



Driving down the cost of and delivering offshore renewables projects

Xodus Group's technical expertise and commercial insight help to deliver efficient, cost-effective offshore renewables projects.

Finding experts who can deliver authoritative, in-depth advice and analysis at the conceptual stage is not easy. It is even harder to find non-deskbound experts who combine smart thinking with practical experience of hands-on engineering, and the ability to balance risk and financial pressures.

Fortunately Xodus offers a reassuring combination: the analytical tools and methodologies to scope and model a project, together with the practical expertise to support project managers during the project lifecycle. Throughout, our experts help to maintain the focus on real-world economics and your specific business goals.

Integration

What sets Xodus apart is our integration. At each stage in the process we can rely on multidisciplinary input from in-house professionals who have built up years of experience in the renewable and wider offshore energy industries covering safety and risk, consenting and environmental impact, geotechnics, subsea engineering, offshore structural engineering and integrity management and due diligence.

Our experts also work with a network of internationally respected specialists. This incisively strategic approach unites all these skills into a single, highly refined instrument. Every new project is tackled from a multi-faceted perspective –

a combination of breadth and depth unique in the industry.

Creating focus

Any major offshore project is fraught with challenges. The range of possibilities is often overwhelming, the conceptual framework alone equivalent to a vast jigsaw of alternative options.

Xodus helps clients manage risk and focus on the key issues – not just the important technical and commercial concerns, but also factors such as corporate governance and supply-chain management. Our specialists use a range of in-house decision-making tools to facilitate structured engineering judgement, from interactive modules and

workshops to advanced simulation and modelling techniques. The result? A detailed breakdown of project requirements that never loses sight of the big picture.

Delivering value

Our focused project management, supported by our quality management system, has been refined throughout the delivery of millions of manhours of project work delivered across the offshore sector. 'Efficient', 'cost-effective', 'timely', 'quality', and 'communicative' are watchwords of our attitude to delivering value. That's why Xodus is trusted by offshore renewables developers, offshore technology developers, research institutions, investors and public-sector institutions for authoritative analysis and advice.



Experience trusted by both developers and suppliers

The Carbon Trust offshore wind accelerator research programme

Leading an expert consortium, Xodus produced the new Cable Burial Risk Assessment (CBRA) methodology guidelines recently issued to the offshore wind sector. The work included a review of site investigation survey methods and a cost-benefit analysis of the CBRA approach during the project development phase. We are currently investigating cable transportation and installation with a view to highlighting the most weather sensitive processes and reducing downtime.

Additionally, Xodus has developed a new approach to structural integrity management, starting with the basis of design, incorporating fabrication, installation and operation. We assessed the cost saving potential of condition and response monitoring technology.

Finally, our metocean experts have developed a new statistical tool for analysing complex time domain scenarios associated with optimised vessel and access system design and performance. This approach considers the latest methods for characterising vessel motion and provides a state-of-the-art, user-friendly, assessment tool.

Consenting tidal projects

Xodus has been retained as Environmental Impact Assessment (EIA) co-ordinator for a number of tidal developers including:

- › MeyGen Limited Phase 1, Pentland Firth
- › Tidal Ventures Limited, Torr Head Tidal Array, Northern Ireland
- › Minesto AB Deep Green Holyhead Deep, Wales.

Xodus is responsible for undertaking / coordinating all technical EIA studies, production of the Environmental Statement (ES) and Habitats Regulations Appraisal (HRA), production of stakeholder engagement strategies and organisation of consultation.

Our environmental scopes are often extended to engineering support of cable studies and project design.

Hywind project, Statoil ASA

Xodus was the EIA co-ordinator for the project which was successfully consented in October 2015. Our engineers also reviewed ground conditions and landfall options, feeding into survey requirements and the application of a reliability engineering approach to assess risks to surrounding assets.

NorthConnect Norway – Scotland, interconnector route feasibility study

Xodus conducted a cable route selection desk study including an environmental and engineering constraints screening and selection exercise. Identification and evaluation of subsea cable route options concluded with a preferred option. The package was executed with Geographic Information System (GIS) constraint mapping, technical route engineering, cost modelling, option screening and selection.

Scottish Enterprise

Xodus has delivered a review of the demand for open water sites for marine energy devices, an assessment of the demand for steel and a series of technical events focused on offshore wind topics.

Offshore wind round 3 projects

Xodus has delivered work in the UK ranging from early concept engineering and management through to detailed design support. We have formed framework agreements with major developers to provide a wide range of fully integrated services and support staff on long term secondment. In addition to several UK projects, we have worked on fixed and floating projects across Europe and provided training in China.

Xodus Group's clients include:

Offshore renewables developers

- › Statoil ASA
- › DONG Energy
- › EDP Renováveis
- › Repsol Nuevas Energías UK
- › RWE
- › ScottishPower Renewables
- › SMart Wind Limited
- › SSE Renewables
- › Statkraft

Offshore technology developers

- › ANDRITZ HYDRO Hammerfest
- › Aquamarine Power
- › Atlantis Resources Corporation
- › MeyGen Limited
- › Minesto AB
- › OpenHydro
- › Pelamis Wave Power
- › Rolls Royce
- › Tidal Generation Limited (TGL)
- › Voith Hydro Wavgen

Investors

- › BNP Paribas
- › Dexia
- › Rabobank

UK government agencies / others

- › Department of Energy & Climate Change (DECC)
- › European Marine Energy Centre (EMEC) Ltd
- › Office of Gas and Electricity Markets (Ofgem)
- › Highlands and Islands Enterprise
- › Marine Scotland / Scottish Government
- › Scottish Enterprise

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