



## Floating Offshore Wind (FLOW) Factsheet

The move toward renewable energy sources is key in the fight against climate change and FLOW is an integral part of that. Plymouth's existing strengths in marine technology and advanced manufacturing combined with its location and connectivity make it perfectly placed to service the FLOW industry.

### Location

Steeped in maritime heritage, Plymouth, Britain's Ocean City, is strategically located on the South Coast of England with clear steaming routes to the Western Approaches. It is the largest and best connected city in the Great South West area with robust rail, road, and sea connections. With a variety of wharves, docks and marina facilities all sheltered by the natural harbour of Plymouth Sound and two breakwaters, the city is home to the most comprehensive shore side marine offering in the South West. Adding to this, its significant manufacturing and engineering capabilities Plymouth becomes the ideal place for serving many aspects of the planned floating offshore wind developments in the Celtic Sea.

### Port capabilities

Home to the largest Naval Base in Western Europe and the largest commercial port in the South West, Plymouth's sheltered waters have been at the forefront of British maritime operations for hundreds of years. Built on this expansive relationship with the sea the city now enjoys a variety of commercial wharves and dock facilities offering significant cargo handling capacity, and specifically a dedicated cement terminal, a key material for FLOW structures.' Facilities include:

- **Barbican Landing Stage** operates as a declared facility for cruise ship tenders, and is operated by the Cattewater Harbour Commissioners. Barbican Landing Stage offers commercial vessels a berthing point in the heart of the city close to amenities and public transport routes, ideal for crew transfer operations.
- **Cattedown Wharves** located at the eastern end of the city's waterfront, the quay length is 210m, with berthing pockets 280m in length. The berth can handle vessels up to 150m in length. The west and east births are dredged to 7.6m and 6.3m plus tide respectively
- **Corporation Wharf** operated by the Victoria Wharf group, is the cement terminal for Plymouth,

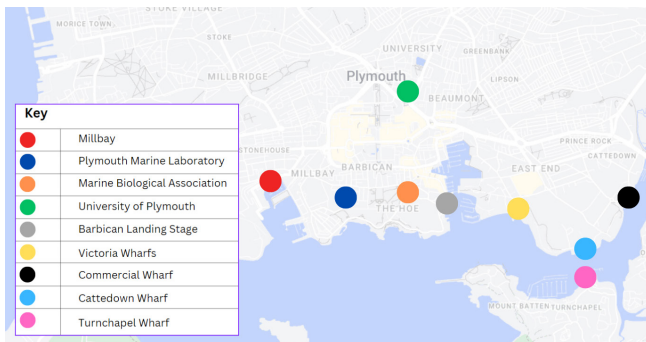
with vessels arriving mainly from Santander, Spain. The berth is a declared Not Always Afloat But Safely Aground (NAABSA) berth dredged to 2m plus tide

- **Millbay** Millbay Docks comprises a tidal basin with 13 ha of water situated within the impressive natural harbour known as Plymouth Sound. From here ferries operate to Western France and the Iberian Peninsula. There are good cargo-handling facilities including a ro/ro berth.
- **Victoria Wharf** handles over half a million tonnes of bulk cargo annually reaching as far afield as the South American markets, with heavy lift cranes and 140m solid quay construction makes Victoria Wharf the only all-purpose multi use facility in the Port of Plymouth, experienced in handling bulk, unitised and project cargo for the wider UK markets to support the wind and wave renewable energy markets.
- **Turnchapel Wharf** is a thriving marine business park owned by the Yacht Haven group. Turnchapel Wharf is the centre of excellence for autonomy, and a hub of maritime development and technology in Plymouth.

In addition to the commercial wharves and dock facilities, Plymouth is also home to a well-established marina offering, perfectly set up to cater to smaller more mobile crew transport vessels;

- The Marina at Sutton Harbour
- King Point Marina
- Queen Anne's Battery
- Plymouth Yacht Haven and Dry Stack facility
- Mayflower Marina

### Plymouth Wharfs and Research Institutes



### Plymouth and South Devon Freeport

Working with the Department of Business and Trade, a dedicated team of experts will showcase the Plymouth and South Devon Freeport to global investors and businesses who fit the criteria to expand or relocate to the region. Businesses that are part of the Freeport can take advantage of a range of tax and customs benefits and incentives to support growth, innovation and investment in the South West. The Plymouth and South Devon Freeport will:

- Enable new employment land to be bought forward at the three sites of South Yard, Langage and Sherford
- Establish a Freeport 'campus' utilising the region's state-of-the-art assets and facilities in marine and defence innovation
- Provide a major expansion plan for Princess Yachts
- Include £29m investment from local councils
- Leverage £250m private sector investment
- Deliver over 3,500 jobs

The South Yard tax site is the centrepiece of the Freeport's innovation hotbed and builds on state-of-the-art marine and defence assets and facilities available within Plymouth and the wider area rapidly making the Freeport a global centre of excellence for the testing, development and manufacturing of latest technology and specific sub-sector specialisms. With a strong net zero focus, these include Marine autonomy and decarbonisation, Digital oceans, Smart ports and shipping, Maritime cyber-security, Offshore renewable energy support solutions, Defence mission modules and small satellite fabrication. [www.pasdfreeport.com](http://www.pasdfreeport.com)

### Marine and maritime economy

Plymouth is a globally relevant centre of marine engineering and technology development. We have core strengths in marine operations, subsea engineering, marine surveys, bespoke fabrication, engineering design, naval architecture, marine sciences, cyber security, skills and workforce training and workforce recruitment. As well as supporting technologies such as hydraulics, electronics, IT, remote sensing, condition monitoring and composites.

### Specialist companies

- Alpha Marine Services Ltd.
- Applied Automation
- Babcock International
- Bluescreen IT
- City College Plymouth
- Fugro
- Hellermann Tyton
- Hydro Energy Group
- MAL (Research & Development) Ltd
- Marine AI
- MSubs
- PML Applications
- SeaRegs
- Silicon Sensing
- Sonardyne
- Thales UK
- University of Plymouth
- Victoria Group
- Western Maritime Training



## FAST cluster

The Future Autonomous at Sea Technologies (FAST) cluster is a group of more than 30 organisations ranging across academia, industry and local government bodies that specialise in the delivery of pioneering marine autonomous technologies. FAST cluster is a significant opportunity for Plymouth and brings together manufacturers and owners of marine autonomous platforms with sensor manufacturers and system integrators, and allows this consortium of companies to collaborate on the development of marine autonomous systems for specific purposes in Plymouth. To find out more visit, [FAST Cluster – Marine Business Technology Centre](#)

## Specialist training in shipping, navigation and autonomy

We have state-of-the-art training facilities located in Plymouth covering training and courses for sea surveys, remotely operated vehicles (ROVs) and un-crewed survey vessels (USVs).

The University of Plymouth provides programmes that combine over 40 years of international industry experience with a strong focus on commercial aspects of shipping, logistics and ports leading to qualifications accredited by the Chartered Institute of Logistics and Transport and recognised by the Institute of Chartered Shipbrokers and The Nautical Institute. Qualifications in Navigation are accredited by the Maritime & Coastguard Agency and the Merchant Navy Training Board.

Fugro operates a state of the art training facility in Plymouth providing Remote Operated Vehicle (ROV) training to its own and external staff. The Plymouth site is one of two

ROV training centres operated by Fugro the second is based in Singapore. The ROV introduction training course is the first to be recognised by the International Marine Contractors Association (IMCA).

The internationally recognised SeaRegs is based here in Plymouth, a leading provider of mariner courses applicable to any boat operators at all levels, Master through to Crew.

Western Maritime Training Limited is a bespoke provider of commercial maritime training courses and bespoke maritime courses for companies and individual mariners. Incorporated in 1990, WMT have been delivering first class maritime training in the South West and globally, for over 30 years.

## Centre of excellence for marine science

### Marine Research Plymouth

A partnership and shared vision to harness the expertise of the UK's largest cluster of marine science researchers and cutting-edge facilities, combines the globally-renowned capabilities of the Marine Biological Association, Plymouth Marine Laboratory and the University of Plymouth. Boasting a significant track record in delivering projects for governments, industry and research bodies, and with recognised capability and unrivalled experience in the scientific monitoring of the challenging and dynamic area of coastal autonomy, it launched the National Centre for Coastal Autonomy (NCCA) in 2022.

Plymouth and the wider South West is recognised nationally by the Department for Business and Trade as a Centre of Excellence for Marine Autonomy with a defined High Potential Opportunity, a capability that will be vital in the ongoing surveillance and monitoring of FLOW arrays. <https://maritimeuksw.org/marine-autonomy-geospatial-data/hpo-marine-autonomy/>

### University of Plymouth

University of Plymouth, which was ranked 1st in the world for research towards Sustainable Development Goal 14 (Life Below Water) in 2021, has the first and largest Marine Institute in the UK.

The extensive commercial assets available at the University of Plymouth include eight linked Wartsila Bridge Simulators with a Kongsberg Dynamic Positioning Simulator, specifically focussed on the optimisation of ORE installation and operations. A state of the art wave basin, with currents for physical testing and hydrodynamic research hosted in the Coastal Ocean and Sediment Testing (COAST) lab which has recently been adapted to include wind generation capabilities. Additionally, unique facilities in the Cyber- SHIP Lab can be applied to determining Cyber-Physical Response to cyber related threats in Shipping and Ports with implications for wider Critical National Infrastructure, with an extension of the lab being planned specifically to look



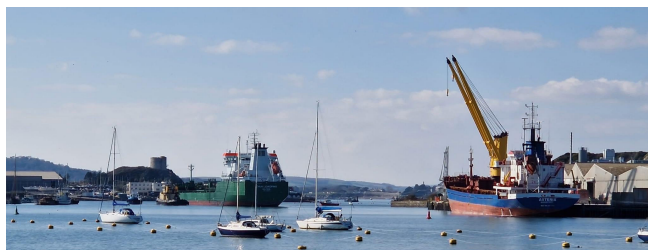
at cyber-security of offshore wind. The combined potential of these assets puts the University of Plymouth very much at the forefront of Floating Wind Energy Research and its associated fields globally. To find out more visit, [Marine Institute - University of Plymouth](#)

## Collaborative Offshore Renewable Energy Subsea Systems (COSS) research accelerator

Offshore Renewable Energy (ORE) Catapult and University of Plymouth offer industry access to the COSS facility which is focused around the hydrodynamics of floating offshore structures, offshore engineering and control systems. The COSS comprises a suite of advanced engineering facilities for use by academic researchers, industry and businesses working in collaboration with the University and ORE Catapult staff. It includes a technology development laboratory, test equipment, DP simulator and a virtual reality suite that can be used to study the hydrodynamic and environmental effects across anchors, foundations, moorings and platforms to optimise designs and reduce future project risk and costs. It will be used to test how innovative floating offshore wind platforms respond to ocean conditions, and build on work to study and develop autonomous marine systems that can carry out the inspection, maintenance and repair of offshore systems.

## Supergen Offshore Renewable Energy Hub

The Supergen ORE Hub provides research leadership to connect academia, industry, policy and public stakeholders, inspire innovation and maximise societal value in offshore wind, wave and tidal energy. It brings together 9 UK universities, including the University of Plymouth allowing transfer of fundamental knowledge, shared learning and use of resources for interdisciplinary research. Through the Supergen Hub, over £3m has been invested into offshore renewable energy research delivering 67 individual projects.



## Smart Sound Plymouth

Smart Sound Plymouth provides over 1000 km<sup>2</sup> of ocean environment to trial, prove and validate marine autonomous systems using a network of carbon neutral monitoring platforms (a system or vessel used to carry the sensor to the necessary part of the ocean).

These systems can aid in environmental surveying, routine O&M checks and system monitoring for FLOW deployments, while providing operational time and cost benefits due to rapid deployability and the lack of need for a crew.

Conditions within Smart Sound Plymouth range from sheltered bays to hostile waters, providing up-and coming autonomous technologies the chance to test in the variety of marine environments seen across a floating wind farm deployment. As of 2021, investment in Smart Sound Plymouth has seen the launch of several advanced autonomous technologies, including a remotely operated, net-zero data buoy developed by Plymouth Marine Laboratory.

Plymouth is a hotbed of private investment, bringing jobs and activity to the city. There are numerous companies in the Plymouth that operate across key aspects of FLOW and its supply chain, mainly focused on:

- Surveying and environmental impact assessments, which are already operating and ready to feed into early-stage project development
- Long-term vessel building and maintenance
- Test and demonstration facilities
- Specialist materials, including research and development
- Cyber Security

To find out more please visit, [Home - Smart Sound Plymouth](#)

## Regulators Pioneer Fund

Plymouth City Council and the University of Plymouth are also engaging with the Marine and Coastguard Agency under a Regulator Pioneer's Funded project looking at regulation development for marine autonomy, so that the cost, safety and carbon saving benefits of the technology for advanced ocean observation can be fully exploited for both pre-consenting and operational maintenance applications for Floating Wind developments.

## Take Action

To find out more about what Plymouth offers the business sector, or to discuss how our business support service can help meet your business needs, please contact:

### Enterprise and Inward Investment Team

[invest@plymouth.gov.uk](mailto:invest@plymouth.gov.uk) [investplymouth.co.uk](http://investplymouth.co.uk)

