Floating Liquefied Natural Gas (FLNG) is now providing a realistic development option for remote or previously stranded offshore gas reserves. However, many companies are finding the selection of an optimal gas monetisation concept, taking into account all parameters (subsurface through to market) and acquiring quality data and necessary insights for clear, robust, decision-making, a daunting task.

Xodus is an independent, international energy consultancy with an excellent track record of providing development planning and concept screening to support investment decisions. We offer a uniquely integrated service based on our ability to provide subsurface, wells, process and facilities, subsea, environmental and commercial support. Our highly experienced engineers and consultants provide extensive knowledge of the oil and gas asset lifecycle – from concept through to decommissioning.

Xodus’ expertise covers technical, commercial and contractual advisory support as well as comprehensive, independent technical due diligence support to aid investment decisions. In recent years we have helped numerous operators make critical investment and development strategy decisions for offshore gas assets. This has enabled us to gain deep insight into the key design and cost issues associated with FLNG and onshore Liquefied Natural Gas (LNG) opportunities, in addition to alternative gas monetisation options.

Xodus is also able to call upon the extensive knowledge and experience of:

› Chiyoda Corporation, majority shareholder in Xodus, a global LNG player involved in Front End Engineering Design (FEED) and Engineering Procurement and Construction (EPC) for more than 40% of the world’s LNG plants for the last 10 years as well as the design of several FLNG projects to date

› Orwell Offshore, a leading team of naval architects with whom Xodus has collaborated closely on several FLNG and Floating, Production, Storage and Offloading (FPSO) projects.

Our team based in the City of London is conveniently located for oil and gas institutions, private investors, insurance companies and law firms.

Experience

Since 2005, Xodus has delivered over 7,800 technical and commercial projects. Recent FLNG / LNG focused support includes:

› Due diligence to support a decision regarding a farm-in opportunity in East Africa involving extensive upstream assets and onshore LNG

› Development plan investment decision support for FLNG in the Eastern Mediterranean

› Exploration and development planning (LNG / FLNG) for a small operator with a large West Africa asset

› Various enhancement projects at an LNG storage facility, UK.
Our global team of engineers and specialists includes:

**Subsurface**  
Andrew Sewell heads the subsurface team, covering the oil and gas asset lifecycle integrating geology, geophysics, petrophysics, reservoir and petroleum engineering. The team has supported exploration and development of many gas fields underpinning gas monetisation projects.

**LNG Process Optimisation / Cost-schedule Verification**  
Moritaka Nakamura represents the Technology and Engineering Division of Chiyoda Corporation covering LNG plant engineering, design and commissioning. He has been Process Manager / Technical Advisor in numerous projects in Indonesia, the Middle East, Russia, USA and Brazil.

**Subsea Architecture**  
David Heath heads the subsea team, covering all aspects of subsea architecture, subsea processing, controls / umbilicals and risers through all stages of concept and project development. The team has significant experience in deepwater gas projects in support of FLNG / LNG projects.

**Flow Assurance**  
Simon Allison leads the flow assurance team. He has extensive LNG and gas system experience on projects through the design phases, commissioning and operations. Larger projects include North West Shelf Venture LNG and Pluto LNG in Australia.

**Process & Facilities**  
Marc Young has been involved in numerous liquefaction related projects and FLNG specific activities, including a Flex LNG PreFEED and FEED verification and the development of a portfolio of FLNG processes for Samsung Heavy Industries. He has also been involved in several novel technology applications.

**Computational Fluid Dynamics**  
Mike Lewis is a recognised Computational Fluid Dynamics (CFD) expert. He has worked on a range of LNG related projects including Aker Yards LNG tanker design, Ichthys LNG, Dragon LNG, Lloyd’s Register (on integrity of vessels) and Petronas FLNG2.

**Naval Architecture / Marine Engineering**  
Dr Ed Ballard oversees Orwell Offshore’s naval architecture group. He has led FLNG studies involving hullform development and vessel sizing, motion assessment including methods for assessing second order roll effects, weathering, active heading control strategies and offloading operability studies.

**Environmental and Social Impact**  
Nigel Blake leads the environmental engineering and socio-assessment team and has been involved in LNG projects (including Grain Phases 2 and 3, South Hook, GNL Quintero, Peru LNG and DFTG Wilhelmshaven) and several offshore projects.

**Gas and LNG Market Analysis**  
Ashutosh Shastri has gas commercialisation, contract structuring / renegotiation and governmental advisory / energy policy experience and provides crucial input into assessment of LNG related projects. He is an advisor to the UN Gas Centre Geneva and a member of several global committees and working groups of the World Energy Council.

**Investment Profiles and Decision Analysis**  
Chris de Goey is a manager in Xodus’ Advisory team. He has more than 20 years’ experience in combining commercial, process and technology solutions for International Oil Companies (IOCs) and start-up companies. Chris has led numerous asset evaluation studies and competent person reports.

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