

# Offshore

i n d u s t r y

## Deep-Sea Mining

DUTCH KNOWLEDGE DEVELOPMENT

## Oil & Gas USA

BACKBONE OF THE ECONOMY

## OTC Houston

THE WORLD'S FORMOST EVENT

## Rules & Regulations

SAFETY FIRST



# *High Value Solutions*

## Managing Complex Projects

**K**BR is using its 70 years of experience in designing, building and managing complex projects from concept to completion for a wide range of global clients. Supporting the offshore energy industry by providing integrated engineering and developing management solutions for production facilities and subsea developments in some of the harshest, most remote environments on earth. Since becoming independent in 2007, the company has expanded on its position in the growing end-markets it serves. Offering a wide range of services through six business segments: Downstream, Government & Infrastructure, Services, Technology, Upstream and Ventures. The foundation for the future is based on the continued success within these growing industries. Even

continuously growing globally, KBR has developed and executed many ground-breaking solutions for complex projects worldwide. As a leading company in the oil and gas industry, KBR has designed and constructed more than half the world's liquefied natural gas production capacity over the past 30 years. The company also produced the world's largest Floating Production Storage and Offloading (FPSO) vessels.

### New Challenges

In 2007, KBR made a commitment to intensify its focus on the upstream oil and gas market and expand its presence worldwide. One key part of this strategy was the reorganisation of KBR's oil and gas business in order to



*Executing large scale, technically complex offshore oil and gas production facilities has been a Kellogg Brown & Root (KBR) specialty since 1947, when the company built the first offshore platform out of the sight of land for Kerr McGee. The world has changed since then. Projects are more complex and technically challenging. External market factors can cause capital expenditures and operating costs to escalate without warning.*

## About KBR

With more than 57,000 employees in 45 countries on five continents, KBR is one of the world's premiere engineering, procurement and construction companies. With a proud and distinguished history of more than a century, KBR has evolved into a prominent part of the energy, petrochemicals, government services and civil infrastructure sectors. KBR's oil and gas group recently moved to its new offices in Houston's Energy Corridor, where many of the clients are located. The West side Houston campus will give KBR the flexibility to respond to engineering, project management and government contracting opportunities throughout the energy corridor, with the support of its corporate and operations office in Downtown Houston.

With the emerging global demand for energy, KBR's use of the latest technology and ability to deliver value has made the company one of the fastest growing members of the downstream hydrocarbon market. With the sights set on contributing to a sustainable future which aligns with their goal of environmental stewardship. Driven by excellence in execution, KBR is committed to ensuring delivery of any project, any time in any environment for the benefit of the customers, shareholders, employees and the communities served.

better serve the Industry and respond to the client's needs. KBR's two subsidiaries, Granherne subsea and field development company and GVA Consultants, the world's leading designer for semi-submersibles and FPSO hulls from new build to upgrades and conversions, were moved into the oil and gas business unit under Roy Oelking, the newly appointed President of oil and gas.

"Granherne adds an especially important element to our offerings", said Oelking. "KBR clients benefit from a consultancy capability that provides oil and gas



development solutions, including specialist subsea and pipeline expertise." Since the reorganization, Oelking and his team, Rebel LeBoeuf, Vice President of Project Management, Americas and Chris Sherertz, Vice President of Business Development Americas have been focused on growing KBR's businesses in the Gulf of Mexico (GoM). "We are working to bring a high value engineering solution to projects in the Americas", said Oelking. "Through close collaboration between Houston, our engineering centre in Monterrey, Mexico, and other KBR offices linked by KBR technology, systems and processes, we are dedicated to delivering competitive engineering services – not only to our clients in the Gulf of Mexico and the Americas, but also around the world."

## Ongoing Developments

With a history of engineering and constructing among the world's largest FPSOs, KBR's renewed focus on the upstream oil and gas market has paid off. KBR has won several projects in the GOM, including the topsides Front End Engineering Design (FEED) for Chevron's Big Foot





GOM development and the hull FEED for Chevron's Jack St. Malo GOM Development. The team is currently bidding on several projects in Angola, Eastern Canada and Alaska to reinforce KBR's strong offshore presence outside of the US. "We are committed to delivering breakthrough results and adding value at every phase", said Oelking. "From field

development to design and execution and throughout the life of a project, KBR offers the experience, integrated services and resources to help our clients get the most out of their assets and make their offshore project a success."

### Floatover Technology

KBR offers many solutions to the complex challenges faced by their customers. The KBR floatover deck method, for example, helps minimise the cost of offshore construction by installing platform topsides as a single structure onshore.

KBR pioneered the floatover method and have saved customers millions of dollars with this flexible alternative to heavy-lift installation. The 11,500 ton Malampaya topside facility, located in the South China Sea, is the largest ever built using the floatover method. The special jacket structures provide sturdy and reliable bases for platforms weighing tens of thousands of tons. They can be used in depths in excess of 304 m and are built to handle the toughest conditions. The jacket for the Elf Piper I, located in 145 m of water in the North Sea, weighs more than 9.98 ton and withstands the strong waves and furious storms of the region. The designers have also created highly efficient minimum

facility platforms, complete with their own energy supply and communications arrays that allow for remote operation, are cost-effective, durable and simple to assemble. KBR also develops, delivers and installs gravity base structures, providing customers with much-needed storage capacity in fields around the globe.

## History

In 1901 Morris W. Kellogg opened a tiny pipe fabrication business in New York that would become a world-class engineering firm known as M.W. Kellogg. Kellogg's engineering expertise led to creation of new technologies, and industry milestones, including building the world's first catalytic cracking facility in Baton Rouge, Louisiana in 1942 and Europe's first crude oil-based liquid ethylene cracking facility in 1956. Kellogg revolutionised fertiliser production in the 1960s through the creation of a new ammonia process, making it possible for a rapid growth in global food production. Many of the innovations that originated in the Kellogg laboratory starting in 1927 are now the foundation for the petroleum refining and petrochemical processing facilities and remain a major part of KBR today. Shortly after WWI George and Herman Brown partnered with Dan Root to start a Texas-based construction company that would carry their names: Brown and Root. The company began building roads, but quickly expanded into other areas. In 1940, Brown and Root received its first government contract, to build the Corpus Christi Naval Air Station; a year later, the company was awarded a contract

to build the first of what would become a total of 359 ships for the US Navy. After succeeding in the shipbuilding business, Brown and Root set its sights further offshore. In 1947, the company set a global milestone when it constructed the first offshore oil platform 43 miles off the coast of Morgan City, Louisiana. In 1965, it was responsible for another industry first when it built the first offshore oil platform in the North Sea. When Halliburton purchased Brown and Root in 1962, its reputation as a leading offshore rig builder, road construction company and general contractor was assured. M.W. Kellogg remained independent for nearly nine decades before it was acquired by Dresser Industries, a provider of integrated services and project management for the oil and gas industry. Ten years later, Dresser was purchased by Halliburton, where it was combined with M.W. Kellogg and Brown and Root, creating new, larger subsidiary: Kellogg Brown & Root (KBR). In 2007, KBR reached a major milestone as it separated from Halliburton and became a stand-alone company.



## Innovative Projects

KBR offers proven single source, design, engineering and execution, new build and semi-submersible conversion services that are efficient and flexible to meet current needs and future expectations. KBR's resource of highly experienced engineers specialise in conceptual design, naval architecture, structural design, marine and drilling systems, guarantees high-value design solutions to each and every project. The breadth of expertise and experience encompasses all operational types and regions in virtually any location around the world from the arctic to the tropics.

As one of the world leaders in FPSO vessel design and construction. The FPSOs are currently in use worldwide, from the seas of the South Atlantic near Brazil to the Western Pacific off the coast of Indonesia. These massive, highly complex vessels require exceptional design and development capabilities, which KBR is ready and able to provide. As long as global energy companies look beneath the seas for new sources of oil and gas, KBR will be there to provide the fixed platforms, topsides and FPSO experience they need to make their projects a success. KBR has a reputation to build on its ability to provide cost-efficient, safe and environmentally sound design solutions, whether for FPSOs, semi-submersibles, topsides or drill ships.

**i. [www.kbr.com](http://www.kbr.com)**

## Development in the North Sea

25 March 2010, KBR was selected to take part in the FEED contract for the Greenfield sections of Hess Denmark ApS' South Arne Phase 3 Development in the North Sea. Granherne was selected for the study via a competitive bidding process. The project will utilise the combined expertise of Granherne and KBR and has assembled an experienced team to manage the fast track schedule.

"This project will further consolidate our excellent relationship with Hess which has built up over several smaller studies", said Richard D'Souza, Vice President, Granherne. "The project has a very tight schedule and we look forward to working with Hess to meet that challenge."

The scope of the project comprises two new well head platforms, one of which is bridge linked to the existing South Arne facility. The other is located 2.5 km NNW of the existing platform. The two platforms are linked by subsea pipelines and an umbilical.

**i. [www.hess.com](http://www.hess.com)**