SEMBAWANG SHIPYARD SECURES FSO CONVERSION CONTRACT WORTH S$56M FROM TEEKAY

Sembawang Shipyard has secured a Floating Storage and Offloading (FSO) conversion contract worth S$56 million from Teekay Offshore Partners L.P. for the Gina Krog Field in the North Sea. This fast track conversion will be carried out in 11 months.

Teekay Offshore is an international provider of marine transportation, oil production and storage services to the offshore oil industry focusing on the fast-growing, deepwater offshore oil regions of the North Sea and Brazil. Teekay Offshore owns interests in shuttle tankers, floating production, storage and offloading (FPSO) units, FSO units and conventional oil tankers.

Sembawang Shipyard will work closely with Teekay to convert the shuttle tanker *Randgrid* into an FSO. Major conversion works to be undertaken are the installation of a new helideck, hull reinforcements and refurbishment of the submersible turret loading compartment. Other works to be carried out include the installation of offshore crane, loading hose reel package and azimuth thruster, replacement of two generators as well as associated piping and additional cabling works. The shipyard will also fabricate and install new living quarter decks on the vessel.

The vessel arrived at Sembawang Shipyard in June. The FSO conversion is expected to be completed in second quarter of 2016. Upon completion, *FSO Gina Krog* will head towards the Norwegian North Sea under a charter contract between Teekay and Statoil.

ST MARINE COMPLETED REPAIR WORK ON HOPPER DREDGER WITHIN SHORT TIMEFRAME

Hopper dredger Antigoon in the dock for repairs by ST Marine.

ST Marine completed major repair work on hopper dredger *Antigoon* within a short time frame of 38 days. The project was carried out for Belgian customer DEME N.V..

Work on the vessel included machinery overhaul, steelwork renewals in the main deck and hopper space involving underwater items as well as piping renewals in the pump room.

The workscope was considered major because the challenging time frame given to the project team to repair and re-deliver the vessel. Project management was key in view of the coordination of different activities at the same time.

JURONG SHIPYARD DELIVERED WELL INTERVENTION RIG TO HELIX

Jurong Shipyard delivered its first specialised platform with well intervention and subsea capabilities, *Q5000*, to Helix Energy Solutions. The vessel represents a significant advance for the yard in this growing new market segment. *Q5000* was successfully handed over to Helix on 30 April 2015.

Built based on Bassoe Technology's naval architectural design with Helix's equipment layout, Q5000 is capable of performing conventional and extended top hold drilling, subsea construction, decommissioning well intervention, coiled tubing operations and twin ROV deployment.

The Dynamic Positioning Class 3 unit is designed and built for deepwater operations worldwide, including the Gulf of Mexico, offshore Brazil and West of Africa.

Q5000 is the first well intervention rig built by Jurong Shipyard to Helix Energy Solutions.

KEPPEL FELS DELIVERED 11TH JACKUP *KUKULKAN* FOR MEXICO

Keppel FELS delivered KUKULKAN to PEMEX safely, on time and on budget.

Keppel FELS has delivered a KFELS B Class jackup rig to Mexican national oil company Petróleos Mexicanos (PEMEX) safely, on time and on budget. It is the 11th jackup rig by Keppel FELS to work in Mexico.

The rig, named *KUKULKAN*, is the second jackup rig Keppel has built directly for PEMEX. It will join sister rig, *YUNUEN*, which was delivered earlier this year, and another nine jackup rigs that PEMEX has chartered from drilling contractors for deployment in offshore Mexico.

KUKULKAN will be the eighth KFELS B Class design jackup rig to work in Mexico. According to Keppel, "the rigs have proven to be robust, efficient, economical, performing excellently for PEMEX. We have another seven such rigs under construction for Mexico, making it the most dominant rig design and jackup of choice for owners and operators in the region."

The KFELS B Class jackup is designed to operate in water depths of up to 400 feet and drill to depths of 30,000 feet. Developed by Keppel's Offshore Technology Development, the KFELS B Class jackup is equipped with an advanced and fully-automated high capacity rack and pinion jacking system, and self-positioning fixation system.

PEMEX Exploration & Production announced its commitment to grow as an exploration and production company by retaining both its existing reserves and exploring in a variety of new areas. In shallow waters, the company needs high performance jackup rigs like *KUKULKAN* to maximise its returns. The company already has six KFELS B Class design rigs working productively and safely for them.

TRIPLE-NAMING CEREMONY FOR KFELS B CLASS JACKUP RIGS FOR CANTARELL OIL FIELD

Three identical jackup rigs for Mexico – *CANTARELL I, CANTARELL II and CANTARELL III* – were named in a first-ever triple rig naming ceremony held on 30 May at Keppel FELS yard. Mr Chan Chun Sing, Minister in Prime Minister's Office and Secretary-General of the National Trades Union Congress was the Guest-of-Honour in the ceremony at the event.

Keppel FELS is on track to deliver the three rigs to Mexican company, Grupo R, safely, on time and on budget. These three rigs are built to Keppel's proprietary KFELS B Class design developed by Keppel's Offshore Technology Development. This design of rigs is the dominant rig design in the region.

The KFELS B Class jackup is designed to operate in water depths of up to 400 feet and drill to depths of 30,000 feet. It is equipped with an advanced and fully-automated high capacity rack and pinion jacking system, and self-positioning fixation system.

CANTARELL I, II & III are the first three of five rigs that Keppel FELS is building for Grupo R. Keppel said that it had reaped synergies from working on five rigs at one time to maximise resources and improve efficiencies in the construction process. Besides two more rigs for Grupo R, there are also another two under construction for Mexican customers. When delivered, these three rigs will make it 11 KFELS B Class rigs working in Mexico.

These rigs are named after the Cantarell oil field in offshore Mexico. In spite of the current low oil price environment, Mexico is focused on finding new resources to increase its oil production in the face of a long-term decline. Besides building new jackup rigs for Mexico, Keppel has also repaired and serviced a total of 18 rigs that have been deployed in Mexico.

Grupo R is a conglomerate of companies dedicated to the oil, gas and energy sector in Mexico. Its principal activities include offshore and onshore drilling including ultra-deep water, operation of gas fields, offshore construction and maintenance services, oil & gas infrastructure, EPC projects and specialised transport of onshore drilling rigs.

A world's first triple rig naming ceremony was held at Keppel FELS to name the three KFELS B Class jackup rigs to be delivered to Mexican company Grupo R.

KEPPEL FELS REPAIRS SEMI-SUBMERSIBLE *SONGA VENUS*

Besides newbuilding work, Keppel FELS remained busy with rig repairs and refurbishments and recently delivered the semi-submersible rig *Songa Venus* to Songa Opus Offshore Drilling. Songa Opus Offshore Drilling is a joint venture company between Songa and Opus Offshore.

The rig, which arrived at the shipyard in November 2014, was delivered on time and with a perfect safety record in April this year. The rig underwent a five-year Special Periodic Survey (SPS), as well as general repairs, refurbishment and system upgrades on the deluge lines and manifolds, among other things. Extensive renewal works was also carried out on the 39 year old rig. The project was completed in a short time frame for it to be ready for its next assignment.

Songa Venus has since been deployed for work in offshore Russia in the Sakhalin field. A second semi-submersible rig, *Songa Mecur*, arrived in Keppel FELS in January 2015. It will also undergo a five-year SPS and similar upgrading works.

SEMBCORP MARINE WINS OFFSHORE & MARINE ENGINEERING AWARD AT SINGAPORE INTERNATIONAL MARITIME AWARDS 2015

Sembcorp Marine Ltd is the winner of the prestigious Offshore & Marine Engineering Award at the biennial Singapore International Maritime Awards (IMA) 2015 organised by the Maritime and Port Authority of Singapore (MPA).

The Award was presented by Guest-of-Honour Mr Lui Tuck Yew, Minister for Transport and Second Minister for Defence, at the Award Presentation ceremony and gala dinner held on 21 April at the Ritz-Carlton Hotel. Sembcorp Marine was among 11 industry partners honoured at the awards event organised by the MPA in conjunction with the 10th Singapore Maritime Week 2015.

The IMA recognises individuals and companies for their outstanding contributions to Singapore's advancement as a premier global hub port and an international maritime centre. This year's IMA attracted a bumper crop of over 150 nominations, reflecting the richness, diversity and quality of the maritime sector. The number of nominations was an increase of about 60 percent since the first edition in 2006.

Sembcorp Marine was accorded the Offshore & Marine Engineering Award this year by an independent judging panel, comprising key MPA and industry representatives, in recognition of the Group's significant contributions towards the development of Singapore's offshore and marine engineering sector.

With its early beginnings in 1963, Sembcorp Marine is a key industry pioneer leading the growth of the marine and offshore sector in Singapore. The Group's successful foray into offshore engineering, FPSO conversion and rig building in the 80s and 90s had helped paved the way for Singapore's achievements as a global leader in the marine and offshore industry, one of the world's top rig builders and a major international maritime centre.

Sembcorp Marine has continually invested in R&D and innovation. It has developed its own proprietary designs and critical components for rigs and ships as well as innovative engineering, construction and operational processes that further enhance productivity, efficiency and standards of excellence.

The opening of Sembcorp Marine's new yard facility Sembmarine Integrated Yard @ Tuas is another key thrust of Sembcorp Marine's strategy to grow its home-base operations and further sharpen Singapore's competitive edge in the marine and offshore industry. The 73.3-hectare Phase I new yard, which commenced operations in August 2013, is

Mr Wong Weng Sun, President & CEO of Sembcorp Marine, receiving the MPA Offshore & Marine Engineering Award from Guest-of-Honour Mr Lui Tuck Yew, Minister for Transport and Second Minister for Defence, at the Singapore International Maritime Awards 2015.

equipped with four VLCC drydocks totalling 1.55 million dwt in capacity, including Asia's longest and deepest ship repair drydock (412m x 66m x -11m) capable of docking containerships of up to 18,000 TEU and Singapore's widest drydock (360m x 89m x -8.5m) designed to accommodate jackups and semi-submersible rigs. The yard is also equipped with a special reinforced load-out area for offshore platforms of up to 20,000T.

Phase II of the new yard, with marine works scheduled for completion in the first quarter of 2017, will feature three graving docks – including two mid-sized 150,000 dwt drydocks with dimensions of 255m x 52m x -8m and a dedicated offshore drydock, among the widest in the region with dimensions of 255m x 110m x -12m for offshore rig building, upgrades and repairs. Facilities under Phase II also include the finger pier, quays and wharves which will offer customers a total berthage of approximately 2km with maximum water depth ranging from -9 metres to -18 metres, as well as a state-of-the-art steel fabrication facility. The latter will offer a streamlined, seamless and extensively automated production process from steel stock yard to final assembly and finishing shop.

With the enhanced facilities, the Sembmarine Integrated Yard @ Tuas will have capabilities to service a broader spectrum of vessels ranging from mid-sized to Suezmax commercial ships and to provide integrated offshore newbuilding, conversion, repair and upgrading solutions for offshore exploration and production units, jackup and semi-submersible drilling rigs, drillships and specialised oil & gas vessels.

Sembcorp Marine's new yard facility – Sembmarine Integrated Yard @ Tuas.

KOMTECH RECEIVES SINGAPORE INTERNATIONAL MARITIME AWARD FOR LNG-FUELLED TUG

Keppel Offshore & Marine Technology Centre (KOMtech), the research and development (R&D) arm of Keppel Offshore & Marine, was awarded the Outstanding Maritime R&D and Technology Award for its design of an Azimuth Stern Drive tug with a 65-tonne bollard pull capacity which can run on both Liquefied Natural Gas (LNG) and diesel fuel.

KOMtech received this Award for its achievements in developing innovative solutions for the marine industry. The Award was presented at the biennial Singapore International Maritime Awards (IMA) ceremony held on 21 April in conjunction with the Singapore Maritime Week by the Maritime and Port Authority of Singapore.

The dual-fuel engine tug design was developed at a time when natural gas is rising in importance as an energy resource and alternative marine fuel globally. KOMtech's focus on LNG solutions is also in line with the MPA's objective of establishing Singapore as a LNG bunkering port by 2020.

While a number of companies have been developing LNG fuel gas systems (LFGS) for ships, most designs face technical challenges with more improvements needed to achieve a higher level of safety and fuel efficiency.

Mr Aziz Merchant (left), Executive Director of KOMtech, receiving the Outstanding Maritime R&D and Technology Award on behalf of KOMtech from Mr Lui Tuck Yew, Minister for Transport and Second Minister for Defence

The Azimuth Stern Drive tug which can run on both LNG and diesel fuel.

KOMtech started developing a LFGS with a robust LNG vaporiser for marine applications in 2012. The result was an innovative and patented LNG vaporiser design incorporated into the tug design. This successfully brings together all the advantages of existing LNG vaporisers in the market. In addition, compared to other LNG vaporisers, KOMtech's system also has the advantages of being lower in capital expenditure and operating cost, more compact and safer.

Apart from the LFGS and LNG vaporiser, KOMtech also incorporated smart designs into its tug to enhance safety and comfort. The LNG vent and piping are arranged in such a way that the accommodation quarters in the lower deck area are situated away from the potential danger zone. The LNG fuel is carried in containerised, type-C ISO-certified tanks on the main deck, and re-fuelling can be as simple as replacing the empty tanks with replenished ones.

This is the second time that KOMtech has received this Award at the IMA. In 2013, KOMtech was presented the Outstanding Maritime R&D and Technology Award for its contributions to the development of feasible solutions in deepwater drilling and production.

MARITIME ASSOCIATES' FLOATING DOCK CONCEPT FOR MULTICATS AND SIMILAR VESSELS

Naval architecture and marine engineering consultancy firm, Maritime Associates, has developed a floating dock concept to dock Multicats and other similar vessels up to 300 light weight tons operating in the Caspian Sea. The floating dock concept was developed for Van Oord Marine & Dredging Contractors. Maritime Associates was asked to convert a flat-top barge into a maintenance barge.

This whole process from concept design to delivery, including obtaining the relevant Class and statutory approvals, was completed in five months.

According to Maritime Associates, deployment of the floating dock at the worksite can reduce significantly the downtime for vessels operating in the Caspian Sea area needing repairs and inspections of propellers. Ships scheduled for inspection and repairs need not to be docked at shore-based repair facilities for such work to be carried out.

Maritime Associates remarked that the floating dock concept offers a cost-effective deployment option for smaller shipyards with depth restrictions at their water front.

Maritime Associates is currently working on two variations of the concept. The first variation is a design for docking vessels up to 40 metres in length while the second one is for docking offshore vessels such as Anchor Handlers and Support Vessels up to 70 metres in length.

Barge Conversion to Floating Dock.

SINGAPORE IS LEADING MARITIME CAPITAL OF THE WORLD

Singapore has topped the list as the leading maritime capital amongst 15 maritime cities according to a 2015 Report on "The Leading Maritime Capitals of the World" published by Norwegian consulting firm Menon Business Economics.

The Report benchmarked 15 top maritime cities around the world in five areas: shipping, finance and law, technology, ports and logistics, and competitiveness and attractiveness. These cities were Athens, Busan, Copenhagen, Dubai, Hamburg, Hong Kong, London, Mumbai, New York, Oslo, Rio de Janeiro, Rotterdam, Shanghai, Singapore and Tokyo. The Report combined objective indicators and subjective measures to assess and benchmark the cities. Data sources that are widely used and respected in the industry were used along with a survey of maritime professionals and experts located in 33 countries in all continents.

Indicators for shipping centers included gross tonnage owned by shipowners and managed by managers registered in the city as well as share of the city's national value of world fleet. Indicators for maritime finance and law included the number of maritime legal experts in the city, national collected insurance premium for P&I, hull and cargo, value of maritime mandated loans issued from a bank in the city, and market capitalisation of listed maritime companies on the city's stock exchange.

For port and logistics, data was gathered for the volume of TEU handled at ports in the city and volume of TEU handled by port operator with headquarters in the city. Indicators for maritime technology included the value of ships delivered from the nation and number of ships classed by a classification society with headquarters in the city.

Maritime professionals were surveyed on their perceived leading cities for the various categories, and attractiveness and competitiveness of the cities based on their business environments and completeness of the maritime cluster.

The Report ranks Singapore first as the leading maritime city of the world, followed by Hamburg, Oslo, Hong Kong and Shanghai. Singapore was also ranked first in the first Report on the leading maritime cities of the world published three years ago.

Singapore also takes the top spot in ports and logistics as well as on attractiveness and competitiveness. Based on objective indicators, Athens is ranked the top shipping centre, its strengths lie in its large and strong shipowning community. Oslo leads in maritime technology. London ranks first for maritime finance and law.

The Report cited Singapore's business friendly policies, and being strategically located on the trade route between Europe and Asia as reasons for her being ranked number one. "Singapore has gained a position in the global economy few would have predicted 40 years ago. As recently as 10 years ago, Singapore lacked maritime research and education, and the lines between foreign and domestic companies were weak. Today, the city plays a key role in all aspects of the maritime industry."

Looking ahead, the Report commented that "There seems to be clear consensus among the experts that Singapore will remain the most important city in 2020, while Shanghai is expected to become the second most important."

For the full report, please see 'The Leading Maritime Capitals of The World' by MENON Business Economics, Menon Publication No. 22/2015, May 2015.

LEADING MARITIME CAPITALS 2015

Rank	Shipping Centres	Maritime Finance & Law	Ports and Logistics	Maritime Technology	Attractiveness & Competitiveness	Overall Rank
1	Athens	London	Singapore	Oslo	Singapore	**Singapore**
2	Singapore	Oslo	Hong Kong	Hamburg	Hamburg/Oslo	**Hamburg**
3	Hamburg	New York	Rotterdam	Tokyo	-	**Oslo**
4	Tokyo	Singapore	Shanghai	Busan	London	**Hong Kong**
5	Hong Kong	Hong Kong	Dubai	Singapore	Shanghai/Hong Kong	**Shanghai**

SMF HOSTS SINGAPORE NITE RECEPTION IN OSLO

ASMI and the Singapore Maritime Foundation (SMF) were in Oslo where they co-organised the Singapore Pavilion at Nor-shipping 2015. The SMF also hosted the Singapore Nite @ Nor-shipping 2015 reception on 4 June at the Hotel Continental in Oslo.

The Minister of Transport and Second Minister for Defence, Mr Lui Tuck Yew, was Guest-of-Honour at the Singapore Nite. The popular function was attended by more than 300 guests from the Singapore, Norwegian and international maritime community.

Minister Lui Tuck Yew (third from right) was Guest-of-Honour at the Singapore Nite @ Nor-shipping 2015.

The Singapore Nite @ Nor-shipping 2015 reception.