

# OffshoreVantage

27 April 2012



## Winning team

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## Jackups an edge above the rest

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## Maximising opportunities through collective strength

“We decided to become the preferred solutions provider in the businesses we chose to be in. To become a truly global company, we have to forge a unified team.

“We decided to create a unified team and build global leadership in three areas – rig design, repair and construction, ship repair and conversion, and construction of specialised ships.”

**Choo Chiau Beng**  
*CEO of Keppel Corporation and  
Chairman of Keppel Offshore & Marine*





**Congratulations to  
Keppel Offshore and Marine  
for TEN years of excellence.**

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# 10 YEARS OF EXCELLENCE

This year, 2012, we celebrate the 10th anniversary of the formation of Keppel Offshore & Marine as a united team, harnessing the collective strength of its members to deliver greater value to its stakeholders.

As a group, we have registered phenomenal growth over the last 10 years. In 2002, the company recorded revenue of S\$1.9 billion, with a total workforce of around 14,000. By the end of 2011, our revenue has reached over S\$5.7 billion, generated by a global workforce of close to 30,500.

We have also built up a creditable track record. Half of the jackups which entered the market since 2000 were built by us, with 33 KFELS B Class among them. Since 2002, we have also delivered 14 semisubmersibles built to our proprietary designs, completed 62 FPSO/FSO/FSRU projects and built 85 offshore support vessels.

This sterling performance over the last 10 years was achieved on the back of a solid foundation forged through decades of patience, fortitude, ingenuity, passion and commitment, together with the sharpening of our competitive edge of execution excellence, innovation and our *Near Market, Near Customer* strategy.

To our customers, partners, Board of Directors, and all Keppelites past and present, who have contributed towards the growth of Keppel Offshore & Marine, I wish to convey my heartfelt gratitude and appreciation.

This special supplement shares our growth story, and how we continue to position ourselves to meet the needs of the industry as the preferred solutions provider for many more years to come. We hope you find this an interesting and enjoyable read.



**Choo Chiau Beng**  
*CEO of Keppel Corporation and  
Chairman of Keppel Offshore & Marine*



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BUMIARMADA

# CONGRATULATIONS

Keppel Offshore & Marine on your 10th anniversary!  
It is an exciting milestone and we are delighted to  
have been a part of that journey.  
Our sincere wishes for your continued success.



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# Collective strength propels Keppel O&M ahead of the curve

**D**rawing on the synergies and collective strengths of its yards and offices worldwide, Keppel Offshore & Marine (Keppel O&M) delivers competitive and innovative offshore and marine solutions and services to its customers.

## More than the sum of the parts

Until a decade ago, Keppel's stable of shipyards ran as separate entities. Their integration in 2002 formed Keppel O&M, one of the world's largest offshore and marine groups today. This strategic move brought together three different operating companies – Keppel FELS, the leading rig designer and builder; Keppel Shipyard, the expert in shiprepair and conversions; and Keppel Singmarine, the shipbuilding specialist.

Mr Choo Chiau Beng, CEO of Keppel Corporation and Chairman of Keppel O&M, elaborated, "To become a truly global company, we would have to forge a unified team. And it was clear what we had to do. There would be no more in-fighting and competing against each other within the group. We would always focus on the outside – focus on our customers and on the marketplace."

The new, overarching unit inherited its three component companies' more than 300 years of combined experience in the industry. At the point of integration, Keppel FELS was in its 35th year, while Keppel Singmarine was at its 115th, having started as Singapore Slipway in 1887. As for

Keppel Shipyard, it was in its 143rd year – the company's lineage can be traced back to the construction of the first drydock in Singapore, which was located in Keppel Harbour in 1859.

As the adage goes, the whole is far greater than the sum of its parts. Harnessing the substantial synergies and collective strengths yielded by the amalgamation, Keppel O&M has been able to offer exceptional value propositions to customers worldwide.

In 2001, Keppel O&M's three component companies had a combined annual turnover and net profit of S\$1.5 billion and S\$82 million respectively. In 2011, Keppel O&M's turnover was S\$5.7 billion, while its net profit was S\$1.1 billion. Its net order book has also grown from S\$1.9 billion in 2003 to S\$9.4 billion in 2011.

In addition, working as a unified network enabled Keppel O&M's group of companies to better rationalise their costs and resources. For instance, cost-savings were accrued by consolidating the procurement of materials, equipment and services. And by collaborating on projects demanding a wide range of expertise, the companies could provide their customers with more competitive solutions.

Mr Tong Chong Heong, CEO of Keppel O&M, shared, "The bundling of our capabilities allowed us to maximise value for our customers – they are offered an attractive matrix of cost-competitive cum world-class services."

## Near Market, Near Customer

With the amalgamation, the overseas subsidiaries that previously came under Keppel O&M's three component companies now came directly under the Keppel O&M banner.

Pressing forward with its *Near Market, Near Customer* strategy, Keppel O&M further expanded its global network, which today comprises 20 yards, located near major offshore oil and gas regions and shipping routes.

Through its network of yards, Keppel O&M has been able to support national aspirations for local content in major offshore and marine projects, which drives an inflow of investments, creates employment and transfers technology and expertise.

Keppel O&M has also been able to provide quality repair services to international customers promptly and conveniently. As containers, tankers and bulk carriers are part of a tight supply chain, they are usually repaired at yards close to where they load and offload to minimise downtime.

"*Near Market, Near Customer* means, first of all, not necessarily locating our yards in the lowest cost countries," explained Michael Chia, Director (Group Strategy and Development) of Keppel Corporation and MD (Offshore) of Keppel O&M. "It means going to where it is most appropriate to serve our customers. We believe that, in the long term, our customers' interests will be best served if our yards are located near them and their target markets."

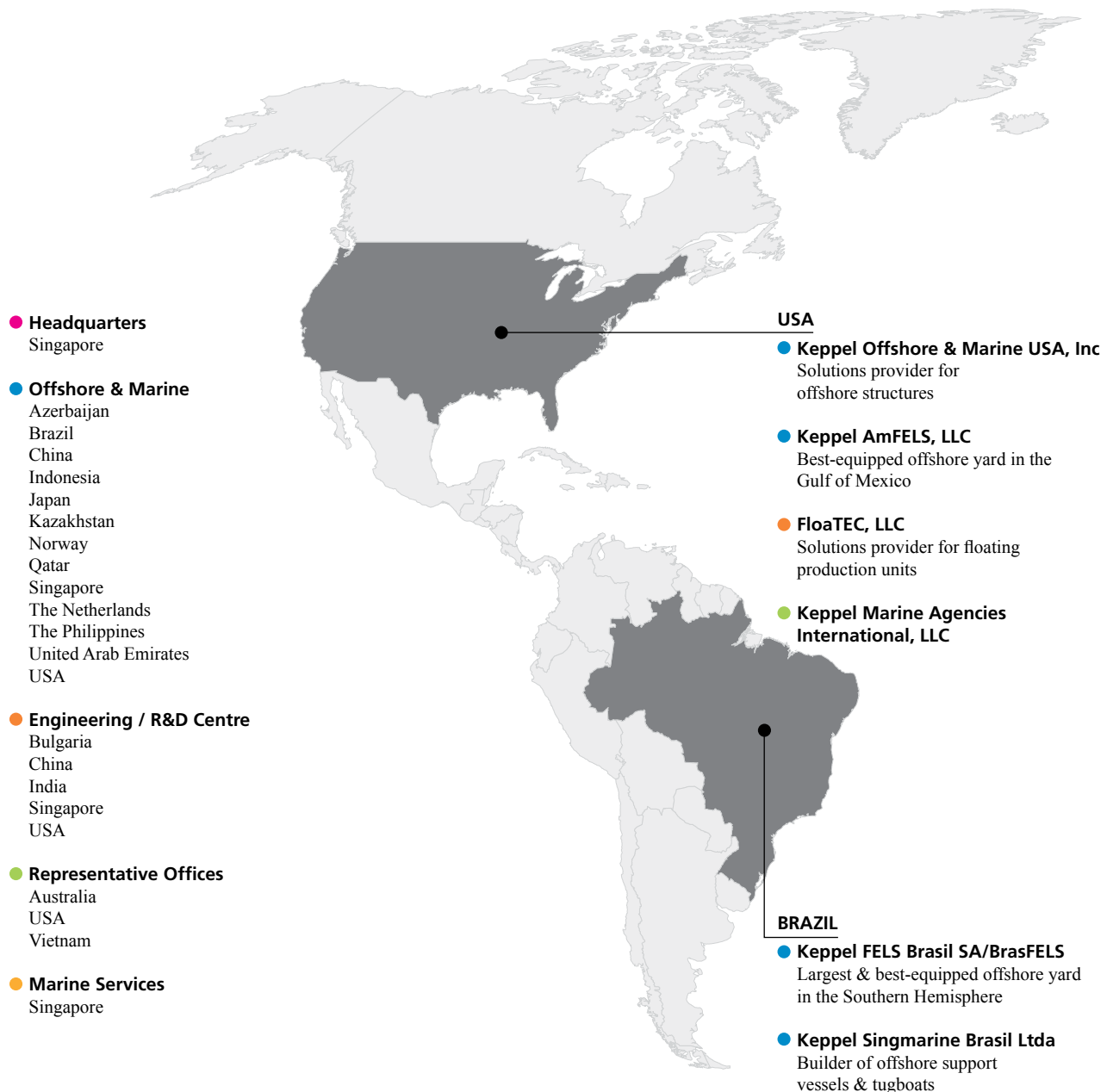
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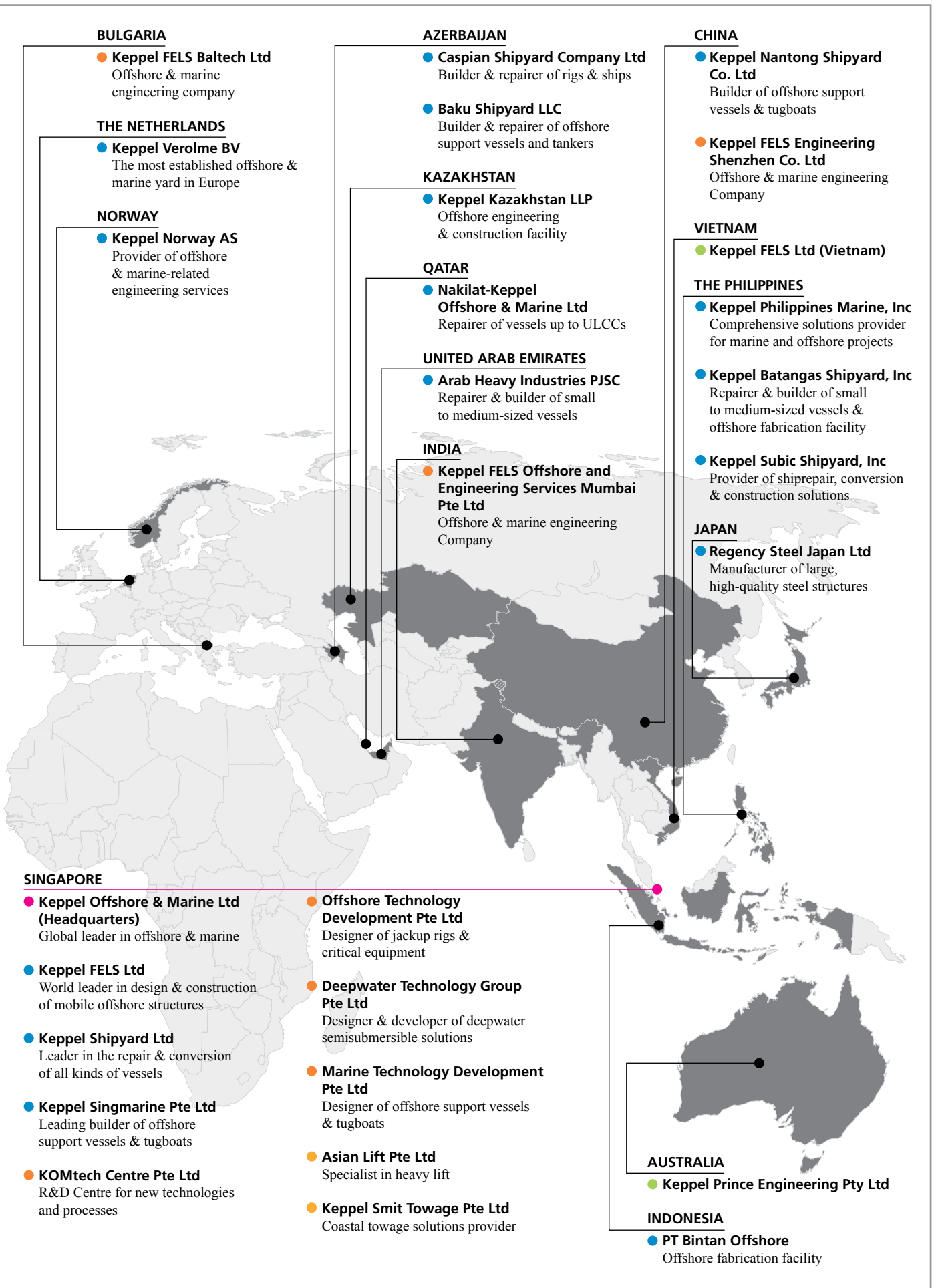
# Global network

**“We want to remain the preferred total solutions provider to our customers. We will be where people drill for offshore oil and gas, use sea transport or engage in other offshore activities. Our *Near Market, Near Customer* strategy ensures that we deliver our services at the doorsteps of our customers worldwide.”**

**Mr Tong Chong Heong,**

*CEO of Keppel Offshore & Marine*





## Anchored in Brazil

**D**espite being half way around the world from Brazil, Keppel O&M which is headquartered in Singapore has developed a strong nexus with the country, emphasising the company's commitment to be *Near Market, Near Customer*.

Keppel O&M first provided services to Brazil in the 1980s. Its subsidiary, Keppel Shipyard, had undertaken ship repair and conversion projects for Petrobras. Three decades on, Keppel O&M has delivered to the Brazilian oil and gas industry some 20 major projects including Floating Production Units (FPUs), drilling rigs, Floating Production Storage and Offloading (FPSO) units and drillships.

Key to Keppel O&M's services for Brazil is its yard in Angra dos Reis – BrasFELS – which had started operating in 2000. The growth of BrasFELS to become the most comprehensive offshore and marine facility in Latin America has had a critical role in the revival of Brazil's offshore and marine industry.

The yard recently delivered its third FPU, P-56, to Petrobras. It is the first FPU to be completely built in Brazil.

Ongoing projects at BrasFELS include the building of a semisubmersible drilling rig based on the DSS™38E design for Sete Brasil, the repair and upgrade of the drillship Noble Roger Eason for Noble Corporation, the integration of two FPSOs as well as the construction of the Tension Leg Wellhead Platform (TLWP), P-61, for the Papa Terra Joint Venture comprising Petrobras and Chevron.

Keppel and Sete Brasil also signed a Letter of Intent (LOI) for the design and construction of five additional DSS™38E rigs in April 2012.

Keppel O&M also operates a shipbuilding yard in Navegantes, Santa Catarina. Named Keppel Singmarine Brasil, this yard was acquired in 2010 and focuses on the construction of offshore support vessels, including Anchor Handling Tug/Supply vessels, platform supply vessels, oil recovery support vessels and harbour tugs. It

is also being equipped to undertake the fabrication of offshore modules.

Amongst Keppel Singmarine Brasil's current projects is the construction of two Platform Supply Vessels for Keppel O&M's Brazilian ship-owning arm, Guanabara Navegacao Ltda (GNL). The vessels are built to Keppel O&M's proprietary MTD 9045-DE design, which is customised for the Brazilian Continental Shelf.

**“We have proven that it is possible to build rigs, platforms and equipment for offshore exploration in Brazil. We shall count on the partnership of companies which come from far away, such as that of Keppel FELS that comes from Singapore. We can count on them. They know that if they come to Brazil, they will have the guarantee of a demand from Petrobras.”**

**HE Dilma Rousseff,**  
*President of Brazil, speaking at the naming of the FPU P-56*



Brazilian President HE Dilma Rousseff (centre), together with (from left) Mr Chow Yew Yuen, COO of Keppel O&M, Mr Helio Azevedo, President of the workers union of Angra, and Mr Kwok Kai Choong, President and CEO of Keppel FELS Brasil, at the naming of P-56 in June 2011.



## A partnership made in Brazil



*Inking the LOI for five DSS™38E semis are Mr Tong Chong Heong (right), CEO Keppel O&M, and Mr Pedro Barusco, COO of Sete Brasil.*



*New Petrobras President and CEO Ms Maria das Graças Silva Foster (first from left) visited BrasFELS in March 2012 and was impressed with the shipyard and Keppel's belief in Brazil since 2000 when it took over the yard.*



*Former Brazilian President Luiz Inacio Lula Da Silva (second from right) and then President and CEO of Petrobras Mr Jose Sergio Gabrielli (right) celebrating the naming of P-52, the first Brazil-built FPU with Keppel O&M in June 2007.*



ABS congratulates  
**Keppel Offshore and Marine**  
on its 10th Anniversary.

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...continued from page 5

## Technology edge

While streamlining its businesses and strengthening its position in overseas markets, Keppel O&M also continues to work closely with its customers to customise solutions to meet specific needs.

Keppel O&M's research and development, design and engineering efforts are spearheaded by Keppel Offshore & Marine Technology Centre (KOMtech), which was set up in 2007. Its scope includes technology foresight into alternative energy applications as well as developing designs, systems and critical equipment for rigs and ships.

KOMtech is supported by three technology arms - Offshore Technology Development (OTD), Deepwater Technology Group (DTG) and Marine Technology Development (MTD).

Set up in 1994, OTD focuses on designing jackups and their critical systems. Through OTD's efforts, Keppel O&M has a suite of proprietary jackup designs that is widely accepted by the market (refer to page 15). The KFELS B Class design is the industry choice drilling solution for benign waters. Meanwhile, demand for Keppel O&M's harsh environmental jackup designs are gaining momentum.

Specialising in semisubmersible (semi) and other floating structures, DTG was set up in 2002. Today, Keppel O&M is the only shipyard group in the world with its own deepwater semi design capabilities and its own suite of proprietary deepwater solutions.



*Celebrating the naming of West Jaya - which had been built to Keppel's proprietary KFELS SSDT™3600E design - were Mr Alf C Thorkildsen, CEO of Seadrill (left), Mr Tong Chong Heong, CEO of Keppel O&M (second from right) and Mr Wong Kok Seng, MD of Keppel FELS (right).*

As for MTD, it was established in 2002 and concentrates on designing specialised offshore support vessel and tugboats.

Over the years, Keppel Shipyard has also grown its capabilities in conversion work, expanding its range of competencies to include detailed engineering and fabrication of topside process modules for Floating Production Storage and Offloading (FPSO) units (refer to page 17).


As exploration and production activities become more sophisticated and demanding, Keppel O&M with its wide ranging design capabilities is in pole position to help meet these challenges.

## Built to last

2012 marks the 10th anniversary of the formation of Keppel O&M,

and the group has much to celebrate. It has enjoyed healthy growth over the past decade, further establishing itself as the preferred provider for a diverse range of offshore and marine services globally.

In the face of an increasingly competitive landscape, the group continues to focus on delivering excellence by enhancing productivity, managing costs more effectively, reaping synergies and honing technology capabilities.

Behind these efforts is a dedicated workforce, which Keppel O&M not only equips with the necessary skills and know-how but also imbibes with the *Can-Do!* attitude. With committed, capable and passionate people working hand-in-hand towards shared goals, Keppel O&M will sustain its strong trajectory, ahead of the curve. 



*Keppel FELS delivered its third DSS™21 deepwater semi drilling rig to Maersk Drilling 43 days ahead of schedule and with a perfect safety record in May 2010.*



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# CONGRATULATIONS

Wärtsilä congratulates **KEPPEL OFFSHORE & MARINE** on their 10 years of excellence.

Wärtsilä is a global leader in complete lifecycle power solutions for the marine and energy markets. By emphasising technological innovation and total efficiency, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers. Wärtsilä is listed on the NASDAQ OMX Helsinki, Finland.



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# Can-Do! spirit

**W**ith more than 30,000 employees worldwide, Keppel Offshore & Marine's (Keppel O&M) success is very much driven by its people – Keppelites, as they are called. Guided by a common set of core values, Keppelites work towards a shared vision of growing the company.

Dr Lee Chay Hoon, General Manager (Organisation Development) of Keppel O&M, said, “We galvanise our global employees with a common set of beliefs and core values. The imbibing of a strong value system has helped to create a resilient global team that delivers on the Company’s promises.”

Following the integration of the various shipyards, the core values were introduced in 2003 to establish a code of conduct and foster a sense of belonging among Keppelites from different countries, subsidiaries and functions. Today, the core values have permeated the work ethics of employees and even subcontractors of Keppel O&M.

Keppel O&M's customers have also come to associate the core values with the company. In certain cases, it has been the basis for the awarding of contracts to Keppel O&M; the customers' have confidence in the

capability as well as integrity of Keppel's project teams.

In promoting the tenets of the core values, Keppel O&M has invested significantly to develop and train its employees. It has introduced programmes to build up the skill sets of its employees to meet the ever-changing needs of the industry. This has not only increased productivity over the years but also helped cultivate competent leaders for succession across Keppel O&M's global operations.

To educate, empower and energise talents, the Keppel College was set up in 2007. It puts in place a series of management and leadership developmental programmes as part of its succession planning system.

Employees go on job rotations and overseas postings and are given the opportunity to take on special assignments and projects outside of their work scope. These, together with the dynamic work environment at Keppel O&M, provide opportunities for employees to hone their skills and develop on a personal and professional front. Keppelites at all levels are nurtured and developed through various programmes specially tailored to meet their needs.

Meanwhile, older employees take

## Keppel O&M Core Values



on mentorship roles, passing on their invaluable knowledge and experience to their younger colleagues.

The establishment of the Keppel O&M Training Centre brings together the wealth of experience and expertise of the Group's global network of 20 yards and 10 engineering and technology units to provide industry-relevant technical training for workers and subcontractors. Going forward, employees remain the key asset for Keppel O&M as it continues to grow its business and bring high quality products and services to its customers. 



The Keppel O&M Training Centre is able to train some 3,500 employees per year with technical and specialised skills.

## Moored in the Gulf of Mexico



*Keppel AmFELS completed the delivery of its fourth EXL jackup in September 2011 to Rowan Companies with a perfect safety record, four months ahead of schedule and within budget.*

**I**n order to better serve customers operating in the Gulf of Mexico (GoM), Keppel acquired a shipyard in Texas in 1990, building it up to become the foremost offshore shipyard in the region.

Renamed Keppel AmFELS, the yard underlined its commitment to provide value-added services by honing its capabilities, developing a highly skilled workforce and

building top-notch facilities to undertake the construction, refurbishment, conversion, life extension and repair services for rig operators in the GoM.

As AmFELS' reputation grew, it established a base of regular customers such as Diamond Offshore, Ensco, Rowan Companies and Perforadora Central.

In the first quarter of 2012,

Keppel AmFELS secured two major projects. It is undertaking the reconstruction and upgrading of Ocean Onyx for Diamond Offshore which is scheduled for completion in the third quarter of 2013. It is also building the fourth newbuild jackup rig for Mexico's Perforadora Central with delivery slated in the first quarter of 2014.

# Congratulations!

Seadrill would like to thank Keppel Offshore & Marine for an excellent cooperation in the deliverance of 16 state-of-the-art offshore drilling units over the years.



## Setting the standard in drilling

Seadrill is a leading offshore deepwater drilling company, aiming to be our customers most important partner in making oil and gas available in a safe and cost-effective manner. The company operates a versatile fleet of 63 units.



# Jackups an edge above the rest

**K**eppel Offshore & Marine's (Keppel O&M) suite of proprietary jackup designs sets the industry benchmark for shallow water drilling solutions.

Dr Foo Kok Seng, Executive Director (Shallow Water Technology) of Keppel Offshore & Marine Technology Centre and Executive Director of Offshore Technology Development (OTD), shared, "We used to only do production work, but we decided to grow our design capabilities so as to offer our customers even better products. Today, we are able to readily customise our range of proprietary solutions to meet the specific requirements of each customer."

Keppel first entered the world of rig design in 1997; Keppel FELS had acquired rights to the Freide & Goldman (F&G) MOD V and MOD VI jackup designs. These designs were then improved upon by OTD – Keppel O&M's jackup design unit – and its rig design partner Bennett & Associates (BASS). The enhanced designs came to be known as the KFELS A Class and KFELS G Class, and their successes



*Keppel's close partnership with Enasco led to the development of the KFELS B Class Bigfoot design. Mr Dan Rabun, Chairman, President & CEO of Enasco (left) with Mr Tong Chong Heong, CEO of Keppel O&M.*

in the market later gave rise to other jackup models such as the KFELS B Class and KFELS N Class.

## Cost-effective solutions for benign waters

The KFELS B Class design, which was first launched in 2000, is the preferred choice for benign waters.

Cost-effective and operationally efficient, the KFELS B Class is lauded by drilling operators worldwide. For its environmentally-friendly features, the KFELS B Class design garnered the prestigious Engineering Achievement Award from the Institute of Engineers in Singapore in 2009.

In 2002, Keppel partnered Enasco to develop a modified KFELS B Class rig for operations in waters with extremely soft seabed. This collaboration brought about the KFELS B Class Bigfoot jackup design, which boasts larger spud cans for reduced bearing pressure.

The KFEL B Class design was taken even further in 2004. With support from Skeie Group, Keppel launched the KFELS Super B Class design. Capable of drilling 35,000 feet below the seabed, the KFELS Super B Class can operate at higher temperatures and pressures.

As of the first quarter of 2012, the qualities of the KFELS Super B Class and KFELS B Class Bigfoot were combined to produce the KFELS Super B Class Bigfoot design for Transocean.

Presently, there are a total of 33 KFELS B Class, KFELS B Class Bigfoot and KFELS Super B Class rigs operating worldwide, with another 20 orders.

## Robust solutions for harsh environments

Keppel O&M's harsh environment solutions have evolved over the years as well. Keppel collaborated with Skeie Group on the KFELS N Class jackup design in 2006. Capable of drilling and producing hydrocarbons at the same time, the KFELS N Class meets the requirements of the Norwegian Petroleum Safety Authority for working in the harsh North Sea environments. Over 2010 and 2011, Keppel FELS delivered three KFELS N Class jackups to Rowan Companies, which had acquired Skeie Drilling.

Keppel has also enhanced its KFELS A Class design to KFELS Super A Class for the United Kingdom, Denmark and the Netherlands sections of the North Sea (refer to page 25).



*Equipped to operate in some of the harshest offshore environments in the world, Rowan Stavanger is the second of three KFELS N Class jackup rig delivered by Keppel FELS to Rowan Companies.*



SBM Offshore's long term partnership with Keppel Offshore & Marine is critical to our performance and ability to deliver to our clients.

We congratulate Keppel Offshore & Marine on its 10 year anniversary and we look forward to many more years of successful collaboration ahead.





# Shipshape offshore production

**A**s offshore drilling moves into marginal fields, deeper waters and harsher environments, flexible and robust solutions to process and store oil and gas in these areas will be in demand.

According to International Maritime Associates, orders for production floaters may average 25 to 35 units a year over the next five years. 80% of these units are expected to be Floating Production Storage and Offloading (FPSO) vessels, of which half will be converted units. The up-cycle for production units is expected to kick in towards late-2012 and 2013.

With strong expertise and experience in FPSO conversions, Keppel Offshore & Marine (Keppel O&M) is well-positioned to meet the needs of the market in this uptrend.

Keppel Shipyard leads Keppel O&M's FPSO conversion capabilities. The company has built a solid track record since it undertook its first FPSO conversion project in 1981. It has become the industry leader for such conversions, having delivered 100 major FPSO, Floating Storage and Offloading (FSO) and Floating Storage and Re-gasification Unit (FSRU) conversion and upgrading projects as of April 2012. Keppel Shipyard undertakes an average of about 8 to 12 such projects at any point in time.

Backed by a reputation for completing sophisticated, customised and fast-track conversions in a safe, timely and efficient manner, Keppel Shipyard has established a wide customer base with long-term as well as new partnerships.

Mr Nelson Yeo, Managing Director of Keppel Shipyard, said, "We are glad to have the trust and confidence of the global industry for a range of conversion projects. Working closely with our customers, we continue to enhance and extend our capabilities, and ensure safe and high quality deliveries."

In undertaking detailed engineering and fabrication work for topside process modules, Keppel Shipyard

partners its sister company DPS (Bristol), a leading designer of FPSO topsides as well as a specialist in field development planning, concept screening and FEED work for oil companies and FPSO operators.


In 2011, Keppel O&M further strengthened its position as a core solutions provider in floating production systems by acquiring a 27.8% stake in Dyna-Mac, a topside module fabricator.

Keppel O&M has also been able to draw on the synergies of its global network to meet the needs of its clients and improved project execution. On the FPSO P-57 conversion project, Keppel Shipyard first undertook the pre-conversion work in Singapore before the vessel proceeded to BrasFELS in Brazil for the integration of its topsides. Delivered in the fourth quarter of 2010, P-57 has been operating successfully in the Jubarte Field, in the Campos Basin. A similar collaboration between Keppel Shipyard and BrasFELS at the moment is the

conversion of FPSO Cidade de Paraty.

Brazil is expected to be one of the key regions driving demand for floating production units. Petrobras' updated business plan for 2011 to 2015 highlighted the requirement for another 50 production units, both semisubmersibles and FPSOs.

Keppel O&M has a strong track record in floating production solutions for Brazil, having delivered some of the world's largest Floating Production Units (FPUs) for Petrobras such as the P-52, P-51 and P-56. In Singapore, Keppel Shipyard has completed 13 FPSO conversion and upgrading projects for Brazil over the years with another three underway.

Southeast Asia and Africa, which are steadily stepping up their offshore oil and gas activities, also have significant potential for FPSO projects. With a reputation for safe, reliable and prompt turnarounds, Keppel Shipyard is the preferred partner for FPSO conversions for the multiple operators servicing these regions. 



*Celebrating the naming of the FPSO OSX-1 are the managements of Keppel, OSX, OGX and BW Offshore, as well as Mr Joao Ziccardi Navajas (fourth from right), Minister Counsellor at the Embassy of Brazil in Singapore.*

With Compliments from



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# Congratulations

## **Keppel Offshore and Marine**

### on 10 years of success!



## STANDARD DRILLING

*We are building a world-class drilling company focused on the safety of our crew, satisfying our customers through the delivery of high quality services and creating shareholder value through growth and expansion globally.*

S.D. Standard Drilling has a fleet of six premium jackup rigs under construction at Keppel FELS, a global leader in rig design and construction.

For more information, visit our website at  
[www.standard-drilling.com](http://www.standard-drilling.com)

#### Expected Delivery Dates

Rig #1 February 2013  
Rig #2 June 2012  
Rig #3 July 2013  
Rig #4 November 2013  
Rig #5 December 2013  
Rig #6 May 2014

#### Fleet Particulars of Keppel FELS B-Class Rigs

400 feet water depth  
30,000 feet maximum water depth  
15,000 psi – 18 ¾ inch BOP  
1.5 million lbs. hook load capacity  
70 x 30 foot cantilever envelope  
Maximum accommodation 120/150

# Charting milestones

## 33

KFELS B Class/ KFELS B Class Bigfoot/ KFELS Super B Class jackups have entered the market

*KFELS B Class rigs are cost-effective and operationally efficient solutions for benign waters.*

*The success of the KFELS B Class design gave rise to variations of the model, including the KFELS B Class Bigfoot and KFELS Super B Class.*

## 0.24

Accident Frequency Rate of Keppel O&M at end 2011 compared to 2.09 at 2002



*The Keppel Safety Training Centre was established to provide a stimulating and interactive learning environment for the group's workers and subcontractors.*

## 11

new yards and offices set up since the formation of Keppel O&M



*Keppel O&M acquired Keppel Verolme BV in the Netherlands in 2002.*

**14**

semisubmersibles build to proprietary designs delivered since 2002



*Caspian Shipyard Company together with Keppel FELS delivered Maersk Explorer, a DSS™20 drilling semisubmersible in 2003.*

**44**

Marine Technology Development-designed vessels delivered since 2002



*Delivered by Keppel Singmarine to LUKOIL-Nizhnevolskneft, YURI KORCHAGIN is the first ice-class FPSO vessel to be completed and deployed in the Caspian region.*

**62**

FPSOs/FSOs/FSRUs delivered by Keppel Shipyard since 2002



*Keppel Shipyard set a new industry benchmark when it converted FPSO Brasil within 12 months in 2002 for SBM.*

**66**

turrets and topside modules delivered by Keppel Shipyard since 2002



*Keppel Shipyard strengthened its expertise in topside fabrication and engineering through stakes in Dyna-Mac and DPS (Bristol)*

**85**

Offshore Support Vessels delivered by Keppel Singmarine since 2002



*Keppel Singmarine completed a series of six AHTS for GulfMark.*

**30,500**

Keppelites around the world



*Powered by the Can-Do! spirit, Keppelites from across the globe strive for excellence at all levels of Keppel O&M's business.*

# TEN YEARS AND COUNTING!



Caterpillar takes great pride in being a part of Keppel Offshore & Marine's tremendous growth and success.

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**[MARINE.CAT.COM](http://MARINE.CAT.COM)**



# Solutions for all frontiers

**T**hrough close partnerships with its customers, Keppel Offshore & Marine (Keppel O&M) has developed a stable of proprietary designs that have gained wide market-acceptance. Indeed, 23 of the 27 jackup and semi-submersible (semi) orders that Keppel O&M secured in 2011 will be built to its proprietary designs.

“We seek extensive inputs, especially on our customers’ operational experiences, for our designs,” elaborated Mr Aziz Merchant, Executive Director (Engineering) of Keppel FELS, Executive Director of Deepwater Technology Group and Executive Director (Deep Water Technology) of Keppel Offshore & Marine Technology Centre. “The strengthening demand for our proprietary designs is affirmation of our continuous efforts to incorporate our customers’ feedback and enhance our range of solutions.”

In recent years, rapidly rising global energy consumption has escalated the search for offshore oil and gas in challenging frontiers; these operations have to be supported by robust offshore and marine solutions. In addition, the Macondo incident in the US Gulf of Mexico has significantly sharpened the industry’s focus on newer and higher specification rigs with enhanced safety features.

Committed to value-add to its customers, Keppel O&M works hand-in-hand with owners and operators to develop viable solutions for present and future needs.

## Deepwater drilling workhorse

Keppel O&M’s deepwater solutions received another vote of confidence when Sete Brasil Participações S.A. (Sete Brasil) placed an order for its proprietary DSS™38E semi in December 2011 and an LOI for another five in April 2012.

Mr Joao Carlos Ferraz, Chief Executive Officer of Sete Brasil, said, “Keppel designed rigs have an established track record of operating



*The DSS™38E design meets the stringent requirements of the deepwater “Golden Triangle” region, comprising Brazil, Africa and the Gulf of Mexico.*

efficiently in their respective fields and we are confident that the DSS™ 38E rig will be well suited for offshore Brazil.”

Jointly developed and owned by Keppel DTG and Marine Structure Consultants (MSC), the DSS™38E design meets the stringent requirements of the deepwater “Golden Triangle” region, comprising Brazil, Africa and the Gulf of Mexico.

A sixth generation rig, DSS™38E is an enhancement of DSS™38, a proven fifth-generation deepwater semi design. Two DSS™38 semis have already entered the market – Gold Star and Alpha Star were delivered by Keppel FELS to Brazil’s Queiroz Galvão Óleo e Gás (QGOG), and have been operating efficiently without disruption in offshore Brazil for Petrobras.

The DSS™38E semi is rated to drill to depths of 10,000 metres (m) below the rotary table in 3,000m water depth. It is 108m in overall length, with a main deck size of 73m by 73m. Its operational displacement is approximately 45,000 tonnes.

The rig is designed to stay in position via eight Azimuthing thrusters

and the configurations comply with the American Bureau of Shipping Dynamic Positioned System (DPS-3) requirements. With accommodation facilities to house a crew of up to 160 men, the DSS™38E semi allows for vertical and horizontal riser storage.

## OSVs for Brazil Continental Shelf

Marine Technology Development (MTD), Keppel O&M’s technology unit focusing on specialised vessels, has developed designs for offshore support vessels catering to the Brazilian Continental Shelf. They are the Platform Supply Vessel (PSV) MTD9045-DE, and the Anchor Handling Tug Supply (AHTS) vessel MTD80210A.

The MTD9045-DE unit features a large deadweight capacity in excess of 4,500 tonnes and a deck space of 1,000 square metres (sqm). Equipped with a diesel-electric propulsion systems and DP2, this PSV is well-suited to operate in a variety of offshore conditions.

The unique arrangement of the PSV’s internal tanks and systems enable it to transport a wide

combination of oil-based and water-based bulk cargoes for offshore exploration and production, offering shipowners a high degree of flexibility to meet chartering requirements.

The first two MTD9045-DE units are being built at Keppel Singmarine Brasil in Santa Catarina, Brazil.

As for the MTD80210A, it is a large-sized AHTS which measures 88m in length and 22m in width and has a deadweight capacity of 3,500 metric tonnes. Its tanks are designed to carry drilling brine and marine gas oil.

The vessel is distinct for its large array of deck machineries, which have been arranged for operational efficiencies and to meet stringent deepwater anchor handling and towing requirements.

Equipped with DP2 capabilities and a diesel-mechanical propulsion system, the MTD80210A is able to achieve excellent station-keeping.



*The PSV MTD9045-DE (top) and AHTS vessel MTD80210A (right) are customised for the Brazilian Continental Shelf.*

### Harsh environment semis

With expanding exploration and production in harsh environments such as the North Sea region, DTG and MSC have collaborated to develop two sixth generation semi designs, DSS<sup>TM</sup>51HE and DSS<sup>TM</sup>60HE.

The two designs are based on successfully commercialised semi designs including DSS<sup>TM</sup>20, DSS<sup>TM</sup>21, DSS<sup>TM</sup>38 and DSS<sup>TM</sup>51.

The DSS<sup>TM</sup>51HE semi has an operational displacement of 51,000 metric tonnes and a high variable deck load of 6,000 metric tonnes, while the DSS<sup>TM</sup>60HE semi has an operational displacement of 61,000 metric tonnes and a high variable deck load of 7,500 metric tonnes. Both designs contain accommodation facilities for up to 200 men.



*Developed for operating in harsh environments such as the North Sea, the DSS<sup>TM</sup>51HE and DSS<sup>TM</sup>60HE (in image) designs include winterised features such as derrick cladding and machinery space heating.*



Both designs are capable of operating in water depth of up to 7,500 feet (ft) and can drill up to 30,000ft from the rotary table. With Dynamic Positioning (DP) 3 capability and engineered to withstand Beaufort 10 sea conditions, DSS™51HE and DSS™60HE semis have superior motion characteristics. The designs are also suitable for self-contained mooring for up to 500m water depth.

Designed for year-round operations, the semis are equipped with winterised features such as derrick cladding and machinery space heating. The designs provide maximised uptime, drilling efficiency and optimum working conditions and are suitable for well workover and intervention, exploration drilling and development drilling.

### Accommodation semi for rough waters

DTG has also designed the enhanced harsh environment accommodation semi SSAU™4000NG.

The SSAU™4000NG is an enhancement of the proven

SSAU™3600 design. It meets the stringent United Kingdom (UK) Health, Safety and Environment (HSE) requirements for operating in the UK sector of the North Sea as well as the Gulf of Mexico, Brazil and Western Australia.

With DP3 capability and enhanced station-keeping, the SSAU™4000NG semi is capable of operating alongside fixed platforms, floating platforms and Floating Production Storage and Offloading vessels. The semi has a full complement of deck cranes and firefighting capabilities, with state-of-the-art accommodations that can house up to 500 persons in one-man and two-man cabins.

Floatel International (Floatel) contracted Keppel FELS for one SSAU™4000NG in June 2011. Named Floatel Victory, the semi has already been chartered by BP Exploration Operating Company Limited for operations in offshore UK. Keppel FELS' deliveries to Floatel includes Floatel Reliance, a SSAU™3600 semi with DP2 capabilities chartered

by Petrobras for Brazil's Campos Basin, as well as Floatel Superior, a DSS™20NS semi with DP3 capabilities chartered to Statoil for operations in Norway's Oseberg field.

Floatel recently also engaged Keppel FELS for another DSS™20NS semi with DP3 capability. The DSS™20NS design meets the requirements for operating in the Norwegian Continental Shelf, which has one of the harshest offshore environments.

Mr Peter Jacobssen, CEO of Floatel, said, "As we grow our fleet of next generation accommodation semis to meet the needs of the market, Keppel FELS is the ideal partner for us in terms of reliability and quality. Their suite of proprietary designs has proven to be cost effective solutions for offshore accommodation and we believe the SSAU™4000NG will be just as successful as her predecessors."

### Jackup for the North Sea region

A viable and cost-effective solution for harsh environments and cold climate areas, the new KFELS Super A Class boasts the distinctive qualities of Keppel FELS' proven jackup designs.

Capable of operating in water depths of 400ft and drill to depths of 40,000ft, the KFELS Super A Class jackup features advanced automated drilling systems with 2.5 million pounds of static hook load, a spacious deck and comprehensive amenities for a 150-person crew. It also has an offline stand building capability to handle drill pipes efficiently, boosting overall rig performance and productivity.

In 2011, Ensco plc ordered 3 units of enhanced KFELS Super A Class rigs while Discovery Offshore ordered 2 KFELS Super A Class rigs.

Mr Dan Rabun, Chairman and CEO of Ensco, said, "Ensco's new series of jackup rigs are enhanced versions of the KFELS Super A Class design that will provide increased levels of efficiency for customers.

"Standardisation across our 11 KFELS design rigs improves reliability for customers as we benefit from more efficient construction, training, daily operations, inventory management, and repairs and maintenance."



Keppel FELS' deliveries to Floatel includes Floatel Reliance, a SSAU™3600 semi, and Floatel Superior, a DSS™20NS semi (in image). Ongoing projects by Keppel FELS for Floatel include a SSAU™4000NG unit and another DSS™20NS semi.

## McDermott is proud to partner with Keppel on Brazil's Papa Terra Project

EPCI and operations/maintenance of the Papa Terra TLWP involves one of the most complex fields in the region, characterized by 4,000-foot water depth and challenging subsurface with high viscosity.

Shared by McDermott, Keppel FELS and their joint venture FloaTEC, LLC, the innovative solution marks the first TLWP facility and the first with dry tree unit for this deepwater area.



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DNV and Keppel Offshore & Marine have over the years enjoyed a successful relationship on numerous projects worldwide. As one of Keppel Offshore & Marine's partners, DNV wishes Keppel Offshore & Marine many more years of successful deliveries to the global offshore and marine industry.

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DNV congratulates Keppel Offshore & Marine on 10 years of excellence



MANAGING RISK

## Arctic jackup

Keppel Offshore & Marine Technology Centre (KOMtech) and ConocoPhillips are jointly designing on a first-of-its-kind, ice-worthy jackup rig to operate in one of the harshest marine frontiers, the Arctic Seas. The joint design project is expected to be completed by end 2013.

This jackup features dual cantilevers to optimise drilling activities and will be able to operate in a self-sustained manner for 14 days. In addition, it is equipped with a hull that can tow in ice, is capable of resisting the impact of multi-year ice floes and ridges as well as withstand level of ice sheets impinging up to its design thickness.

Leveraging their combined expertise, resources and research findings, Keppel O&M and ConocoPhillips aim to achieve significant breakthroughs for offshore drilling in the Arctic region.

## Treading deepwater

FloaTEC, a joint venture between Keppel O&M, and McDermott



*A viable and cost-effective solution for harsh environments and cold climate areas, the new KFELS Super A Class boast the distinctive qualities of Keppel FELS' proven jackup designs.*


International (MDR), specialises in designing deepwater floating production systems (FPS).

Formed in 2005, FloaTEC is the only company that offers a full

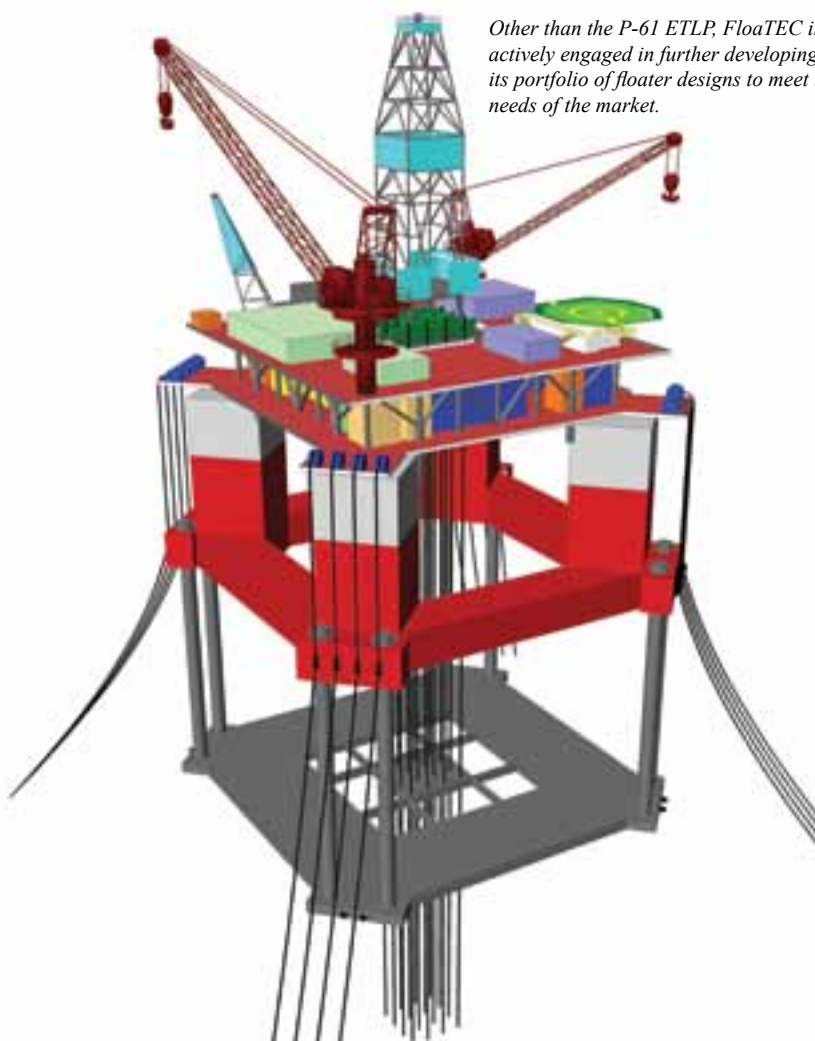
complement of proven FPS solutions – encompassing Spar, Semisubmersible, and Tension Leg Platform (TLP) technology.

In 2010, together with its parent companies, it secured a contract from Petrobras to design, engineer, build, install and operate P-61, the first tension leg wellhead platform to be utilised in Brazil. Scheduled for delivery in 2013, it will be deployed in the Papa-Terra field in the Campos Basin to work alongside the P-63 Floating Production Storage Offloading vessel to handle up to 180,000 barrels of oil per day.

Mr. Eric H. Namtvedt, President of FloaTEC, LLC said, “FloaTEC’s ability to draw from its parents’ global resources enables us to offer robust and cost effective solutions for our customers. From design to construction and installation, we are better able to identify and manage risks, ensure the high integrity of the design and generate efficiencies in the work processes.”

Besides the P-61 project, FloaTEC is currently tendering for FPS projects in deepwater Southeast Asia and West Africa and is involved in a variety of different early concept studies for potential field development projects in the promising pre-salt areas offshore Brazil and in deepwater Gulf of Mexico, as well as globally. 

*Other than the P-61 ETLF, FloaTEC in actively engaged in further developing its portfolio of floater designs to meet the needs of the market.*



## We congratulate Keppel Offshore & Marine with its 10<sup>th</sup> anniversary



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# Powerful offshore support

**K**eppel Singmarine, the specialised shipbuilding arm of Keppel Offshore & Marine (Keppel O&M), had humble beginnings. With a heritage dating back to 1887, the company started off servicing boats and coastal vessels. Today, the company has a strong track record of having built some 400 ships of diverse types and sophistication.

Over the years, the group has also grown its in-house engineering capabilities. Through its design arm, Marine Technology Development (MTD), Keppel Singmarine is able to offer a wide range of customised solutions for a variety of challenging frontiers.

Mr Hoe Eng Hock, Executive Director of Keppel Singmarine shared, "Having accumulated years of experience and built a multitude of specialised ships of different designs and functions, we have honed and proven our ability to tailor-make vessels for every frontier, be it in deep waters or under icy conditions.

"Derrick pipelay vessels and rock dumping fall pipe vessels are good examples of highly specialised ships that require detailed engineering customised to the owners' requirements. Leveraging our proven




*Product of a winning partnership and excellent project management, GLOBAL 1200 is a new generation derrick pipelay vessel built by Keppel Singmarine for Global Industries.*

track record and expertise in this area, we have delivered quality vessels to Global Offshore and Boskalis to their expectations."

Working in tandem with its sister yard Keppel Nantong in China, Keppel Singmarine provides

discerning operators with a one-stop solution for customised vessels, from conceptualisation to completion. Its portfolio of customised vessels spans Anchor Handling Tug/Supply vessels, multi-purpose Offshore Support Vessels and tugboats to highly advanced solutions such as ice-breaking vessels, pipe laying vessels and rock dumping fall pipe vessel for a worldwide clientele. Its latest project is the building of a multi-purpose diving support construction vessel for SBM Offshore which is scheduled to be delivered in second quarter of 2013.

Keppel Singmarine has further brought its services of providing reliable, flexible and advanced solutions to Brazil. It has set up a yard, Keppel Singmarine Brasil in Santa Catarina which has already secured a few projects.

With specialised vessels required to support E&P in deeper and harsher environments, Keppel Singmarine is ideally suited to be the choice solutions partner. 



*Managements of Royal Boskalis Westminster N.V. (Boskalis) and Keppel Singmarine at the christening ceremony for ROCKPIPER. Keppel Singmarine was awarded a bonus of S\$25,000 from Boskalis for its strong safety performance during construction.*



# Congratulations with the 10th year anniversary Keppel Offshore & Marine



We sincerely appreciate the cooperation between our two companies, and the numerous successfully completed projects together over the last decade:

- **Atwood Oceanics**
- **Diamond Offshore Drilling Inc**
- **Helix Energy Solutions Group**
- **Ensco plc**
- **Floatel International Ltd**
- **Gulf Drilling International Ltd**
- **Rowan Drilling**
- **Maersk Drilling**
- **PetroVietnam Drilling**
- **Perforadora Central**
- **Pemex**
- **Seadrill**

We are looking forward to many more years of strong and successful cooperation, And we wish you a great and prosperous future in the years to come.

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# Harnessing offshore wind

**D**emand for offshore wind energy is gaining traction around the world with a large number of offshore wind farms currently being constructed or planned.

Europe is currently the leader in offshore wind power. The European Wind Energy Association (EWEA) has set a target to achieve 40 GW installed by 2020 and 150 GW by 2030.

Drawing on its extensive engineering and construction capabilities, Keppel Offshore & Marine (Keppel O&M) has conceived several innovative and cost-effective solutions for the offshore wind industry.

Keppel Offshore & Marine Technology Centre (KOMtech) is developing two dedicated cable laying vessels (CLV) optimised to support the development of offshore wind farms.

As wind farms move further ashore, into deeper waters, the limitations of vessels presently used for such

operations will be more pronounced. Cable networks for future wind farms will increasingly have to be laid by CLVs purpose-built to perform this task in relatively rough conditions.

Meanwhile, the world's first KFELS Multi-Purpose Self-Elevating Platform (MPSEP) will be delivered to Seafox Group by Keppel FELS in the second half of 2012. It has been chartered by the joint venture Aarsleff Bilfinger Berger (ABJV) Dan Tysk for installing offshore wind foundations in German sector of the North Sea.


Developed by Keppel O&M's Offshore Technology Development (OTD), the KFELS MPSEP is optimised for the installation and maintenance of heavy wind turbine foundations. It can also support accommodation, well-intervention, maintenance, construction and decommissioning needs.

Designed to withstand harsh

offshore environmental conditions all year round, the KFELS MPSEP is able to operate in water depths of up to 65 metres in the North Sea and ensures reduced downtime even in extreme storm conditions, potentially providing a longer operational window.

Further expanding and improving its range of solutions for the offshore wind industry, Keppel has taken a stake in OWEC Tower, a leader in the design and engineering of offshore wind turbine foundations.

As offshore wind farms move into deeper waters with bigger capacity turbines, a large number of jacket foundations will be required.

In broadening its design capabilities, Keppel O&M has also completed an equity partnership with BPP Cables to deliver customised integrated cable design, supply and installation solutions. 



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# Safety excellence

**A**t Keppel Offshore & Marine (Keppel O&M), safety is a core value embraced at all levels. The group works closely with all its stakeholders, including customers, contractors, and industry and regulatory bodies, to ensure safety at the workplace.

Over the years, Keppel O&M made significant improvements to its safety performance. With the integration of the different shipyards, the Group has made a concerted effort to synergise and align its safety efforts across all its operations.

Keppel O&M consolidates the safety statistics from its different yards to track overall performance, analyse trends and identify areas to focus their safety efforts. From 2002 to 2010, its accident frequency rate (AFR) and accident severity rate (ASR) were significantly lowered. However, despite Keppel O&M's tremendous efforts to ensure safety, the journey was not without its trials and tribulations as the company also suffered fatalities along the way.

Deeply regretting any loss of life, Keppel O&M stepped up its safety efforts and shared the lessons learnt across its yards to prevent recurrences. It recognises the importance of constant vigilance and constant engagement with its workforce at all levels to sustain a culture of safety in the workplace.



*Through rigorous safety training programmes, Keppel O&M arms its people with the competencies to protect themselves and those around them.*

Keppel O&M's safety efforts are led by the top. A Safety Committee was set up at the Keppel Board level in 2006. The Board also provides guidance on group-wide safety efforts. Keppel O&M's senior management and its safety leaders regularly review and evaluate the group's work environments as well as safety initiatives and performance.

The Keppel Workplace Safety and Health (WSH) 2018 strategy was introduced in 2010 to significantly reduce its incident rates by implementing uniform safeguards, increasing accountability and promoting ownership across all its business units.

Keppel O&M imbues in its workforce a safety-first mindset at all times. It also conducts and coordinates extensive safety competency training

programmes for its direct and indirect workforce. The Keppel Safety Training Centre offers a complete range of safety training and certification courses for workforce across all areas and levels. In 2011, there were 3,088 workers and subcontractors were trained at the Centre.

To keep abreast with industry best practices for safety and to raise the industry's safety standards, Keppel O&M actively participates in national and industry safety initiatives and events.

As a testament to our safety efforts, Keppel O&M garnered a record 20 WSH Awards from Singapore's WSHC and Ministry of Manpower in 2011. Last year, Keppel FELS also received the Safety Award at Lloyd's List Asia while Keppel Shipyard received the Safety Award at Seatrade Asia Awards.

Mr Yong Chee Min, General Manager (Health, Safety and Environment) of Keppel O&M, added, "Notwithstanding recognition from the government and the industry, our greatest reward is seeing everyone return home safely from our yards at the end of each workday.

"The journey towards a safety culture is a long and ongoing one. Our goal is for everyone to realise that safety is not just the responsibility of the senior management and that safety culture is at its strongest when everyone takes ownership."



*Keppel Shipyard's customers are actively involved in the yard's safety programme. Some of them such as SBM sits on its Safety Steering Committee.*



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# Cat Power Solutions

Tractors Singapore Limited (TSL) was established on 20th January 1966 and its association with Caterpillar dates back to the 1920s as a division of Sime Darby. It became an independent Caterpillar dealer on 1st January 1983. Tractors Singapore Limited is the authorised Caterpillar dealer with a full line of : Caterpillar machines, engines and lift trucks, covering the service territories of Singapore, Christmas Island (Indian Ocean) and Maldives.

Tractors Singapore's skills in sales engineering, designing, packaging and support of complete power systems, elevated it into the ranks of the elite group of Caterpillar Power professionals in 1991. Today, its business unit, TSL Power Systems is an acknowledged powerhouse of total turnkey solutions capable of meeting the power needs of Marine, Oil and Gas, Industrial and Power generation industries.

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Customer satisfaction is a priority of Tractors Singapore. TSL is an ISO 9001:2008 certified organisation. It adopted the 6-sigma concept of life since 2003. We invite you to visit our website at [www.tractors.com.sg](http://www.tractors.com.sg), give us a call at (65) 6261 2222 or fax in your enquiries to (65) 6261 6072.

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# Next decade and beyond

**H**aving helmed Keppel Offshore & Marine over the past 10 years, CEO Mr Tong Chong Heong (CH Tong) and COO Mr Chow Yew Yuen (YY Chow) speak on the group's strategies for sustaining its impressive growth into the future.

**How would you characterise Keppel O&M's growth and what can the company do to stay competitive for the future?**

**CH Tong:**

With the strength of our people and the support of our customers, partners and vendors, we have grown tremendously over the years. Our strategy since the formation of Keppel O&M has always been to maximise the synergies of our businesses to become a total offshore solutions provider. In meeting our customers' needs, we have developed a suite of proprietary solutions that have set the industry standard for high performance. In addition, we have grown our capabilities and track record for on time, on budget and safe deliveries.

While we are pleased with our successes, we are not resting on our laurels. Our priority is always to ensure that Keppel O&M is fighting fit and ready to meet the challenges ahead.

We continue to dedicate significant resources to improve our overall productivity, manage our costs more effectively and hone our technology and research and development (R&D) competencies. We also harness the synergies of our global network of yards to offer value-added solutions, as well as expand into adjacent businesses to widen the range of our offerings.

With people as our core asset, we continue to grow our team and groom new talent. We are stepping up efforts to train and develop our people, not only equipping them with competitive skills, but also imbuing them with the Keppel core values.



*Mr Tong Chong Heong, CEO of Keppel Offshore & Marine*

**YY Chow:**

Over the years, we have placed a lot of emphasis on improving our productivity. This has enabled us to deliver an increasing number of projects each year. In 2009, we delivered a record 14 rigs across the group. In 2013, we will deliver over 20 rigs. We are currently doubling our efforts to raise operational efficiencies so that we remain well-positioned to meet the growing demand for quality solutions.

Steering our efforts in this area is the Productivity Improvement Taskforce which we formed some years ago to oversee the development of strategic productivity improvement plans across all the yards in our global network.

Furthermore, we continue to strengthen our technology leadership. With the exploration of oil and gas moving into harsher environments and deeper waters, we are working on a number of new designs this year such as arctic jackup solutions and harsh environment semisubmersibles.

**What are some of the new growth areas Keppel O&M is looking at?**

**CH Tong:**

A key characteristic of our growth strategy has been to integrate our competencies along the value chain. Over the years, we have selected niche areas where we do not compete with most of our customers.

We acquired a stake in Dyna-Mac, a topside module fabricator, to strengthen our capabilities in floating production systems. We have also taken a 47% stake in Floatel International, which will enable us to better tap growth prospects for quality floating accommodation semisubmersibles.

In addition, in anticipation of demand for offshore support vessels in Brazil, we started a new ship-owning company which will offer vessels for bareboat charter or sale.

Meanwhile, our participation in the offshore wind sector is progressing well. We are seeking to build more offshore wind installation vessels and

have developed a new cable-laying vessel design meant for future offshore wind farm projects. We have also taken a stake in a Norwegian offshore wind turbine jacket foundation designer, OWEC Tower, and are looking for other similar opportunities.

To further add to our design capabilities, we have acquired also ownership of Bennett & Associates, a naval architecture, design and consulting firm in Houston.

Looking ahead, we will continue to seek opportunities in areas which can enhance our value-add to our customers and fortify our position as the provider of choice and partner for solutions for the global offshore and marine industry.

### **What are the new markets that Keppel O&M is focusing on as part of its Near Market, Near Customer strategy?**

#### **YY Chow:**

Through the years, we have steadily and selectively built up a network of 20 yards and engineering offices in 16 countries, serving our customers from around the world. Currently, our expansion plans are focused on Brazil, the Caspian region and the Middle East.

In the Caspian region, exploration and production activities are picking up. The development of our new shipyard in collaboration with SOCAR, Azerbaijan's national oil company, is progressing steadily. When ready, this Baku yard will be able to construct a variety of vessels ranging from offshore support vessels to tankers, as well as carry out ship repairs and conversions. Our existing Caspian Shipyard in Azerbaijan is in discussions on a potential order to construct a new semisubmersible for SOCAR.

In Qatar, our Nakilat-Keppel Offshore & Marine (N-KOM) yard has in its first year of operations, worked on over 40 ship and rig projects, earning the confidence of the marine and offshore industry in the Middle East region.

Possible future areas which we are considering include West Africa, Russia and Mexico. We will evaluate these countries carefully before making any decisions to ensure we can extract value from operating in these locations.

### **What are your views on the outlook of the offshore and marine industry in the next five years?**

#### **CH Tong:**

While the overall global economic outlook is expected to be weak in the next few years, there is returning confidence in the global oil and gas industry driven by the continued growth in energy demand across countries in the Asia Pacific and Latin America.

With the oil price averaging around US\$95 per barrel and significant exploration finds reported in 2011, the prospects of the offshore market in 2012 and beyond are healthy.

In terms of the specific market segments, the continued influence of the Macondo incident is expected to translate into increasing demand for customised rigs with improved quality and enhanced safety features.

#### **YY Chow:**


Even with the slew of deliveries expected in 2013, industry estimates put more than 50% of the jackup rig fleet to be over 30 years of age by 2015. This is five times the number of units at that age today and we expect

the replacement cycle to continue.

In the North Sea, we are seeing more demand for ultra-premium rigs to work in harsher environments. In the Middle East, we see Saudi Aramco looking to expand their fleet of jackups while PEMEX in Mexico is also looking to do the same. Already, Keppel AmFELS has received two orders for jackups for Mexico.

In the ultra deepwater market, demand is exceeding supply. According to Pareto, there are not enough available rigs in 2012 and the market is expected to fully absorb the new units arriving in 2013 and 2014.

In the Floating Production market, industry experts say that the world will need more than 100 such units in the next four years with Brazil requiring a majority of the vessels in the floating production sector in the coming years. For example, Petrobras expects installation of 54 new production systems over the next 10 years while OGX says it will require 19 FPSOs for their fields.

With the healthy outlook, we are going full steam ahead in all aspects of our business to ensure we leverage our established core competencies to meet and benefit from the upcoming demand for rigs and vessels. 



*Mr Chow Yew Yuen, COO of Keppel Offshore & Marine*



# CONGRATULATIONS

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