

KEPPEL FELS SIGNS CONTRACT WORTH US\$1.2B TO BUILD TWO CUSTOMISED RIGS FOR BLACK SEA

Keppel FELS has signed a contract with Ukraine's National Joint-Stock Company "Naftogaz of Ukraine" (Naftogaz), to construct two semi-submersible drilling rigs worth about US\$1.2 billion. Naftogaz carries out offshore development in Ukrainian sections of the Black and Azov Seas. The company also produces hydrocarbons at fields in the Crimea, and operates underground gas storage facilities on the Glebovsky peninsula and trunk pipelines.

The rigs will be built to Keppel FELS' proprietary DSS™ 38U design which is customised for the Black Sea environment. The harsh weather conditions of the Black Sea include extreme freezing temperatures, storms with strong winds and heavy seas.

Durable grades of steel with increased thickness will form the basis of the structural design of the hull and pontoons of the rigs. They will have winterisation features such as machinery cladding, advanced heating systems to prevent equipment and pipe freezing as well as enhanced air conditioning for the living quarters.

According to Ukraine's official estimates in 2011, the country boasts proven reserves of natural gas (1200 billion cubic meters) and oil and gas condensate (220 million tons).

Jointly developed and owned by Keppel's Deepwater Technology Group and Marine Structure Consultants, the DSS™ 38U design features the latest safety

and environmental features. It will have double-skin columns for additional protection to machinery spaces in the event of a ship collision.

In addition, to facilitate safe handling of equipment, the rigs will be equipped with a separate blow-out preventer and "Christmas Tree" (used to control the flow of oil or gas out of the well). A compact, fit-for-purpose pipe handling system capable of performing offline stand building will enable it to handle drill pipes efficiently while drilling. The rigs will be equipped with a 2000 kips drilling derrick suitable for 30,000 feet drilling depth.

KEPPEL FELS DELIVERS SAFIN'S FIRST KFELS B CLASS JACK-UP RIG

Keppel FELS has delivered *Paradise 400*, a high-specification KFELS B Class jack-up rig to Safin Gulf FZCO (Safin) ahead of schedule and with a strong safety record. The rig is a refurbishment and upgrade of a KFELS B Class jack-up rig that Keppel FELS purchased in 2011.

Safin Gulf FZCO is part of privately-owned Safin GmbH which is among the

ten largest independent steel trading and distribution companies in the world. In addition to steel trading, Safin GmbH is also involved in mining, coal and oil trading.

Developed by Keppel's jack-up rig design arm, Offshore Technology Development, the KFELS B Class rig is able to operate in water depths of 400 ft with a drilling depth of 30,000 ft. It is equipped with a full 15,000 psi BOP system, 70-foot cantilever outreach with upgraded mud pit storage capacity of 4,000 bbls and accommodation for up to 150 personnel.

The new rig has been upgraded with two additional knuckle boom cranes installed on the port and starboard sides of the cantilever platform to improve efficiency for material handling and promote a safe working environment.

Besides the increased mud pit capacity to improve rig flexibility for mud mixing operations, the latest mud treatment technology such as balanced elliptical motion and cascade shakers have been installed to deliver better throughput capacity.

A compact, fit-for-purpose derrick mounted Bridge Crane has been installed to improve safety and efficiency for offline stand building and pipe racking. Its offline stand building capability enables it to handle drill pipes more efficiently. The KFELS B Class rig is also designed for maximum uptime with reduced emissions and discharges.

PPL SHIPYARD SECURES TWO RIG ORDERS WORTH US\$434M FROM ORO NEGRO

PPL Shipyard has secured two turnkey contracts with a combined value of US\$434 million for the construction of two units of jack-up rigs from Integradora de Servicios Petroleros Oro Negro, S.A.P.I. de C.V (Oro Negro).

The pair of high specifications and high performance deep drilling offshore jack-up rigs will be built based on PPL Shipyard's proprietary design, the PPL Pacific Class 400. The rigs are scheduled for delivery in end of fourth quarter 2013 and end of first quarter 2014.

These new rigs will be capable of operating in deeper waters of 400 feet and equipped with the latest drilling equipment for improved drilling efficiencies with offline handling features and simultaneous operations support. It will be equipped to drill high pressure and high temperature wells to depths of 30,000 feet. The rig is equipped with increased accommodation with full catering and amenities for 150 persons.

Oro Negro is a Mexican company created with the purpose of integrating diversified oil & gas services companies and assets.



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JURONG SHIPYARD AND PROSAFE SIGN CONTRACT FOR SECOND ACCOMMODATION SEMI-SUBMERSIBLE WORTH US\$295.2M

Sembcorp Marine's subsidiary Jurong Shipyard (JSPL) and Prosafe have finalised a contract for JSPL to build the second unit of a new generation harsh-environment accommodation semi-submersible worth US\$295.2 million. This follows the Letter of Intent announced by Sembcorp Marine and Prosafe earlier in October this year.

This is Prosafe's second accommodation semi with JSPL, following the first order contracted in December 2011. Prosafe is the world's leading owner and operator of semi-submersible accommodation/service rigs. It operates globally and is headquartered in Larnaca, Cyprus.

Along with the latest contract, JSPL has granted two additional options to Prosafe for further newbuilds. Including the option previously granted last year, Prosafe will now have a total of three options for accommodation semi newbuilds at JSPL. The accommodation semis for the two additional options can be designed for either the Norwegian Continental Shelf or for world-wide operations outside of Norway.

This accommodation semi-submersible will be built based on the GVA 3000E design, a similar design as the first unit, the *Safe Boreas*, presently under construction in Jurong Shipyard. Featuring the latest technology, the

GVA 3000E design accommodation semi is capable of operating gangway connected in deep water and in harsh environments alongside fixed platforms, floating platform and floating production and offloading vessels, with a full complement of deck cranes and fire-fighting capabilities.

The 450-person capacity Dynamic Positioning 3 (DP3) unit with 12 point mooring will be built in compliance with stringent Norwegian Offshore health and safety standards and is suitable for harsh environment operations in the Norwegian Continental Shelf. The rig is scheduled for delivery in end December 2014.

SEBMMARINE SECURES 7TH DRILLSHIP CONTRACT WORTH US\$806.4M FROM SETE BRASIL

Sembcorp Marine Ltd (SembMarine), through Jurong Offshore Pte Ltd's wholly-owned subsidiary, has secured a drillship contract worth US\$806.4 million from Sete Brasil Participações S.A. (Sete Brasil), for the design and construction of a drillship based on Jurong Shipyard's proprietary Jurong Espadon drillship design.

This is the seventh unit of a series of ultra-deepwater drillships that SembMarine's subsidiaries have secured since February 2012. All seven drillships will be built based on the Jurong Espadon design, which represents the next generation of high specification drillships with advanced capabilities for operational efficiency and ultra-deepwater operations worldwide.

Each of the drillships will be equipped with state-of-the-art drilling facilities, a larger deck area, efficient deck arrangement and a large moon pool for enhanced drilling operations as well as DP-3 (Dynamic Positioning Class 3) capabilities and superior motion. The drillship will be capable of operating at 10,000 ft water depth and drilling

to depths of 40,000 ft. It will have accommodation facilities for a crew of 180 personnel.

The seventh drillship unit is scheduled for delivery no later than the third quarter of 2016. These seven drillships, with deliveries ranging from second

quarter 2015 to fourth quarter 2019, will be among the first in a series of drillships to be built in Brazil to cater to the oil and gas discoveries in the offshore giant pre-salt fields of the Santos Basin. On delivery, all the seven units will be chartered to Petrobras for 15 years.



The series of seven drillships on order by Sete Brasil will be built based on the proprietary Jurong Espadon drillship design developed by Jurong Shipyard.

SEBMMARINE ANNOUNCES ACQUISITION OF 34.5-HECTARE SITE FOR PHASE II DEVELOPMENT OF NEW YARD FACILITY

Sembcorp Marine (SembMarine) has announced the acquisition of a 34.5-hectare site at Tuas View South extension, for the Phase II development of its Integrated New Yard Facility.

The new site, located adjacent to and north of the Phase I development, is the second phase of its planned 206-hectare New Yard Facility. The Phase II new yard will be developed in stages and over a period of four to five years.

SEMBAWANG SHIPYARD SECURES FAVOURED CUSTOMER CONTRACT FROM ROYAL CARIBBEAN

Sembawang Shipyard has been awarded the favoured customer contract from Royal Caribbean Cruises Ltd. (Royal Caribbean), USA, to provide ship-repair, revitalisation, upgrading and related marine services for its fleet of 41 cruise ships. Royal Caribbean is the world's second largest cruise company that operates Royal Caribbean International, Celebrity Cruises, Pullmantur, Azamara Cruises and CDF Croisières de France.

This milestone long-term maintenance and refit contract with Royal Caribbean will boost Singapore's status as a major Asian cruise hub. It will also reinforce Sembawang Shipyard's reputation as one of the world's leading shipyards in the highly specialised segment of cruise ships repair, refurbishment and conversion.

The contract commits the repairs, revitalisation and upgrading of Royal

Caribbean's fleet of passenger ships cruising in the Singapore region to Sembawang Shipyard. The yard had previously revitalised Royal Caribbean International's *Rhapsody of the Seas*.

Since the 1970s, Sembawang Shipyard has successfully repaired and upgraded more than 150 passenger ships. It has developed a "cruise ship culture" and a workforce with a good attitude, training and experience to successfully deliver cruise ships on schedule and to high Quality, Health, Environment and Safety standards.

The signing of this favoured customer contract will include two cruise ships calling at Sembawang Shipyard for major revitalisation and a third ship for drydocking and repairs between January 2013 to 2014. Total sales is estimated to range from S\$50 million to S\$70 million, depending on the scope

of repairs and upgrading packages of the ships.

KEPPEL SHIPYARD TO UPGRADE FPSO LEWEK ARUNOTHAI

Keppel Shipyard has won a contract from EMAS Offshore Construction and Production Pte Ltd (EMAS Offshore) to modify and upgrade an existing Floating Production Storage and Offloading (FPSO) facility, *Lewek Arunothai*. The yard's workscope includes the installation of new structures, piping systems and deck crane, refurbishment of the living quarters as well as the fabrication and installation of the rigid arm and external turret mooring systems.

When completed in second quarter 2013, the FPSO will be deployed as an Early Production System in the Kamelia field, which is located in the Malaysia/Thailand Joint Development Area (JDA) in the North Malay Basin. The upgraded FPSO will be capable of handling 100 million standard cubic feet per day (MMscfd) of gas, 1000 barrels per day (bpd) of condensates and 500bpd of water.



Royal Caribbean's cruise ship *Rhapsody of the Seas* was successfully revitalised in Sembawang Shipyard.

KEPPEL FELS DELIVERS JACK-UP RIG EARLY TO NEW MEXICAN CUSTOMER

Keppel FELS has delivered *Primus*, a KFELS B Class jack-up rig, to offshore Mexican oil field services company, Integradora de Servicios Petroleros Oro Negro (Oro Negro), seven days early and with a perfect safety record. Oro Negro is a Mexican company created with the purpose of integrating diversified oil & gas services companies and assets.

Named earlier today at Keppel FELS, *Primus* was officially delivered on 16 November 2012. It is the first of two rigs by Keppel FELS for Oro Negro after the company purchased them from Jasper Investments. The rig is Oro Negro's first jack-up rig and is suited for deployment in various parts of the world including the Gulf of Mexico.

Developed by Keppel's technology arm, Offshore Technology Development (OTD), the KFELS B Class jack-up design

is able to operate in water depths of up to 400 feet and drill to depths of 30,000 feet. The robust rig incorporates Keppel's advanced and fully-automated high capacity rack and pinion jacking system, and self-positioning fixation system. An environmentally-friendly rig, it provides maximum uptime with reduced emissions and discharges.

Primus is one of the first jack-up rigs to be delivered from the new orders that started in late 2010 and is primed to meet the shortage of high specification rigs for shallow water fields. There are currently two KFELS B Class jack-up rigs in operation in Mexican waters - the *Tonala* rig operated by Peforadora Central and the *Ocean Scepter* rig operated by Diamond Offshore.

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KEPPEL SINGMARINE CLINCHES TWO NEWBUILDING CONTRACTS

Keppel Singmarine has clinched two new contracts for building of a deepwater pipelay vessel and a dive support vessel.

The first contract from Hydro Marine Services, Inc., a subsidiary of McDermott International, Inc., (McDermott) is for the construction of a high-specification deepwater pipelay (S-Lay) vessel. Developed by Keppel's Marine Technology Development (MTD), the vessel is designed to support advanced pipelay operations, in which pipelines are installed to depths of up to 10,000 feet. It is also capable of achieving efficient pipelay rates for long trunklines, operating in severe weather conditions, and providing significant thrust output and power

distribution. Works for the pipelay vessel is scheduled to commence in first quarter 2013 and is expected to complete in approximately two and a half years.

The second contract is from Australia-based Bhagwan Marine Pty Ltd (Bhagwan Marine) to build a catamaran air dive support vessel (DSV). The DSV will be deployed in the north west of Western Australia to support the operations of Apache Energy Ltd when completed in first quarter 2014. The DSV is of twin hull configuration (catamaran) and is designed by Incat Crowther Pty. Ltd.

KEPPEL EXPANDS Foothold IN MEXICAN OFFSHORE MARKET WITH TWO JACK-UP ORDERS WORTH US\$420M

Keppel FELS has won a contract from PEMEX Exploracion y Produccion, a subsidiary of Mexico's national oil company, Petroleos Mexicanos (PEMEX), to build two KFELS B Class jack-up rigs. The contract is worth US\$420 million.

PEMEX, the biggest company in Mexico, is the world's fourth-largest crude producer at 2.5 million barrels per day. PEMEX estimated that it will invest up to US\$2.4 billion in 2012 in exploration,

and have 40 rigs operating in Mexican waters.

The high specification rigs will be the 19th and 20th KFELS B Class rigs on order at Keppel, with 36 already delivered in the past decade. When completed, the two rigs will join a number of KFELS B Class jack-up rigs built by Keppel for Mexican customers. They are scheduled for delivery in first quarter of 2015.

The KFELS B Class jack-up design is developed by Keppel's technology arm, Offshore Technology Development. It is able to operate in water depths of up to 400 feet and drill to depths of 30,000 feet. The design incorporates Keppel's advanced and fully-automated high capacity rack and pinion jacking system, and self-positioning fixation system. It provides maximum uptime with reduced emissions and discharges.

OUTLOOK AND COMMERCIAL TRENDS OF THE OIL & GAS INDUSTRY

The outlook and commercial trends in the oil & gas industry was presented at the recently concluded Offshore South East Asia (OSEA) event. Mr Chow Yew Yuen, Chief Operating Officer of Keppel Offshore & Marine, spoke on the industry's outlook at the Opening Ceremony of OSEA 2012 held on 27 November.

Mr Chow pointed out that the International Energy Agency's 2012 World Energy Outlook had forecasted global energy demand to increase by one-third from 2010 to 2035. This increasing demand for global energy was "driving a new wave of exploration and production by oil companies in deeper formations in shallow waters and in new deepwater fields, and in harsh environments." Currently, more than a third of oil in the world is being produced offshore. The growth in development of deepwater and ultra-deepwater fields was also rapidly increasing as the era of "easy oil" drew to a close.

Mr Chow shared that deepwater offshore activities are prolific in areas such as the golden triangle in the Atlantic Basin, made up of Brazil, West and East Africa, and the Gulf of Mexico. The Asia Pacific region is growing in significance, in particular Southeast Asia and Australasia. The region is seeing increasing expenditure in the deepwater market. Douglas-Westwood has projected some US\$29 billion in deepwater expenditure in the region over the next five years.

Douglas-Westwood also forecasted investment of up to US\$91 billion on floating production units between 2013 and 2017. An increase in demand for Offshore Support Vessels (OSVs) is expected given the large number of discoveries worldwide and an aging global OSV fleet.

Mr Chow noted that the aging rig fleet was driving a new cycle of replacement. Half of the existing fleet is more than 25 years old. Other than being inefficient, many of these rigs do not have the sophisticated technology required for more complicated and deeper water operations. According to Pareto Securities, 200 new jack-up rigs will need to be built between 2015 and 2025 to replace the aging rigs.

He noted that there had been many developments in the offshore oil & gas sector that had boosted the demand for new assets with higher specifications around the world. The Macondo incident in the Gulf of Mexico in 2010 underscored the need for modern assets equipped with the latest safety features and technology, again spurring demand for new rigs.

"Even more extreme than the North Sea, the Arctic region represents one of the final frontiers when it comes to oil & gas exploration and production. Still in its nascent stages, development for the challenging region would require a whole new class of assets," said Mr Chow. There is a need "to keep up with this development by evolving our designs, enhancing our suite of solutions with the latest requirements and preferences."

The strong demand for oil & gas and increased E&P spending augurs well for Singapore, given her reputation of delivering high quality rigs in a safe and timely manner. Singapore has produced a suite of rig designs, which are widely adopted globally. Singapore shipyards are constantly enhancing their rig designs to meet new requirements and market conditions to evolve better solutions for higher performance.