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Jotun AS, P.O.Box 2021, N-3248 Sandefjord, Norway tel:+47 33 45 70 00 fax:+47 33 45 79 00 For more information: [www.jotun.com](http://www.jotun.com)

## AROUND THE BOOTHS

### Navigating the correct floater course



With oil prices comfortably in the US\$100-US\$120 per barrel range and all the market drivers set fair it has never been a better time to invest in the offshore floating production market. Dr Roger Knight and George Venturas of Infield Systems (Booth 2557) examine whether the newbuild, conversion or speculative FPSO option is the right path to pursue.

In terms of regional FPSO deployment numbers we estimate that Africa will continue to dominate the global picture through to 2012. FPSOs have been the infrastructure option of choice in West Africa and this is aptly illustrated by the large number of projects that have used FPSOs in Angolan and Nigerian waters. However, less than one third of these have been new builds. Other regions have been slower to adopt FPSOs, but with the emergence of more projects in deeper waters, FPSOs are increasingly popular globally with operators. Asia has shown a large growth in the market from only representing 18% in 2002 rising to 27% in 2007, while Europe and Australasia, on the other hand, have had relatively less activity in the last five years. We expect European and Australasian demand to grow in the next five years but stay within the stable thresholds of between 10-15% respectively. In numerical terms this would be two to three vessels a year.

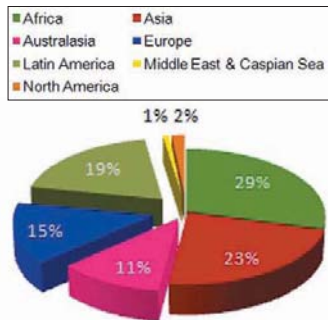
Asia has experienced an explosion in FPSO numbers over the last couple of years as a percentage of world totals. Asian FPSO deployments rose from only 7% in 2005 to 27% in 2007 which demonstrates the growth in the shallow water Chinese and Indian sectors as well as deepwater plays in this region. While historically Asian development plans have been mainly fixed platforms in shallow water linked to floating storage, we can now see a shift in infrastructure out into much deeper water. In terms of deepwater development, Asia is without doubt a major emerging region. However, it is still at an early stage, characterized by isolated projects such as Kikeh and Gumusut; Kikeh which came onstream in 2007 and Gumusut which is slated to come onstream in 4Q 2010. Once hubs have been set up we expect to see the emergence of more projects demanding FPSOs and tiebacks. Asia should maintain these higher floating

production levels with projects such as Reliance's use of Aker's *First Smart* FPSO on its KG D6 MA field in the Bay of Bengal in the next couple of months, and to continue with more post-2009. In addition to this the continued deepwater activity of Petronas, Shell and Murphy in Malaysia and Chevron off eastern Kalimantan leads us to remain positive that the Asian region will comprise as much as 21% of global activity in FPSO deployment by 2012. We expect from 2001 to 2012 over 70% of Asian FPSOs to be conversions rather than newbuilds.

With one major exception, the new floater in Mexico's Ku-Malooob-Zaap complex. Latin American numbers are completely reliant on Brazilian deployments. Petrobras remains by and large the market leader in FPSO deployment and is also the world's largest FPSO client. Historically, Brazil has had FPSOs working on major fields for the last 20 years, starting with the Albacora field.

We expect Latin America to remain stable throughout the whole period with between 20-30% of FPSOs to add to their already impressive FPSO fleet. Over this time frame we see conversions to represent close to 70% of all FPSOs deployed, but innovation such as the Sevan SSP 300 installation on Piranema or the P57 Jubarte FPSO BR concept with its angular hull, show Petrobras is open to new ideas in its hunt for the ultimate FPSO.

Globally the number and diversity of vessel operators is increasing, as is the number of operators with both experience and/or opportunities to utilize floating production systems. These operators are already looking at increased diversity in financing, ownership and production and profit sharing agreements. Innovation in the floating production sector is a positive point and one that bodes well for the future, but one that also maintains a clear caveat: redeployment. Considering that the



Regional share of FPSO market.

SOURCE: INFIELD SYSTEMS

robust current demand and supply constraints have resulted in such a bullish market it is easy to forget the inherent difficulties and costs related to redeploying floating production vessels. There are an increasing number of vessels that have passed their original cessation date and/or are operating at lower production levels than were initially regarded as economic. Eventually we expect to see an increase in vessel redeployments from the current fairly flat market. A recent example of this was the move of Modec's *MV7* vessel from Buffalo field off Western Australia to the Jasmine field in the Gulf of Thailand. The future interaction between redeployable vessels and additional vessels entering the market could be a defining factor in shaping this sector's financial profile over the next decade. The key impact here will be in the assessment of residual asset value and its influence on financing and investment. Speculative FPSOs is currently an area of

burning debate within the offshore oil and gas community. Following on from successful rig investments over the past three years, investors have moved capital into speculating on FPSOs. The rationale for speculative FPSOs is to reduce project lead times and improve project cash flow. This is seen as returns realized in shorter time frames. Nevertheless there are elements in the offshore oil and gas industry that point out that the composition of the FPSO market is fundamentally different from the rig market.

First, the FPSO market does not have the spot market that rigs enjoy and relies on longer term fixed contracts. In other words if an FPSO does not gain a contract before it is completed there is no central place in which to sell it. This demonstrates the magnitude of the risk with between \$235 million to \$665 million invested in a single newbuild.

Second, there are limits to the levels of standardization of FPSOs as different oil fields require differing production equipment to handle different chemical compositions of the crudes. Moreover, in the same vein, supply constraints in other areas, such as subsea equipment and pipeline vessel availability, could mean lead times would not necessarily be reduced by having a vessel available immediately if other areas in the chain are blighted with delays.

As it stands, the jury is still out on the issue of whether speculative FPSOs will have the ability to generate profits, especially in the immediate timeframe that speculators are hoping for. But we feel sure that the current market situation is so buoyant that there is room for all in the next five years, whether commissioned newbuilds, conversions or speculatives. The decision of which to go for will ultimately rest with the individual client.

For instance, after the *Erika* oil disaster of 1999, Total definitely prefers newbuilds for its major projects over conversions, but others think differently and will follow different paths to success.

Looking forward and attempting to predict future deployment trends we believe that floating LNG plants, which can monetize stranded gas deposits, will do in five to ten years time what conventional FPSOs are doing for oil fields now.

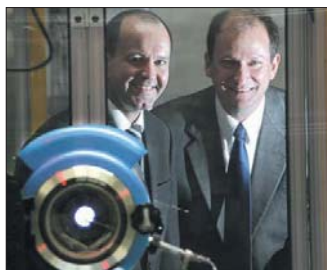
Now that could well be a major growth area!

### Inner protection

Pleasanton, California-based internal surface coatings specialist Sub-One Technology (Booth 11212) has released a family of new coatings based on its breakthrough InnerArmor technology. The coatings are being tested in key surface, subsea and downhole oil and gas applications including piping, couplers, cylinders, and drilling and completion equipment. According to Sub-One, InnerArmor coatings were selected based on 'their unique ability to protect against internal corrosion and abrasive wear'.

'The release of these new InnerArmor coatings represents an important milestone in our quest to help the oil and gas industry deploy high-performance interior coating approaches,' said the company's CEO Andrew Tudhope.

'Depositing carbon-based coatings, metals,



Dr Mark Gore (right), Sub-One president in Europe, with Jim Davidson, managing director of Aberdeen-based Advanced Coatings Initiative, the first European licensee for InnerArmor.

oxides and other compounds that can be ionized and applied on the interior surfaces of oilfield equipment promises to achieve a step change in performance and cost savings in many offshore and land drilling, completion and production applications,' he added.

The new InnerArmor family of coatings has been tuned to solve difficult corrosion, wear and friction reduction challenges in the interiors of critical liquid and gas handling equipment and piping. Each coating has been thoroughly tested using applicable NACE, ASTM and other industry standards to validate performance. Hybrid custom coatings are also available to accommodate application requirements for multiple types of protection. For example, heavy oil producers are using InnerArmor coatings to protect internal components against abrasion and corrosion from slurry flows.

### J Ray on a roll

Subsidiaries of J Ray McDermott (Booth 2169) landed an offshore construction double - in Russia and Australia - this week with two contracts expected to have a combined value in excess of \$500 million.

The first award, from OOO Lukoil-Nizhnevolszhskneft, a subsidiary of OAO Lukoil Oil, covers installation of offshore facilities in the Yuri Korchagin field. J Ray's scope of work includes the transportation and installation of the piles for the ice-resistant fixed platform LSP-1, as well as transportation and installation of single point mooring substructure, piles and the topsides.

The second award, from Esso Australia Resources, is an EPCI contract for work on the Kipper Tuna gas project located in Australia's Bass Strait.

### Winch win

Through its subsidiary TTS Offshore Handling Equipment in Alesund, Norwegian firm TTS Marine's marine cranes division has cause to celebrate this OTC (Booth 5141). It has landed its first contract - worth about Nkr33 million - for the delivery of anchor handling winches and sees the prospect of further deliveries to a value of about Nkr50 million.

'This contract represents a breakthrough for TTS in the anchor handling market,' said Ivah Hanson, head of the marine cranes division.

TTS will deliver equipment for two anchor handling vessels currently under construction in Japan. The newbuilds are 150t vessels, with 12,000hp engines, to be equipped with 350t winches.

TTS' first delivery will be in June 2009.

The contract also contains options on equipment for three additional anchor handlers.

According to TTS, the Korean shipping company involved has chosen a solution based on high-pressure hydraulics. 'This market has been characterized by low-pressure hydraulics, and it is a great recognition for TTS to gain acceptance for this technology for anchor handling winches,' said Hanson. 'The equipment includes a set-up where TTS personnel may troubleshoot and diagnose the equipment via satellite, regardless of the vessel's position. This functionality will strongly contribute to preventing and reducing the risk of a non-scheduled disruption in the operation of the winches.'

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**The Bluestream Group**  
Koperlagersweg 2, 1786 RA Den Helder, The Netherlands  
+31 (0)223 - 637784, info@thebluestreamgroup.com  
www.thebluestreamgroup.com