

Reflex Marine Ltd.

JAVELIN Anchor Development Project



Project Lead: Reflex Marine Ltd.

DESNZ Grant: £1,012,000

Innovation overview

The JAVELIN is a deep-set drilled anchoring system designed to achieve stability and high angle mooring loading in a diverse range of geological seabed conditions, which would be typical on large floating wind sites. JAVELIN is particularly well suited to managing hard or rocky seabeds.

JAVELIN is installed in a pre-drilled borehole utilising proven conventional (surface driven) offshore drilling techniques. This differentiates it from other developing anchor systems which rely on complex robotic drilling machinery being placed on the seabed.

JAVELIN is installed and locked into the borehole. By accessing high strength rocks, at depth, a compact low mass anchor can resist exceptionally high loads. JAVELIN will provide a robust and reliable anchoring solution for floating offshore wind and other marine applications.

Potential benefit to the industry

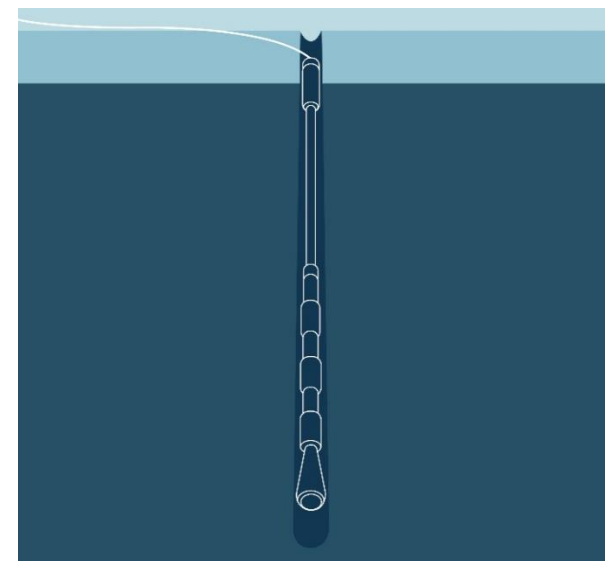
JAVELIN enables the deployment of high angle, taut mooring systems, such as tension leg platforms, critical to large scale commercial viability, while also reducing mooring footprint and seabed disturbance.

JAVELIN also enables developers to unlock high-energy offshore wind sites with complex seabeds, providing a secure and cost-effective anchoring solution. By addressing limitations associated with conventional mooring and anchoring technologies, JAVELIN enhances project feasibility in deeper waters and rocky seabeds, expanding the viable deployment range for floating wind farms.

“ Our Department for Energy Security & Net Zero (DESNZ) funding has played a pivotal role in advancing the JAVELIN anchor technology towards commercialisation, allowing us to significantly refine the design, strengthen its geotechnical validation and engage with key industry stakeholders. We are feeling very confident as our first offshore trial approaches, JAVELINs combination of adaptability, efficiency and sustainability offer a game-changing solution. ”

Philip Strong

CEO & Technical Director at Reflex Marine

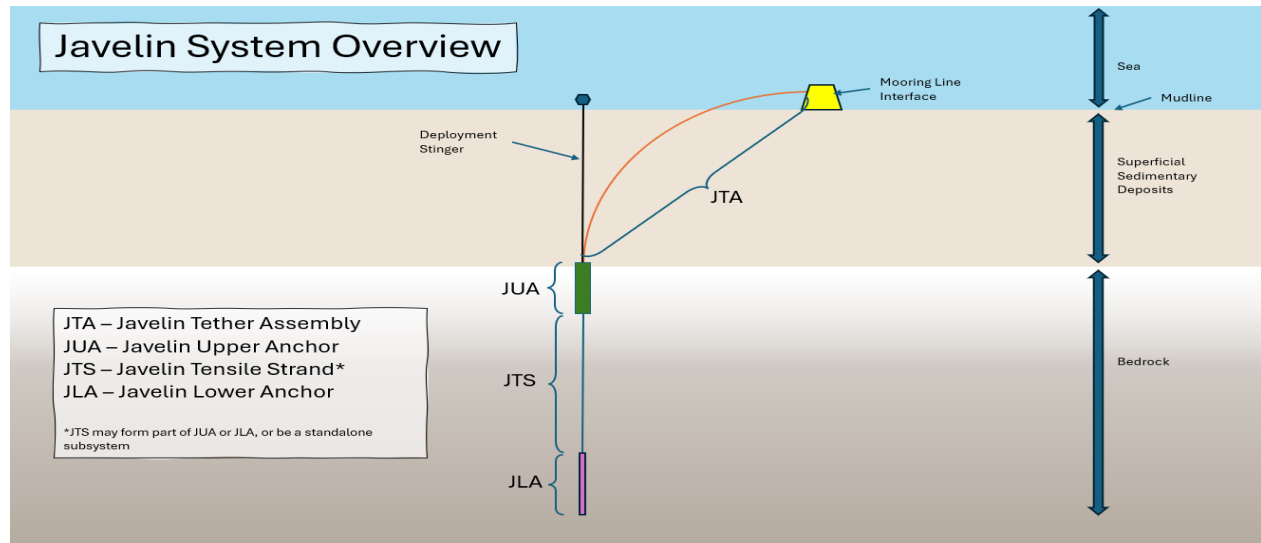


Results

- **Engineering advancements:** Further refinement of the JAVELIN anchor's design, optimising its performance across a range of seabed conditions.
- **Geotechnical validation:** Continuation of a structured Technology Qualification (TQ) process to align with industry certification standards.
- **Prototype development:** Successful JLA 1:1.5 scale onshore trials in known geology. Furthered progress on JAVELIN Anchor 'system' with the fabrication of a 1:10 scale Full System Test Rig for experimental trials.
- **Project specific anchor design:** Detailed anchor designs (including numerical modelling) and cost models have been developed for several UK and European UK offshore sites.
- **Industry engagement:** Strengthening collaboration with key industry stakeholders, including floating wind developers and regulatory bodies. Test sites identified for nearshore offshore trials in Q1 2026.

Outcomes and benefits

- **Technical readiness:** Enhanced confidence in JAVELIN's ability to provide adaptable, high-performance anchoring solutions for floating offshore wind.
- **Market positioning:** Increased visibility within the floating wind sector, with positive engagement from potential customers and investors.
- **Pathway to commercialisation:** The DESNZ funding has been instrumental in de-risking JAVELIN's development, paving the way for full-scale offshore trials and commercial deployment.



What happens next?

- Full-scale prototype: Manufacturing and deployment of full-scale prototype, with offshore trial targeted for Q1 2026.
- Site-specific optimisation: Detailed geological assessments and numerical modelling of prospective deployment sites, ensuring diverse seabed adaptability.
- Certification & regulatory approvals: Finalise compliance pathways with certification bodies, further validating JAVELIN's geotechnical and structural performance.

Contact information

Name: Claire Haines

Email: claire.haines@reflexmarine.com

The Floating Offshore Wind (FOW) Demonstration Programme is a competitive funding initiative supporting the development of floating offshore wind technologies. Through the scheme, the government awarded £31.6 million in grants to 11 projects across five challenge areas: dynamic cables, anchors and moorings, floaters and foundations, industry-defined innovation, and integrated demonstration of multiple technologies. These projects aim to showcase innovative technologies to reduce costs and accelerate the deployment of floating offshore wind turbines.

Funded by:

Supported by:

