MARINE SITE CHARACTERISATION

58°06'.20"N 03°05'3.5"W

Vast industry know-how combined with leading-edge technology, capturing and delivering the highest quality data to inform and de-risk your projects.

Beam

Automating offshore wind

beam.global

sales@beam.global

Contact Us →


Beam

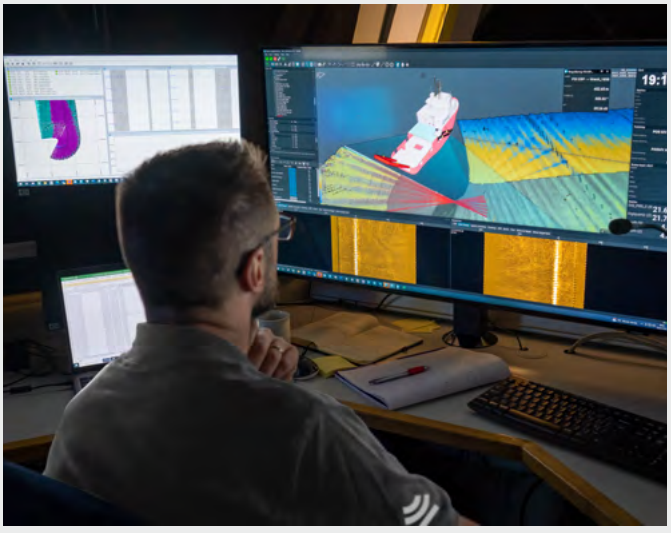
Your trusted partner of choice

In response to growing client demand, we offer a comprehensive suite of integrated site characterisation solutions, delivering critical insights about seabed, sub-seabed and environmental conditions, guiding the layout and cost-effective design of offshore wind farm developments, and supporting engineering decisions.

Through state-of-the-art data collection and in-house analysis, we help our clients mitigate risk and ensure the long-term performance of their assets, eliminating uncertainty about subsea site conditions.

Our technical studies and surveys deliver the highest quality data sets that provide a thorough understanding of offshore wind development areas and cable routes, enabling informed decisions and the de-risking of complex projects.

Furthermore, our innovative survey solutions also support the conservation of the marine environment and the sustainable development of large marine assets.



WHY BEAM?

- Specialists in delivering winning survey solutions, driven by our deep knowledge of the offshore wind sector.
- Solutions designed to dramatically increase efficiency across projects, lower emissions, and deliver the highest quality data capture and reporting.
- Industry-leading data sets, delivering an unrivalled level of perspective, accuracy and coverage.
- In-house project management and data processing.
- Successful, safe operations at over 50% of the UK's operational offshore wind farms.
- The latest remote and unmanned survey technologies, enabling more efficient working across operations.

MULTIPURPOSE DP2 SURVEY VESSEL

Our dedicated multipurpose DP2 survey vessel, the Glomar Supporter, has a proven track record of safe and efficient operations, and has been meticulously tailored to deliver a versatile and superior quality spread for consistent, industry-leading data capture and reporting.

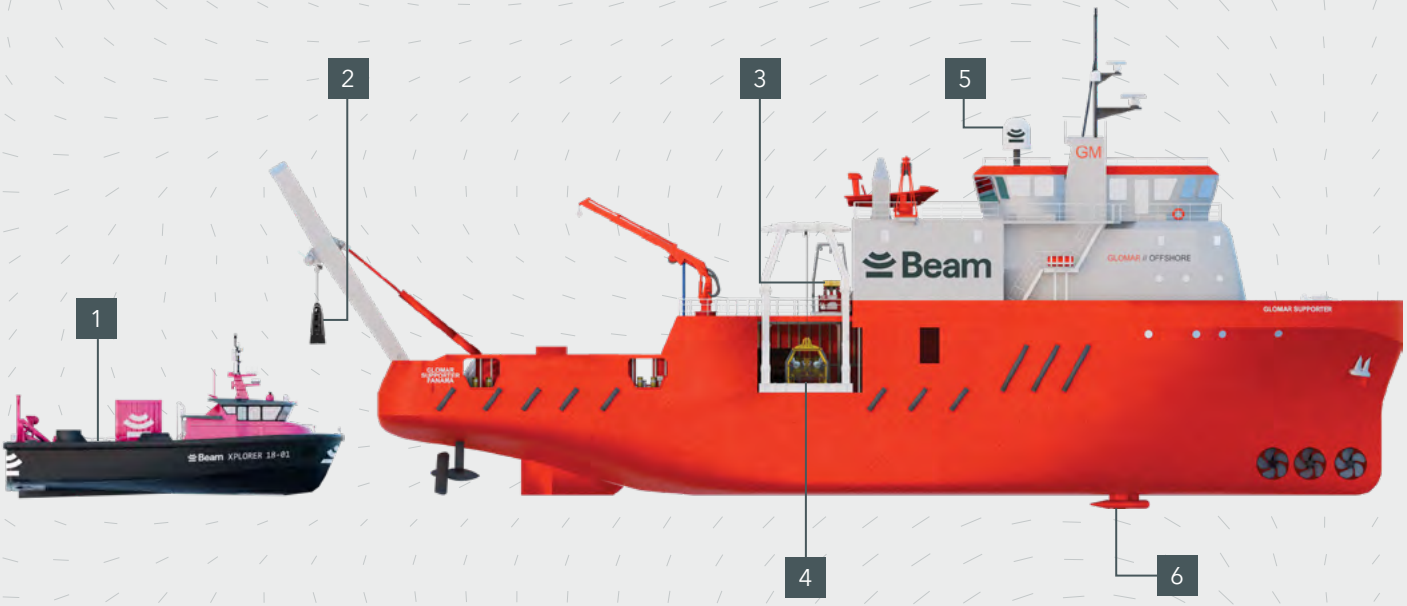
Differentiated by technology and equipment, the vessel provides synergistic working and flexibility of sensor deployment. It is fully equipped to deliver simultaneous data collection with instant upload, as well as a Work-Class ROV for concurrent inspection activities.

Equipped with advanced DP2 station keeping capabilities, the vessel is purposefully designed to cater to the unique demands of offshore wind development areas, providing the stable platform required to deliver technical studies, surveys and investigations in challenging marine environments.

Newly furbished, with an overall length of 60 metres, 15.6 metres width and a draft of 3.5 metres, the Glomar Supporter is the ideal vessel to deliver a complete package of survey solutions, bringing unrivalled efficiency to offshore operations.

- Long-term (3 year+) charter of multipurpose DP2 vessel.
- Dedicated survey vessel, delivering a versatile and superior quality spread for consistent, industry-leading data capture and reporting.
- Differentiated by technology and equipment to provide synergistic working and flexibility of sensor deployment.
- A multi-tasking survey vessel that can deliver a broad range of solutions from a single mobilisation.
- Bringing unrivalled efficiency and lower operating costs.
- Substantial deck space to accomodate containerised lab facilities for our environmental partners to commence cursory studies offshore, as well as freezer containers for sample storage.

GLOMAR SUPPORTER & XPLORER SURVEY VESSELS



1

Xplorer 18-01 is an autonomous, minimally crewed, hydrographic survey vessel, built for maximum efficiency. With AI-driven remote acquisition and processing, it provides best-in-industry deliverables in shorter time frames.

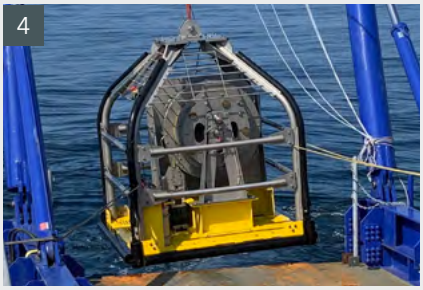
2

Equipped to deploy towed sensors such as SSS, ROTV or 2D-UHR.

3

Work-Class ROV, enabling detailed surveys of areas of interest such as inspection of cable crossings, or archaeological surveys. Deployment with Pilot Assist/RPL following capability.

4



CPT launch for reliable, versatile and efficient sampling of in-situ soil conditions.

5

Dedicated data link enables fast comms to shore for reporting efficiency via data platform and remote ops.

6

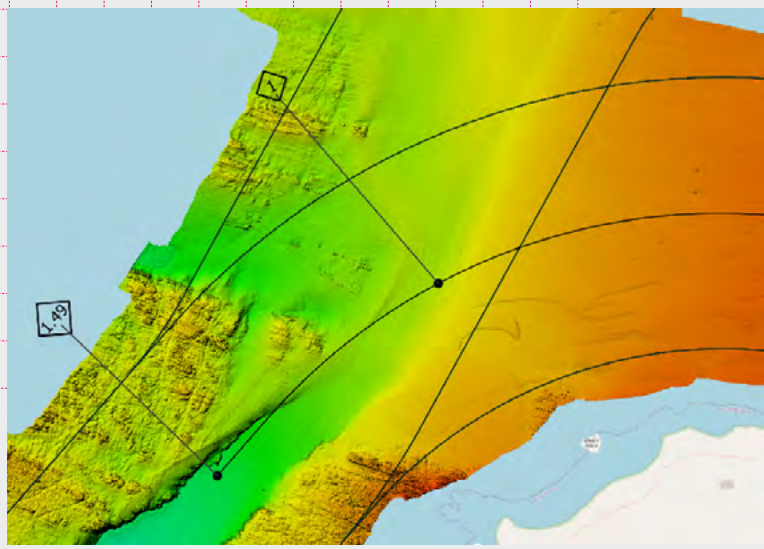
Hull mounted survey sensors enable high quality, repeatable MBES (2x R2sonic 2026) and SBP (1x Innomar Medium-100) data collection.

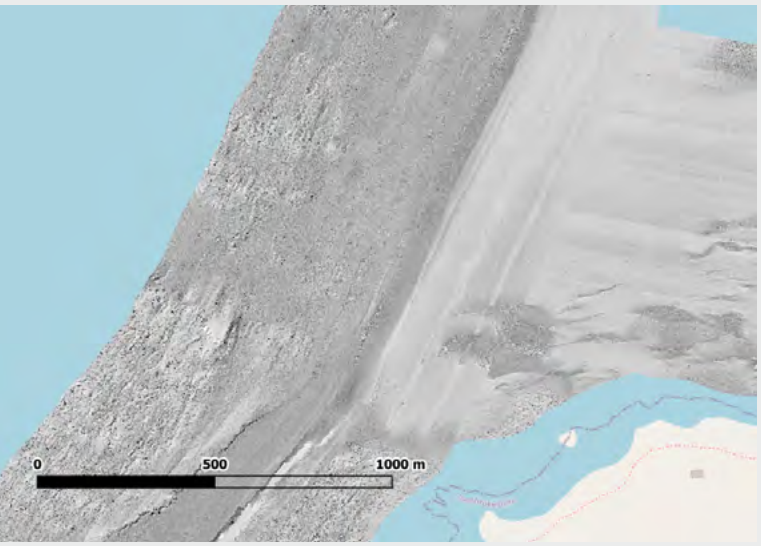
SOLUTIONS

Hydrographic Survey

Whether you are planning a new offshore wind farm development, or monitoring existing infrastructure, understanding bathymetry is a vital task. Failure to track seabed morphology can lead to over-budgeting of infrastructure requirements, or increased costs from remediating defects due to unsuitable foundations or poorly designed cable routes.

We perform seabed mapping from nearshore and hazardous shallow water to deep water environments, using a range of hydrographic surveying methodologies, including multibeam bathymetry, side scan sonar, sub-bottom profiler, 2D-UHR and magnetometry surveys.





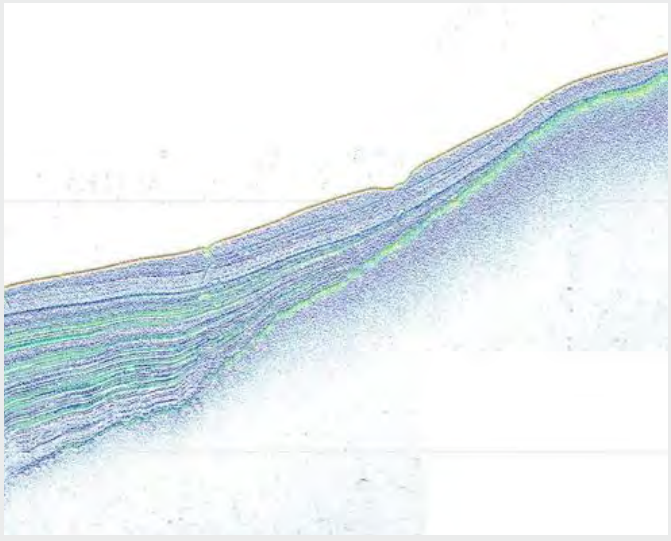
Operated by our highly experienced team of hydrographic surveyors, our innovative solutions are tailored to meet your quality, sustainability, schedule, and cost requirements. Supporting site consenting, pre-construction and cable route surveys, our survey solutions accelerate the acquisition of industry-leading hydrographic data.

- Bathymetric surveys.
- Debris surveys.
- Fixed and floating foundation surveys.
- Cable route and depth of burial surveys.
- Unexploded ordnance investigations.
- Environmental surveys.
- Marine archaeological investigations.

Geophysical Survey

Conducting geophysical surveys at the design and planning stages of your project helps to identify and mitigate hidden hazards which could be faced by offshore project teams and contractors.

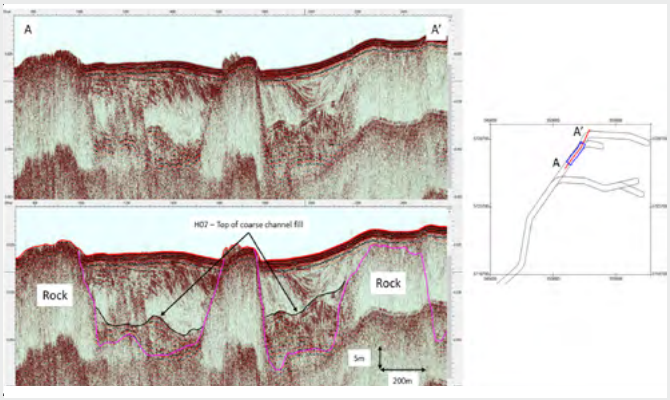
Supporting your offshore wind development activities, we deliver geophysical survey solutions at all water depths, minimising project risk, improving safety and facilitating the route and project design for offshore developers.

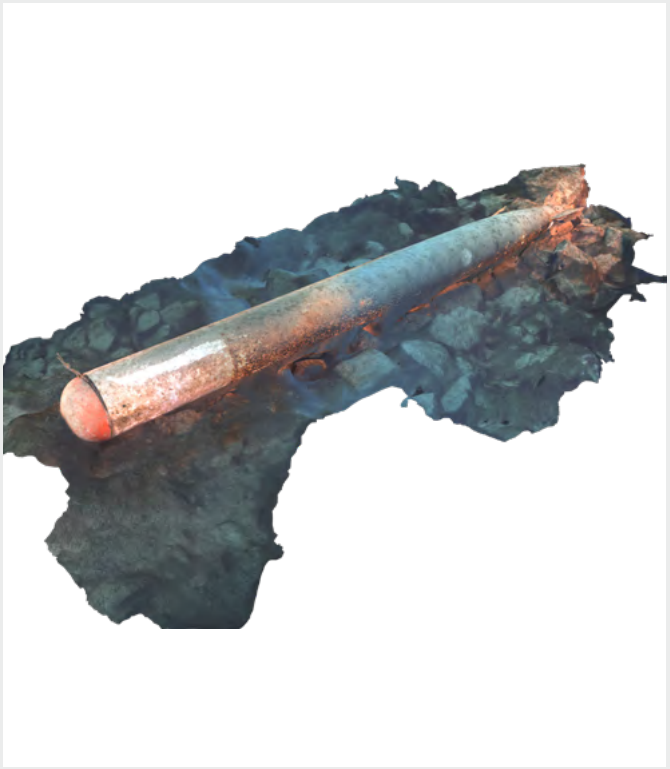


Seismic Survey

We utilise 2D Ultra High Resolution (2D-UHR) seismic survey technologies, providing a detailed picture of sub-bottom structures and shallow sub-surface seismic stratigraphy, which can play an important part in offshore wind farm foundation studies.

Our expertise in seismic data interpretation provides offshore site developers with critical insights required for positioning new turbines securely on the variable sediments and mobile sea floor, helping to reduce costs and extend the lifespan of offshore wind infrastructure.





UXO Identification & Clearance

Unexploded ordnance (UXO) continue to pose a real risk to site developers, contractors and asset owners, even after decades of inactivity.

We are experienced in identifying, investigating and mitigating hazards with precision and expediency.

To thoroughly evaluate the risks presented by potential UXO (pUXO) on or beneath the seabed, we perform accurate and high-resolution geophysical surveys, to ensure that we identify any potential items of UXO (pUXO) at the development site.

Leveraging our suite of industry-leading technology and advanced equipment, our team of experts can identify magnetic gradients and anomalies with precision, as well as sub-bottom profiles, enabling the detection of both ferrous and non-ferrous UXO contamination.

Through our commitment to excellence and use of innovative methodologies, we ensure that the identification of pUXO is an efficient and highly accurate process, safeguarding all stakeholders involved in the project.

Marine Environmental

In supporting the planning, consenting and development and environmental protection across new offshore developments, we understand the importance of recording and monitoring the complete environment.

That is why our integrated survey capabilities are designed to combine the acquisition of physical, chemical, and biological data sets simultaneously.

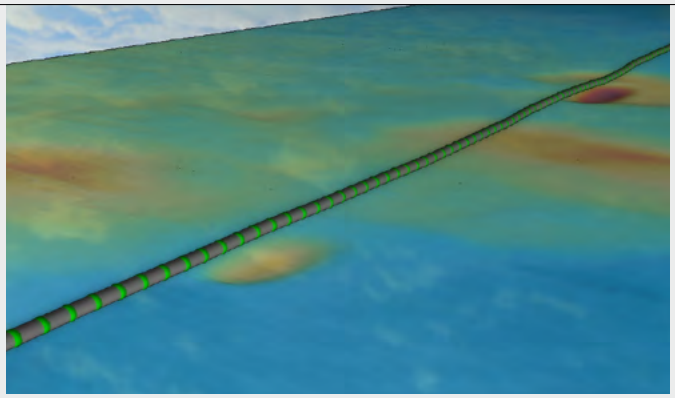
Working with trusted environmental science partners, we offer a broad range of specialisms, delivering industry-leading data insights in a concise report. Our extensive environmental survey solutions range from benthic studies for species identification and abundance, water chemistry analysis exploring dissolved O2, pH and temperature in addition to meteorological observations at the project location.

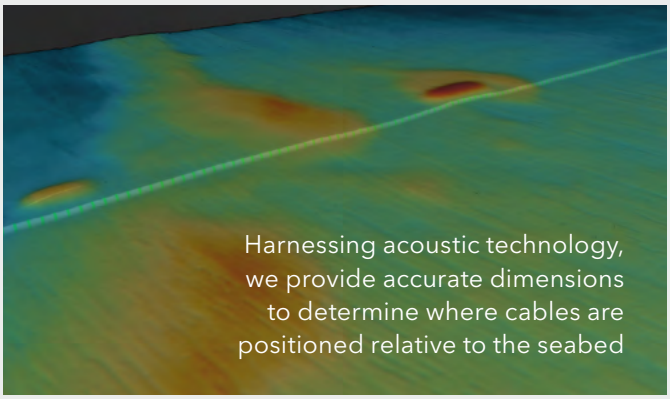
Cable Route Planning

Eliminating uncertainty about offshore subsea site conditions, we help our clients mitigate risk and ensure the long-term performance of their assets. Our technical studies and surveys deliver insights that provide a thorough understanding of offshore wind development areas and cable routes, guiding layout and design.

We specialise in conducting thorough pre-lay surveys, incorporating state-of-the-art geophysical and geotechnical equipment, accompanied by thorough video inspections. Our ultra high-resolution data enables our clients to assess seabed conditions accurately before cable installations take place.

At Beam, we recognise the criticality of these surveys in ensuring the successful deployment and ongoing operation of offshore wind farms. With our expertise and cutting-edge technology, we deliver comprehensive and reliable cable route planning solutions, helping our clients to make informed decisions, and maintain the efficiency and reliability of their offshore wind installations.





Harnessing acoustic technology, we provide accurate dimensions to determine where cables are positioned relative to the seabed

Impact Assesment Survey

Environmental Impact Assessment (EIA) surveys play a crucial role in assessing the value and suitability of offshore wind development sites. Our surveys offer a comprehensive evaluation of the potential environmental effects of developments, aiding in sustainable decision-making and minimising ecological harm.

Our surveys provide a systematic examination of the development site's environmental components, including marine habitats and aquatic ecosystems. By identifying sensitive areas, we enable developers to better design and implement mitigation measures to protect biodiversity and ecosystem functioning.

Contributing to the optimisation of project design and layout, our surveys aid developers in identifying potential hazards, such as geological risks or navigational challenges, so that they can modify their plans to enhance safety and efficiency.

Geotechnical Survey

To provide further understanding of the composition of sediments at and below the seabed, geotechnical sampling is undertaken. Cone Penetration Testing (CPT) provides in-situ measurements of a soil's properties, while a vibrocorer is used to provide physical sediment samples that can be analysed in further detail.

Geotechnical analysis supports ground-truthing of geophysical data, providing greater certainty of physical seabed properties across the survey area. Running geotechnical operations alongside hydrographic survey, geophysical survey and other work packages improves value through fewer mobilisations and acquisition synergies.

Work-Class ROV

SEAEYE LEOPARD

Exceptionally powerful, surprisingly compact, all-electric.

- Drastically increases the ROV operating window, achieving lower operational costs.
- Lower energy consumption and reduced risk of contamination compared to traditional ROVs.
- Lighter, smaller and more agile for enhanced payload and performance – beneficial for high current, shallow water ops.
- Cutting-edge DC power system, driving efficiency and a lower carbon footprint.
- Operating with superior precision in 3 knot water currents.
- Adaptive onboard flight control, interfacing seamlessly with our SubSLAM X2 and machine learning technologies.
- Paired with an all-electric LARS.
- Low noise pollution, resulting in less disturbance to marine life.

XPLORER 18-01

Xplorer 18 is an autonomous, minimally crewed, hydrographic survey vessel that effortlessly supports near and offshore campaigns. Offering a new concept, Xplorer 18 has been built from the start to be completely uncrewed, yet retains the necessities to support a lean crew; efficient operations today supported by the technology of the future.

Whether working solo or paired with another vessel in the fleet, Xplorer 18 maximises efficiency with 10-day endurance, permanently fitted sensor spread and a gyroscopic stabiliser.

Mobilised with a dense, AI driven, remote computer cluster, Xplorer is its own floating data acquisition and processing powerhouse. Our internally developed AI pipelines speed up processing of critical survey datasets, on site, at the edge, to shorten delivery timeframes.

Near and offshore force-multiplier for hydrographic survey scopes:

- 10-day duration in 24-hour operations mode.
- Permanently mobilised sensors:
  - Hull mounted R2Sonic 2026-V MBES.
  - Hull mounted Innomar SES Medium USV SBP.
  - Sonardyne Ranger 2 USBL on retractable pole.
  - Edgetech 4205 SSS.
  - Applanix POS MV.
  - Flexible back deck arrangement to support a variety of survey and offshore scenarios.
- Shallow draft and dual IPS drive provide excellent manoeuvrability during nearshore operations.
- AI Driven remote data acquisition and processing, providing best-in-industry deliverables in shorter time frames.

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