OFFSHOREMARINE

A newsletter of Keppel Offshore & Marine



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Mr S Iswaran (second from left), Singapore's Minister for Trade & Industry (Industry), speaking to Mr Michael Chia, MD (Marine & Technology) of Keppel O&M, at the Keppel O&M booth at the exhibition and conference Gastech.

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Eighth rig of the year delivered safely and on time



Mr Wong Kok Seng (second from right), MD of Keppel O&M (Offshore) and Keppel FELS and Mr Ali Hamid Al-Ghamdi (second from left), MD (Administration) of Arabian Drilling Company celebrating the win-win partnership between both companies during the delivery signing ceremony of ARABDRILL 70 on 28 October 2015

Keppel FELS has delivered ARABDRILL 70, a KFELS B Class jackup rig, to Arabian Drilling Company (ADC), three days ahead of schedule, on budget and with a perfect safety record. The delivery signing ceremony was held on 28 October 2015.

ARABDRILL 70 is the fourth KFELS B Class jackup rig to work for ADC.

Keppel FELS previously delivered two jackup rigs, ARABDRILL 50 and ARABDRILL 60, in June 2013 and December 2013 respectively. The jackups have since been operating successfully for ADC and their charterer, Saudi Aramco, Saudi Arabia's national oil company. ADC also acquired ARABDRILL 30 in 2009. In addition to these rigs, Keppel FELS built a KFELS Super B Class rig, SAR 202, directly for Saudi Aramco in 2012.

Mr Wong Kok Seng, MD of Keppel

O&M (Offshore) and Keppel FELS, said, "We build long-standing partnerships with our quality customers which enable us to understand their needs and deliver projects that are well-received in the market, efficiently and safely each time. We are proud that our proprietary KFELS B Class design has served ADC well and remains in strong demand even in the current low oil price environment.

"This is our eighth delivery this year and we continue to focus on executing our projects well, ensuring on-time and on-budget deliveries. Besides newbuild rigs, we are also actively engaged in repair and modification projects for our customers. By the end of this year, Keppel FELS would have completed 17 repair projects."

Mr Ali Hamid Al-Ghamdi, MD (Administration) of Arabian Drilling Company, added, "We are pleased to receive another high quality rig from Keppel FELS, which will bring our offshore fleet to eight units, placing ADC in a favourable position to contribute to the growth of the oil industry in the region. The first three rigs have been performing exceptionally well and we are confident that ARABDRILL 70 will perform just as well, if not better.

"The relationship between ADC and Keppel has been very successful and we look forward to building on that success in the future."

ARABDRILL 70 is the 61st KFELS B Class rig delivered since 2000. The KFELS B Class design has a market share of about a quarter of all jackup rigs delivered in the last 15 years. It has been employed by some 20 international drilling operators in over 15 countries.

Caspian subsea vessel progress



Management and project teams from BP, Baku Shipyard, Keppel Singmarine and surveyor, DNV GL, celebrating the successful launch of the hull strips of the Subsea Construction Vessel



Launching of the hull from a slipway

Keppel Singmarine celebrated a project milestone on 26 August 2015 when it launched the hull of a Subsea Construction Vessel (SCV) that it fabricated for Baku Shipyard, Keppel Offshore & Marine's shipyard in Azerbaijan.

The hull was then shipped to Baku Shipyard on 14 September 2015 for integration with other

components fabricated there. The hull was built and shipped in two longitudinal hull strips so that it could pass through the Volga-Don Canal which provides the most direct passage into the land-locked Caspian Sea where Baku Shipyard is located.

The SCV is a project that Baku Shipyard secured from BP

Exploration (Shah Deniz) Ltd, the operator of the Shah Deniz gas field development in the Azerbaijan sector of the Caspian Sea. Other than the fabrication of the hull strips, Keppel Singmarine's work scope includes the design of the vessel and outfitting the hull with equipment and systems.

Striking start for multi-purpose vessel

Keppel Singmarine, together with its customer Maritime Construction Services, celebrated the strike steel ceremony for a multi-purpose vessel on 29 September 2015.

Scheduled for completion in mid-2017, the vessel will be built to the proprietary design of Keppel Offshore & Marine's ship design and development arm, Marine Technology Development (MTD).

It will have capabilities such as Class 3 dynamic positioning and diving support functions.



Management and project members from Keppel Singmarine and Maritime Construction Services celebrated the start of construction for its latest ice-class multi-purpose vessel, built to Keppel's proprietary design

Smooth execution at Keppel AmFELS

Even as Keppel AmFELS bustles with activity, safety remains a key focus at the yard. The yard celebrated progress milestones with impressive safety achievements in the month of September.

DOUBLE MILESTONE FOR UXPANAPA

The fifth jackup rig that Keppel AmFELS is constructing for Perforadora Central, Uxpanapa, reached a double milestone on 22 September 2015. Its hull was successfully launched into the sea and it also celebrated two million man-hours worked without lost-time incidents. In recognition of the yard's achievement, Perforadora Central presented the project team with a plaque and safety bonus of US \$30,000.

Mr Ricardo Cortinas, Vice
President, Offshore Drilling
Operations, Central Panuco
(Perforadora Central) said, "It is
always very exciting to see the
successful launching of a rig.
Central Panuco is very pleased
with the on-time production
schedule of Uxpanapa and would
like to congratulate the dedicated
employees at Keppel AmFELS for
achieving two million man-hours
without any lost time incidents."

SAFETY ONBOARD P209

In another demonstration of Keppel AmFELS' commitment to safety and quality, the yard accomplished one million man-hours with zero lost-time incidents on the construction of the P209 project. The customer



The construction of the jackup rig, Uxpanapa, reached a significant milestone with the launching of the hull into the sea



The project teams from Keppel AmFELS and Perforadora Central, including Mr Simon Lee (front row, third from left), President, Keppel AmFELS and Mr Patricio Alvarez Morphy Camou (front row, fifth from left), General Director, Perforadora Central, celebrate another winning partnership

congratulated the team on a great safety performance and project execution. As an appreciation and incentive to the teams, the customer presented them with a plaque of recognition and a slew of rewards in September 2015.

The implementation of a number of new safety ideas and practices on the P209 project were generated in consultation with the customer and resulted in improved safety awareness among the project team.

NOBLE DELIVERY

Another project with a perfect safety record is the on-time delivery of the semisubmersible rig Noble Paul Romano, to repeat customer, Noble, on 19 September 2015.

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The rig, which arrived on 1 May 2015, was at the yard for repairs and upgrading works. It was moored alongside a second project in the yard for Noble, the semisubmersible Noble Jim Thompson.

Keppel AmFELS' unwavering commitment to safety was further reinforced in a recent crossbusiness unit safety audit exercise conducted by Keppel FELS and Keppel Verolme's HSE teams from 27 September to 4 October. The

audit also provide the opportunity for business units and teams across Keppel's yards globally to exchange ideas on best practices and processes.



Keppel AmFELS received strong customer commendation on the excellent progress and safety achievement of the P209 project

Sharing safety best practices

To continually raise safety standards across its yards and share best practices with the industry, Keppel Offshore & Marine (Keppel O&M) hosted a visit by Shell Singapore on 23 September 2015.

Besides a cross-sharing on key safety initiatives from both parties, the delegation from Shell was also taken on a tour around Keppel's integrated safety training facility, the Keppel Safety Training Centre, where they were introduced to the different programmes which Keppel O&M uses to train its multinational workforce.

Mr Yong Chee Min, Director (HSE & Special Projects), Keppel O&M, shared, "These regular sharing sessions allow us to learn from one another's best practices and at the

same time, refine our processes to build a robust safety culture at the workplace where everyone looks out for each other."



Mr Chor How Jat (standing, seventh from left), MD, Keppel Shipyard, hosted the delegation from Shell, led by Ms Goh Swee Chen (standing, eighth from left), Chairperson, Shell Singapore, in a tour around Keppel Safety Training Centre where they exchanged safety best practices

Trusted partner in repairs

As the market leader in the design, construction and repair of offshore rigs, Keppel FELS executes its projects safely, on time and on budget, winning the trust and support of its clients.

COSL SEEKER

Jackup rig COSL SEEKER was re-delivered to COSL Drilling Pan-Pacific (COSL) on 28 October 2015 after general refurbishment and repair works were completed on time, on budget and with a perfect safety record.

The rig originally arrived at Keppel FELS on 1 August 2015 and was awarded a drilling contract in the middle of September 2015.

Project teams from Keppel FELS and COSL then partnered closely to complete the project, which included various system repairs and upgrading, as well as the installation of a third-party equipment.

Besides the construction of newbuild rigs, Keppel FELS is also actively engaged in repair and modification projects. By the end of this year, the yard would have completed 16 repair projects.

HAKURYU-11

Repair and modification works for the KFELS Super B Class rig Hakuryu-11 were completed on time and with a perfect safety record on 10 September 2015, after docking in Keppel FELS for 38 days.

To ensure that the rig was kept in tip-top condition, a periodic survey, an Underwater Inspection in Lieu of Dry Docking (UWILD), was also conducted.

Mr Andrew Ong, Assistant Project Manager, Keppel FELS, said, "The safe and timely delivery of Hakuryu-11 bears testimony to the exceptional teamwork between Japan Drilling Company (JDC) and Keppel FELS. Having worked with JDC on several projects over the

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Mr Toshiki Abe (fourth from right), GM, Technical Maintenance Department, Japan Drilling Company, presenting a token of appreciation to Mr Loe Hauw Sheong (third from right), Assistant GM, Operations, Keppel FELS, for the safe and timely delivery of Hakuryu-11



During the delivery signing on 16 September 2015, Mr Ian Lord (fifth from left), Head, UMW Offshore Drilling, presented a plaque of appreciation to Mr Max Goh, (fourth from left), GM (Operations), Keppel FELS, in recognition of the safe and successful completion of UMW Naga 3



Keppel FELS, BOT Lease Company and Japan Drilling Company representatives at the keel-laying ceremony of Project B378 Hakuryu-15

years, we have gained their trust and built a strong partnership."

Keppel FELS delivered Hakuryu-11 to JDC in May 2013. The two companies also collaborated on the upgrade and modification of the semisubmersible drilling rig Hakuryu-5 in 2014 and the jackup rig Hakuryu-10 in 2012.

UMW NAGA 3

UMW Offshore Drilling's jackup rig, UMW Naga 3 was delivered on 16 September 2015 after maintenance and repair works were completed safely, on time and within budget.

The rig was docked in Keppel FELS from 24 July to 19 September 2015 for its five-yearly Special Periodic Survey, which included a refurbishment and recertification of drilling, marine and life-saving equipment and systems. General

maintenance and repair works were also carried out.

Mr Ian Lord, Head, UMW Offshore Drilling, said, "Besides this repair job, Keppel FELS also recently delivered our third newbuild KFELS B Class jackup, UMW Naga 8, a month early.

"Our strong partnership and close cooperation give us full assurance that Keppel FELS will not only deliver early and on time, but their rigs will also perform excellently for us."

HAKURYU-15

Representatives from Keppel FELS, BOT Lease Company (BOTL) and Japan Drilling Company (JDC) marked the keel-laying ceremony of Project B378 Hakuryu-15, a KFELS Super B Class jackup rig on 22 October 2015. Hakuryu-15 is the second KFELS Super B Class jackup rig that will be operated by JDC and had its strike steel ceremony in March 2015.

Hakuryu-11, JDC's first KFELS Super B Class unit, was delivered safely and on time in 2013 and has been working well in the field. The KFELS Super B Class is an innovative solution for drilling rigs that can operate in deeper depths and at higher temperature and pressure levels.

With a drilling depth of 35,000 ft, the rig's leg structure is uniquely designed to provide enhanced robustness for operations at 400 ft water depth. The rig is also engineered to operate in high ambient temperatures and can ccommodate 150 personnel onboard.

New developments by BOS in fuel efficiency

To help reduce fuel costs, Blue Ocean Solutions (BOS) installed its proprietary Emulsified Fuel System (EFS) in four more container ships for APL. This brings the number of APL vessels that BOS has serviced to a total of seven.

A notable feature of the latest deliveries is the seamless

Blue Ocean Solutions Senior Engineer, Mr Thomas Tesswin (second from left), explaining some of the functions of the EFS Water Controller to APL crew members

integration of the EFS to the new generation of electronically governed marine diesel engines. Analysis of the combustion data logged by the performance monitoring system confirmed that the combustion efficiency of these engines is better when integrated with an EFS.

Another significant development by Blue Ocean Solutions is a new methodology which is able to reliably measure the improvement of fuel efficiency to within 1% tolerance. Using this methodology, vessel owners can evaluate the extent EFS has helped in bringing about 2-5% fuel savings for them.

Enhancing track record in BWMS installation

Keppel Shipyard has successfully installed a Ballast Water Management System (BWMS) on oil tanker, Kaimon Maru, for long-time customer JX Ocean. The tanker was delivered on 26 August 2015.

This is the first time that JX Ocean has their vessel retrofitted with a BWMS, which allows a vessel to treat and discharge the water from its ballast tank safely and according to international standards.

Keppel Shipyard, through partnerships with established vendors that have a strong track record in BWMS technology, has been providing quality BWMS installation services for customers worldwide



Keppel Shipyard successfully installed a Ballast Water Management System for oil tanker, Kaimon Maru, in August

Stena's praise for Keppel FELS

During the Sundowners Party held at 1-Altitude Gallery & Bar on 16 October 2015, Keppel FELS' longstanding customer, Stena Drilling, presented a plaque of appreciation to the company for its dedicated

service and round-the-clock work on semisubmersible drilling rig, Stena Clyde.

The work on Stena Clyde, which included an installation of a new helideck and two blisters, was completed by Keppel FELS in May 2015 in less than one month so that the rig could be mobilized for work in offshore Australia as scheduled. Under normal circumstances, this project would have required at least a few months.

Earlier in the year, Stena Clyde also docked at Keppel FELS for its fiveyearly Special Periodic Survey and departed the yard on 23 February 2015.



Mr Barry Rainnie (third from left), Engineering and Performance Manager, Stena Drilling, presented a plaque of appreciation to Mr Chris Ong (second from left), Deputy Managing Director, Keppel FELS for the project team's hard work and dedication on Stena Clyde

Celebrations onboard BW Singapore

In celebration of the successful modification works carried out by Keppel Shipyard on the Floating Storage Regasification Unit BW Singapore for long-time customer, BW, a networking and tour session was held onboard BW Singapore by the vessel owner on 15 September 2015.

Attendees at the celebratory event included the vessel's Godmother, Mrs Lim Hwee Hua, Board Director of BW and former Singapore Second Minister for Finance and Transport, as well as management from Keppel Offshore & Marine and guests from Temasek Holdings and companies from the oil and gas industry.



Modification works were successfully carried out by Keppel Shipyard on BW Singapore

Strong partnerships in Brazil



Mr Marlin Khiew (sixth from right), Vice President (Operations) of BrasFELS, presents a plaque from the shipyard to Mr Luiz Britto (seventh from right), Project Manager of Odebrecht, in the presence of Keppel and Odebrecht representatives including Mr Lai Ching Chuan (fourth from right), Director (Corporate Development) of Keppel O&M, Mr Kwok Kai Choong (fifith from right), CEO and President of Keppel FELS Brasil, and Mr Helio Colodete (third from left), Contract Director of Odebrecht

Keppel FELS Brasil's BrasFELS shippard continues to deliver quality services to its repair customers.

ODN TAY IV

Over the course of the year, the shipyard has carried out a trio of projects for its customer Odebrecht Oil & Gas.

The semisubmersible rig ODN Tay IV had arrived at the shipyard on 7 July 2015 and left on 12 September 2015.

On 30 October 2015, the two companies exchange plaques to mark the successful teamwork on this project.

TOP CORAL DO ATLANTICO

The pipe laying support vessel (PLSV) Top Coral do Atlântico left BrasFELS shipyard in October 2015 after completing its thruster repairs on the floating dock FS-1.

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BrasFELS received compliments for a job well done in repair works for the PLSV Top Coral do Atlântico

Pleased with the standard and quality of the job, the vessel's owners Odebrecht Oil & Gas and Technip paid special compliments to the painters Josue Carneiro dos Santos and Samuel de Deus for their excellent safety performances during the execution of their duties.

NORBE VI

The semisubmersible rig Norbe VI arrived at Keppel FELS Brasil's BrasFELS shipyard for repairs on 28 October 2015. The vessel is expected to leave in the shipyard in November 2015.



Norbe VI arrived at BrasFELS shipyard on 28 October 2015

Navigating challenging conditions



Keppel O&M senior management, including CEO Mr Chow Yew Yuen (far right) and MD (Offshore) Mr Wong Kok Seng (second from right) interacted with partners at the annual Pareto Conference in Oslo

At Europe's largest oil and offshore investor conference, the Pareto conference, the mood was predictably sombre but there was optimism for the long term outlook and short term opportunities.

Held from 2 to 3 September 2015 in Oslo, Norway, the 22nd edition of the annual conference saw presentations from major companies from the oil and gas, drilling and production, subsea and offshore support segments.

Keppel Offshore & Marine (Kepel O&M) is the only shipyard to present regularly at the conference. CEO Mr Chow Yew Yuen shared on its focus of executing well while exploring opportunities to provide solutions in areas such as the liquefied natural gas value chain, the maintenance repair and upgrading market, subsea support vessels and next generation drilling rigs.

The general consensus for the

long term is that oil will continue to be the main energy supply to meet increasing global demand from developing countries, with oil prices expected to reach an equilibrium in a few years. In the short term, cost controls and improved efficiency are key to riding out the downturn. Most drilling operators spoke of the need to retire older rigs to rebalance the market.

Having emerged strong through several cycles of industry downturns, Keppel O&M has the experience and foresight to seize opportunities through prudent acquisitions to grow its capabilities, leverage its proprietary technology to add value and provide costefficient solutions for customers as well as enter niche markets.

Outstanding performance at N-KOM



Management and project teams from N-KOM and GDI celebrating the safety milestone of two million safe man-hours without lost-time incidents with key contractors working on the liftboat project

Nakilat-Keppel Offshore & Marine (N-KOM)'s steadfast focus on safety excellence received recognition from valued clients when the shipyard, a subsidiary of Keppel Offshore & Marine in Qatar, was given a bonus and an award for good performance in safety.

PROJECT MILESTONE

N-KOM's newbuild liftboat project recently achieved a safety milestone of two million safe manhours without lost-time incidents.

The shipyard is currently constructing the self-propelled and self-elevating liftboat for its longtime client, Gulf Drilling International (GDI).

For its excellent performance in safety, N-KOM was awarded a US\$10,000 bonus by GDI.

N-KOM also presented certificates of appreciation to key contractors to recognise their contributions



Mr Chandru Rajwani (left), CEO of N-KOM, receiving the Most Improved HSE Standards and Culture Award from Captain David Taylor (right), General Manger (Ship Management) of Shell International Trading & Shipping Co. Ltd

and commitment to safety on the liftboat project.

SAFETY IMPROVEMENT

N-KOM received the Most Improved HSE Standards and Culture Award at the Shell Shipping and Maritime Contractor Awards 2015 on 15 October 2015. The shipyard has repaired and serviced a number of LNG carriers for the oil company over the past year. The award, which was presented during Shell's annual Health, Safety and Environment workshop, recognises the shipyard's improvements made in its lost-time-incident rate from 1.0 in 2014 to zero in 2015, as well as its efforts in enhancing its safety culture through the launch of a robust and comprehensive programme, Safety Excellence 2020, which aims to create an injury-free work environment.

Top honours

In both its local and overseas operations, Keppel Offshore & Marine maintains a steadfast focus on customer satisfaction and innovation. Two of Keppel's yards recently received recognition for their strong display of these core values.

Mr Chandru Rajwani, CEO of N-KOM, said, "The successful completion of the ME-GI project by N-KOM is yet another significant milestone for the shipyard in 2015. The attainment of the Ship Repair Innovation Award is an affirmation of the shipyard's capabilities in

handling complex repair and retrofit projects, as well also our innovative efforts in contributing to the sustainable development of the maritime industry through solutions that bring about cleaner emissions."

SHIPYARD OF THE YEAR

For its longstanding commitment to its customers, Keppel Shipyard was named Shipyard of the Year at the annual Lloyd's List Asia Awards held at Singapore's Fullerton Hotel on 28 October 2015.

This is the ninth time that Keppel Shipyard has received the award, in recognition of its consistent delivery of safe, high quality and prompt services.

Mr Albert Kee, ED (Operations), Keppel Shipyard, received the award on behalf of the company.

SHIP REPAIR INNOVATION

Bolstering its reputation as a premier shipyard in Qater, Nakilat-Keppel Offshore & Marine (N-KOM) received the Ship Repair Innovation Award at the Seatrade Maritime Awards Middle East. Indian Subcontinent & Africa 2015 held in Dubai on 19 October 2015.

The award recognises N-KOM's achievement in successfully undertaking the world's first M-type Gas Injection (ME-GI) retrofit project, which involved modifying a Q-MAX vessel, Rasheeda, to run on Liquefied Natural Gas as an alternative to marine diesel fuel.



Mr Albert Kee (right), ED (Operations), Keppel Shipyard, receiving the Lloyd's List Shipyard of the Year award on behalf of Keppel Shipyard



Mr Chandru Rajwani (second from right), CEO of N-KOM, represented the shipyard to receive the Seatrade Maritime Ship Repair Innovation Award from Mr Koichi Murata (second from left), Regional Manager (Middle East) of ClassNK

Showcase of gas solutions



Mr S Iswaran (centre with red tie), Singapore Minister for Trade and Industry (Industry), being briefed on Keppel's award winning dual-fuel ASD tug design by Mr Michael Chia (left), MD (Marine & Technology), Keppel O&M, while Mr Chor How Jat (right), MD, Keppel Shipyard, looks on during the opening of the Gastech Singapore Pavilion

Keppel Offshore & Marine (Keppel O&M) joined over 20,000 international attendees to showcase its technological innovations in gas at Gastech Singapore 2015 held at the Singapore Expo from 27 to 30 October 2015.

Gastech, which is now into its 43rd year, is a conference and exhibition for the international oil & gas industry. This is the first time that the event has taken place in Singapore.

The Gastech event in Singapore comes at a time when the government has opened up the gas and Liquefied Natural Gas (LNG) trading market to competition, and announced plans to develop the state into a major energy hub for the gas industries.

On the opening day of the event,

Mr S Iswaran, Singapore Minister for Trade and Industry (Industry), opened the Singapore Pavilion in the exhibition space and visited Keppel's booth where he was given an overview of the group's gas solutions.

As a global leading provider of offshore and marine solutions, Keppel O&M stands poised to seize opportunities from LNG developments in the region. The group just recently set up a new design and technology arm, Gas Technology Development (GTD), to further focus efforts on solutions for the LNG markets. This includes the development of a suite of products with LNG applications as well as designs for LNG support vessels and LNG systems for vessels.

Prior to the setting up of GTD, Keppel Shipyard, the ship repairing and conversion unit of Keppel O&M, has already built up a track record in catering to the LNG market. The shipyard was the first in the world to undertake a conversion project for a Floating Storage and Regasification Unit delivered in 2008. More recently in 2014, Keppel Shipyard became the first shipyard in the world to provide conversion solutions for a Floating Liquefaction Facility.

Apart from providing solutions that bring gas efficiently to market, Keppel Shipyard has also developed solutions for sustainable development through the conversion of vessel engine systems to run on LNG as an alternative and greener fuel. The shipyard will be undertaking the world's first conversion of a large roll-on/roll-off cargo vessel to operate on a dual-fuel diesel LNG propulsion system for Totem Ocean Trailer Express.

Developing award winning designs

As part of the Gastech exhibition in Singapore, the Maritime and Port Authority of Singapore (MPA) commissioned a special supplement in The Business Times newspaper.

Keppel Offshore & Marine's (Keppel O&M) technological innovations and gas strategy were featured through interviews with Mr Michael Chia, MD (Marine & Technology), and Dr Nigel Koh, Senior Programme Manager (Ship and Marine Technology), Keppel O&M Technology Centre (KOMtech).

Mr Chia told The Business Times that Singapore was poised to benefit from Liquefied Natural Gas (LNG) development in the region. He said, "The market for small to mid-scale LNG solutions has been

growing in regions such as Africa and Asia Pacific. These regions have a healthy demand for energy, and a cost effective and quick solution to bring gas to market and users without relying on landbased LNG terminals."

The Floating Liquefaction Facility that Keppel is converting for Golar LNG is premised on delivering cost and time savings over newbuild units based on the conversion of existing Moss LNG carriers readily available in the market.

In seeking to free up deck space from installed liquefaction facilities, Keppel O&M has separately developed the PreNEx micro-LNG plant system. The use of nitrogen, a non-flammable gas as the refrigerant in PreNEx, meant that most of the equipment can be stored below deck. PreNEx also boasts a lower equipment count than the dominant SMR system and is thus more space efficient.

To seize opportunities in this market, Keppel O&M has set up a new design and technology arm, Gas Technology Development (GTD), which focuses efforts on solutions for LNG markets. This includes the development of a suite of products with LNG applications as well as designs for LNG support vessels and LNG systems for vessels.

Besides the Floating Liquefaction Facility, Keppel also has proprietary designs that can be tailored to meet customers' specific needs. Mr Chia added, "For instance, our LNG carrier designs are suitable for more specific needs such as inter-coastal and river transportation and have a range of storage capacity for customers to choose from. For owners requiring newbuild ships, they are also looking at ship designs that come with dual-fuel engines that can run on both diesel and LNG. So far, we have come up with a design for an ocean-going LNG tug."

In fact, for its design of an ASD tug with a 65-tonne bollard pull capacity which can run on both LNG and diesel fuel, KOMtech was awarded the Outstanding Maritime R&D and Technology



Dr Nigel Koh, part of Keppel O&M's in-house R&D team responsible for developing award winning designs such as the ASD tug (model shown in picture) that can run on both LNG and diesel fuel

Award at the biennial Singapore International Maritime Awards by the Maritime Port Authority of Singapore in April this year.

"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," says Dr Koh. "KOMtech started developing an LFGS with a robust LNG vaporiser for marine applications since 2012. The fruit of the research was incorporated into the tug design which successfully brings together all the advantages of the existing LNG vaporiser in the market."

Compared to other LNG vaporisers, KOMtech's system has the advantages of being lower in capital expenditure and operating cost. It is also more compact and safer. Apart from the LNG vaporiser and LNG fuel gas systems (LFGS), KOMtech also incorporates smart designs into its tug to enhance safety and comfort.

KOMtech's focus on LNG solutions is also in line with MPA's objective of establishing Singapore as an LNG bunkering port by 2020.

Besides LNG shipping, Keppel Shipyard is also well-placed, with their established track records and to pursue Floating Storage Regasification unit (FSRU) contracts stemming from efforts by governments to fast-track the building of LNG import capacity.

The company is seeing enquiries for up to 60,000 cubic metre FSRUs, Mr Chia said, adding that the yard intends to pursue newbuild contracts for units of 60,000-75,000 cubic metres. Keppel O&M would continue to offer shipowners the conversion option for larger FSRUs, which by his estimate, could fast-track the delivery of the finished product within 12 months.

Golden jubilee award

In recognition of its achievements and contributions over the decades as leading Singaporean company, Keppel Singmarine was honoured with the Golden Jubilee Business Awards on 4 November 2015.

Keppel Singmarine was among 50 companies who received the award from the Guest-of-Honour, Minister for Finance and Chairman of the SG50 Steering Committee Mr Heng Swee Keat, at the awards ceremony held in conjunction with the Semi-Centennial Leadership Conference.

Mr Heng said, "These businesses stayed mindful of domestic and global changes, to ensure that their businesses remained relevant to the needs of their time. We need to continue to embody this pioneering spirit."

The award recipients were selected by a committee comprising the Singapore Business Federation, the Accounting and Corporate Regulatory Authority and business information service provider DP Information Group.



Mr Heng Swee Keat (left), Singapore Minister for Finance, presenting a Golden Jubilee Business Award to Keppel Singmarine, represented by its MD, Mr Abu Bakar Mohd Nor (right)

Latin America opportunities



Keppel was a host of the Latin Asia Business Forum and networking reception, and met up with partners, friends and customers.

Mr Michael Chia (third from left), MD (Marine & Technology) of Keppel O&M, participated on a panel of industry experts providing insights into the Latin American oil and gas market

Despite challenges faced by some cities in Latin America, long term investment opportunities in the region remain.

Several countries have implemented energy reforms which, coupled with further developments in infrastructure, will be needed to support growth in the region and a rising middle class that has doubled to 30% of the total Latin American population in the last decade.

This was the consensus by business leaders and policymakers at the Latin Asia Business Forum held on 16 October 2015, where Keppel was a strategic sponsor.

Mr Michael Chia, MD, Marine &

Technology, Keppel Offshore & Marine, was a panelist for the discussion "Will oil fuel the Latin-Asia relationship for the long haul?".

He shared, "Latin America has an abundance of oil and gas, and despite the current low oil price, it is still looking to increase its production in order to meet targets. Having delivered a significant number of projects to the region, we have a good understanding of the market and believe that many opportunities for Singapore companies remain.

Keppel, with our expertise in offshore rigs, floating production platforms, Floating Production Storage and Offloading units (FPSOs), vessels and equipment is well positioned to service this growing market."

The biennial Latin Asia Business Forum brings together business and government leaders to discuss opportunities for partnership in trade and investments, providing a platform to share market experiences, insights and expertise.

Growing with Vietnam

Keppel Offshore & Marine (Keppel O&M) fostered stronger relations with long-time customer Vietnam Oil and Gas Group, or Petrovietnam, and networked with global oil majors when it participated in Petrovietnam Conference & Exhibition from 21 to 23 October 2015 in Ho Chi Minh City, Vietnam.

The three-day conference and exhibition is a premier oil and gas event hosted by Petrovietnam with the objective of bringing together international oil and gas companies and supporting industries to network and exchange views on technology trends and potential solutions for Exploration & Production challenges.

The event was officially opened by H.E. Hoang Trung Hai, Deputy

Prime Minister of Vietnam, on 21 October 2015.

As a global solutions provider in the offshore and marine industries, Keppel O&M has been supporting and growing with the oil and gas industry of Vietnam for over 20 years, having been involved in a number of firsts for the country.

For instance, the first offshore vessel – a 1,200 tonne floating crane – was built for Vietnam by Keppel FELS in 1984. In 1988, Keppel FELS built the country's first jackup rig Tam Dao 1.

Since delivering Tam Dao 1, Keppel FELS has also built Vietnam's first semisubmersible drilling tender, and delivered four KFELS B Class jackup rigs to PetroVietnam Drilling. The latest and fourth KFELS B Class rig, PV Drilling VI, was delivered earlier this year. The naming ceremony of the rig was held at Keppel FELS. PV Drilling VI was also the 100th jackup rig Keppel FELS has built since 1970.

On the marine side, Keppel Shipyard has converted several Floating Storage Offloading and Floating Production Storage and Offloading vessels, which are currently operating in waters off Vietnam.



Keppel O&M management hosting H.E. Hoang Trung Hai (third from right), Deputy Prime Minister of Vietnam, and Mr Nguyen Quoc Khanh (second from left), President and CEO of Petrovietnam, to a visit to Keppel's booth on the opening day of the exhibition

Awards affirm culture of innovation



Keppel management with the award winners at the third Keppel O&M innovation awards

This year's Keppel Offshore & Marine (Keppel O&M) Innovation Awards Ceremony saw a wide variety of projects from state-of-the-art product designs to advanced rig equipment to efficient processes being recognised.

It was the third year of the annual awards ceremony and a strong affirmation of the robust culture of innovation across the group.

Speaking at the Ceremony,
Mr Loh Chin Hua, Chairman, of
Keppel O&M and CEO of Keppel
Corporation said, "Innovation is
what has made Keppel O&M the
leader it is today. We come up
with ideas to help our customers
solve their problems and at the
same time, to make ourselves more
productive. We are an organisation
that welcomes ideas and cross
collaborations. Over the past two

years, we have recognised over 50 projects globally through this platform and it has also inspired the innovation awards at the Keppel Group level."

A total of 38 teams from 10 business units participated in this year's Innovation Awards. Besides entries from the local business units, overseas yards, including those in Brazil, the US, China, Japan, the Philippines, Qatar and Azerbaijan also contributed to the diverse range of innovation projects.

Mr Chow Yew Yuen, CEO, of Keppel O&M, added, "This has proven to be a very successful platform to recognise the achievements and contributions of our very own innovators as well as incentivise aspiring Keppelites. We must always innovate to stay ahead of the competition. "This is a challenging period with the low oil price. However, this is an opportune time for us to grow our capabilities and continually come up with robust solutions to emerge even stronger. It is during these period in the past that we have innovated and seized opportunities. I want to congratulate all the winners today as well as those who have contributed to fostering an innovative culture."

Some of the winning projects include the world's first purposebuilt drilling tender to operate in the North Sea, the SSDT™ 5000NG design; the first jackup design to operate in 500 feet water depth, providing a more robust and high-performing solution for harsh environments in the East China Sea and North Sea; developing innovative construction

methodology in the Malampaya Phase 3 Depletion Compression Platform (MP3 DCP) in the Philippines, among a host of other innovative projects.

In addition, the group continues to be on the lookout for new opportunities and markets. With the growth in demand for natural gas and its long term viability for cleaner energy, a Gas Technology Development (GTD) arm has also been set up to tap opportunities in the gas value chain. New products for adjacent markets being developed include liftboats and self-elevating platforms for maintenance of offshore platforms, offshore wind turbine installation or decommissioning of oil wells.

The winning projects are:

Project name	Business Unit
Gold New N Plus Design with Enhanced Cantilever Load Chart and Spudcan Design New Generation Drilling Tender SSDT™5000NG for Harsh Environment	Offshore Technology Development (OTD) Deepwater Technology Group (DTG)
Silver Automated Profile Line DLV2000 – 180m Heavylift and Pipelay Vessel Ice Class Supply Vessel KSM H383/384 and Ice Class Multi-Purpose Duty Rescue Vessel KSM H385 Malampaya Phase 3 Depletion Compression Platform (MP3 DCP)	Keppel FELS Keppel Singmarine Keppel Singmarine Keppel Subic Shipyard
Bronze Raffles Dock Transformation Skidding Facilities for Land Based Fabrication OTD Rack and Pinion Skidding System Improvement in the Rig Move and Sea State Monitoring Capability of Seafox 5 Lifting and Installation of FPSO Topside Modules beyond Gantry Crane Outreach	Keppel Shipyard Keppel Shipyard Offshore Technology Development (OTD) Offshore Technology Development (OTD) Keppel FELS Brasil
Commendation awards J-Snap High Pressure Hose Installer Securing of Rack Chords without Strong Back during Leg Assembly Elimination of Strong-backs during Cantilever Main Beam Web Erection Commissioning Test Packages Welding Automation Crane Load Monitoring System Automatic Blasting Operations (ABO) Auto Welding Carriage for Curved Area Bending Pipe with Flanges Panel Line Mechanization Thruster Cradle Turning of Semisubmersible Living Quarters 90 Degree Gantry Crane releasing after Mega-block Erection Joining of Drillfloor Legs for DRU at Ground Level In-house Hydro-blast Water Treatment Unit Testing Mooring Bollards at Keppel AmFELS, Brownsville, TX USA H045/H046 AHTS Vessel Y-Bracket Installation Method Improvement Slipway Launching Method Improvement Steel Pipe Pile – Development of Multiple Electrodes Shear Key Welding Technique	Keppel FELS Offshore Technology Development (OTD) Keppel Shipyard Keppel Singmarine Keppel Singmarine Keppel Singmarine Keppel Singmarine Keppel Singmarine Keppel FELS Brasil Keppel AmFELS Keppel Nantong Shipyard Keppel Nantong Heavy Industry Regency Steel Japan

Gold innovations



The SSDT™ 5000NG design revolutionarises the way drilling tenders operate with its ability to operate in harsh environments



The new KFELS N-Plus design adds to Keppel's portfolio of proprietary jackup designs, enabling the company to be competitive in the large jackup market

Two innovations stood out from the rest to clinch the Gold Awards this year. The top awards went to the SSDT™ 5000NG design, the world's first purpose-built drilling tender to operate in the North Sea by the team from Deepwater Technology Group (DTG) together with Keppel FELS; and the New KFELS N-Plus jackup design with enhanced cantilever load chart and spudcan design by the team from Offshore Technology Development (OTD) together with Keppel FELS and Keppel Offshore & Marine Technology Centre.

The design for the new generation drilling tender SSDT™ 5000NG was developed at a time when DTG saw the need to further improve their existing proprietary design for drilling tender, the SSDT™ series, in order to enter the North Sea market and stay competitive in the drilling tender market. This

also comes at a time when drilling contracts are moving towards deeper waters and harsher environments.

The result was the SSDT™ 5000NG, which revolutionarise the way drilling tenders operate. The enhanced design allows for deployment in harsh environments, with improved performance in terms of air gap, variable deck load, station-keeping, environmental protection, and operator safety and well-being.

As the first SSDT™ unit designed for operations in harsh environment, it opens up more opportunities for oil companies to venture into fields in the Gulf of Mexico, the North Sea and other regions where the environment is harsh, with enhancements in safety and the operation costs kept to the minimal.

Similarly, the new KFELS N-Plus design is an innovative enhancement to an existing jackup design that aims to meet or even exceed the needs of the client for a large jackup that can operate in harsh environments and deeper water depth. Leveraging and adapting from the well-received KFELS N-Class design aspects for its leg, hull, cantilever and spudcan design, the KFELS N-Plus design is designed to provide a more robust and high-performing solution in the jackup market for harsh environments.

Despite the many enhanced features that comes with the KFELS N-Plus design, the building cost is kept low so as to enable Keppel to be competitive with the Chinese yards, thereby allowing it to maintain its leading position in the global jackup market.

Networking at OTC Brasil

Keppel Offshore & Marine (Keppel O&M) participated in the third installation of OTC Brasil, which took place in Rio de Janeiro, Brazil, from 27 to 29 October this year.

Featuring displays on Keppel O&M's operations and projects as well as people development and community programmes in Brazil, the Keppel O&M booth saw a wide variety of visitors including

industry professionals, government representatives and students.

In addition, customers and business partners such as Shell, MODEC, McDermott, American Bureau of Shipping (ABS), DNV GL, and National Oilwell Varco (NOV) attended the Keppel O&M reception, held at the group's exhibition booth on the evening of 27 October.

Charge d'affaires of Embassy of Singapore in Brasilia, Ms Chin Siew Fei, and IE Singapore's Regional Director for South America, Ms Valerina Soo, also joined the reception, which was hosted by the management of Keppel FELS Brasil, BrasFELS and Keppel Singmarine Brasil.



Keppel management and employees hosted government officials, customers, and business partners at its exhibition booth and reception at OTC Brasil 2015

Engagement in Brazil

HOSTING GOVERNMENT OFFICIALS

On 18 September 2015, BrasFELS hosted a visiting delegation led by the Vice President of the Congressional Financial Inspection and Control Committee (CFFC), Congressman Valtenir Pereira. The CFFC is a government body which researches and reports on national fiscal and economic issues. One of

its areas of study is the challenges facing Brazil's offshore and marine industry.

During the visit, the delegation was briefed on BrasFELS' operations and projects as well as its people development and corporate social responsibility programmes.

Congressman Pereira and other members of the delegation such as Congressman Luiz Sergio and Congressman Fernando Jordão spoke positively about BrasFELS, recognising the shipyard's significant contributions to Brazil's shipbuilding, naval and offshore as well as oil and gas industries.

Government officials of Angra dos Reis present in the delegation expressed similar sentiments, and stressed the importance of BrasFELS' contribution to the economy and community.

EDB VISITS

A delegation from Singapore's Economic Development Board (EDB) called on Keppel FELS Brasil's BrasFELS shipyard on 28 October 2015.

The delegation led by Mr Lim Kok Kiang, Assistant Managing Director of EDB, was hosted by Mr Kwok Kai Choong, CEO and President of Keppel FELS Brasil, Mr Marlin Khiew, Vice President (Operations) of BrasFELS, Mr Gilberto Israel, Director (Commercial) of BrasFELS and Mr Luiz Caetano, Director (Operations) of BrasFELS.

Through a corporate presentation and yard tour, BrasFELS shared with the visitors on its history and operations in Brazil, including its people development and community efforts. The EDB visitors and BrasFELS management also had a discussion on the advantages and challenges of Singaporean companies operating overseas.



BrasFELS hosted a delegation from the Congressional Financial Control and Inspection Committee on 18 September 2015



Mr Lim Kok Kiang (fourth from right), Assistant Managing Director of EDB, led a delegation from EDB on a visit to BrasFELS

Visitors from Tabasco

To learn more about Singapore's offshore and marine industry and gain a better understanding of how local companies contribute to the nation's economy, a delegation from Tabasco, a state in southeast Mexico, visited Keppel Offshore & Marine (Keppel O&M) on 25 August 2015.

Hosted by Keppel O&M's senior management led by CEO Mr Chow Yew Yuen, the delegation was given a presentation on Keppel O&M's business operations and strategic directions. Besides learning about the company's



Mr Chow Yew Yuen (extreme left), CEO, Keppel Offshore & Marine, introduced Keppel's proprietary designs, including the KFELS Super A Class (rig model on left), a robust rig that is well-suited to operate in harsh environments, to the delegation led by Mr David Gustavo (centre in blue), Secretary of Economic Development, State of Tabasco, Mexico

Near Market, Near Customer strategy, the delegation also toured the yard where they gleaned insights into the different rig construction processes.

Viva Mexico!



Keppel enjoys strong business and cultural ties with Mexico, exemplified by Mexican Ambassador Rogelio Granguillhome (left) and Mr Chow Yew Yuen (right), CEO of Keppel Offshore & Marine at Mexico's Independence Day celebrations

Having delivered some 11 jackup rigs to the country, Keppel Offshore & Marine is a strong supporter of Mexico's oil and gas industry and also an ardent supporter of Mexican culture. The company was a sponsor of Mexico's 205th Independence Day celebrations in Singapore, which also coincided with 40 years of bilateral relations between the two countries.

Held on 15 September 2015 at the Fullerton Hotel, the event was hosted by H.E. Rogelio Granguillhome, Ambassador of Mexico to Singapore, and saw government representatives, diplomats and business leaders in attendance.

The evening was lit up with a lively showcase of Mexican culture, song and dance. Earlier this year, Keppel was also a sponsor of Spotlight Singapore, where a Singapore delegation flew up to Mexico for a cross-cultural performance.

Fostering stakeholder ties

As an industry leader, Keppel Offshore & Marine (Keppel O&M) works closely with its subcontractors to ensure execution excellence as well as safe and timely deliveries, making a concerted effort to foster strong ties with its stakeholders.

SHARING SESSION WITH MOM

To keep stakeholders updated on the latest employment laws, **Keppel FELS Subcontractors** Executive Council (KSEC) initiated a sharing session with the Ministry of Manpower (MOM) on 1 September 2015. Held at Keppel O&M's Multi-Purpose Hall, the session was attended by over 160

subcontractors and Keppel FELS management.

MOM officials gave a detailed presentation on the Employment Act, elaborating on the employment rights and obligations of employees and employers respectively. Attendees also learnt more about the Workplace Injury Compensation Act, including its coverage and the different types of work injury compensation.

Mr Ng Joo Kheong, Chairman of KSEC, shared, "We hope that sessions like these will enable our subcontractors to better cope with issues arising from the challenging market conditions."

KEPPEL FELS' SUBCONTRACTORS' NIGHT

The annual Keppel FELS Subcontractors' Night celebrated its 12th anniversary with more than 150 attendees, including senior management and employees of Keppel FELS, as well as subcontractors, mingling over a sumptuous spread of food and drinks during the Hawaiianthemed dinner on 12 October 2015.

During his opening address, Mr Chow Yew Yuen, CEO, Keppel Offshore & Marine, said, "Over the years, our yards have formed a strong partnership with our subcontractors - one that is based on mutual support and understanding. Such unique relationships should not be taken for granted. These strong ties have allowed us to maintain smooth and safe working processes in our yards and enabled us to meet our deliveries safety on time and on budget."

In recognition of their valued partnership over the years, 11 subcontractors were presented the '10-year Partnership Award' and three recipients received the '20-year Partnership Award'. Mectrade Engineering who has worked with Keppel FELS for four decades received the '40year Partnership Award'. Four subcontractors also received Health, Safety and Excellence awards for their robust safety management frameworks.



An official from the Ministry of Manpower shared about Singapore's labour laws and the obligations of employers during the session organised by Keppel FELS Subcontractors Executive Council on 1 September 2015



Keppel FELS senior management led by Mr Chow Yew Yuen (front row, fifth from right), CEO. Keppel O&M and Mr Wong Kok Seng (front row, third from right), MD of Keppel O&M (Offshore) and Keppel FELS, celebrated long-term partnerships with award winners at the Keppel FELS Subcontractors' Night on 12 October 2015

Feted for public service



Mr Abu Bakar Mohd Nor (right), MD of Keppel Singmarine, received a Public Administration Medal (Bronze) (Military) from Singapore's Prime Minister Mr Lee Hsien Loong (left) at a National Day Awards ceremony on 11 November 2015 (Photo courtesy of Prime Minister Lee Hsien Loong's Facebook page)

Mr Abu Bakar Mohd Nor, MD of Keppel Singmarine and Singapore Armed Forces (SAF) Col (NS), was conferred a Public Administration Medal (Bronze) (Military) at the National Day Awards investiture ceremony on 11 November 2015.

Singapore's Prime Minister Mr Lee Hsien Loong presented the awards, which recognise the competence, courage and conviction of public officers in implementing government policies effectively.

Mr Abu Bakar, who commands the Headquarters 27th Singapore Infantry Brigade, SAF, also received a Long Service Medal (Military), which is awarded to SAF members who have completed 25 years of continuous service. Mr Abu Bakar said, "Reflecting on Singapore's journey to independence and how far we have come in the 50 years since, we are reminded once more of the importance of Total Defence and how the peace we enjoy today should never be taken for granted. Every Singaporean has a role to play and I am honoured and fortunate to be given that opportunity.

"I am very grateful to my family for their support and to Keppel, which has always backed my commitments to SAF fully. I dedicate this award to them and to all those who have supported me on this journey."

Winning innovations



Mr Chow Yew Yuen (centre, with jacket), CEO of Keppel Offshore & Marine, celebrated with the jubilant award winners from Keppel Shipyard and Keppel Singmarine at the annual WSH Innovation Convention organised by ASMI

The 18th Workplace Safety & Health (WSH) Innovation Convention organised by the Association of Singapore Marine Industries (ASMI) on 16 September 2015 saw two teams from Keppel Singmarine and a team from Keppel Shipyard bag the Gold, Silver and Bronze awards respectively.

The project that won Keppel Singmarine the Gold award was 'Mighty Hammer Arrestor'. By securing hammers with galvanised sheets, it sought

to reduce incidences of 'flying hammer heads', which are hammer heads dislodged from their wooden handles as a result of wear and tear.

Team leader Choo Jin Fu, Plant & Maintenance Engineer at Keppel Singmarine, shared, "With just a simple tweak, our innovation has created a safer working environment, especially for Keppelites working onboard vessels where hammering activities are conducted at height."

Teams 'Secure Station' from Keppel Singmarine and 'BMT' from Keppel Shipyard won the Silver and Bronze awards respectively.

Developing industry talent



Dr Lee Chay Hoon (extreme left), Director (Organisation Development & Human Resources), Keppel O&M, together with key representatives from tertiary institutions and industry players, at the signing ceremony of the MOU, which seeks to enhance the career development of students in the industry

On 16 October 2015, a Memorandum of Understanding (MOU), which aims to enhance the skills and career development for students in the Offshore & Marine Engineering sector, was signed between industry players and tertiary institutions. Keppel Offshore & Marine (Keppel O&M) was one of the three major companies in the industry to sign the MOU with the Institute of Technical Education (ITE), Ngee Ann Polytechnic (NP) and Singapore Polytechnic (SP).

With this MOU, students and fresh graduates of polytechnics and ITE who are keen to join the offshore and marine industry will be able to navigate their career paths. The initiatives include the SkillsFuture Earn and Learn Programme, a work-study programme offering career placements and on-the-job training.

Under this structured year-long internship programme, the first

batch of 10 polytechnic graduates from NP and SP have started their Earn and Learn Programme with industry leaders, including Keppel O&M. Students will attend evening classes at NP while being trained on the job and will receive a Specialist Diploma in Marine Production at the end of the programme.

One of the internship participants is Keave Sim Qi Bin, an Assistant Engineer at Keppel Singmarine, who completed his diploma in Marine and Offshore Technology in 2013. He shared, "After work on Tuesdays and Thursdays, I head down to NP for lessons from 6 to 10pm. It has been a rather hectic and challenging journey but I cherish this opportunity as the work experience I get allows me to better apply the concepts and skills I pick up in my classes."

Besides this initiative, internships for final-year NP students enrolled

in the Marine and Offshore
Technology course will also be
extended to six months next
year, double the usual duration.
There will also be 80 slots for
Higher Nitec ITE students in the
same course to join the internship
programme.

To better support students' transition to the workplace, the internships are structured according to detailed task scopes drawn up by the institutions together with companies in the industry.

Another participant of the course, Teoh Kok Keong, Assistant Engineer, Keppel Shipyard, said, "Working in the yard gives me a much broader perspective as I get a glimpse of how the yard operates and my work also reinforces the knowledge I pick up from my course."

Acing school and work

To mark the graduation of Keppelites who furthered their education under the company's sponsorship, Keppel Offshore & Marine (Keppel O&M) Group Training organised a Staff Graduation Congratulatory Ceremony on 26 October 2015.

At the ceremony, Keppel O&M's senior management celebrated the academic milestones achieved by Keppelites, many of whom juggled work and part-time studies.

Addressing the jubilant graduates and their family members,
Mr Chow Yew Yuen, CEO of
Keppel O&M shared, "Apart from paper qualifications, skills mastery is critical to us and we should continually strive for excellence.
With so many experienced colleagues from diverse backgrounds around you, do make full use of every opportunity to deepen your skills and broaden your knowledge.

"The working world may be different from the classroom

but do not be afraid to seek challenges, ask questions and strive to do your best. Remain focused on your goals and steadfast in your aspirations."

This year, 44 Keppelites successfully completed their Nitec and Higher Nitec education and another 37 Keppelites attained their Diploma, Bachelor's or Master's Degree.

Of these Keppelites, 17 pursued their studies under the Keppel O&M Employee Sponsorship Programme and 21 attained their Nitec certification through parttime studies at the Keppel O&M Training Centre. 18 Assistant Technical Associates and Technical Associates completed the structured 2-year traineeship programme to obtain their Nitec and Higher Nitec education.

Li Feng, Foreman, Hull, Keppel FELS, who achieved a perfect GPA score for Nitec in Fabrication Technology (Hull & Structures), shared, "With the new knowledge that I've attained, I now have a clearer understanding of my work processes and I am able to suggest changes to improve our productivity. Previously, I followed the instructions of my seniors without fully understanding the rationale so the course has definitely been very beneficial."

For Muthamperumal Pillai
Veerabathran, Costing Engineer,
Keppel Shipyard, his supervisors
and colleagues played a significant
role in his journey to attain
a Bachelor's of Technology
(Mechanical Engineering) at the
National University of Singapore.

The father of a 2-year-old daughter shared, "Juggling between my different roles as a father, student and an employee has not been easy but I am thankful to have the support of my bosses who understood my commitments and even encouraged me to take time off work to revise for my exams. My colleagues have also been very supportive and stood in for me whenever I was not around."



Senior management of Keppel O&M led by Mr Chow Yew Yuen (seventh from left), CEO of Keppel O&M, celebrated the success of Keppelites who reached new milestones in their academic journey

Skills upgrading



Participants of the third run of the Diploma (Conversion) in Marine & Offshore Technology course celebrated the completion of their training programme with Keppel O&M's senior management, led by Mr Chris Ong (back row, centre in blue), Deputy MD, Keppel FELS

Sixteen outstanding Keppelites from Keppel Offshore & Marine's (Keppel O&M) overseas business units, including those in Brazil, China, the Philippines and Qatar, attended the Diploma (Conversion) in Marine & Offshore Technology (DCMOT) course from April to August 2015.

The 15-week course culminated in a presentation to senior management on 31 August 2015 where participants shared their

findings and proposed improvements for the yards in their home countries.

Now in its third run, the DCMOT course is a partnership between Keppel O&M and Ngee Ann Polytechnic to nurture high-performing employees. Besides structured classroom courses, participants also undergo on-the-job training at Keppel O&M's local yards so that they can learn and share best practices.

Deepu Anthikat Gopinathan, Piping Engineer, Nakilat-Keppel Offshore & Marine, shared, "This course enabled me to gain a macro view of the different work processes in our yards. My attachment with Keppel Shipyard was also very useful as my mentors shared invaluable advice and insights which they have gained from their many years of experience."

Leadership and core values

Supervisors and Superintendents at Keppel AmFELS recently underwent a leadership development programme. As part of this programme, a small focus group was formed to learn and share best practices on being an effective leader. There was also teambuilding exercises which enable participants to forge closer bonds and engage in open dialogue.

Meanwhile, Ms Tan Shin Rong and Ms Leong Jia Xin from

Keppel Offshore & Marine's HR management team, visited Keppel AmFELS to conduct a Core Value Alignment session with the yard's young graduate engineers. The engineers recently joined Keppel

AmFELS' 24 months Operation Leadership Training Programme (OLTP), which will see these young engineers going undergoing job rotations in the Production department.



The first graduates of the leadership development programme with Mr Erik Mendez (left), Human Resource Manager of Keppel AmFELS

Combating MERS

Keppel is well-equipped to combat the potential threat of Middle East Respiratory Syndrome (MERS) in Singapore, in the light of confirmed cases that neighbouring countries Malaysia, Thailand and the Philippines had reported earlier this year.

Under the direction of the Keppel Offshore & Marine (KOM) Business Continuity Management (BCM) committee, business units have set up MERS task forces to review existing plans and conduct table-top as well as actual exercises over the past few months.

One of the first lines of defence against MERS is at Keppel Housing, which accommodates over 9,800 workers across four lodges. Pandemic exercises were conducted on 26 August 2015 with temperature checks at all entry and exit points, while quarantine

actions and contact tracing were carried out for selected personnel. Following that, Keppel Shipyard and Keppel FELS organised their own table-top exercise that ran through a variety of scenarios including responses to the different alert levels according to Singapore Disease Outbreak Response System Condition (DORSCON).

Staff had to be well trained, medical facilities adequate; tie-ups with the various government agencies and hospitals in place; yard operations and processes stress tested; communication flow and templates for internal and external messages to stakeholders established; IT systems robust; and media statements prepared, among a host of other considerations.

In addition, a combined exercise by all Keppel O&M business units in Singapore was conducted on 14 September and 9 October 2015. The sessions, attended by the BCM steering committees and chaired by CEO of Keppel O&M and the heads of the business helped align the practices, coordinate the efforts and share on their experiences. It ensures that the yards are prepared to meet the threat of MERS and minimise disruption to operations.



Keppel Housing's Acacia Lodge conducting the MERS exercise which includes temperature screening for all workers entering lodge



A combined table top exercise by all Keppel O&M business units in Singapore was conducted to align the practices, coordinate the efforts and share on their experiences on preparing for MERS

Day of celebration

BrasFELS celebrated Brazil's Independence Day with its employees and members of the community.



Coral da Cidade, Angra's municipal choir, gave a rousing rendition of Brazil's national anthem at BrasFELS' Independence Day event



Mr Kwok Kai Choong, CEO and President of Keppel FELS Brasil and BrasFELS, addressed BrasFELS employees



Washington Manoel Xavier Ribeiro (foreground, second from left), Assistant Technician of BrasFELS Transport Section, was among those recognised as an exemplary safety champion



The band of Nazira Salomão public high school performed at BrasFELS' Independence Day event

On 4 September 2015, BrasFELS marked Brazil's Independence Day, which falls on 7 September, with a flagraising ceremony and music celebrating the country.

Recounting Keppel's long partnership with Brazil, Mr Kwok Kai Choong, CEO and President of Keppel FELS Brasil and BrasFELS, said, "Since the year 2000, BrasFELS has come a long way to where we are today.

"Today, all of us at BrasFELS must be proud of our significant contributions to Brazil's production capacity through the various

projects that we have successfully completed over the last 15 years. Congratulations to all of you, BrasFELS employees."

Urging all employees to continue to raise their productivity and work safely, Mr Kwok said, "Productivity must be accompanied with safety and safety is not negotiable. Everyone at BrasFELS has a part to play and has a personal responsibility towards the safety of himself, his colleague and the safety of the company."

At the event, BrasFELS also recognised three workers and one supervisor for their strong safety performances as well as efforts to encourage their teams and peers to work safely.

Adding joy to the occasion were lively performances by Coral da Cidade, Angra's municipal choir, and a band from Nazira Salomão high school.

The Independence Day celebrations were topped off with a traditional meal of feijoada (stewed beans with beef and pork) served at the shipyard's canteen.

Public-spirited star

In November 2014, the Embassy of Singapore in Brasilia contacted Mrs Betty Mok, an Administrator at BrasFELS shipyard, for help. A Singaporean had taken ill on a flight, and had been brought to a hospital in Rio de Janeiro for emergency services. The Embassy needed someone, preferably a fellow countryman, to provide him with the necessary support.

The gentle, petite Betty immediately responded. Providing keen attention and care, she was a pillar of support to the patient and his family, during his time in the Rio de Janeiro hospital which lasted for about a month.

During this period, she was also the contact point between the Embassy and the patient, providing the Embassy with regular updates on his health status and needs.

For her selfless acts, Betty was conferred the PS21 Star Customer Award by Mr Teo Chee Hean, Singapore's Deputy Prime Minister (DPM), Coordinating Minister for National Security, and Minister in charge of the Civil Service at this year's Public Service Awards Ceremony, held on 15 October.

Highlighting Betty in his speech, DPM Teo said, "She helped the Ministry of Foreign Affairs (MFA) assist a Singaporean who had fallen seriously ill during a long flight, and was hospitalised in Rio de Janeiro. The nearest Singapore Embassy, located in Brasilia, which is about 1,000 km from Rio de Janeiro, reached out to its contacts in the Rio de Janeiro region to see if anyone could provide urgent help. Responding without hesitation to the Embassy's call was Betty, who, on several occasions, travelled two hours by car to Rio to check on the hospitalised Singaporean's condition. She also provided emotional support to the patient's next-of-kin, and continued to monitor his condition until he was well enough to return to Singapore."

The PS21 Star Customer Award recognises members of the public who have made significant and positive contributions to public service delivery.

Congratulating Betty on the

award, Ms Chin Siew Fei, Head of Mission and Chargé d'Affaires of the Embassy, said, "Over the past few years, you have been extremely helpful to the Embassy, in particular, in rendering consular assistance to Singaporeans. We sincerely appreciate your help especially since we do not have a presence in Rio. Although you are not an Embassy staff, you have gone out of your way to assist a fellow Singaporean and his family."

Betty said, "It is an honour to receive this award, and I greatly appreciate DPM Teo's kind words and also the encouragement of Chargé d'Affaires Ms Chin. For me, it is a blessing to be able to make a difference and help others. I will continue to do so to the best of my abilities."



In August 2015, Mrs Betty Mok (second from left) received a letter of appreciation from Ms Chin Siew Fei (third from right), Head of Mission and Chargé d'Affaires of the Embassy, for her invaluable support to the Embassy and care for her fellow Singaporeans

Lauded for giving



Mr Robert Chong (left), Director of Group Human Resources, Keppel Corporation and CEO of Keppel Care Foundation, received the Community Chest Corporate Platinum Award from Mr Tan Chuan-Jin, Minister for Social and Family Development

Business units across the Keppel Group were honoured at the **Community Chest Awards**

Ceremony at the Capitol Theatre on 25 September 2015. The event was graced by Guest-of-Honour,

Singapore's President Tony Tan, who is also the Patron-in-Chief of the National Council of Social Service.

Keppel Care Foundation was awarded the Corporate Gold Award for its sustained contributions towards Community Chest beneficiaries.

Keppel FELS, Keppel Shipyard and Keppel Singmarine were lauded with SHARE Platinum Awards while Keppel Logistics was awarded the SHARE Bronze Award for supporting SHARE, the Community Chest's workplacegiving programme.

Concert in the park

For the third year running, Keppel O&M sponsored the popular concert in the park, PianoBotanica, at the Singapore Botanic Gardens. Set in the lush greenery of the UNESCO World Heritage Site, over 2,000 attendees enjoyed an evening of exuberant Brazilian music by Brazilian Duo Bastos & Borges on 6 September 2015.

The hour-long concert saw flautist João Bastos and pianist Yara Borges enchanting the audience with intricate harmonies.

Organised by the embassy of

Brazil, the free concert was also a celebration of Singapore and Brazilian partnerships. With two shipyards in Brazil and a long

history of working with Brazilian customers, Keppel is a strong supporter of the event.



Mr Ho Tong Yen (extreme left), GM, Group Corporate Communications, Keppel Corporation, Brazilian Ambassador H.E. Luis Fernando de Andrade Serra (second from left) and his wife (centre), celebrated the friendship between Singapore and Brazil at the third edition of PianoBotanica on 6 September 2015

Amazing race

Over 80 Keppelites travelled around Singapore from Clarke Quay to Marina South Pier to compete in maritime-themed games, such as constructing model lighthouses and nautical navigation on 18 October 2015. They were amongst the 1,000 participants who took part in the annual Amazing Maritime Challenge, of which Keppel Corporation is a co-sponsor.

Organised by the Maritime and Port Authority of Singapore (MPA) and Singapore Maritime Foundation, the competition is part of MPA's drive to promote the industry through fun and engaging activities.

One of the participants, Yong San Wee, Senior Engineer, Innovation, Keppel Infrastructure, shared, "It was definitely a Sunday morning well spent as I got to learn more about the local maritime industry. Besides bonding with my fellow colleagues, I also forged new friendships with other participants who work in the maritime industry."



Flagging off the Amazing Maritime Challenge are (on podium from L to R): Mr Michael Chia, MD (Marine & Technology), Keppel O&M and Chairman, Singapore Maritime Foundation; Mr Andrew Tan, CEO, Maritime and Port Authority of Singapore; Ms Lisa Teo, Vice President and Honorary Secretary, Singapore Shipping Association Council and Mr Chow Yew Yuen, CEO, Keppel O&M and President, Association of Singapore Marine Industries

Volleying to success



Keppelites from Keppel FELS were congratulated by Mr Ang Wei Yang (first row, first from left), President of Volleyball Association of Singapore and Mr Samuel Tsien (first row, second from left), Group CEO of OCBC as they celebrated their title of second runner up at the OCBC Cup Volleyball (Corporate Tournament) 2015

Teach-it-forward



Volunteers from BrasFELS joined students of Escola Municipal Francisco Xavier Botelho to mark Arbour Day with a workshop on how to grow and care for sunflower seedlings

Volunteers from BrasFELS spent time with students of public schools in Angra dos Reis, Rio de Janeiro, Brazil to impart the gift of knowledge.

SEEDING NATURE CHAMPIONS

Volunteers from BrasFELS marked Arbour Day in Brazil teaching 185 young students of Escola Municipal Francisco Xavier Botelho, a public school in Lambicada, Angra dos Reis, how to grow and nurture sunflower seedlings.

Volunteers and students alike had a ball of a time during the lively presentations and interactive workshops.

Visiting the budding nature champions were BrasFELS

management Mr Marlin Khiew, Vice President (Operations), Mr Low Tiau Tong, Director (Special Duties), Mr Luiz Caetano, Director (Operations) and Luiz Queiroz, Manager of Quality, Health, Safety and Environment, as well as Angra dos Reis Councilman Cleber Antonio da Silva.

Arbour Day is a special day in Brazil where individuals and groups are encouraged to plant and care for trees.

TEACH-IT-FORWARD

Young employees of BrasFELS ignited a love for learning within eight-year-old students of the Cornelis Verolme public school.

Volunteers gave twice-weekly

mathematics and Portuguese classes to the eager students starting in September 2015.

This initiative to provide classes at Cornelis Verolme public school stems from BrasFELS' Teach-It-Forward programme, which encourages the company's young employees to share their knowledge and experience with the community.

All volunteers under the initiative are current or graduates of BrasFELS' Trainee Engineer programme, in which new employees are given multi-faceted exposure to BrasFELS' shipyard operations.

Causes for the young and old

CHEER FOR CHILDREN

Who would imagine that a trip to the hospital could turn out to be such fun? Keppel FELS made Children's Day extra special by championing the Keppel Volunteer event as a team and putting up a colourful carnival at KK Women's and Children's Hospital on 9 October 2015.

Mustering all their creative ideas and energy, the Logistics, Commercial, Purchasing,

Subcontract and Marketing teams at Keppel FELS filled a large empty hall with exciting game stalls to thrill the children.

"When Keppelites from various departments and expertise draw on collective strength towards a common goal, the result is always spectacular. I am delighted that Keppel FELS staff showcased our Can Do! spirit in taking the lead to organise and volunteer for this event. I hope this event will

spark a trend for inter-department strength for a worthy cause," shared Mr Chris Ong, Deputy MD, Keppel FELS, who has been a strong advocate of Keppel Volunteers.

More than 200 children and family members turned up at the carnival over the course of the day, beyond what was expected.

Ms Chong Pik Wan, Chief
Development Officer, KK Women's
and Children's Hospital, enthused,
"We are very appreciative of
Keppel Volunteers and Keppel
FELS for organising the Children's
Day Carnival at KKH. A lot of hard
work went into the planning and
staging of the party. I spoke to a
few parents and their kids were
extremely thrilled to be invited to
the party especially after a visit
to the doctor. It certainly brought
much cheer to the kids and their
parents!"

EVERGREEN TIES

The first Terrarium workshop held in July this year proved a hit with the elderly and volunteers. Hence, Keppel Volunteers decided to organise a similar event in October.

This time round, Marina at Keppel Bay provided the tranquil setting for senior friends from Thye Hua Kwan to develop green fingers with the help of Keppelites.

On top of promoting care for nature, the terrarium workshop provided a platform for participants to build budding friendships.



Keppelites transform a hospital experience into a fun-filled day with a Children's Day Carnival, a Keppel Volunteers' event championed by Keppel FELS

Green thumbs

As a committed and responsible corporate citizen, Keppel AmFELS launched its eco-friendly campaign, themed 'Go Green', on 11 September 2015.

The campaign aims to inspire its employees to care for and protect the environment through a slew of interesting educational and interactive activities.

Kickstarting the campaign with a tree-planting ceremony, Mr Simon Lee, President, Keppel AmFELS, said, "As we grow our business, we also want to ensure that we contribute to the community by protecting the environments we operate in. This campaign is a positive step in that direction as we seek to increase environmental awareness among Keppelites."



Mr Simon Lee (fifth from left), President, Keppel AmFELS, together with key representatives from various environmental state agencies, marked the start of the "Go Green" campaign with a tree-planting ceremony

Keppel AmFELS' Environmental Management System recently received ISO 14001 certification, a widely recognised international standard for environmental management systems.

Apart from implementing a recycling programme, the yard's green efforts also include a waste management system, a paint waste management system as well as an oil spillage prevention programme.

Walking the extra mile

Keppel Batangas Shipyard volunteers went the extra mile for a good cause in a nationwide fund raising campaign organised by the Alay Lakad (Tagalog for 'walk offering') Association of Bauan, on 26 September 2015. The annual community walk aims to raise funds for out-of-school youth and increase awareness of the importance of access to education.

Going beyond its participation in the campaign, Keppel Batangas Shipyard also offers the youths full scholarships in structural welding at the Keppel Batangas Training Centre. To date, 36 scholarships have been awarded by Keppel. Those who have completed the apprenticeship programme are offered employment opportunities with Keppel Batangas Shipyard or its subcontractors



Keppel Batangas volunteers walking to raise funds for charity

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Triple naming for ice-class vessels



The management and directors of Bumi Armada, Lukoil and Keppel O&M reaffirming their strong ties at the naming ceremony of Bumi Uray, Bumi Pokachi and Bumi Naryan-Mar

Specialised shipbuilder Keppel
Singmarine has successfully
delivered three ice-class vessels to
Bumi Armada Offshore Holdings, a
subsidiary of Bumi Armada Berhad
(Bumi Armada), on schedule and
with a perfect safety record in
September 2015.

The two supply vessels and one multi-purpose duty-rescue vessel were named Bumi Uray, Bumi Pokachi and Bumi Naryan-Mar respectively at a ceremony held at Keppel Singmarine on 10 September 2015.

These vessels will support offshore platforms at the Filanovsky oil field in the northern part of the Caspian Sea, off the coast of Russia, providing year-round services such as the delivery of cargoes, salvage, search and rescue functions, fire-fighting operations, and towing and tanker mooring operations.

Mr Michael Chia, MD (Marine & Technology), Keppel Offshore & Marine (Keppel O&M), said, "We

are pleased to once again support Bumi Armada with three highly sophisticated vessels. We were able to leverage our expertise in ice-class technology and in-depth knowledge of the Caspian region to customise these three high specification ice-class vessels to suit their needs. We are confident that they will be a success in the harsh environments of the Caspian Sea.

"With the completion of the vessels, Keppel Singmarine has delivered a total of 10 ice-class vessels, helping us to further strengthen our position in the specialised market of ice-class vessels.

"In building them, we were able to maximise resources and increase efficiencies by harnessing the synergy of Keppel's network of yards. The two supply vessels were built at Keppel Nantong in China while the multi-purpose vessel was constructed in Keppel Singmarine's yard in Singapore."

Mr Chan Chee Beng, ED and acting

CEO of Bumi Armada, said, "Bumi Uray and Bumi Pokachi are the first Bumi Armada vessels to be constructed in Keppel's shipyard in China, representing the growth of a long and successful partnership between Bumi Armada and Keppel. We would like to thank Keppel for delivering the vessels safely and on time."

The ice-class supply vessels and the multi-purpose duty rescue vessel are built to the MTD 8060-TS and MTD 8060-RV designs respectively, which were developed by Keppel O&M's ship design and development arm, Marine Technology Development.

Keppel Singmarine was the first company in Asia to build icebreakers when it won a contract from LUKOIL-Kaliningradmorneft in 2006 to build two such units. Apart from the three vessels for Bumi Armada, Keppel Singmarine is currently also constructing another ice-class multi-purpose vessel of its proprietary design for Maritime Construction Services SA.