine technology suppliers are developing innovative solutions that will help shipowners navigate tomorrow's challenges.

Whether designing cutting-edge technologies for zero-emission transport, autonomous vessels and ocean exploration, or revolutionising rapidly growing sectors like renewable energy and aquaculture, pioneering UK companies are helping global leaders maximise their opportunities in a changing world.

The UK's thriving marine technology and engineering market includes the biggest global players as well as thousands of highly specialised small-to-medium sized businesses. Here you will find a diverse range of engineering experts, from designing zero-emission ferries to building the world's most advanced scientific vessels, as well as supplying systems and equipment for vessels from leisure boats to tankers.

Supported by a government committed to further developing the competence and global competitiveness of its maritime sector, the UK's marine engineering and technology companies are ready to unlock even greater value in your project.

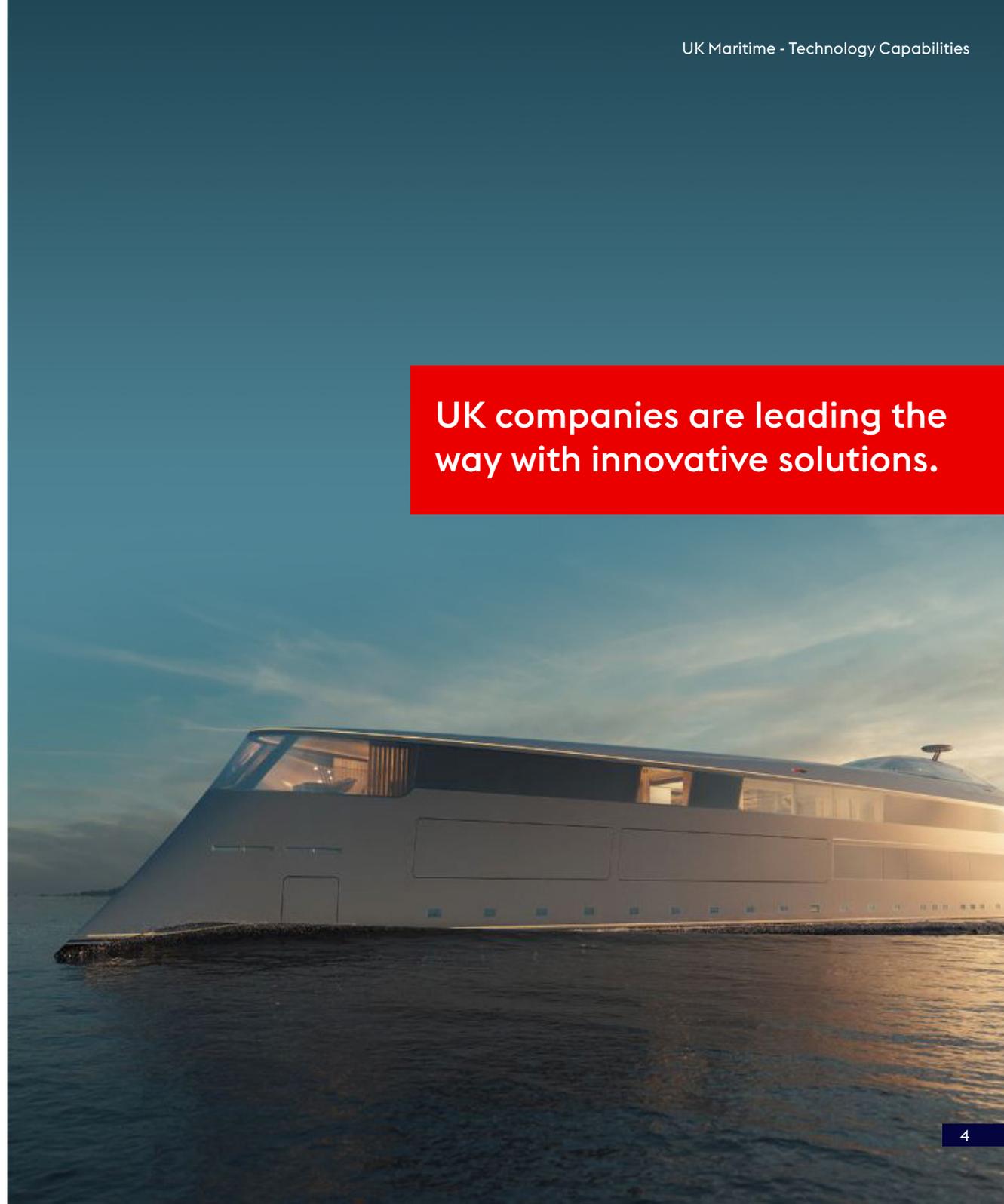
# A voyage into the future

Like other sectors, shipping is grappling with issues that are changing how business is done today - and will affect it even more over the coming decades.

With the right approach companies can turn these challenges into opportunities. From the demand for better environmental performance comes the need to use cleaner power – but also the chance to support the growing renewables sector. From the requirement for more joined-up, just-in-time logistics comes the need to modernise ship systems and fleet operations – but also the opportunity to run more efficient and profitable vessels.

Across several challenges facing the industry, UK companies are leading the way with innovative solutions.

**UK companies are leading the way with innovative solutions.**



# Decarbonisation

As global society responds to climate change concerns by reducing greenhouse gas emissions, shipping must also adapt. The IMO is targeting at least a 50% reduction in emissions from international shipping by 2050 (based on 2008 levels). To reach that target, ships will need to use new fuels and engines, energy storage technologies, hybrid power sources and all the systems that accompany these developments.

The UK is home to several companies addressing shipping's journey to lower greenhouse gas emissions. Whether it is the design of new zero emission vessels, pioneering work on fuel cells for maritime use, or innovative solutions to reduce emissions on today's vessels, UK marine engineers and naval architects can help plot your path to reduced environmental impact.

Other UK companies active in this area include:

**Silverstream**

**Houlder**

**Artemis**  
TECHNOLOGIES

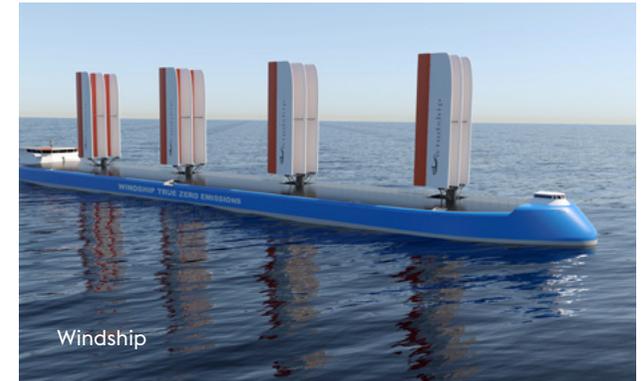


Artemis Technologies

## Artemis Technologies

A consortium of Northern Irish companies led by Belfast-based Artemis Technologies have been awarded £33 million funding to develop a zero-emission fast ferry to serve the city. The project will bring more than 125 research and development jobs to Belfast and lend new momentum to the maritime technology sector in the historic shipbuilding city. The technologies developed will be applied far beyond the city, eliminating emissions for high-speed vessels in several sectors.

[artemistechnologies.co.uk](http://artemistechnologies.co.uk)



Windship

## Windship

The solution to carbon-neutral shipping does not rely on one system but multiple technologies working to combine savings. Windship's patented wing technology offers a wind-powered solution for bulk carriers, tankers and some ferries – either newbuild or retrofit – to help reduce or eliminate carbon footprint. A wind and electricity powered ship has already been designed and computer tested and discussions with partners around the first demonstration concept are well advanced.

[windshiptechnology.com](http://windshiptechnology.com)

# Clean Energy Transition

The global effort to reduce emissions includes an increasing focus on harnessing renewable energy sources including wind, tidal and solar energy. Many of the world's renewable energy production facilities are located offshore, offering new opportunities for ship owners to support these sites. New types of vessels are required for crew transfer and new technologies are needed to enable safe and efficient operation of renewables.

With a long-established offshore energy sector, the UK industry has quickly mobilised its expertise to address the growing demand for offshore renewables. The UK has been an early leader in the development of offshore wind farms, giving marine suppliers the opportunity to develop industry-leading solutions for windfarm installations and the vessels that serve them.

Other UK companies active in this area include:

**Babcock LGE**

**BMT**

**Bruntons Propellers**

**Eminox**

**GE Power Conversion**

**BAR** TECHNOLOGIES



BAR Technologies

## BAR Technologies

Marine engineering consultancy BAR Technologies will deliver highly efficient crew transfer vessel (CTV) designs to operators Seacat and High Speed Transfers. The unique vessels will feature BAR's foil optimised stability system, which minimises vertical acceleration during transfer to ensure year-round access to offshore windfarms. The designs will also

deliver fuel savings (and therefore reduced CO2 emissions) of 30% compared to conventional CTVs. A hybrid version will be offered to the market in Q2 2021.

[bartechologies.uk](http://bartechologies.uk)

# Autonomous systems

Advances in digital technology, including processing power, connectivity, sensor technology and big data analytics, are driving many changes in the shipping business. One of the most exciting is the journey towards more autonomous vessels. Although self operating or remote-control vessels may be many years away, development of the systems they will need is progressing quickly. In the process, systems are being created that can dramatically improve the safety and efficiency of ship operations today.

An abundance of top tier universities and research institutions and a regulatory regime that encourages pilot trials have made the UK a fertile environment for companies developing advanced marine systems. Progress in vessel autonomy is particularly rapid and UK companies lead the international field in their offerings.

Other UK companies active in this area include:

**BMT**

**Horizon Technologies**

**MSubs**

**Seakit**

**Solis Marine Consultants**

 OCEAN INFINITY®



Ocean Infinity

## Ocean Infinity

Ocean Infinity, the University of Portsmouth, Airborne Robotics and Bentley Telecom are developing an autonomous offshore wind farm inspection capability utilising aerial drones deployed from an uncrewed marine robotic vessel.

A 36m Armada uncrewed robotic vessel will act as the host vessel for the aerial drones, facilitating launch and recovery, recharge, data download and transmission to shore via satellite. The £1.67 million project will culminate in a system demonstration in 2022.

[oceaninfinity.com](https://oceaninfinity.com)

# Ocean science

As the ocean is exploited for a wider range of society's needs – including energy, aquaculture and mineral resources – understanding the ocean and the seabed is becoming ever more important. The UK has committed to being at the forefront of international efforts to chart the international seabed area and can call on several providers of specialist hydrographic and oceanographic equipment to support that effort.

Other UK companies active in this area include:

**AST Group**

**British Antarctic Society**

**Pelagian**

**RS Aqua**

**Valeport**

## AutoNaut



AutoNaut USV

## AutoNaut USV

AutoNaut USV designs, builds and operates unmanned surface vessels (USVs) from facilities in Sussex and Devon. One of its vessels, a five-metre AutoNaut, accompanied The Ocean Cleanup project in a series of environmental monitoring missions of up to 50 days duration in the Pacific Ocean. The versatile vessels have been used for a wide variety of monitoring tasks including noise monitoring, collecting meteorological data and to monitor wildlife.

[autonautusv.com](http://autonautusv.com)



Sonardyne

## Sonardyne

In 2020, sonar specialist Sonardyne launched its latest obstacle avoidance sonar, Vigilant. The forward-looking sonar enables navigation in challenging environments, such as uncharted or dynamic waters. The system has already been put to the test via the Stiletto Maritime Demonstration Platform at the US Naval Surface Warfare Center Carderock Division (NSWCCD), which was looking for real-time obstacle avoidance capability for high-speed landing craft in shallow waters, using vessel-mounted surveillance systems.

[sonardyne.com](http://sonardyne.com)

# Building from a strong foundation

For the UK's marine technology companies, innovation is not new. They are part of an unparalleled network of maritime businesses in the UK whose expertise and global outlook has emerged across a maritime heritage spanning centuries.

London has long been the commercial heart of shipping. But the UK is more than London and more than a business service hub. The marine engineering expertise of UK companies is the result of sustained investment in the shipping economy. Key elements include:

- **An unparalleled pool of maritime education and training** – providing skilled engineers and leaders for companies in the UK;
- **Top-rated maritime research and testing facilities** – where companies can develop cutting-edge technologies and systems;
- **Multiple regional maritime clusters of shipbuilding, design and engineering expertise** – offering opportunities for collaboration in the development of new systems, products and services.

This combination of factors has helped to forge a marine engineering and technology market that is diverse, innovative and globally competitive.





# Advanced materials research for better bearings

After an extensive research and development programme, ACM Bearings has deployed its low-friction, marine-grade L2Marine bearings on 7,500 vessels, including surface and submarine vessels in 20 navies. Originally designed for rudders, the low-friction, water-lubricated bearings have since been used for stern tubes and several offshore and deck applications.

The research programme aimed to apply a 'wet and dry' fully approved marine grade for rudder and stern tube bearings. The materials developed allow less than 0.1% water absorption, which makes it easy to calculate clearances and margins when fitting bearings. They are also approved for use with Environmentally Approved Lubricants (EAL), allowing vessels to meet the requirements of US and other regulators.

[acmbearings.co.uk](http://acmbearings.co.uk)





# Keeping windfarms crewed in all weathers

Conventional crew transfer vessels (CTV) have to be less than 24m long at their loadline and carry fewer than 12 passengers to avoid onerous 'big ship' legislation. Although these limits are evolving, the challenge remains; smaller vessels typically have a narrower weather and sea state window in which they can operate.

Conventional vessels are not suitable for windfarms currently being built in the UK with a wave height of around three metres. A naturally low-motion and low-acceleration vessel is needed. The 26m Typhoon Class SWATH (small waterplane area twin hull) vessel designed by Ad Hoc Marine Designs has outperformed expectations, managing successful crew transfers at sea states higher than any similar-sized conventional vessel.

Maritime Craft Services (Clyde), which has been operating a Typhoon Class SWATH since September 2016 at various locations in the North Sea, praised the vessel's ability to retain full cruising speed at high sea states (exceeding 2m) while allowing passengers to move freely onboard. The low motion design also allows for safer and more efficient pushing on to the tower, enabling safer transfer of technicians from the vessel to the windfarm facility.

[adhocmarinedesigns.co.uk](http://adhocmarinedesigns.co.uk)





# High bandwidth communications in Arctic conditions

The largest Arctic expedition in history to track the annual cycle of the drifting polar ice – and help better understand climate change – relied on technology from AST Group to maintain reliable communications in one of the world's most challenging environments.

In October 2019, the German research icebreaker Polarstern set sail from Tromsø in Norway to spend a year drifting through the Arctic Ocean, trapped in ice. The vessel will be at the centre of a constellation of buoys, ice-tethered profilers, remote stations, underwater drifters, and unmanned aerial systems. More than 600 scientists operate in shifts throughout the year, collecting and sending data back to base. The need for reliable communications is crucial.

AST provided Iridium Certus broadband connectivity delivered through Thales Vesse LINK terminals. Combined with AST's INTEGRA global IP network to monitor and control data usage, the package guaranteed secure, high-performance connectivity for crew and scientists.

Andreas Nil of German satellite communications provider MediaMobil said: "We chose AST as the Iridium Certus airtime provider because of their close integration with Iridium, both network and know-how wise, and their approach in supporting us to provide the hardware and service for this challenging project."

[theastgroup.com](http://theastgroup.com)





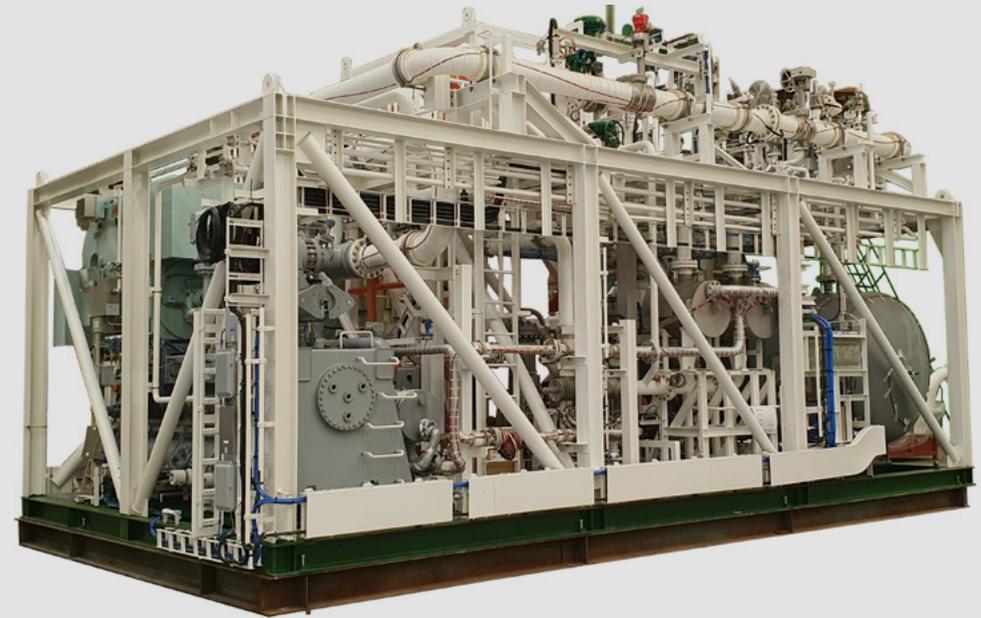
# Minimising emissions from LNG cargoes

Managing the gas that evaporates from liquefied natural gas (LNG) cargoes is an important function for the world's rapidly growing fleet of LNG carriers. A large portion of this 'boil off' gas has traditionally been burned off to prevent dangerous pressure building in the tanks, meaning greater emissions and less profit from the cargo. Babcock LGE's ecoSMRT reliquefaction plant allows ship operators to return the boil-off gas back to the cargo in a liquid state, reducing the amount of gas that is wasted during a voyage.

The system's main innovation compared to other plant is an external precooling stage integrated into the LNG heat exchanger. This means a secondary refrigeration loop is not required, improving the overall cost of the overall reliquefaction system. The result is a 40% reduction in the overall system footprint, a 50% reduction in maintenance and 20% more reliquefaction capacity per kilowatt of absorbed power.

Each ecoSMRT plant in service on an LNG carrier will save the equivalent of up to 19,000 tonnes of CO<sub>2</sub> emission per year, compared to burning off the gas – helping to reduce the carbon footprint not just for each vessel but for the LNG and shipping industries as a whole.

[babcockinternational.com](http://babcockinternational.com)





# Exporting UK ship design expertise

International design, engineering and risk management consultancy BMT designs and supports vessels that lower environmental impact, working towards more sustainable designs and solutions and using alternative fuels for the future. This was demonstrated in 2020 by the successful sea trials of a fully LNG-fuelled ropax ferry designed for Rederij Doeksen in the Netherlands. A research project led by BMT has also received a funding grant, investigating asset leasing models that could be used to accelerate the adoption of energy saving technologies.

In the UK, BMT is part of the Team Resolute bidding team hoping to secure the right to build the country's next Fleet Solid Support ships. It is also partnering Marine Specialised Technology, which was selected by the Ministry of Defence to provide two fast patrol vessels; BMT will provide the design and logistics support.

BMT is a good example of how the UK's maritime sector harnesses local competences to add value to international projects. The company recently designed its first wind farm support vessels, for operation in Japan. And in Taiwan, a BMT-designed service accommodation transfer vessel for the Formosa 1 Offshore Wind Farm Project has been commissioned and has commenced its first long-term charter for Siemens Gamesa Renewable Energy.

[bmt.org](http://bmt.org)





# Enabling a fleetwide view on cybersecurity

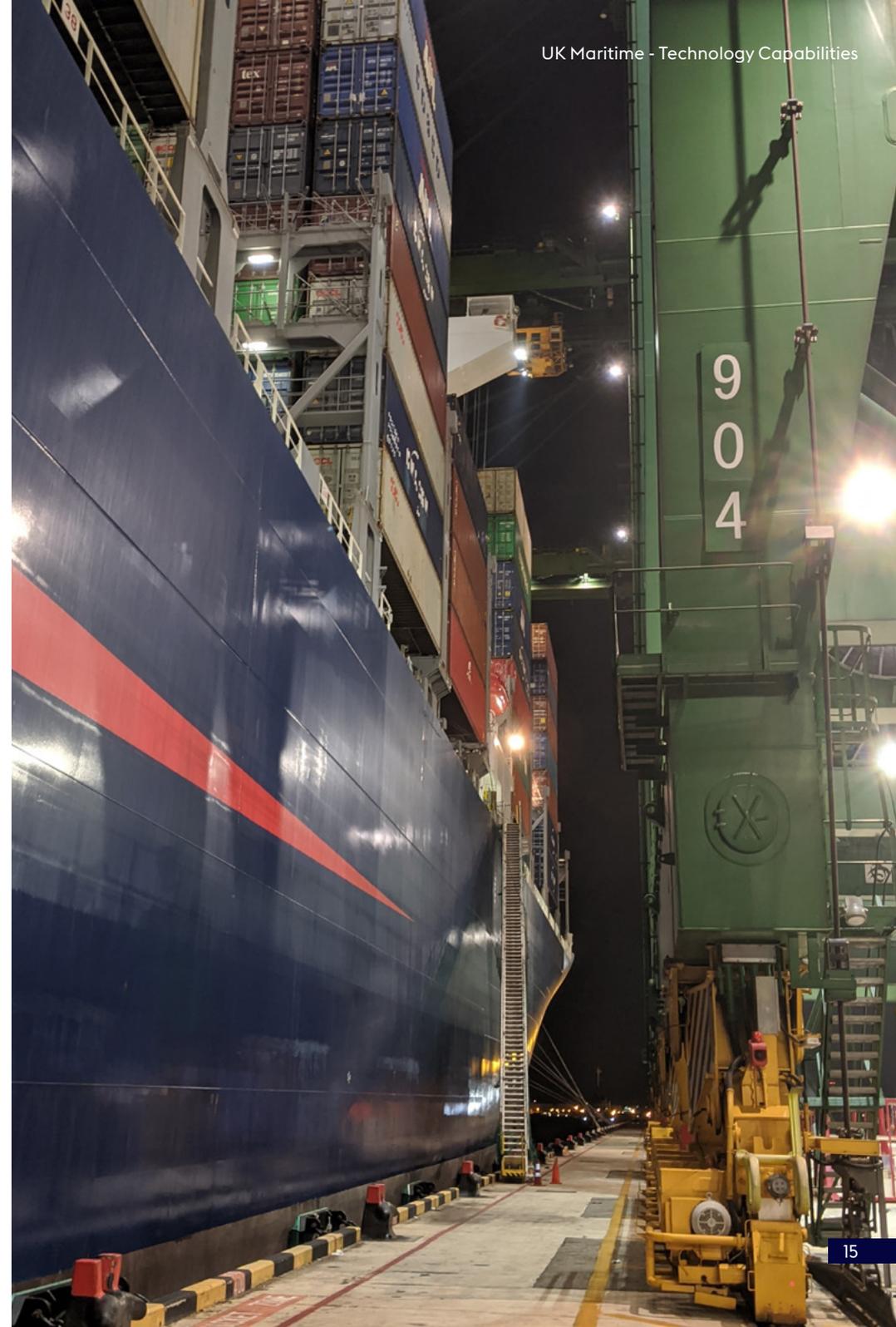
When Eastern Pacific Shipping (EPS) were exploring their compliance options for IMO's recent cybersecurity regulation (known as IMO 2021), they turned to CyberOwl's maritime cybersecurity monitoring and analytics system Medulla. The regulation requires that shipowners detail the cyber threats across their vessels and systems as well as identifying potential mitigation measures. Together with managed services provided by CyberOwl's maritime cybersecurity experts, Medulla has helped EPS gain visibility, security and compliance for their shipboard assets and networks.

Medulla enables shipowners and operators to maintain an updated understanding of the critical assets and networks onboard vessels, in order to assess and address their associated cyber risk. By deploying the system across several segments within its 160-strong fleet, EPS was able to proactively identify cyber risks to onboard systems and address them before any losses or interruptions.

As well as improving asset discovery – identifying where onboard equipment deviates from documented inventory – Medulla enables focus in mitigating risks and protecting high-value assets onboard. If an issue requires attention, an incident report is received with detailed analysis of what has happened and guidance on next steps. This makes it efficient in investigating and resolving.

By using monitoring data to measure the performance of procedural and technical security controls, the system affords visibility of controls which are not performing as expected and can also be used to provide evidence of effective security management to inspectors.

[cyberowl.io](https://cyberowl.io)





# Helping modern engines meet emissions targets

Eminox has 42 years of experience designing and manufacturing exhaust aftertreatment systems. Its emissions reduction technologies enable marine engines to comply with stringent global controls such as IMO Tier III and Inland Waterways (IWW) Stage 5 standards.

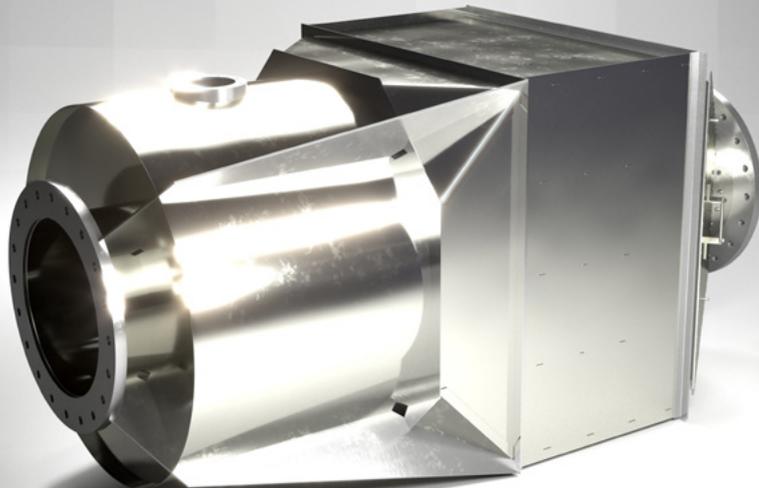
Using state-of-the-art inhouse facilities, Eminox delivers complete, integrated solutions – from design and prototyping to testing and production – that are tailored to multiple vessel types and supported by a complete lifecycle service. This end-to-end solution shortens service time, reduces costs and provides increased speed to market.

Eminox's in-house team has used its years of experience in exhaust technology to develop selective catalytic reduction (SCR) and diesel particulate filter products for the marine sector. These systems are designed to reduce nitrogen oxides, particulate matter and particulate number levels.

Swedish engine manufacturer Volvo Penta is a long-standing customer. Volvo Penta's IMO Tier III-compliant emissions control system is designed to handle high-sulphur fuel and the toughest operating conditions while maintaining engine durability and efficiency. Eminox's expertise in SCR muffler design helped Volvo Penta to fulfil IMO III targets.

Eminox's service to marine customers including Volvo Penta includes adapting systems depending on spatial constraints, working to maintain the optimum thermal properties of engine systems and developing efficient mixing techniques optimised for the greatest uniformity indices.

[eminox.com](http://eminox.com)





# Wide deployment for amphibious workhorse

The Griffon Hoverwork 8000TD has been described as the ultimate logistical workhorse. Capable of travelling at high speeds over both land and sea, these hovercraft are favoured by military, paramilitary and naval forces as a logistic or amphibious operational support craft.

The craft is capable of carrying up to 75 passengers plus two crew, and can also accommodate a light armoured vehicle or a 20-foot container. The design permits many possible superstructure options with the same standard hull and machinery installation.

The Swedish Amphibious Battalion contracted Griffon Hoverwork to build three 8100TD hovercraft for use in their military operations in the Baltic Sea, operating from the amphibious unit's base at Berga, Muskö. The 8100TD is designed to meet the Swedish Amphibious Battalion's requirement to carry a variety of alternative military payloads over water, ice, and tundra.

The craft for Venezuela meanwhile was built for use in agricultural logistics operations. Due to the amphibious geography of the region, with shallow jungle river banks and changing tidal activity, the transportation of farming machinery and vital supplies was made more efficient through the use of hovercraft.

[griffonhoverwork.com](http://griffonhoverwork.com)





# Major makeover for signature cruise liner

Belfast-based joinery and interior fit-out company Mivan Marine was awarded a major project on Royal Caribbean Cruise Line's Freedom of the Seas in mid-2019. The scope consisted of sixteen different public areas - ranging from kids' areas to bars, restaurants, outer-deck areas as well as the first roll out of the new Giovanni's Italian Kitchen concept - and was designated as one of RCCL's signature 'Amplification' projects.

Preconstruction works were scheduled for six months prior to boarding the ship in Puerto Rico. At the beginning of 2020, the Mivan Team joined the ship for a gruelling six-week non-stop refit journey, combining periods at sea and in drydock. The main drydock part of the project was in the Navantia shipyard in Cadiz. The project management team was 12 strong with a labour force of 400 workers.

Logistics is the backbone of the process and the key to a successful project. Materials and supplies were required in San Juan and Cadiz. Bespoke joinery items were manufactured in Mivan's 110,000-square-foot factory in Antrim.

The project was completed on time, within budget and was well received by the client, with outstanding venues for passengers to enjoy for years to come.

[mivan.com](http://mivan.com)





# Staying wise to Dover's shifting waters

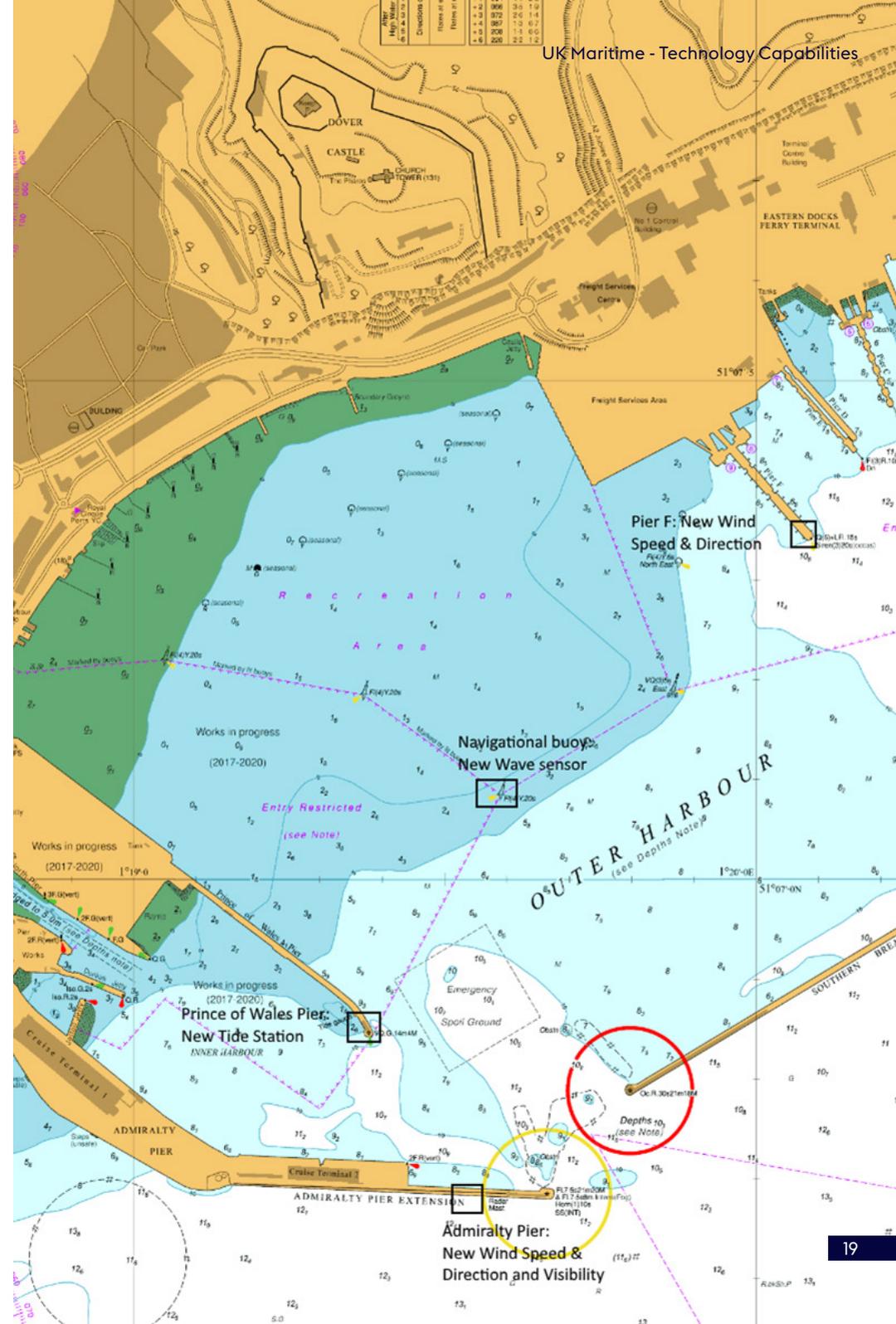
OceanWise contributed its environmental monitoring expertise to the installation of a new vessel traffic service (VTS) system at the Port of Dover. The system was designed to improve port operations, support decision making and enhance efficiencies at Europe's busiest ferry port.

The project included the supply of new VTS operator workstations, a port management information system, radars, a VHF system, radio direction finders (RDF), an Automatic Identification System, and CCTV. The port also required systems to monitor the changing environmental conditions at the port.

Environmental monitoring specialist OceanWise delivered a system which met the port's unique data requirements. Various sensors were installed across the port, both onshore and offshore. The complex data from the new sensors as well as existing meters was carefully integrated by experts at OceanWise to create a modern, optimised system.

The essential real-time data produced by the network of sensors is transmitted, digested and stored in Port-Log – the OceanWise data platform which manages and publishes environmental data. Historical and real-time data will be published via Port-Log, which is designed to display the complex range of sensor data in an easy-to-use web page and publish the data more widely to multiple users, including maritime pilots.

[oceanwise.eu](http://oceanwise.eu)



The Pelagian logo consists of the word "pelagian" in a lowercase, sans-serif font. The letters "p", "e", "l", "a", "g", "i", and "a" are in a light blue color, while the letters "n" and "n" are in a light green color. The logo is enclosed in a thin blue rectangular border.

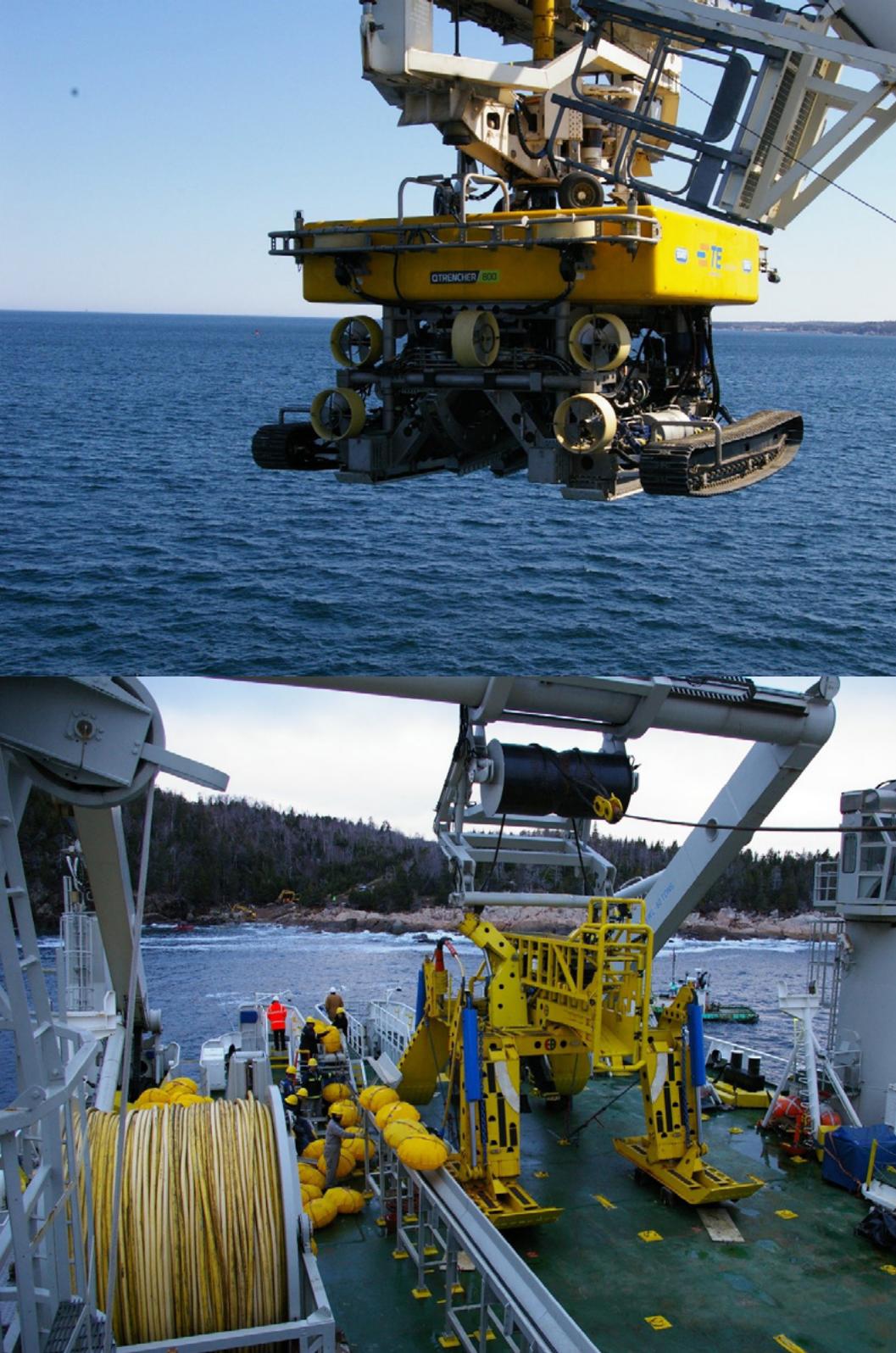
# Subsea services support transatlantic cable project

Pelagian provided consultancy for the first transatlantic telecom cable to be installed for over 10 years. The Hibernia Express fibre optic cable used a unique low latency route laid in very challenging seabed conditions.

The shore end landings were in challenging locations, requiring in-depth planning to ensure all environmental aspects of the project were adhered to. Once the shore end had been completed the cable was installed into the seabed using a plough. Finally, remotely operated vehicles were used to ensure that the cable was buried to the correct depth.

Pelagian's services included management of the survey and installation programs, permit research and stakeholder management, including the preparation of notices to mariners and information for the public. During the two-year project, Pelagian provided personnel for several critical functions including survey, cable load, installation, pre-lay grapnel run, post-lay inspection and burial, shore end and Marine and Maritime Organisation liaison.

[pelagian.co.uk](http://pelagian.co.uk)





# Optimising propellers for efficiency and power

Maximum propulsive power used to be the main criteria for designing propellers. In today's marine environment that has to be balanced against a second requirement; to produce that power whilst reducing fuel consumption and emissions as much as possible.

Stone Marine Propulsion's NPT propeller was designed to address this demand. It has now been fitted to over 200 ships, many of them operated by the world's largest shipping companies. In every case the reductions required in both fuel consumption and emissions have been exceeded, often by significant amounts.

An NPT propeller was recently fitted to a 35,000 deadweight tonne bulk carrier. At the completion of sea trials it was shown that the vessel had exceeded performance requirements built into its contract. Computer modelling anticipated that the vessel would achieve savings of 3.5% with an NPT propeller fitted. In the trials, savings were around 8%.

There are other benefits to NPT propellers too. One is the smaller optimum diameter compared with a conventional propeller, meaning a more efficient, slower turning propeller is often possible without exceeding the maximum allowable diameter. This is also advantageous for retrofitting to a de-rated engine, as the number of blades and blade surface area can be lower without increasing propeller diameter – bringing further efficiency gains.

[smpropulsion.com](http://smpropulsion.com)



# Ready to trade

The UK government already offers strong support to international companies working with UK marine technology suppliers and is stepping up investment in the sector.



As part of its National Shipbuilding Strategy, the government aims to make the maritime industry more competitive, export British ships overseas and boost innovation, skills, jobs, and productivity across the UK.

The UK Department for Transport has also launched the £20 million Clean Maritime Demonstration Competition to support development of UK expertise in green shipping technologies and components. This programme aims to accelerate the design and development of zero emission vessels in the UK.

UK Export Finance (UKEF) can offer substantial support for overseas companies buying from UK marine technology suppliers providing goods and services. The export credit agency can guarantee commercial loans to overseas buyers for up to 85% of the value of eligible goods and services purchased under a contract. Support can be provided for contracts with a lower UK content (to a minimum of 20%), offering greater flexibility to exporters and buyers. UKEF may be able to offer direct loans to buyers at competitive fixed interest rates, on a case-by-case basis.

The government's commitment to building sustainable business is reflected in a separate £2 billion fund earmarked for direct lending from UKEF to green growth projects. UKEF will consider support under this initiative on a case-by-case basis and in line with the Green Bond Principles.

A wide range of maritime-related businesses are eligible to apply for this additional funding, including projects to deliver or support offshore renewables or to reduce emissions through clean transportation technology. For example, in February 2021 UKEF provided a £200 million buyer credit guarantee to help finance the Greater Changhua 1 Offshore Wind Farm in Taiwan, unlocking the export potential of the UK's offshore wind sector.

Two UK renewable energy companies have already capitalised on UKEF's latest support by winning multi-million-pound export contracts with Ørsted in Taiwan. Seajacks, an East Anglia-based company, will ship the material needed to install the turbines. Trelleborg's applied technologies operation in the West Midlands, will provide protection systems for the cables which connect the turbines to the mainland.

**For more information on UK Export Finance, visit**

[www.gov.uk/government/organisations/uk-export-finance](http://www.gov.uk/government/organisations/uk-export-finance)

**For more information on the UK maritimemarket, visit**

[www.maritimeuk.org/](http://www.maritimeuk.org/)

# UK marine technology supplier directory

Please find below a selection of the UK suppliers operating in the marine technology sector.

**ACM Bearings**  
[www.acmbearings.co.uk](http://www.acmbearings.co.uk)

**Ad Hoc Marine Designs**  
[www.adhocmarinedesigns.co.uk](http://www.adhocmarinedesigns.co.uk)

**Aluminium Marine Consultants**  
[www.aluminium-boats.com](http://www.aluminium-boats.com)

**Ambrey**  
[www.ambrey.com](http://www.ambrey.com)

**Artemis Technologies**  
[www.artemistechnologies.co.uk](http://www.artemistechnologies.co.uk)

**AST**  
[www.theastgroup.com](http://www.theastgroup.com)

**AutoNaut USV**  
[www.autonautusv.com](http://www.autonautusv.com)

**Babcock LGE**  
[www.babcockinternational.com/lge](http://www.babcockinternational.com/lge)

**BAR Technologies**  
[www.barttechnologies.uk](http://www.barttechnologies.uk)

**Bibby Marine**  
[www.bibbymarine.com](http://www.bibbymarine.com)

**BMT**  
[www.bmt.org](http://www.bmt.org)

**Bruntons Propellers**  
[www.bruntonspropellers.com](http://www.bruntonspropellers.com)

**Cammel Laird**  
[www.clbh.co.uk](http://www.clbh.co.uk)

**Cast Iron Welding Services (CIWS)**  
[www.castironwelding.co.uk](http://www.castironwelding.co.uk)

**Cox Powertrain**  
[www.coxmarine.com](http://www.coxmarine.com)

**CyberOwl**  
[www.cyberowl.io](http://www.cyberowl.io)

**Darglow Engineering**  
[www.darglow.co.uk](http://www.darglow.co.uk)

**Diverse Marine**  
[www.diversemarine.co.uk](http://www.diversemarine.co.uk)

**Eminox**  
[www.eminox.com](http://www.eminox.com)

**GE Power Conversion**  
[www.gepowerconversion.com/industries/marine](http://www.gepowerconversion.com/industries/marine)

**Griffon Hoverwork**  
[www.griffonhoverwork.com](http://www.griffonhoverwork.com)

**Harland & Wolff**  
[www.harland-wolff.com](http://www.harland-wolff.com)

**HENSOLDT UK**  
[www.uk.hensoldt.net](http://www.uk.hensoldt.net)

**HFW**  
[www.hfw.com](http://www.hfw.com)

**Horizon Technologies**  
[www.horizontechnologies.com](http://www.horizontechnologies.com)

**Houlder**  
[www.houlderltd.com](http://www.houlderltd.com)

**Inmarsat Global**  
[www.inmarsat.com](http://www.inmarsat.com)

**Lloyd's Register**  
[www.lr.org](http://www.lr.org)

**Manor Renewable Energy (MRE)**  
[www.mreltd.co.uk](http://www.mreltd.co.uk)

**MarineDash**  
[www.marinedash.com](http://www.marinedash.com)

**Maritime Testing and Training Alliance**  
[www.linkedin.com/company/maritime-testing-training-alliance/](http://www.linkedin.com/company/maritime-testing-training-alliance/)

**Mivan**  
[www.mivan.com](http://www.mivan.com)

**MJM MARINE**  
[www.mjmmarine.com](http://www.mjmmarine.com)

**mSubs**  
[www.msubs.com](http://www.msubs.com)

**Ocean Infinity Group**  
[www.oceaninfinity.com](http://www.oceaninfinity.com)

**OceanWise**  
[www.oceanwise.eu](http://www.oceanwise.eu)

**P & S Automation**  
[www.pandsautomation.com](http://www.pandsautomation.com)

**PAKA**  
[www.paka.group](http://www.paka.group)

**Parkol Marine Engineering**  
[www.parkol.co.uk](http://www.parkol.co.uk)

**Pelagian UK**  
[www.pelagian.co.uk](http://www.pelagian.co.uk)

**Port of Blyth**  
[www.portofblyth.co.uk](http://www.portofblyth.co.uk)

**Rivertrace**  
[www.rivertrace.com](http://www.rivertrace.com)

**RS Aqua**  
[www.rsaqua.co.uk](http://www.rsaqua.co.uk)

**SEA-KIT International**  
[www.sea-kit.com](http://www.sea-kit.com)

**Solarglide**  
[www.solarglide.com](http://www.solarglide.com)

**Solis Marine Consultants**  
[www.solis-marine.com](http://www.solis-marine.com)

**Sonardyne International**  
[www.sonardyne.com](http://www.sonardyne.com)

**Stone Marine Propulsion**  
[www.smpropulsion.com](http://www.smpropulsion.com)

**SubSea Craft**  
[www.subseacraft.com](http://www.subseacraft.com)

**Survitec Group**  
[www.survitecgroup.com](http://www.survitecgroup.com)

**Theta Marine Consulting UK**  
[www.thetamarine.co.uk](http://www.thetamarine.co.uk)

**Topglass Contracts**  
[www.top-glass.com](http://www.top-glass.com)

**Tugdock**  
[www.tugdock.com](http://www.tugdock.com)

**Tyne Gangway (Structures)** [www.tynegangway.com](http://www.tynegangway.com)

**Valeport**  
[www.valeport.co.uk](http://www.valeport.co.uk)

**VIRSEC**  
[www.virsec.org](http://www.virsec.org)

**Windship Technology**  
[www.windshiptechnology.com](http://www.windshiptechnology.com)

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