Vysus Group

Supporting investors, developers, operators and key contractors as a multi-disciplined engineering and technical partner

Powering your offshore wind project

Confidence at every turn

From development bids to rotating blades, the seabed to the shoreline and our streets, we'll help you succeed, safely and effectively.

Move forward swiftly with insightful solutions

Maximise outcomes, opportunities and performance

Reduce risk – technical, commercial and operational

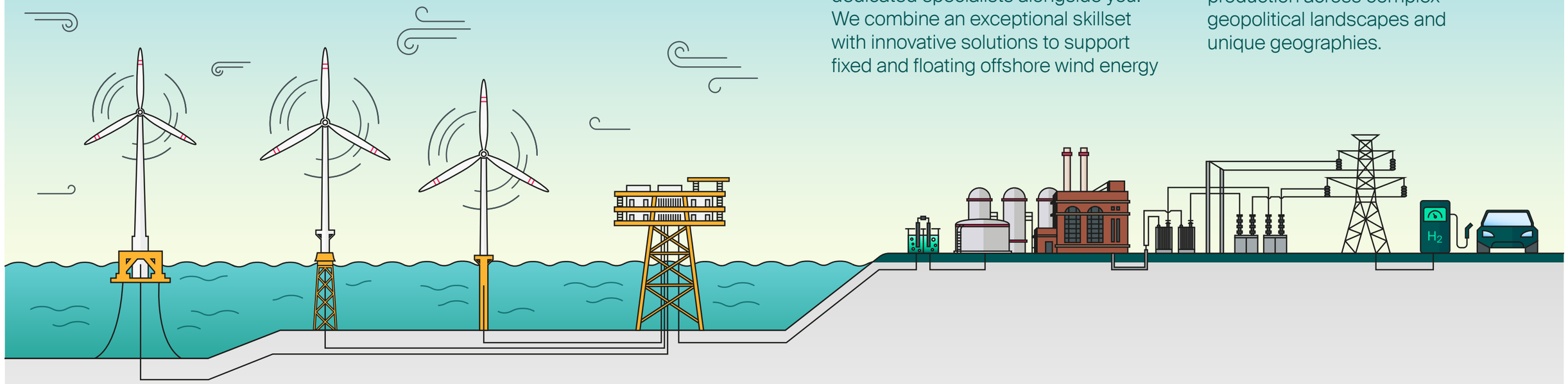
Progress with total technical integrity

We're here for a winning offshore wind industry

Vysus Group brings deep engineering and technical insight, and hands-on consulting, to your team. Across all phases of offshore wind and its supply chains, we're ready to support you through the complexities you face, help manage your risk, underpin your decision making and optimise what you do next.

Helping you commercialise clean energy

Scope it, develop it, build it, connect it and keep on operating it fully with our dedicated specialists alongside you. We combine an exceptional skillset with innovative solutions to support fixed and floating offshore wind energy and emerging technologies, including integrated hydrogen production across complex geopolitical landscapes and unique geographies.



Stage of development

Secure site	Feasibility	Initial development	Advanced development	Project execution	Operations and maintenance	Decommissioning
1-2 yrs	Approx. 3-5 yrs	Approx. 2-3 yrs	Approx. 1-2 yrs	Approx. 2-3 yrs	25-35 yrs	Approx. 2-5 yrs

Covering all aspects of the offshore wind business

From initial bid and site selection through to operation, let's find the solution.

Feasibility

- Bid consulting
- Site feasibility and pre-auction assessments
- Onshore power system and risk analysis
- Grid connection strategic assessments and due diligence
- Underwater acoustic site assessments
- Site investigation management
- Survey and GeoEngineering consulting
- Offshore client representative (OCR) services
- Feasibility assessments
- Foundation or anchoring

Development

- Levelised cost of electricity (LCOE) cost modelling and bid consulting
- Grid connection capacity and connectivity assessments including effect on robustness of onshore grid
- EIA foundation and cables assessment
- Risk assessment of site design and systems
- Pre-assessment of underwater noise from UxO detonation

Construction

- Design verification for structural integrity and commissioning
- Substation noise and vibration consulting
- Onshore connectivity, grid analysis & due diligence with OEMs & EPC contractors including assessment of effect on robustness of onshore grid
- Environmental and sustainability consulting
- Risk management across HSEQ
- Cable installation and quality control

Operation

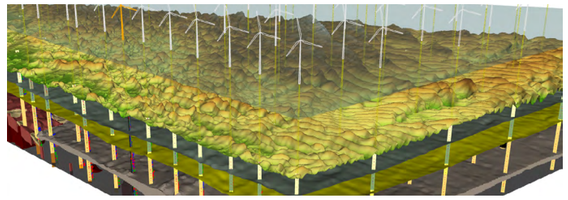
- Risk management across HSEQ
- Dynamic positioning and risk of collision
- Underwater noise and vibration consulting
- Assessment of integrity and maintenance of the turbines
- Optimisation of equipment

Decommissioning

- Risk management across HSEQ, proven in the oil and gas sector

Benefit from multi-disciplinary minds

Working in partnership with you, we solve complex challenges for offshore wind financiers, developers and operators. Our track record is second to none. Our disciplines cover all of the industry's core areas. Our teams have supported the delivery of some of the world's most ambitious renewable projects.



Survey and GeoEngineering

Understand and manage your project's seabed and ground conditions, from initial feasibility, development, design and construction stages through to operation and maintenance and, ultimately, decommissioning.

Our solutions cover geological, geophysical, geospatial and geotechnical engineering, offshore survey and positioning, mapping and GIS, ground modelling, cable installation and supervisor/OCR services. They are as much about favourability and cost impact as feasibility.

Service benefits

- Avoid subsea hazards and delays
- Full understanding of ground condition risks and mitigation strategies for your offshore installation and operations
- Reduce overall project risk, helping to lower CAPEX

Noise, vibration and structural dynamics

Use our expertise in underwater noise and vibration modelling and predictions, trouble-shooting and abatement solutions.

Our services include assessments of underwater noise at the feasibility stage and during construction to determine environmental impact. We also provide substation consulting for working environments, advice on turbine structural dynamics and airborne noise predictions for near-shore assets.

Service benefits

- Meet environmental requirements efficiently
- Minimise noise to safeguard personnel and improve working conditions
- Avoid expensive retroactive noise and vibration control

Risk management

Manage risk throughout the lifecycle of your assets and infrastructure, from protecting lives and the environment to asset performance, market dynamics and contractual and regulatory requirements. Our expertise covers risk analysis and management, consequence modelling, human factors, reliability and asset performance optimisation, and emergency preparedness.

Service benefits

- Identify and evaluate possible accidental events
- Identify and assesses major risks
- Develop optimum risk prevention and mitigation strategies

Asset management

Operate your offshore wind farm safely and cost effectively with our risk-based approach to asset integrity and maintenance optimisation. Our specialists also support with technical due diligence when acquiring an asset or investing or divesting in one, as well as with concept design, structural integrity, corrosion consulting and engineering, and asset life extension.

Service benefits

- Improve asset availability
- Avoid unplanned downtime
- Optimise maintenance and inspection schedules, with longer intervals between turnarounds
- Reduce OPEX and CAPEX and increase profitability

Environment and sustainability

Power the transition to clean energy by reducing project risk and optimising the environmental performance of your renewable assets. Our specialist support includes:

- Developing an effective energy management (EnMs) system
- Quantifying the integrity of GHG emissions data and independently verifying reporting
- Providing an accurate, secure emissions tracking solution with Energy Transition Databox
- Helping to decarbonise operations through asset management consulting, full lifecycle assessment, concept selection, optioneering and design appraisal, EIAs and BAT assessments, journey planning and logistics, and continuous improvement plans
- Supporting integration with electrification of offshore infrastructure, green hydrogen and carbon capture, utilisation and storage (CCUS)
- Carrying out environmental and safety (E&S) due diligence to review any potential environmental and safety risks associated with business activities

Grid connection onshore

Determine the feasibility of your project's connection and, in an increasingly constrained grid environment, support your project through planning, construction and commissioning to achieve the most efficient electrical connection.

We also assist OEMs and EPC contractors to bring their new technologies to market for more effective generation projects, and carry out due diligence reviews of wind and solar farms to support transaction assessments.

Service benefits

- Manage project risks relating to technology, costs and timescales
- State-of-the-art strategies to streamline the grid connection process
- Demonstrate performance against grid code requirements
- Tailored technical solutions to improve project outcomes
- Keep on supplying stable energy with our power system reliability software, Promaps™

Make decisions backed by expertise and insight

60 GW+

of offshore wind energy supported by our specialist teams since the sector's beginnings

4,000+ days

as supervisors and OCRs (average)

15,000+ km

of submarine cable projects since 2004

3,000+ projects

in UK, European, US and Asia-Pacific waters

Examples of how we help globally

Supporting a successful US wind bid

Client challenge

To determine which area to build an offshore wind farm, our client required a reliable site assessment.

Our support

Our Survey & GeoEngineering team conducted a geological, geotechnical and met-ocean study to assess the feasibility of four separate blocks within the license area for a new offshore wind farm. Our help included:

- characterising the seabed and sub-seabed conditions using available hydrographic, geotechnical and geophysical datasets
- informing scopes of work for future offshore surveys and lease-area favourability zoning
- shaping preliminary foundation-sizing assessments
- formulating potential development costs for each of the blocks, with a detailed feasibility assessment of the ground, wind and met-ocean conditions.

Result

We recommended viable foundation options, with some high-level design ranges. Our analysis, insight and recommendations formed the basis of our client's evaluation, underpinning their successful bid.

Registering an Australian wind energy project

Client challenge

To register an ambitious wind energy project as effectively as possible with the network operator and Australian Energy Market Operator (AEMO). This needed to be completed before generator commissioning could begin.

Our support

Our Grid and Power Systems team carried out technical studies to develop the plant configuration and demonstrate it met acceptable performance standards. Our help included:

- modelling the performance of the wind farm and tuning control settings with the OEM;
- developing cost-effective solutions for additional reactive power support required by the grid operator; and
- negotiating study outcomes and required performance with the network operator and AEMO.

Result

Our team successfully helped the client meet the relevant requirements for registering the wind energy project in the National Electricity Market as a prerequisite to commissioning.

Reducing underwater noise for a Danish offshore windfarm

Client challenge

COWI A/S needed a comprehensive underwater noise study to help develop a new offshore wind farm.

Our support

Our Engineering Dynamics team built a site-specific model, providing a detailed representation of the multi-layered seabed, sound-speed profile and bathymetry. Our help included applying a parabolic-equation model along several radial transects to derive cumulative noise metrics against distance. The work was delivered in a qualified, timely way to meet national guidelines, which safeguard moving sea animals.

Result

Our study was an essential element in supporting our client's environmental impact assessment (EIA) for the development.

Investigating a French site for floating wind power

Client challenge

LEFGL required a study to develop a pilot floating offshore wind farm. The proposed site for this pioneering project was located approximately 16 km off the coast of the Occitanie region, France.

Our support

Using our extensive specialist experience, we characterised the site's subsea ground conditions, supported offshore site investigation and provided geotechnical engineering solutions. Our initial report updated the understanding of the site's geology by analysing geophysical data and geological conditions from a preliminary survey. We then developed a preliminary 3D ground model. Our support covered four stages:

- geotechnical survey strategy
- defining technical specifications
- investigation technical support
- ground modelling (3D) and an interpretative report.

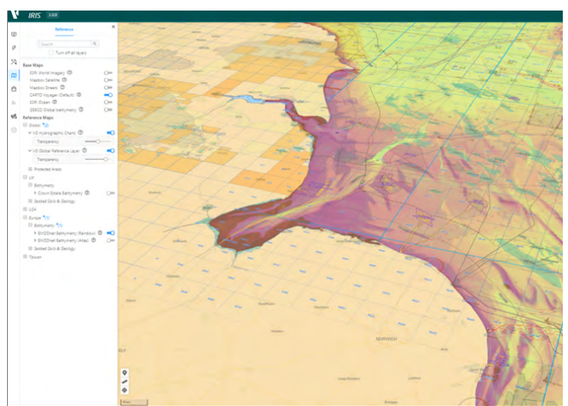
Result

Our technology and offshore support ensured that the four floating 6.33MW wind turbines were successfully secured.

Furthering your success: our proprietary software

Energy Transition Databox for end-to-end emissions tracking and reporting

Promaps™ risk management software for power system reliability



IRIS survey project management, mapping, vessel tracking, metocean and data streaming web technology

CableQC software to assess the performance of cable installation vessels, lay and trench systems

Power tomorrow with Vysus Group

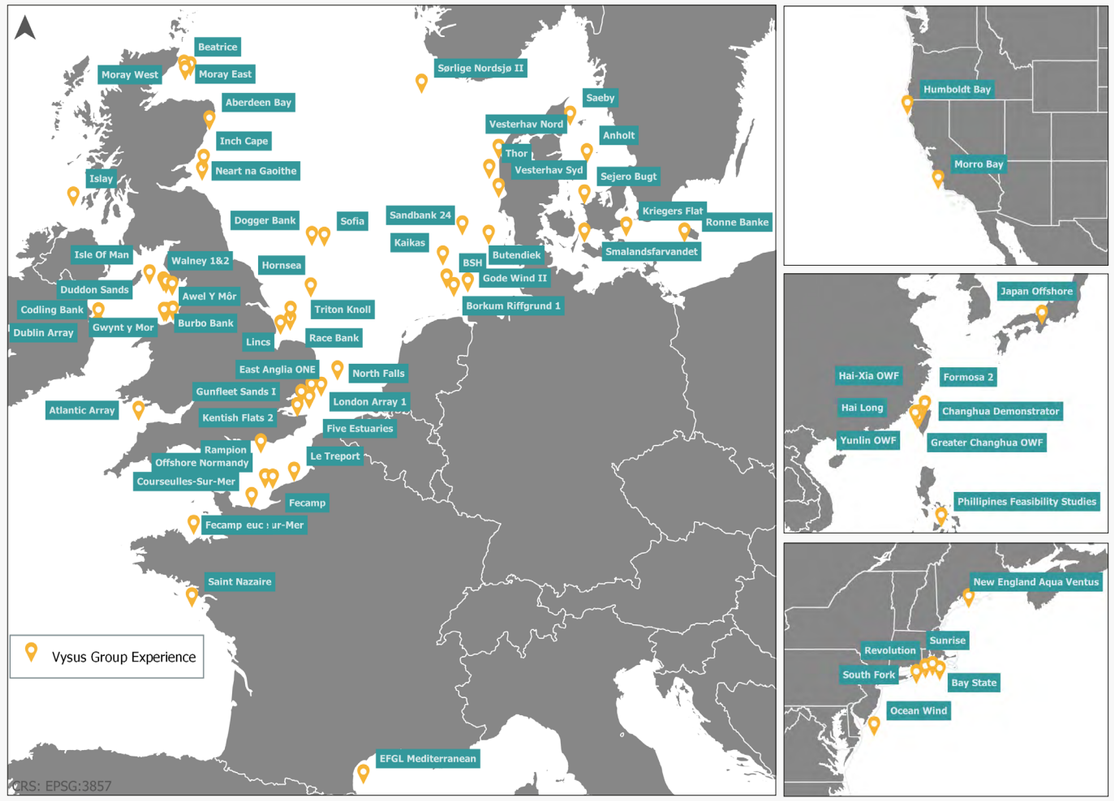
Vysus Group is a trusted engineering and technical consultancy. With an 80-year heritage and over 650 people, our clients benefit from our specialist asset performance, risk management and project management services globally.

From the deep waters of the North Sea to the straits of Taiwan, we support safe and profitable generation of offshore wind energy.

80 year
Heritage

400
Employees worldwide

Our global offshore wind experience



To find out how we can help power your offshore wind project, just get in touch.

+ 44 1224 057 777
info@vysusgroup.com
vysusgroup.com

For a full list of our locations, please visit here.