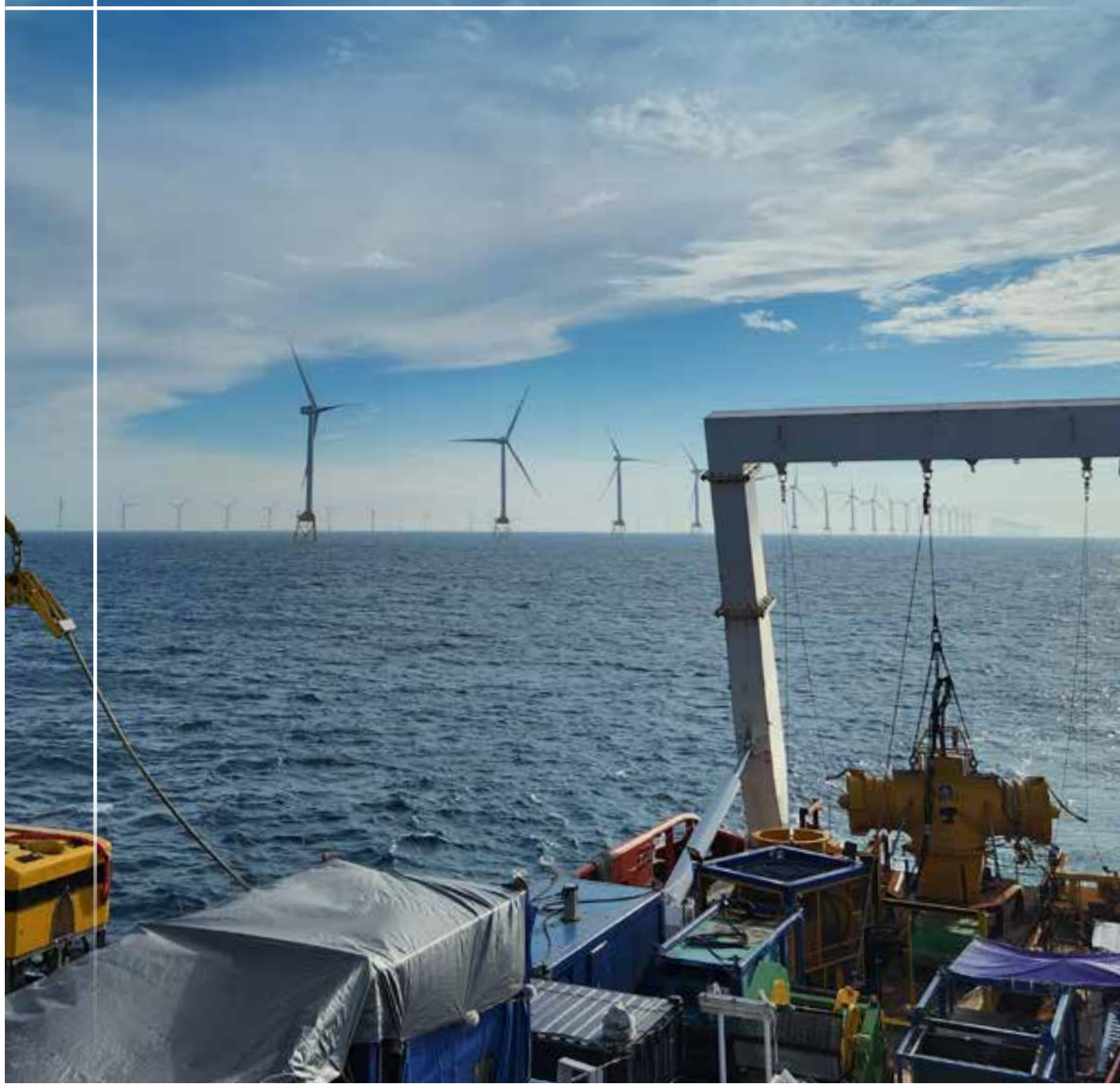




PROVIDING INNOVATIVE SOLUTIONS TO THE OFFSHORE RENEWABLES MARKET

DELIVERING OFFSHORE EXPERTISE ACROSS ASIA



DELIVERING WORLD-LEADING TECHNOLOGY TO THE RENEWABLES SECTOR

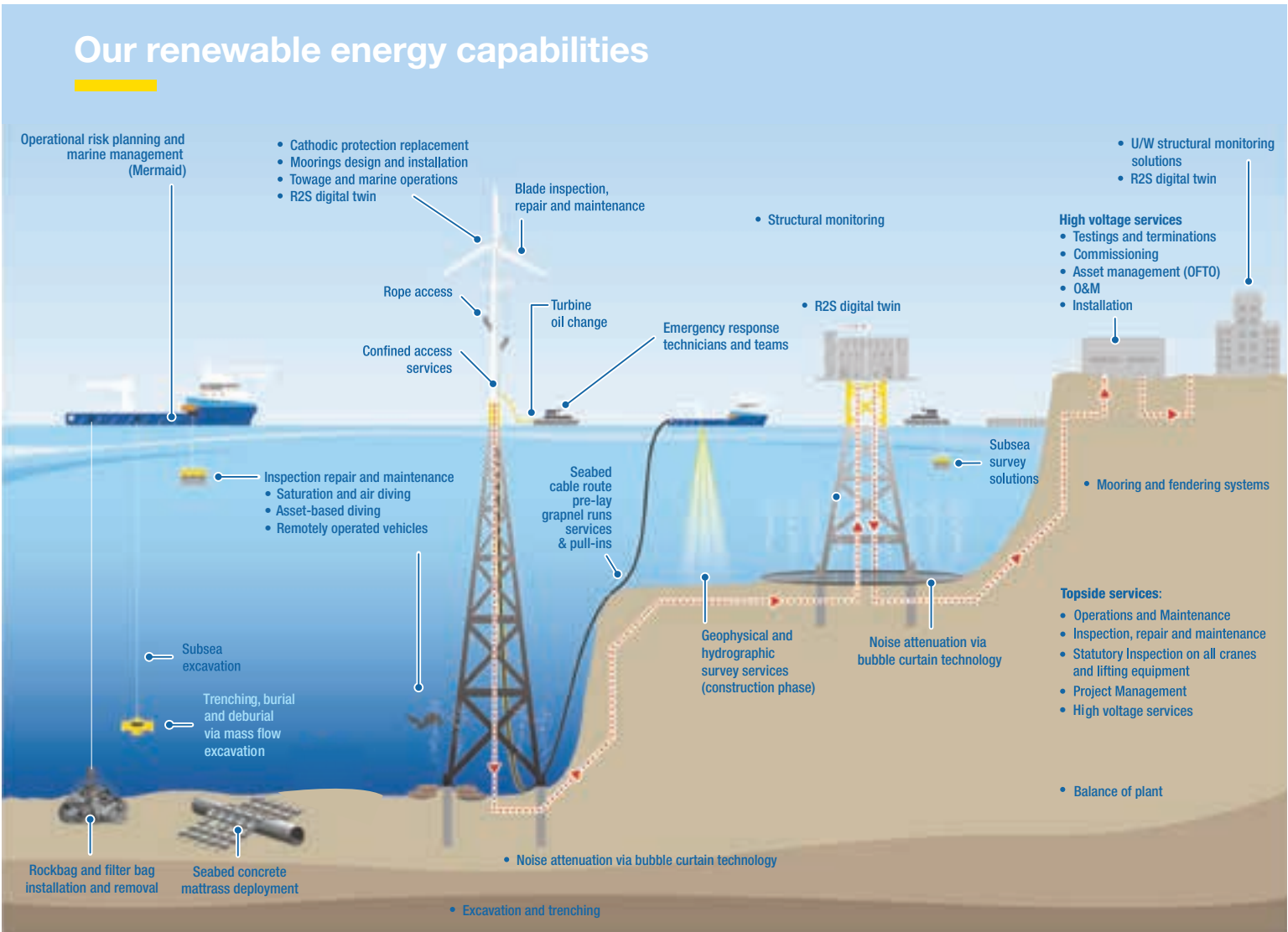
James Fisher and Sons plc has developed unparalleled operational expertise in harsh environments, delivering specialist solutions in the renewables energy sector.

Our purpose is to enhance, protect and connect human life and asset riches on and around the world's oceans through unparalleled operational expertise and continuous innovation.

Our highly skilled personnel, innovative culture and extensive experience enable us to support customers operating in some of the most demanding and technically challenging environments. Leveraging the strengths of our diverse capabilities from our regional base, we're able to provide fully integrated solutions for each phase of your offshore energy project.

We pride ourselves on creating value and delivering excellence for our customers.

Our renewable energy capabilities





CONTROLLED FLOW EXCAVATION

James Fisher and Sons is an industry leading provider of controlled flow excavation equipment and services with global capabilities. With an unrivalled selection of tooling and in-house expertise, James Fisher and Sons is perfectly positioned to deliver for our customers' project requirements.

Our range of controlled flow excavation (CFE) equipment provides a non-contact form of excavation that eliminates the risks associated with alternative excavation methods, especially around complex subsea assets. Combining experience and innovation, we deploy the right technologies to optimise project delivery.

- Pipeline and cable trenching (pre / post lay)
- Backfilling of existing trenches (post trenching operations)
- De-burial of cables, pipelines, and subsea assets for IRM
- Seabed preparation and pre-installation excavations
- Pre-sweeping of sand waves
- Free-span rectification (pre / post lay)
- Rock dump dispersal
- Decommissioning and salvage excavations
- Harbour clearances / channel deepening
- With the addition of our patented high velocity jetting solution, where the water jet is inserted into the moving water column, our equipment is capable of cutting through soils in excess of 300kPa

CONTROLLED FLOW EXCAVATION

With dedicated local resources, James Fisher Offshore is strategically positioned to react promptly to fully support our customers' offshore requirements by mitigating operational downtime and reducing overall spend on cost critical projects.

WHY USE CFE EQUIPMENT OVER ALTERNATIVE METHODS?

Our diverse portfolio of CFE tooling spreads are engineered and proven to excel in the harshest subsea conditions across global energy sectors.



CFE ADVANTAGES:

- Non-contact form of excavation / trenching, maintaining the integrity of the assets
- Low pressure / high volume
- No ROV / diver requirements for any CFE operations
- One CFE spread allows for multiple applications
- Capable of operating in 1.5m - 300m water depths in standard configuration
- Ability to trench a variety of product sizes from 1"- 60"
- Real-time sonar monitoring during excavation / trenching operations
- Counter rotating impellers allows for gyroscopic stability
- Designed to accommodate varying seabed compositions, including sand, clay, silt, mud, gravel, and rock dump
- 100% flow control



TWIN R2000

The Twin R2000 controlled flow excavation tool generates two controllable columns of seawater which travel vertically down towards the seabed at a velocity of up to 10m per second. This tool has repeatedly proven itself to be ideally suited to shallow water projects on a variety of cable and pipeline sizes. The controllability of the water columns and localised excavation effect make the Twin R2000 the ideal solution when working in environmentally sensitive areas.



THE SP6000

The SP6000 is ideal for deployment on various vessels thanks to its compact design. The SP6000 works by producing a fully controllable column of water which has a maximum flow of 6000l/sec at a maximum velocity of 8m/sec, to excavate the seabed efficiently and precisely. Operational capability is further enhanced by its ability to work in water depths from 3m – 300m and the employment of real-time sonar monitoring and optional LARS*. (*Limited to 175m when deployed via LARS.)

LARS

We can offer our bespoke LARS equipment in support of our SP6000. LARS was specifically designed to allow the vessel crane to be used for multiple, simultaneous projects.

JETFLOW100

The JetFlow100 controlled flow excavation tool has been designed to cut through tough soils and clays without the requirement of additional jetting equipment. This innovative dual function tool also complies with DNV2.7-3 subsea lifting standards.



TWIN PROP AND TR4000

The Twin Prop and TR4000 controlled flow excavation systems are the next generation, state-of-the-art development of the widely proven controlled flow excavation technique. Counter-rotating impellers are used to produce two high volume columns to rapidly excavate the seabed. The two independent impeller housings can be adjusted to various angles and distances apart to best suit the application. The TwinProp and TR4000 is deployed using a crane or a-frame.



THE T4000 AND T8000

These impressive pieces of equipment can generate a large volume of water with a velocity of up to 10m per second. The high-volume flow of water fluidises the seabed and disperses the soil rapidly. The patented shape and counter rotating impellers of the kit provide controlled flow excavation by combining a non-contact method with a remote-contact real-time sonar system and gyroscopic stability.

The T4000 has a max of 4000L/sec and the T8000 has a max of 8000L/sec at full flow. The T8 is used for larger size pipelines, large sand waves and larger / deeper excavations.

TWIN T8000

The Twin T8000 excavation tool works in a similar way to that of the T8000, but with double the output. Working from depths of 7m, the tool can generate up to 16,000 litres of water per second.

AIR COMPRESSORS FOR BIG BUBBLE CURTAIN PROJECTS

Through the diversity of our solutions, we support customers from the beginning of their offshore wind projects. Harnessing the combined strength of our specialist teams, we're there for our customers from the very start, allowing for the seamless execution of all projects.

The big bubble curtain (BBC) was developed as a compressed air system for sound absorption in water and especially protects porpoises and seals which use ultrasound as orientation in water. Ordinary construction noises travel much more easily underwater, and sound levels can be five times higher than in open air. This can be enough to harm and even kill sea life. However, air bubbles resonate in response to sound, absorbing the energy. When formed into a curtain they reflect the sound, effectively keeping it within the curtained area.

A ship is typically fitted with a set of air compressors provided by ScanTech Offshore, part of James Fisher and Sons plc, to deliver compressed air to a flexible tube with special nozzle openings.



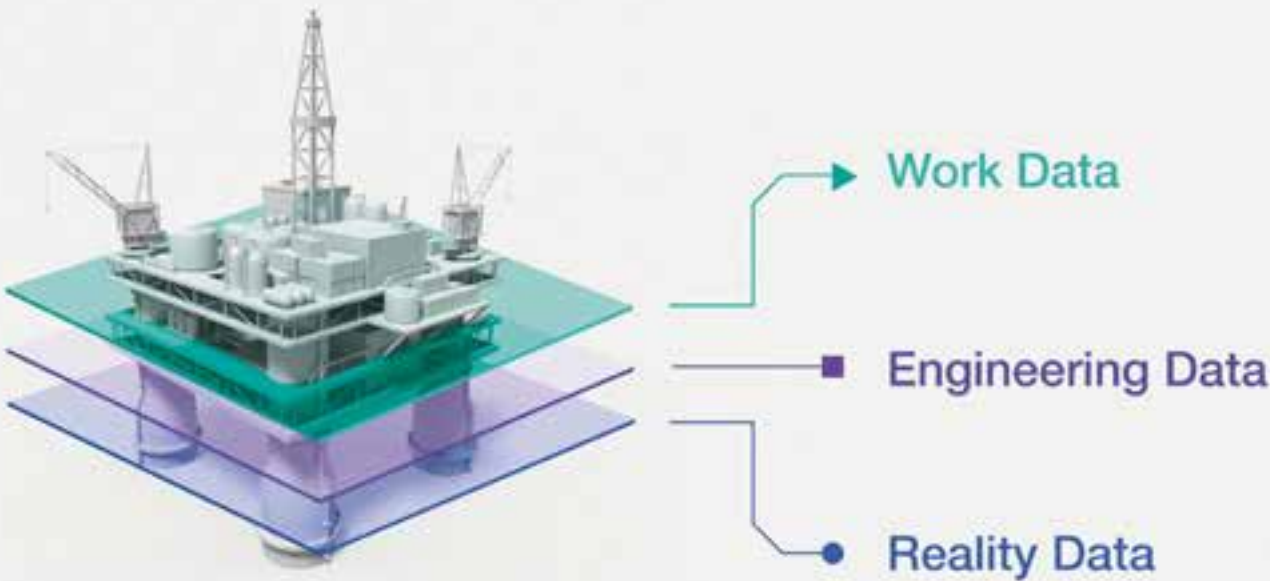


AIR COMPRESSORS FOR BIG BUBBLE CURTAIN PROJECTS

The world's first purpose built air compressors designed specifically for big bubble curtain projects. The ST3100 air compressors utilise a Caterpillar engine and ScanTech Offshore's original radiator technology, providing the air required to create a bubble curtain that reduces noise by up to 90 percent.

Big bubble curtain projects come with a range of challenges. Firstly, to deliver the volume of air required for a project the operator typically needs to install many air compressors which take up a large footprint on a vessel (20 – 30 air compressors can typically be required).

However, the ST3100 can deliver more than double the output compared to traditional solutions, whilst taking up half the footprint. This is achieved through the ST3100's ability to not only be stackable but to stack whilst maintaining a more comfortable temperature between units for personnel to operate. When stacked the footprint savings are much greater providing up to 3-4 times more compressed air on the same footprint as some of the alternative solutions available in the market.



DIGITAL APPLICATION

We understand that transitioning to digital operations is challenging, both technically and organisationally.

Our digital twin application, R2S, was designed to enable teams to navigate the challenges of managing assets and project lifecycles in high-risk environments. It's providing teams with a highly visual and collaborative digital workspace that integrates and augments existing systems, so they can plan and deliver more efficiently.

R2S is empowering owners of complex assets to transition their teams to new, digital ways of working.

WATCH OUR **R2S**
VIDEO HERE:



FOR FURTHER INFORMATION
ON OUR **DIGITAL APPLICATION**
SOLUTIONS, VISIT HERE:



CABLE FAULT AND REPAIR INCLUDING CABLE GUARDIAN

James Fisher provides comprehensive and trusted offshore wind farm solutions across the renewable asset lifecycle. We are dedicated to the technical and operational aspects of construction, installation, specialist operation and maintenance for fixed and floating assets.

We provide high-voltage engineering expertise to deliver cost savings and reduce asset downtime.

OUR SERVICES INCLUDE:

- **Cable risk planning**
- **Fault readiness**
- **Fault repairs**
- **Cable monitoring & digital solutions**
- **Cable guardian** - Our comprehensive cable guardian package supports emergency response planning, strategic spares management and continuous cable monitoring and reactive solutions, in particular fault location and repair

BLADE INSPECTION, REPAIRS AND MAINTENANCE

ON AND OFFSHORE PROJECTS PRESENT EXTREMELY CHALLENGING AND HARSH ENVIRONMENTS, FOR BOTH PEOPLE AND TECHNOLOGY.

It has become our mission to align our services with the needs of our customers, providing new technology led solutions and a professional service.

We work around the clock to maximise the potential of your wind turbines.

OUR SERVICES INCLUDE:

- Quality assurance
- Inspection, maintenance, testing and repair
- Life extension and upgrades

A large, blue, multi-level offshore wind turbine structure is shown against a blue sky with wispy clouds. The structure is supported by a yellow lattice tower. In the background, other wind turbines are visible on the horizon.

OPERATIONS AND MAINTENANCE, AND ASSET MANAGEMENT SERVICES

Our comprehensive range of in-house subsea and topside capabilities ensures the safe, timely and cost-effective delivery of complex projects.

OUR SERVICES INCLUDE:

- Balance of plant operations and maintenance
- Asset management strategies and plans
- Planned and unplanned inspections and repairs
- Availability guarantees and asset optimisation

HIGH VOLTAGE SAFETY SERVICES

James Fisher's comprehensive offering provides unparalleled expertise and innovation in the offshore wind construction industry. Our unique value lies in our proven track record, extensive reach, and commitment to safety and excellence.

OUR SERVICES INCLUDE:

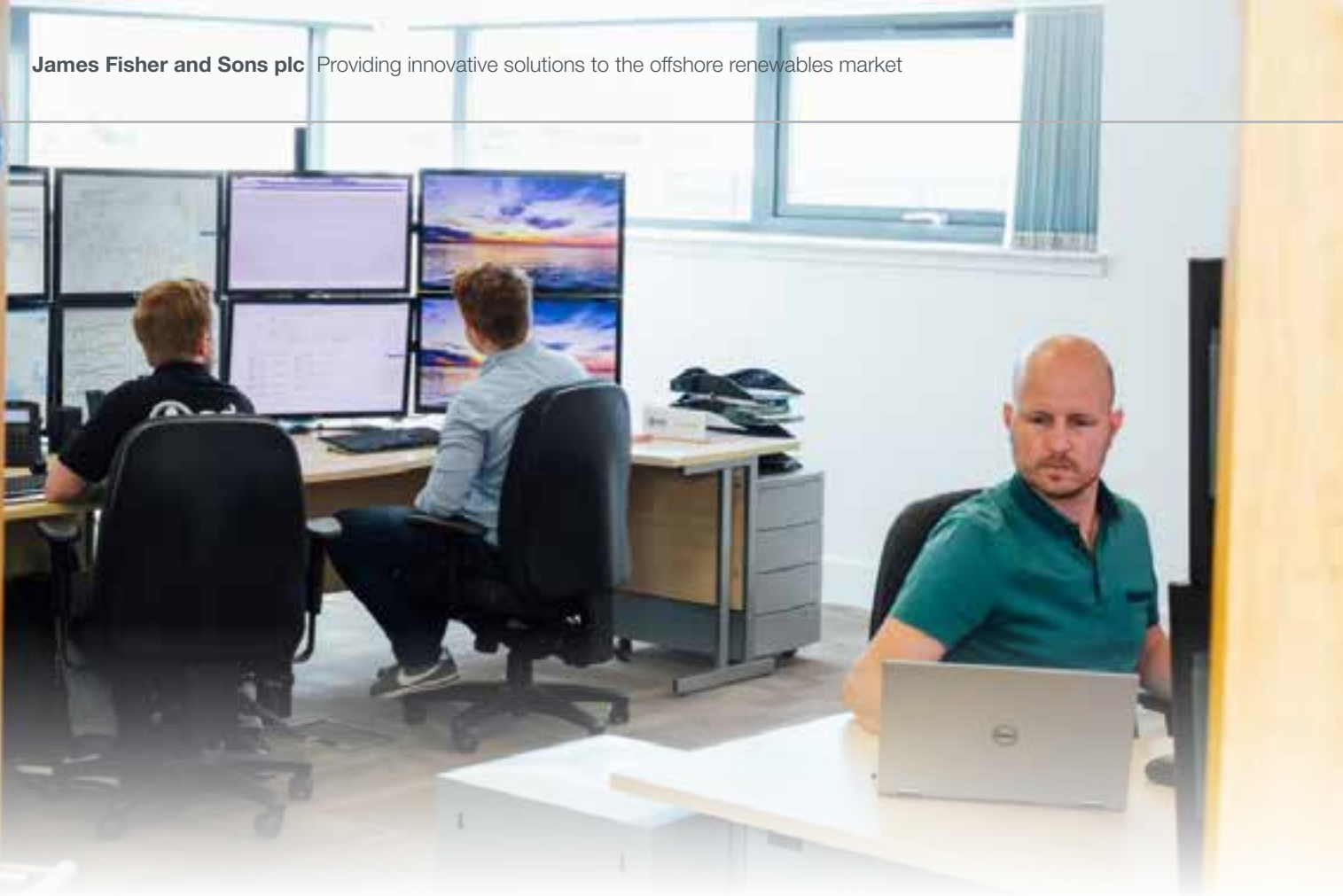
- Development services
- Governance services
- Operational services

JAMES FISHER ACADEMY

Addressing the skills gap in the offshore wind sector, we launched the James Fisher Academy to provide comprehensive training in high voltage safety.

OUR ACADEMY PROGRAMME:

- Combines online and field-based learning
- Is delivered by industry experts, to provide essential skills needed for today's renewable energy challenges
- Develops top-tier talent in the renewable sector
- Prepares a workforce for the future



CONTROL ROOM SERVICES

We help developers to safely and efficiently energise their wind farm by providing highly skilled engineering staff, coupled with expert project management and accurate data management systems.

Our high voltage control centre is manned 24/7 365 days a year, providing HV control and system surveillance services.

OUR SERVICES INCLUDE:

- 24/7 SCADA surveillance
- 24/7 remote switching (up to 400kV)
- Alarm and fault monitoring
- TSO interface
- Operation and maintenance coordination
- Local regional grid interface management and points of control
- Project management and feasibility studies
- Reporting and data analysis
- Commissioning support
- Emergency switching
- Reactive power set point changes
- Equipment releases under transmission status certificate process
- Safety – co-ordinator duties as per the Record of Inter System Safety Precautions process

MARINE PRODUCTS AND SERVICES

We supply high-quality marine products and services, meeting the needs of the global offshore renewables industry.

We are a major global supplier of premium marine products and services. With strategic global bases, our team delivers local expertise and support, providing a flexible and rapid response to customer requirements.

PROTECTING YOUR PEOPLE AND ASSETS

Our key global bases ensure high marine product stock availability to support regional customers, and our in-house technicians provide expert inspection and maintenance services.

With the scale and flexibility to support the offshore renewables industry, JF Fendercare provides marine products and services to suit your fendering, mooring, deck and quayside needs.



FENDERS

Renowned as the world’s leading supplier of premium Yokohama pneumatic fenders, we provide a wide range of fenders to protect people and assets, as well as inspection and maintenance services to ensure ongoing high safety standards.

Our fenders are highly prized for their high performance and simple deployment and installation, making them highly flexible to suit your offshore project requirements. In addition to purchase options, we can provide Yokohama pneumatic fenders on short or long-term hire to suit your project requirements, delivering flexibility and cost-effectiveness.

FLOATING FENDERS

- Yokohama pneumatic fenders for sale or hire
- Foam floating fenders

VESSEL FENDERS

- US Polyform F-series fenders
- Cylindrical fenders
- Hollow D fenders
- W fenders

DECK AND MOORING EQUIPMENT

DECK AND MOORING EQUIPMENT

Our comprehensive range of deck and mooring products ensure the safe operation of vessels during critical operations.

- **Marine rope, including MEG4 (certified to DNV-GL)**
- **Deck bollards**
- **Chocks:**
 - Deck mounted
 - Bulwark
- **Fairleads**
- **SPM and emergency towing including**
 - Smit brackets
 - Chain stoppers

CHAINS AND FITTINGS

- **Stud link anchor chain**
 - Kenters
 - Swivel forerunners
 - D-end anchor shackles
- **Self-coloured and galvanised open link mooring chain**
- **Sinkers**

MARINE HOOKS

- **Sea Catch**
- **Pelican**
- **RAM**

ANCHORS

- **High holding power anchors**
- **Offshore anchors**
- **Stockless anchors**

QUAYSIDE EQUIPMENT

JF Fendercare provides a range of quayside equipment for port and terminal applications, including bespoke fender solutions designed by our in-house technical team.

- **A wide range of fixed quayside fenders, including bespoke design services**
- **Quayside bollards**
- **Horn cleats**
- **Marine rope**
- **Ladders**

James Fisher and Sons plc

Pioneering Sustainably



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