

wood.

Subsea and Export Systems

The world's leading independent provider of subsea and export systems, engineering and technology solutions.



Wood is a global leader in project delivery, engineering and technical services, providing efficient, integrated solutions across the asset life cycle in multiple sectors. We are proud of our rich heritage which underpins our unrivalled breadth and depth of capability. We employ people with the brightest minds and the sharpest skills, who use our leading-edge technology to help our customers succeed.

160+
year heritage

60,000
employees

60+
countries

Our differentiators include our extensive range of services, the quality of our delivery, the passion of our people and our unique culture. True to our values, we work in an open and transparent way; a committed partner to our customers, supply chain and the communities we work with.

Our values set the tone for what is important in our business, they are the essence of our identity and fortify everything we do.

Care

Working safely with integrity, respecting and valuing each other and our communities

Commitment

Consistently delivering to all our stakeholders

Courage

Pushing the boundaries to create smarter, more sustainable solutions



"Each and every individual in our business has the ability to make a significant impact to our safety delivery. Safety is what we care about most and being safe means looking out for yourself and showing care for your colleagues. Keep safety at the heart of every conversation you have."

Robin Watson,
Chief Executive

Our expertise takes subsea projects to new depths and helps you tackle new frontiers.

Our unique combination of technical expertise, responsiveness and engineering innovation enables us to offer our customers the full spectrum of subsea project capability. Our track record has been honed across a breadth of projects, some in particularly challenging locations or environments. Our experience means we can adapt our capabilities and apply our skills successfully across related markets. With fully integrated project delivery, our global multi-discipline teams provide a flexible and sensible approach to all subsea programmes.

We leverage the latest digital solutions, in areas such as asset integrity, simulating offshore marine engineering and optimising project delivery. Focused on value-added solutions, we ensure consistent and efficient engineering delivery every time.

With extensive experience and in-depth knowledge of marine and coastal infrastructure we support any equipment that works in, or under the water. Risers, pipelines, cables, jetties and terminals are all areas where we lead in design, delivery and operation.

Broad experience

Our track record of engineering stretches from deepwater engineering beyond 4,000m, to some of the longest pipelines in the world. We combine world-class design with extensive practical delivery expertise to produce effective subsea engineering solutions which enhance project value.

The depth of our subsea experience applies to renewable energy. We are at the forefront of the marine and offshore renewable industries. We provide technical rigour for our customers in the areas of offshore design and project management; subsea cable and subsea infrastructure design and installation management.

Leading in technology development and industry guidance, we pioneer new approaches and collaborative joint industry projects which continually push industry-wide improvements.

Engineering design and project management

We provide technical expertise and engineering innovation to any subsea project from production to transmission.

Simple solutions

We are driven to create and sustain value in subsea and export systems projects and we do this by simplifying the complex issues faced by our customers.

We draw upon decades of knowledge to improve our future design and project delivery. We take a standardised approach, where applicable to reduce cost, improve schedule and mitigate risk for customers.

Bespoke approach

That same wealth of knowledge means we also create bespoke solutions to solve our customers' complex engineering challenges. We thrive on problem-solving, always looking for the best and most suitable answers to your problems.

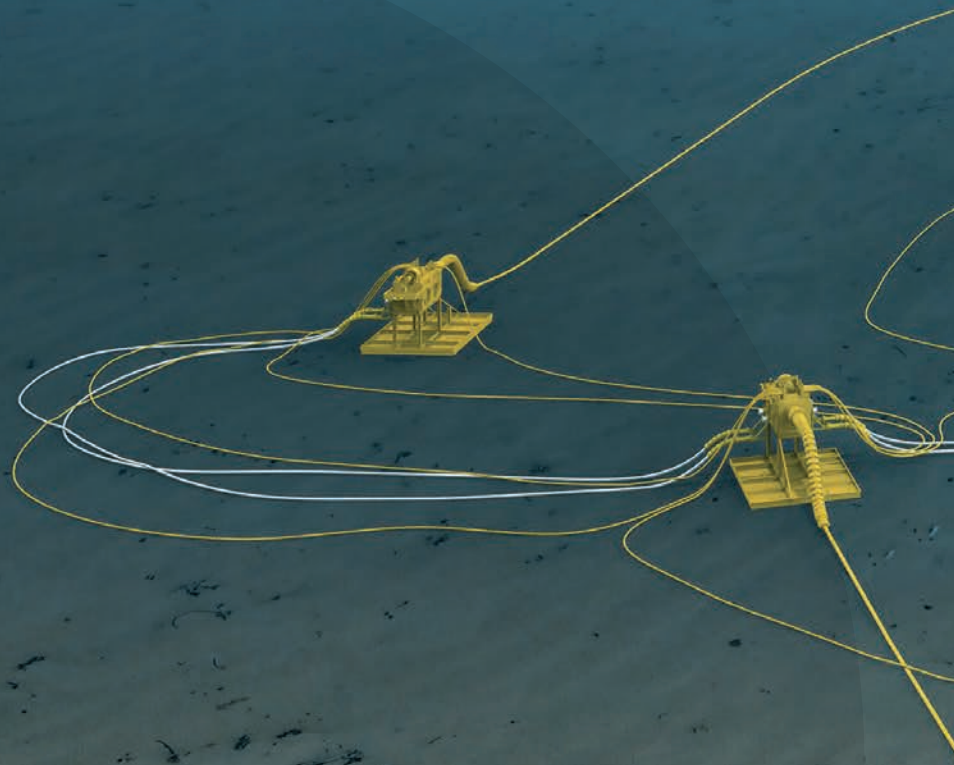
Our integrated team takes an independent and holistic approach to subsea projects. We engineer with a view on the long-term operability of an asset. Our niche experience is a constant thread throughout our design work; for instance, pipework is designed by a team with extensive experience in highly specific fatigue issues.

When it comes to project development, management and supervision, we have a strong reputation for always delivering with a transparent approach and a trusted capability, assuring the successful delivery of your project, in line with your operational and commercial drivers.

We offer bespoke capabilities tailored to our customers' needs, providing entire project management solutions, robust systems and integrated teams. These include:

- Concept and contracting strategy definition
- Estimation of capital expenditure (CAPEX) and operational expenditure (OPEX)

- Schedule and cost control
- Engineering phase management
- Process and functional safety
- Tender preparation and evaluation
- Transaction support to final investment decision (FID)
- Vendor, contract and contractor management
- Quality management and inspection
- Factory acceptance test (FAT) and system integration test (SIT)
- Materials control
- Site supervision both on and offshore



Subsea cables

We deliver optimal solutions for the planning, design, construction and operation of subsea power cables. Our expert engineers bring advanced analytical capabilities, strong technical knowledge in geographical information systems (GIS) and data management, and our extensive experience to deliver safe, practical and cost-effective cable projects. As a technology leader in the sector, we have led several joint industry projects in this area, including the undertaking of specific research into the stability of cables on mobile seabeds.

Our specialist teams support areas such as:

- Survey management, data processing and interpretation
- Through-life inspection and maintenance

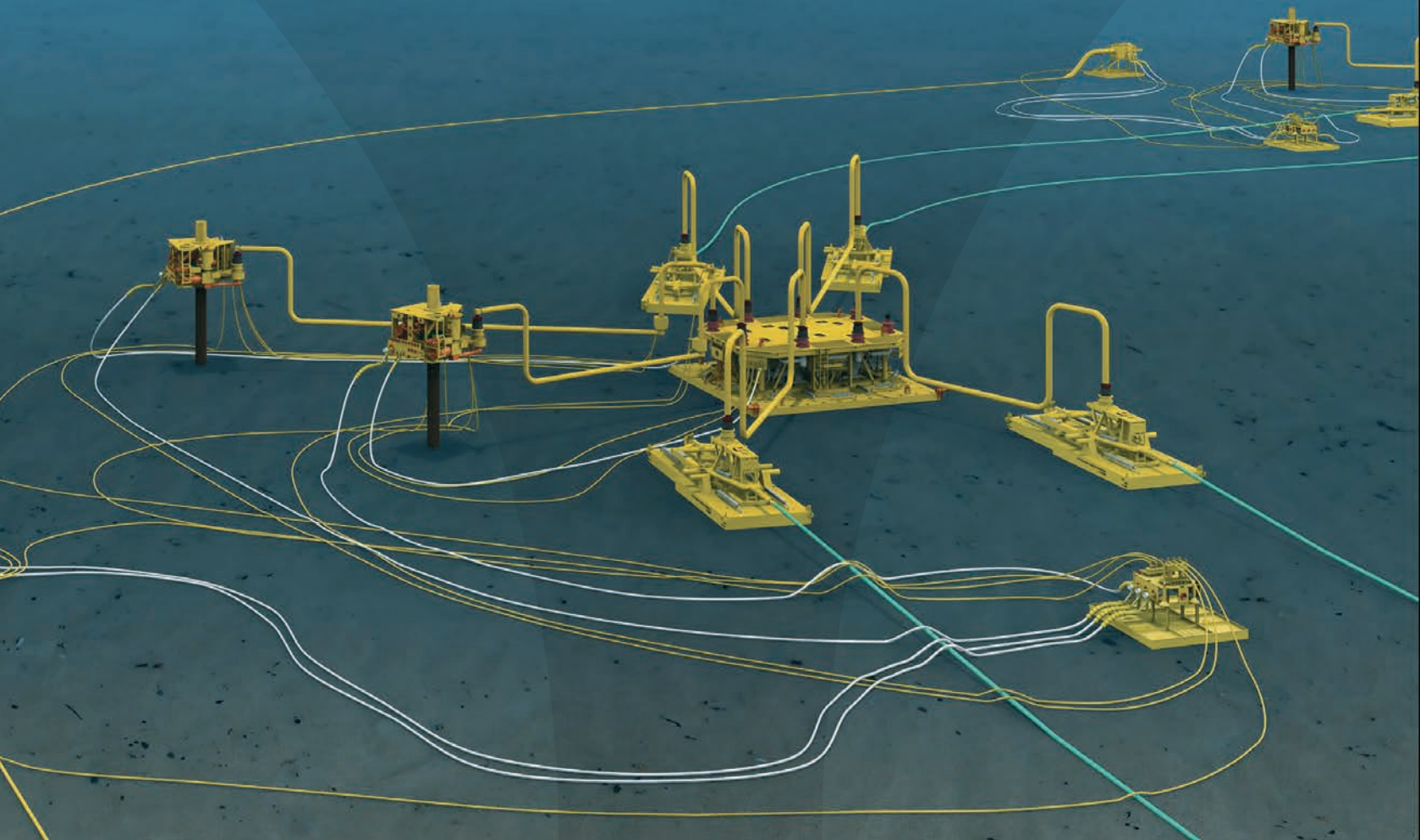
- Offshore cable routing and optimisation
- Cable design for optimum stability and protection
- Cable installation and repair design for deepwater
- Landfall location analysis and shore crossing design
- Cable package management to the quay side

Project delivery is assured because of our extensive project management services portfolio – from specific areas of support such as procurement or document management, through to full project management consultancy services utilising our delivery system toolkit.

600,000 km

of subsea pipeline projects designed and managed

Designed the subsea export cable routing for the one of the world's largest offshore wind farms.



Operational support and integrity

The safety and profitability of subsea infrastructure throughout its operational life is critical. Our specialists provide bespoke support for life cycle operations of subsea systems, pipelines, marine terminals and subsea cables to ensure that the integrity of equipment and infrastructure is safe and assured.

We provide crucial operational input into the early stages of a development to ensure practical operation in the long run. Throughout the life of a subsea development, we identify and execute the right rigor of integrity assurance to meet both operational and commercial requirements.

Support through the asset life cycle

During design, we provide expert consulting and engineering expertise to ensure the specification of your project is fit-for-purpose and will meet or exceed the intended design life.

We will also provide support to provide smooth transition from pre-operations through to pre-commissioning and commissioning, through asset operation and ultimately end-of-life into decommissioning.

In the engineering phase we equip the operations support team with a complete database of life cycle information. During the operational readiness phase we draw upon the discipline expertise in the engineering and project management teams for installation, hook-up and commissioning support so the asset is fit for purpose.

We also support asset integrity throughout the life cycle, including design support and specification as well as direct and indirect inspection.

Our capability includes:

- Subsea repair and maintenance intervention support
- Integrated safe systems of work
- Subsea integrity
- Documentation
- Package management
- Regulatory requirements
- Spares management
- Subsea decommissioning
- Operational secondments



We drive the industry's longest running joint industry project on SURF facilities integrity management.



Engineer, procure, fabricate (EPF)

We use experienced project execution management practitioners, proven systems and a flexible delivery model for the turnkey delivery of subsea structures and components - from specification through to delivery for installation.

We leverage standard designs, processes, specifications and work packages based on decades of experience, providing up to a 35% cost saving on previous supply contracts. We have strong experience delivering large offshore projects for major operators and smaller construction or replacement projects for developments or expansions. Our well-established in-house project management systems (PMS), tools and processes support project execution.

Engineer

Our global team of experts leverage decades of experience to deliver fit-for-purpose solutions and standardised designs, providing a cost-effective base for projects. This can then be built upon by adding bespoke elements as required.

Procure

As a single point of responsibility throughout all phases, we manage the entire process, enabling customers to focus on their operations and business objectives. Our streamlined procurement is cost efficient and effective. This is all underpinned by strong frameworks, controls and experience.

Fabricate

Being solution independent, we have vast experience working with different suppliers and fabricators. This ideally positions us to consider all options and propose the best integrated solutions and suppliers for our customers.

Typical 35% engineering efficiency savings based on use of standard designs.



2,000+

flow assurance projects
successfully delivered for over
200+ companies worldwide

100+

software-based real-time,
online Virtuoso® systems
deployed to optimise operations
and maximise asset value and
return

Flow assurance

We understand and mitigate key flow assurance issues through our technical consulting services, from design to operation. We are focused on improving efficiency, safety and cost.

We are industry leaders in flow assurance and process optimisation and our expertise spans all project stages, both onshore and offshore. Our specialist team supports customers with innovative technology, robust analytics and software systems that are tried and tested in the field.

Flow assurance innovation

We provide ground-breaking technology for customers by remaining ahead of the innovation curve, from leading research, joint industry projects, writing industry guidelines and using data analytics to enhance our offering. We are also actively involved in joint industrial projects across the world, with the main focus on wax, hydrates, slugging, and carbon dioxide (CO₂) rich fluids.

Our expertise

We offer solutions in the following areas:

- Transient multiphase flow
- Computational fluid dynamics (CFD)
- Production chemistry and fluid phase thermodynamics
- Integrated production modeling (IPM) and field development planning
- Process dynamics and process control – topsides, subsea and plants
- Online monitoring systems and engineering simulators
- Operator training systems (OTS)
- Asset management and optimisation systems
- Operations support, troubleshooting, site survey and assessment
- Enhanced oil recovery
- Carbon capture and storage (CCS), unconventional, shale and methane hydrate, arctic, heavy oil and HPHT resources
- Production process flow management, analytics and debottlenecking
- Well performance assessment, production meter balancing and reconciliation
- Owner's engineer, third-party design audit/verification/review and expert witness support services
- Flow assurance software to visualise and analyse results
- Real-time, online flow assurance advisory packages and process flow management tools
- Production chemistry, thermo-hydraulic assessment, wax precipitation/deposition modelling, pigging and wax management strategies

Subsea, umbilical, riser and flowline (SURF)

We support both greenfield and brownfield projects with a multidiscipline team providing robust and proven solutions from initial concept development through detailed design and beyond.

We have unrivalled expertise in subsea, umbilical, riser and flowline (SURF) design and delivery, having designed some of the world's deepest risers, and managed the longest running joint industry project on SURF facilities integrity management. We apply our depth of SURF knowledge to support our customers and advance our wider industry.

With more than 15 years' experience in completing rigid riser projects, our design capability in brownfield facilities for retrofit risers and associated assemblies is unparalleled.

Our capability extends to design services for structural repair and riser routing, modification, configuration and installation studies, supporting projects through the fabrication and installation phases. In addition to our core structural and piping design service, we also provide tender and fabrication assistance with both installation and decommissioning studies.

We are at the forefront of subsea technology, establishing new industry standards, writing SURF industry guidelines, authoring the latest riser software and leading technology development.



Designed some of the world's deepest risers.

Pipelines and marine terminals

We tackle the toughest industry challenges, such as high operational temperatures and pressures, ultra-deep waters and critical environmental conditions to ensure safe and efficient solutions.

We're experts in the design and delivery of gathering systems, the flowline network and process facilities that transport and control the flow of oil or gas from the wells to a main storage facility, processing plant or shipping point. Our expertise ranges from large-scale projects to in-depth consultancy work; from concept design and front-end engineering to detailed design, operations and decommissioning.

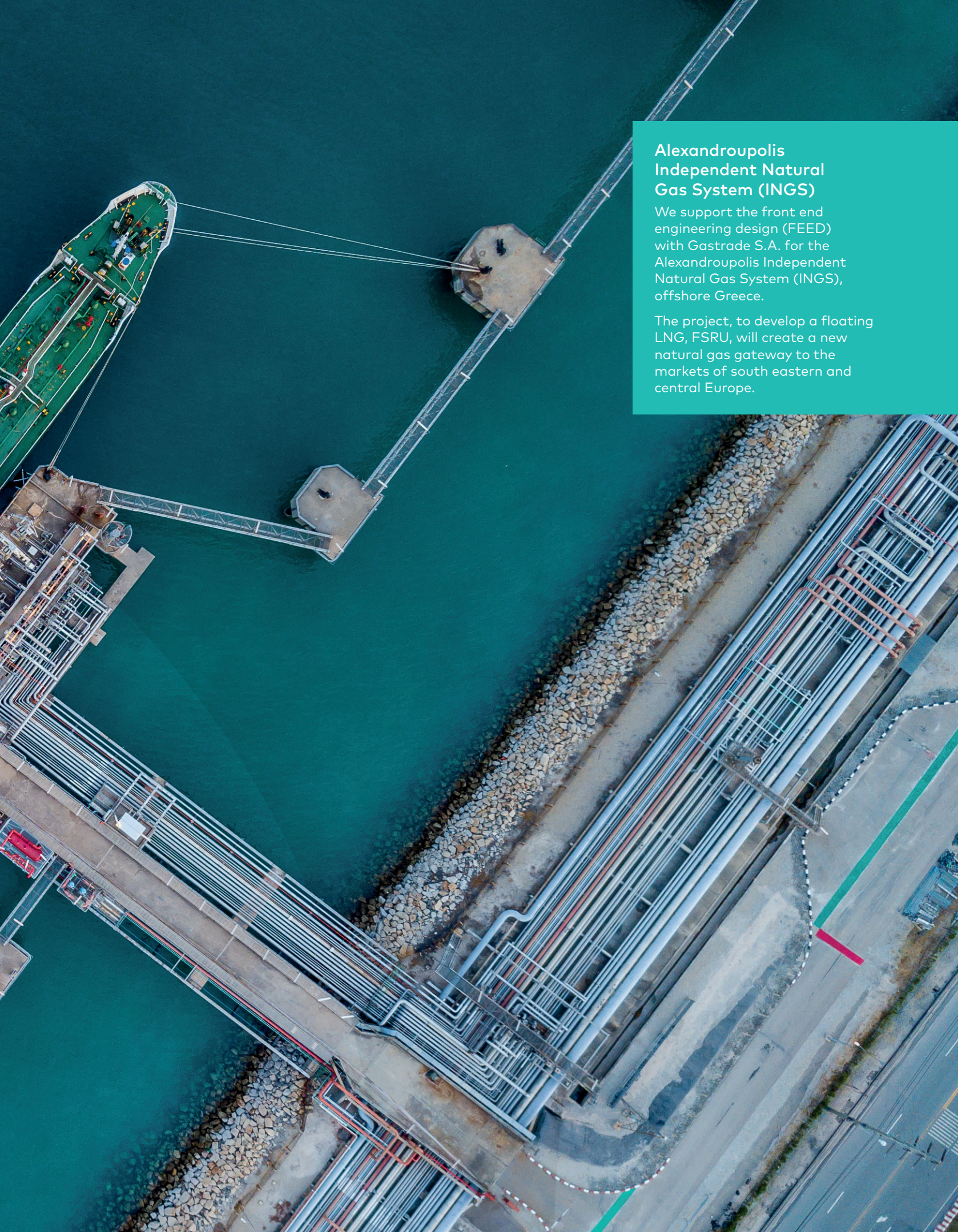
Applying new technology, advanced analytical capabilities and technical acumen, we deliver optimum solutions for the planning, design and development of marine terminals and pipelines. Our skills in geographical information systems (GIS) add real value. This is an indispensable tool for defining and optimising pipeline routes.

We leverage broad engineering capability to optimise the solution at the early stages of the project, ensuring our customers minimise their engineering and development spend.

We have an extensive track record in delivering engineering projects for:

- Pipe-in-pipe
- Heated heavy oil pipelines
- Liquefied natural gas (LNG) pipelines
- Single-point mooring (SPM) terminals
- Fixed berths/jetties
- Multibuoy moorings (MBM)/conventional buoy moorings (CBM)
- Floating storage regasification unit (FSRU)
- Tank farms
- Pipelines
- Subsea structures
- EPCM





Alexandroupolis Independent Natural Gas System (INGS)

We support the front end engineering design (FEED) with Gastrade S.A. for the Alexandroupolis Independent Natural Gas System (INGS), offshore Greece.

The project, to develop a floating LNG, FSRU, will create a new natural gas gateway to the markets of south eastern and central Europe.



Wood is a global leader delivering technical, engineering and project services across the entire asset life cycle. We operate in more than 60 countries, employing about 60,000 people. We provide performance-driven solutions from development to decommissioning for a broad range of industries including all energy sectors, process and refining, power and utilities, mining and manufacturing.

For further information please go to:

woodplc.com

