

SEN

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(with DEEPWATER INTERNATIONAL)



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Maersk's Culzean Plans Take Shape



Awards have been handed out for Culzean.

Maersk Oil has been busy handing out the spoils for its recently approved **Culzean** (*SEN*, 32/11) development in the U.K. North Sea, although the award of the floating, storage offloading (FSO) unit for the project is still up for grabs.

Sevan Marine has said it is “optimistic” that its technology will be selected for the FSO unit for the scheme in Block 22/25 of the Central North Sea, which would mean Teekay Offshore is in pole position for the award, with its concept employing a cylindrical FSO.

Teekay is going head-to-head with Modec for the FSO, which will be used to store condensate from the field.

Down below, Subsea 7 has scooped the \$150 million subsea, umbilical, riser and flowline contract for the HP/HT gas condensate development.

Its contract scope includes project management, engineering, procurement, construction (EPC) and installation of a 22-in. diameter, 52-km gas export pipeline connected to the Central Area Transmission System and a 3.6-km pipe-in-pipe (10-in. outer pipe and 6-in.

inner pipe) providing insulation for the transportation of the condensate to the infield FSO.

The pipe-in-pipe will be laid with a 4-in. piggy-back line that will transport fuel gas to the FSO.

Subsea 7 also will provide subsea structures, tie-ins to the Culzean platform facilities and precommissioning expertise.

Project management and engineering work will be done from Subsea 7's Aberdeen office. Offshore activities will utilise a number of Subsea 7 vessels including the highly versatile pipelay and heavy-lift vessel *Seven Borealis*. Offshore operations are scheduled to kick off in 2017.

The bulk of the platform construction work, meanwhile, has gone to Singapore's Sembcorp Marine, which has landed an EPC contract worth more than \$1 billion (including long lead items) for Culzean.

The contract includes the building of the central processing facility plus two connecting bridges, a well-head platform and a utilities and living quarters platform topsides.

The facility will be installed at a water depth of 90 m in the U.K. sector of the Central North Sea.

SMOE will provide EPC and onshore precommissioning services while detailed engineering work will be performed by a subcontracting partner.

The Sembcorp Marine Admiralty Yard in Singapore will be the core fabrication yard for the project, while, in some good news for the U.K. supply chain, the Sembmarine SLP yard in Lowestoft will undertake the work scope for a power generation module, two bridges and a flare.

Heerema has won the EPC contract for both the 8,000 mt central processing facility platform and the 6,800mt

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utility & living quarter platform. Construction is due to start at Heerema Vlissingen in January 2016 to be ready for sail away in June 2017.

As part of the contract, six pile sleeve clusters will be fabricated at Heerema's Hartlepool facility in the UK, in addition to the wellhead access deck already underway at the yard.

With initial reservoir pressure up to 13,575 psi and temperature up to 175 C, the Culzean project counts as an ultra-HP/HT field and has qualified for the HP/HT Cluster Area Allowance introduced by the U.K. government as part of the 2015 budget.

In a first phase of drilling lasting five years, six producers will be installed, of which three will be online at startup.

In a second phase, three replacement wells will be drilled in 2021 to 2023, reflecting the experience that producers have a relatively limited lifetime in such extreme reservoir conditions. There will be 14 well slots, so there will be ample opportunity to drill more wells if need be.

The Culzean gas field is expected to be capable of providing about 5% of the U.K.'s total gas consumption by 2020 to 2021.

Discovered in 2008 by Maersk Oil and its co-venturers, the gas condensate field has resources estimated at 250 MMboe to 300 MMboe.

Production is expected to start in 2019 and continue for at least 13 years, with plateau production of 60 Mboe/d to 90 Mboe/d.

FLOATERS

UK Catcher Faces Hull Delay



Cidade de São Mateus was hit by an explosion.

BW Offshore has warned of possible delays to Premier Oil's U.K. North Sea **Catcher** (*SEN*, 32/8) development because of late delivery of the hull for the field's FPSO from a yard in Japan.

IHI Corp. is fabricating the hull at its Aichi works, but BW Offshore said "hull activities have slipped" and that delivery would not take place "in accordance with the contractual schedule."

IHI's scope includes the design, build, equipping and completion of a hull with accommodation, helideck and parts of the turret mooring system. The integration of the topside modules and completion of the FPSO will be performed in Singapore.

BW Offshore said, "A mitigation plan has been implemented to minimise the impact to the overall project schedule. Topside fabrication is developing as planned. At the end of the second quarter, more than 75% of the projected project cost has been committed. BW Offshore is closely monitoring progress and safety in all the project activities, ensuring that mitigating actions are implemented quickly if any deviation is detected."

The company said *Catcher* remains within budget with first oil still expected in 2017.

BW Offshore said good progress was made during the quarter on engineering, procurement and construction activities. Construction of the turret mooring system is progressing well with the mating cone module completed and delivered to the hull fabrication yard.

BW Offshore's scope includes the delivery of the FPSO, mooring system, installation and operation of the unit throughout the charter period.

The FPSO will have a processing capacity of 60 Mbbl/d of oil and a storage capacity of 650 Mbbl.

Meanwhile, following the explosion on the *Cidade de São Mateus* FPSO vessel off Brazil in February, work is ongoing to empty oil from it and disconnect it for transport to a yard for repairs.

BW said the disconnection of the unit has been significantly delayed by the approval process in Brazil.

The cost of repairs are still being estimated together with impact from impairment to be taken for damages incurred.

"As the unit is still at the field, it has been challenging to get access to make an accurate assessment of the damages, and consequentially also to decide the book value to be impaired," the company said.

BW Offshore also warned that the short- and medium-term outlook for its products and services has changed due to the drop in oil price.

The company said, "Macro conditions for the offshore industry have significantly worsened with expected continued drop in capital expenditure.

"BW Offshore still expects outsourcing of production to be a cost-effective solution for oil and gas companies, but believes it is prudent to expect a prolonged downturn in orders being awarded."

Aje FPSO Plans Boosted by New Well

Panoro Energy has been encouraged by results from its latest development well on the **Aje** (SEN, 32/6) Field offshore Nigeria, which is to be tapped with a leased FPSO.

The Aje-5 production well on the OML 113 licence reached targeted depth of 3,255 m, having been drilled with the Saipem's *Scarabeo 3* semisubmersible in 300 m.

It is now being completed as a subsea oil production well.

Aje-5 intersected 72 m of gross hydrocarbon-bearing Turonian sandstone. Panoro said LWD data is consistent with data from the Aje-1, Aje-2 and Aje-4 wells, which all intersected a condensate-rich gas column with an underlying liquid oil rim of about 9 m.

"Preliminary indications are that the net reservoir over this interval in Aje-5 is slightly better than had been seen

in these previous wells."

The rig is now being moved to re-enter the existing Aje-4 well to complete it as a second Cenomanian production well.

The Aje Field is located in the western part of Nigeria in the Dahomey Basin close to the border with Benin. The field is situated in water depths ranging from 100 m to 1,000 m and first oil is targeted for 2016.

The aim for Stage 1 is to produce 10 Mbbbl/d through the reentry of Aje-4 as the first producer and Aje-5 as the second.

The development plan includes the use of Rubicon's *Front Puffin* FPSO vessel, which previously operated on the now defunct **Puffin** (SEN, 31/10) Field in the Timor Sea. The vessel is undergoing modifications in Singapore.

FLOATER BRIEFS

Cron dall Energy has won more work on Ophir Energy's **Fortuna** (SEN, 32/11) FLNG project in West Africa from a consortium of Aker Solutions and Subsea 7.

The award is to provide technical support for the FEED and includes all aspects of the subsea design.

The Fortuna project, located in Block R in Equatorial Guinea, is a phased deepwater development producing gas to an FLNG facility.

The deal extends Cron dall Energy's involvement with the Fortuna project, which has previously included early field development concept work and conceptual engineering of both the subsea and FLNG facilities.

Golar LNG's **Hilli** (32/9) FLNG project remains on schedule and on budget, the company said.

During the second quarter, sponson construction, assembly, blasting and painting work progressed. Fabrication of piping and pipe supports continued and good progress was made with the repair and life extension work for the vessel.

Significant activities undertaken during the last quarter included addressing specific design and operation issues, and the overall project at the end of July is said to be 60% complete.

Meanwhile, the *Gandria* conversion contract is on target to become effective by the end of September.

Golar also has placed an order for a further floating storage regasification newbuild with Samsung Heavy

Industries. This new vessel will be a sister vessel to the *Golar Tundra* with LNG storage of 170,000 sq m and a continuous regasification capacity of 401,000 sq cm/d.

Petronas has given the nod to a revised field development plan for the **Ophir** oil field in Block PM 305 offshore Peninsular Malaysia. Work on the \$90 million project is set to begin immediately.

The field is being developed by Ophir Production Sdn Bhd, a joint-venture company comprising Octanex (50%), Scomi Energy Services (30%) and Vestigo Petroleum (20%).

Octanex said it has optimised project costs and shaved 30% off the development due to reduced industry costs.

Facilities for the Ophir oil field include three production wells, a wellhead platform and a leased FPSO vessel.

Japan's Inpex Corp. and partner Shell have tripled the size of the deepwater **Abadi** (31/19) gas field FLNG project offshore Indonesia.

They have submitted a revised PDO to authorities for the use of a FLNG plant with a processing capacity of 7.5 mtpa compared to the original plans for 2.5 mtpa capacity.

The project is now entering the FEED stage and will likely be a copy of Shell's giant Prelude FLNG vessel. The large scale development replaces the original phased development of the field.

DEVELOPMENT

Santos Targets Brownfield Expansions

From Australia (LB): Santos said it is primed to take advantage of brownfield expansion and extension opportunities in offshore northern Australia and is progressing activities in the area accordingly.

Santos' Western Australia and Northern Territory General Manager Joe Ariyaratnam, who spoke on the company's

ability to meet Asia's insatiable energy demand via brownfield development at the SEAAOC conference in Darwin, told delegates expansion projects would be most cost effective when it came to meeting future LNG demand.

"The projects that will capture that unmet LNG demand will be those projects that can deliver gas most

cost competitively," he said.

"Brownfield expansions are competitive with LNG supply from the rest of the world.

"A greenfield plant is probably going to cost you about \$1,800 a tonne, [and] brownfield [will cost] probably closer to about \$1,000 a tonne."

When it came to brownfield opportunities, Ariyaratnam said Santos was well positioned in northern Australia, adding that the company was continuing to chase multi-trillion cubic feet opportunities in the offshore Browse and Bonaparte basins to build on its discovered resource base.

The ConocoPhillips led **Darwin** LNG (DLNG) development has been the jewel in Darwin's oil and gas crown for some time, but with the Bayu-Undan fed plant set to reach production plateau in 2020, the project has been on the hunt for more gas to continue operations into the next decade.

Santos is a minority stakeholder in DLNG, alongside Eni, Inpex and Tokyo Electric Power.

Ariyaratnam said while DLNG had a space for an additional train, with approvals in place for up to 10 million tonnes per annum, it was critical not to discount the importance of backfill, which also could be a pathway to commercialise Santos' resources off Australia's north coast.

"There is some time until Bayu-Undan comes off plateau so there is time to get this right," he remarked.

Ariyaratnam said the **Crown** and **Lasseter** gas discoveries in the Browse Basin "were absolute contenders for DLNG backfill or an expansion," due in part to collaboration opportunities presented by infrastructure in the area.

Meanwhile, the ConocoPhillips-operated **Caldita-Barossa** fields in the Bonaparte Basin are both contenders for DLNG feedstock. Santos has a 25% interest in the fields.

The partners wrapped up a successful three-well appraisal drilling campaign at the fields earlier this year, which confirmed a better quality and larger resource than originally anticipated.

Ariyaratnam said drilling of the Barossa 3 well "blew us away" after it intersected 104 m of net gas play.

"This well has really delivered a step-change in resource position and the development options that are available for this field," he said.

Off that success, the joint venture (JV) has been able to hit the ground running with further engineering definition being undertaken to bring the project forward.

"The JV is aiming to be moving into a pre-FEED stage in the first half of next year," he said. "It's a strong contender for DLNG backfill."

All Systems Go on Gullfaks

Statoil has been given the green light by the Norwegian Petroleum Directorate (NPD) to start up and operate its new subsea wet-gas compressor and umbilicals on the **Gullfaks** (*SEN*, 32/10) Field.

The Gullfaks project is the second major seabed gas compression project that will be initiated, after the NPD granted consent for the startup of Åsgard (32/11) subsea compression in July.

"For Gullfaks, this gas compression means extended lifetime and an increase in the gas recovery rate from Gullfaks Sør Brent from 62% to 74%," said Astri Fritsen, principal engineer for the NPD.



The Gullfaks compressor gets green light.

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First Oil
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Lucius First Oil
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The compressor station and the umbilical installed on the seabed on Gullfaks will push up the wellstream from templates D, L, M and N. Production is scheduled to start no later than October.

In addition to accelerating gas production and extending the period when the gas capacity on the Gullfaks C facility is utilised, the new infrastructure will increase the gas and condensate reserves from the reservoirs on Gullfaks Sor Brent and Rimfaks Brent, the NPD said.

This also enables the realisation of additional resources in the greater Gullfaks area.

“Technology development is a key to improved recov-

ery and extended lifetime for fields on the Norwegian shelf,” Fritsen added.

According to Fritsen, the technology can be used on other new and existing fields in the future.

The main Gullfaks Field lies in Block 34/10 in the northern part of the Norwegian North Sea. It has been developed with three large concrete production platforms.

The Gullfaks A platform began production on Dec. 22, 1986, with Gullfaks B following on Feb. 29, 1988 and the C platform on Nov. 4, 1989.

Produced oil is loaded directly into shuttle tankers on the field, while associated gas is piped to the Kårstø gas treatment plant north of Stavanger and then on to continental Europe.

Gorgon Faces Industrial Headwinds

From Australia (LB): Chevron’s **Gorgon** (*SEN, 32/10*) project has hit industrial action turbulence with hundreds of workers on the giant LNG project on Barrow Island voting to take industrial action over demands for more favourable work rosters.

This comes after a secret ballot of 1,000 members resulted in a 94% vote in favour of downing tools unless more “family friendly” work timetables are arranged. All of the workers are employed by lead contractor Chicago Bridge & Iron.

The workers can down tools anytime from now but have to give seven days’ notice. They are demanding that a work roster of 26 days on and nine days off is changed to 20 days on and 10 days off.

The 15-million-tonnes-per-annum Gorgon Project, now 90% complete, is already months behind schedule and has blown out by almost 60% to \$54 billion in costs.

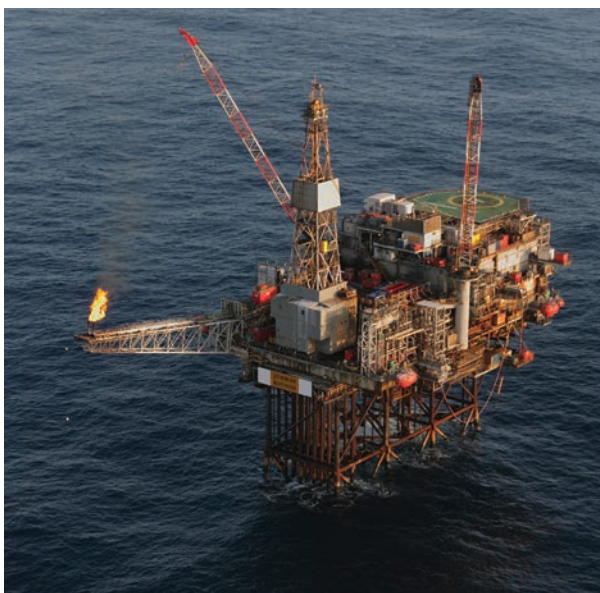
The protected action was sought by the Australian Manufacturing Workers Union and the Construction Forestry Mining and Energy Union after negotiations with Chicago Bridge & Iron hit turbulence.

Gorgon is the largest LNG project built in Australia. But in August, the supermajor told investors that it may miss its revised year-end target to ship first gas cargoes due to potential labour disputes, weather disruptions and equipment teething problems.

Gorgon, initially budgeted at \$37 billion, was originally meant to start production at the end of third-quarter 2014, some 60 months after the project was given the green light.

The company has tried to implement a new enterprise agreement for the Gorgon project, which the workers, in spite of the inclusion of pay increases and other benefits, had voted against four times in recent weeks.

DEVELOPMENT BRIEFS



Orlando will tie back to Ninian.

Iona Energy has managed to lop another \$23 million off capex on the subsea development of its small **Orlando** (*SEN, 32/2*) Field in the Northern North Sea by “taking advantage of the favourable contracting environment for 2016 oilfield services.”

The company had earlier trimmed capex to \$215 million from \$228 million but has now found even more cost savings.

The revised budget represents an overall savings of \$36 million, or 16%, vs. the budget in place when the manage-

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ment team joined in late 2014.

The Orlando development remains on track for first production in fourth-quarter 2016. Most planned works relating to Orlando reception facilities on the **Ninian** (32/7) Central Platform were completed as planned during the summer shutdown period in June 2015 supporting the company's objective of delivering first oil from Orlando in fourth-quarter 2016.

The integrated riser hang off structure was loaded onto a supply vessel in August with installation expected to be completed this month.

The company's planned \$40 million appraisal well on the nearby **Ronan** and **Oran** (32/2) discoveries is on hold while it seeks a partner to take part of its 100% stake and carry its interest.

Italy's Rosetti Marino has taken its first step into the subsea manufacturing sphere.

It has landed a contract from OneSubsea for the engineering, procurement and construction of subsea production modules for a North African offshore gas project.

Earlier this year, OneSubsea scooped a subsea production systems contract worth more than \$330 million for BP's **West Nile Delta** (32/10) gas project offshore Egypt.

OneSubsea's scope of supply for the 13-well development includes subsea production equipment, tooling and installation and commissioning services. Deliveries are expected to begin in third-quarter 2016.

The Rosetti Marino contract award represents the company's first move into the subsea sector and is worth about \$34 million.

Work is scheduled to start during this year and to be completed in early 2017.

Installation of Shell's **Malampaya** Depletion Compression Platform (32/6) has been completed in the West Philippine Sea. The new platform will help ensure a steady supply of natural gas to the Philippines.

The completed facility supports the extension of the only indigenous producing natural gas source in the Philippines, which provides 40% to 50% of the power generation needs for the island of Luzon, the largest and most populous island of the Philippines.

Xodus Group has been awarded a contract with Nexen to provide FEED services for decommissioning of the **Ettrick** (32/1) and **Blackbird** (32/1) fields in the central North Sea.

The work scope will assess the best practice decommissioning methods for the main items of field architecture, including the structures, flowlines, umbilicals and risers.

The work involves developing the decommissioning methodology for the field taking account of current industry best practice to ensure a technically robust decommissioning solution is developed.

Andrew Wylie, Scotland subsea operations manager, said, "While offshore infrastructure is complex, a logical approach to decommissioning, which makes the most of

operational data, lessons learned and latest technologies, can reduce costs at every stage of the process."

The steel jacket for the Statoil-operated U.K. North Sea **Mariner** (32-9) Field has been installed.

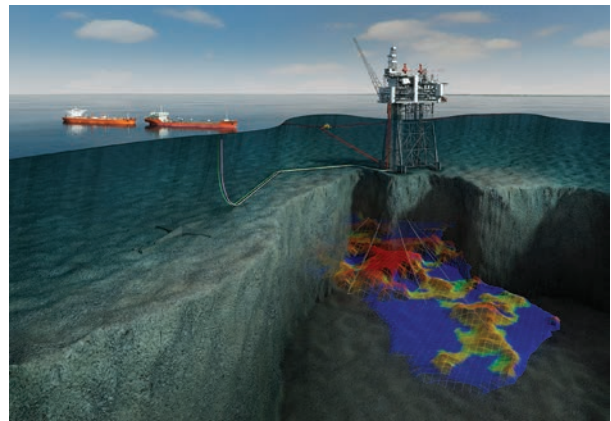
Following sailaway from the Dragados Offshore yard in Cadiz, Spain, on Aug. 10, the Mariner jacket spent a week in the sheltered Boknafjorden near Stavanger, while waiting for the heavy-lift vessel *Saipem 7000* to arrive at the field.

During the early hours of Aug 31, the jacket was hooked up to the cranes, up-ended and placed on its permanent location.

A total of 24 piles will now be driven into the seabed to secure the platform jacket. Each pile is 65 m long with a weight of 250 tonnes to 300 tonnes.

The remaining installation activities are expected to continue for another 10 days to 14 days.

The Mariner substructure is the largest steel jacket ever built for a Statoil project (134 m high with a footprint of 88 m by 62 m). The weight at load-out was 22,400 mt including floatation tanks and rigging.



How the Mariner development will look.

Marine Planning Consultants has been awarded a contract by Oil and Gas UK and the Oil Spill Response Forum to examine the specific requirements for monitoring during a major oil spill event on the U.K. Continental Shelf.

The project also will assess capability within industry and the wider scientific community to carry out environmental monitoring in response to such an event.

Global deepwater buoyancy and polymer specialist Balmoral Offshore Engineering has been approved by Bureau Veritas in line with American Petroleum Institute's specification for its Subsea umbilicals, risers and flowlines-related bend stiffeners and restrictors.

The API 17L standards cover the minimum requirements for design, material selection, manufacture, documentation, testing, marking and packaging of equipment.

Helix subsidiary Canyon Offshore has been picked by Shell, the operator of the **BC-10** (32/7) Field off Brazil, to trench and bury more than 40 km of pipe in 1,675 m of water in the Campos Basin offshore Brazil.

The work will be carried out in fourth-quarter 2015 from the *Grand Canyon I* vessel utilising the T-1200 deep-water trenching system.

The job will be the deepest pipeline trenching project ever performed offshore Brazil.

McDermott International has landed a lump sum contract—its largest ever in the Middle East—from Saudi Aramco for brownfield work in various fields offshore

Saudi Arabia through to second-quarter 2018.

A significant portion of the engineering and fabrication scope will be carried out by its engineering office in Al Khobar and fabrication facility in Dammam.

Procurement will be managed by McDermott's global procurement office in Dubai and vessels from the McDermott global fleet, including specialised shallow-water installation vessels, are scheduled to undertake offshore installation.

EXPLORATION NOTES

Eni is looking at a fast-track development of what it describes as a “world-class supergiant gas discovery” at its **Zohr** Prospect in the deep water of the Mediterranean Sea off Egypt.

The discovery could hold a potential of 849 Bcm of lean gas in place and covers an area of about 100 sq km.

Zohr is the largest gas discovery ever made in Egypt and in the Mediterranean Sea. The discovery well Zohr 1X NFW is located in 1,450 m in the Shorouk Block.

Zohr 1X NFW was drilled to a total depth of about 4,131 m and hit 630 m of hydrocarbon column in a carbonate sequence of Miocene age with excellent reservoir characteristics (400 m plus of net pay).

Zohr's structure also has a deeper Cretaceous upside that will be targeted in the future with a dedicated well.

Eni said it will immediately appraise the field with the aim of accelerating a fast-track development of the discovery that will utilise existing offshore and onshore infrastructure.

From Houston (BN): The challenges of drilling in the Arctic were highlighted Aug. 25 when rough weather that Shell described as “high winds and a volatile sea state” forced suspension of drilling for two days at the **Burger** (32/10) prospect in the Chukchi Sea. “For the entirety of the storm, the *Polar Pioneer* remained safely over the well. Operations resumed again on Sunday [Aug. 30],” a Shell spokesman said.

Falklands Oil and Gas (FOGL) has been hit with a hitch while drilling its **Humpback** (SEN, 32/3) exploration well in the South Falklands basin.

Humpback spudded on June 13 on licence PL012, testing multiple stacked reservoirs within the Cretaceous Diomedea fan complex.

But a series of unforeseen equipment and operational issues has resulted in a delay to the completion of the well.

FOGL said the delays are expected to extend the duration of the well from 65 days to about 100 days.

FOGL anticipates that the results of the well should be available in September 2015 and a further update will be provided once target depth has been reached and wireline logs have been run.

Following the completion of the Humpback well, the *Eirik Raude* rig will return to the North Falklands basin.

The company said, “Consideration is currently being given to further drilling at **Isobel Deep** (32/5) and this may replace the planned **Jayne East** well. Any further drilling in the South Falkland basin, as part of the current programme, will be dependent on the Humpback results.”

From Houston (BN): The Canada-Newfoundland-Labrador Offshore Petroleum Board (C-NLOPB) has issued a call for nominations of tracts to be offered in a bid round next year.

One of the areas is described as “mature,” the Jean d'Arc Basin, where Newfoundland-Labrador's three producing projects—Exxon Mobil-led Hibernia, Suncor's Terra Nova and Husky's White Rose—are located.

The boundaries are between roughly 46 degrees and 48 degrees North Latitude and 47 degrees and 50 degrees West Longitude. The other is north of Jean d'Arc and northwest of Statoil's **Mizzen, Harpoon** and **Bay du Nord** (32/8) discoveries in Flemish Pass.

It is dubbed the Eastern Newfoundland region and is as yet undeveloped but described as “high activity.” It lies between roughly 50 degrees and 51 degrees North Latitude and 47 degrees and 50 degrees West Longitude.

The deadline for submitting nominations is Oct. 20. Information about the nominations call is available at cnlopb.ca/news/nr20150825.php.

Independent Oil and Gas (IOG) is pursuing a contractor-led funding approach to drill the U.K. North Sea **Skipper** (30/22) commitment appraisal well in late 2015 and said it continues to explore alternative funding arrangements.

The aim of the well is to retrieve core and oil samples to design the optimum field development plan.

Skipper has independently verified gross 2C resources of 26.2 MMbbl. The appraisal well also will target two exploration prospects directly beneath the Skipper oil discovery, which may contain additional oil in place of 46 MMbbl.

IOG said it has presented the rig proposal and the progress with certain contractor discussions to the Oil and Gas Authority, which has agreed to extend the licence by three months to Dec. 31, 2015.

TGS said it has been given the nod by Mexico's Comisión Nacional de Hidrocarburos to acquire multibeam, coring

and geochemical analysis data across about 600,000 sq km in Mexican waters.

The survey will cover the entire deepwater area of the offshore sector of Mexico, including producing trends such as the Perdido Fold Belt and Campeche Bay.

It will be carried out in conjunction with the 186,000 km TGS Gigante seismic survey, which is currently 12% complete.

The multibeam data will be acquired by Fugro using vessels equipped with the latest generation of multibeam sonar equipment. Multibeam bathymetry and backscatter data will be used to identify possible oil and gas seep targets for sediment sampling.

TGS will begin acquisition of multibeam and coring data in third-quarter 2015 subject to receiving environmental impact resolution from the Mexican authorities, with expected completion in early fourth-quarter 2016.

Partner Faroe Petroleum said the Norwegian Sea **Portrush** exploration well 6407/10-5 has spudded.

The Portrush prospect is located about 10 km south-east of the producing Statoil-operated **Njord** (32/7) field (Faroe 7.5%) and 20 km west of the Shell-operated **Draugen** (32/7) Field.

The exploration well will target prospective resources along the Vingleia fault in Upper Jurassic reservoirs, analogous to the reservoirs found in **Pil**, **Bue** and **Draugen**.

JX Nippon Oil & Gas has taken a 30% stake in Block **FZA-M-320** located offshore in the Foz do Amazonas Basin in Brazil.

JX Nippon, which has been studying offshore basins in Brazil for a number of years as one of its potential new exploration venues, will acquire a new 3-D seismic dataset.

Polarcus has signed a contract with an undisclosed client for a non-exclusive broadband 3-D marine seismic project offshore Brazil. Project duration is expected to be about four months.

The dual-azimuth project is expected to begin in second-quarter 2016 following completion of a 3-D project for Queiroz Galvão Exploração e Produção.

Tap Oil has formalised its entry into Myanmar following the signing of the production sharing contract for the shallow-water Block **M-7** in the Moattama Basin.

Tap holds a 95% participating interest in Block M-7 and has assumed operatorship.

Tap and local joint-venture partner Smart E&P International have agreed to undertake an 18-month environmental and social impact assessment and Study Period, followed by an option to proceed to a three-year commitment exploration work programme.

The Tanzanian Petroleum Development Corp. has awarded ION a contract to acquire 4,058 km of 2-D seismic, gravity and magnetic data over offshore blocks 4/1B and 4/1C in the Rovuma Delta region. The survey, TPDC Phase I 2015, is planned to be acquired in fourth-quarter 2015.

Ocean Floor Geophysics and Fukada have completed another high-resolution controlled source electromagnetic (CSEM) survey of near-surface gas hydrates in Japanese waters.

Following the successful 3-D CSEM survey and inversion models completed in 2014, the 2015 survey comprises more than 670 line km of high-resolution data collected from the Fukada vessel *Shin Nichi Maru*.

VESSEL BRIEFS



Songa Endurance will drill on the Troll Field.

Songa Offshore has taken delivery of *Songa Endurance* from Daewoo Shipbuilding & Marine Engineering in Korea.

Songa Endurance will shortly depart South Korea en-route to Norway to begin an eight-year drilling contract with Statoil, with its first assignment on the **Troll** (32/2) Field on the Norwegian continental shelf.

Songa said the voyage to Norway will take place with tow-assist, and the rig will arrive with all third-party equipment installed and ready for final acceptance testing. Commencement of drilling operations is expected to take place around year-end.

Songa Endurance is a sixth-generation, high-specifi-

OE 2015
8-11 SEPT 2015
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- > Deepwater Presentation Area
- > More than 35 International Pavilions
- > 1,500+ Exhibitors in 6 Halls



cation, DP3, harsh environment, midwater rig designed for efficient year-round drilling, completion, testing and intervention operations in water depths up to 500 m.

PGS will cold-stack the *Ramform Viking* seismic vessel after she completes a multiclient project offshore East Newfoundland in late October this year.

The vessel was originally scheduled for a yard stay and classing in first-quarter 2016, which will be deferred. In-sea equipment from the *Ramform Viking* will be used on vessels in operation, and PGS said this reduces the company's capex related to maintenance in 2016 by about \$50 million.

In addition to the *Ramform Viking*, PGS earlier said that the *Ramform Explorer* and *Ramform Challenger* will be cold-stacked after the end of the North Europe acquisition season this year.

PGS estimates cold-stacking of the three Ramform vessels will reduce quarterly cash costs by \$25 million to

\$30 million with full effect from first-quarter 2016.

Shell has booked the *Regalia* semisubmersible flotel for use at the *Brent C* platform in the U.K. sector of the North Sea.

The short duration \$24 million contract beginning in second-quarter 2016 will provide dynamically positioned gangway connection for the duration of the project.

The deal comes after the *Regalia* recently completed a successful assignment for Shell at the *Shearwater* platform.

The *Yno 302* offshore construction vessel has been launched from the dock hall at Ulstein Verft in Norway. Measuring close to 160 m in length, and with a beam of 30 m, she is the largest offshore vessel built by Ulstein Verft. The helideck is currently being mounted.

The vessel is jointly owned by Norway-based Island Offshore and U.S.-based Edison Chouest Offshore; the latter will be managing the vessel.

TECHNOLOGY

Oceaneering Looks Deeper

Oceaneering has launched a deepwater Phased Array ultrasonic inspection capability for subsea applications down to 3,000 m.

The new system is already validated for use by a number of operators following trials carried out in Houston.

Oceaneering said the system can speed up subsea asset integrity assessment on rigid or flexible pipeline and riser systems, significantly reducing operator costs in diver, ROV and vessel hire.

High resolution wall thickness and corrosion mapping is rapidly performed using 64 element "Paint Brush" transducers, with full volumetric weld inspection carried

out in a single pass using a variable angle probe carriage.

The system is deployed by ROV using Oceaneering's Neptune scanner—the first deepwater ultrasonic scanner, that has been in global subsea service since 2009.

It has collected valuable asset integrity data for subsea operators at depths down to 1,800 m in the Mediterranean, the Gulf of Mexico, Norwegian and West African offshore sectors.

Oceaneering said, "Phased Array (PA) or multielement transducers have been in use topside for a number of years. This is the first time they have been fully marinised. The graphic PA imagery brings enhanced data collection and analysis to subsea asset operators."

TECHNOLOGY BRIEFS

Trelleborg Sealing Solutions has produced an innovative seal for a valve designed by Schoolhill Hydraulic Engineering for BP's **Shah Deniz** (SEN 32/9) Field.

The high-flow, high-integrity, safety critical subsea quick exhaust valve (QEV), believed to be the first of its kind, has been created for a subsea high integrity pressure protection system at the South Caspian Sea site.

Trelleborg created a bespoke version of its Captive Glyd Ring in its low friction Zurcon Z43 high modulus thermoplastic to feature in the QEV, which was selected as the seal was required to slide across mating surfaces that had dimensional changes.

The seal is retained in a split groove, which prevents the sealing surface from getting damaged by a counter part with variable diameter or when passing holes.

The QEV has a 30-year design life with a valve qualification water depth range of 3,000 m.

3sun Group's subsea division has installed its first Time Delay Block Valve (TDBV) for use on hydrocarbon producing wells.

The valve was designed and manufactured by Bifold Group, and the prototype TDBV was installed in June 2015 on a North Sea platform.

CEO Graham Hacon said, "TDBV allows absolute control of the downhole safety valve. By blocking the hydraulic control line, it prevents migration of gaseous and fluid hydrocarbons into working areas, which in general are not hazardous area classified for such ingress, until the



The TDBV has debuted in the North Sea.

DHSV [downhole safety valve] is to be reopened to resume recovery of hydrocarbons, at which point the time-delayed blocking valve reopens to allow hydraulic communication. The TDBV is the only valve type suitable for this requirement, for which the valve concept was designed.”

Teledyne Oil & Gas said it has transformed the usually passive flying lead into an adaptable platform that can extend step-out lengths, convert power or media, or add other project-specific functions within the jumper assembly itself.

It said the Active Flying Lead (AFL) technology platform can result in simplified field layouts, the ability to upgrade existing fields with newer technology and greater levels of equipment compatibility.

AFL technology consists of functional electronics housed within a qualified atmospheric chamber that can be placed within a pressure-balanced, oil-filled hose.

Teledyne DGO’s glass-to-metal sealed penetrators pro-

vide fail-safe pressure barriers within the chamber for reliable performance under the extreme pressures found in deepwater subsea fields.

Flexlife has been awarded flexible riser annulus testing projects on six installations for three different operators in the North Sea and two on two installations for two different operators in the U.S. Gulf of Mexico.

The company said a key factor to these successes comes from Flexlife’s differentiating method of annulus testing using mass flow technology to assess the condition of a flexible riser, a method of flowing a fluid into the flexible’s annulus through a laminar flow device.

Flexlife’s CEO Garry Millard said, “Our focused investment in new differentiating technology continues to pay dividends in the current environment, where the focus is on improved services and results, executed in an efficient and cost-effective way.”

POLICY

OGUK Unveils North Sea Efficiency Task Force

Oil & Gas UK (OGUK) has launched the Efficiency Task Force (ETF), a group tasked with driving improvement, making the sector more competitive and supporting the drive to maximise economic recovery from the U.K. Continental Shelf.

The latest in a number of steps taken by the industry, the ETF is led by John Pearson, group president Northern Europe and CIS, AMEC Foster Wheeler and OGUK co-chairman.

The ETF will focus on three themes: cooperation, culture and behaviours; standardisation; and business process.

The ETF already is working to help companies rationalise their inventories, exploring opportunities for the pooling and sharing of items of high value kit and creating visibility of stock holdings across the industry.

In addition, the task force also is aiming to tackle the efficiency of compression systems, which have been iden-

tified as being accountable for at least 20 MMboe each year in production losses. Working with operators to identify the key drivers of the compression systems issues, the ETF aims to create cross-industry solutions and facilitate the sharing of industry good practices.

John Pearson said, “I’m delighted to announce the official launch of the Efficiency Task Force. It will encourage cooperation and focus on initiatives that add real value for our sector—helping the U.K. to compete globally.

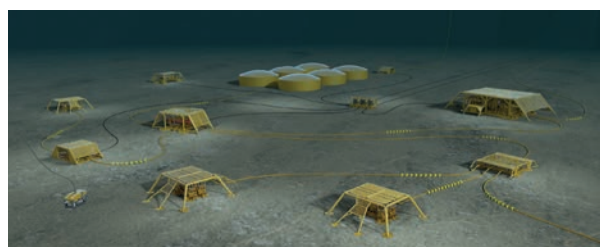
“Tackling efficiency has been at the forefront of the industry minds for some time but has become more acute and urgent as the value of our end product has more than halved in the last year. We now need to step up, increase the effort and resource we’re putting in, and get the job done as a united industry.”

Subsea UK Recruitment Drive

Subsea UK has launched a new support service to help companies bring new talent into the subsea sector by making it easier to recruit apprentices.

Companies are put off recruiting apprentices because of the time and cost involved in what is perceived as a complex process.

Subsea UK’s scheme will provide financial support and specific help with making the process simpler so that small firms can benefit from apprentices and develop the next generation of subsea workers.



A drive has been launched to beef up subsea recruitment.

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Subsea UK will offer tailored support to individual companies to help them with the overall recruitment process, development of training plans, setting clear roles and responsibilities for on-the-job training and conducting assessments.

Subsea UK CEO, Neil Gordon said, "The majority of our 320 members are smaller-sized companies who are put off recruiting apprentices because they lack the HR [human resources] knowledge and resources to deal with the overall recruitment and management process.

"Our findings revealed that they often turn to training providers or organisations but often this doesn't work for them. The research showed that the most effective approach to make it easier for these companies to take on apprentices would be practical, one-to-one consultancy to support them through the process rather than producing generic guidance, which is already available through other skills organisations."

BUSINESS

Schlumberger Moves on Cameron

Schlumberger's \$14.8 billion deal to buy joint-venture partner Cameron International expands the company into new territory in subsea and equipment manufacturing.

A strong motivator for the deal is OneSubsea, a jointly run Schlumberger and Cameron company competitive in the subsea sector.

More broadly, the merger gives Schlumberger bottom-to-top control of wells from its reservoir and wellbore technologies to Cameron's portfolio of wellheads, processing and flow control offerings. Schlumberger will transform into a more broadly dual manufacturing and service company that makes valves and rig equipment such as BOPs.

Though offshore and subsea production is out of favour because of global oil oversupply, the extraction methods will continue to play an increasingly important role in the future, said James Schumm, analyst, Oppenheimer & Co. Inc.

"When there's blood in the streets ... buy capital equipment," Schumm said. "With oil prices near 10-year lows and the offshore/subsea space out of favour as a result of the onshore shale boom, sentiment is very poor."

Schlumberger estimates its pretax synergies will be \$900 million over two years, reflecting cost reductions, streamlining, improved manufacturing and revenue synergies.

The transaction will expand Schlumberger's revenue base by more than 20%, Schlumberger Chairman and CEO Paal Kibsgaard said in a press call.

"Cameron, with its current product line structure, will join Schlumberger as a complete new product group, on par with our existing characterization, drilling and production groups, which will significantly simplify the overall integration scope," he said.

Tudor, Pickering, Holt & Co. called the transaction a "strategic bet" in oilfield manufacturers and deepwater activity with OneSubsea the prime driver of the deal.

The transaction "clearly makes sense as deepwater development costs need to move step-function lower and a big part of existing [Schlumberger] portfolio is deepwater levered," the firm said.

The planned merger builds upon the 3-year-old relationship formed when the two formed OneSubsea. Great success with that partnership makes the merger a logical

next step for Cameron, Cameron CEO Jack Moore said on the call.

Together, "we can achieve results greater than we can achieve independently," Moore said.

He later added that Schlumberger and Cameron will follow the same roadmap as it did with OneSubsea.

Cameron's work takes place above everything that Schlumberger does, Moore said, referring to the company's main product lines.


"Combining those two can create whole new platforms that will enable much more efficiency and much more success for our customers as they drill in various formations around the world," he said.

From the U.K. (SS): The Schlumberger bid for Cameron is neither the reservoir-and-downhole giant's first ever interest in acquiring a hardware company nor will it be last of what are expected to be other moves towards consolidation.

The history of business in the offshore sector is strewn with trends that have seen mergers and takeovers and then, sometimes, breakups. And every trend has always been described as "different." This one, though, might actually be the one that is.

It began—maybe with the Halliburton-Baker Hughes deal—in the midst of a downturn, which appears to be the worst in memory for two reasons. Firstly, it has occurred in the wake of an overheated sector with costs for equipment and manpower at record levels and resulted in a development "pause" that had operators reconsidering their basic approach to bringing on new production as a way of growing their business.

This saw the flow of new project contracts seriously curtailed and appeared to presage yet another "bust" fol-



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lowing a boom. This has been matched by the OPEC decision, led by Saudi Arabia and Kuwait, to defend their marketshare rather than the oil price.

Driving high cost oil out of the market seemed like a good idea at the time, although Saudi's recent foray into the international bond market to boost its coffers seems to indicate that it may have been ill-conceived.

Add in the slowdown in the Chinese economy and you have a triple whammy, which has formed existing market conditions.

The Cameron deal makes sense for Schlumberger because the former is a big player in the drilling equip-

ment market as well as in production hardware. Drilling will lead the sector out of its lethargy—just like industrials lead the wider economy ahead of consumer spending—so having a foothold there is a good thing.

So who is the next target? If there are other deals in the offing, they will likely involve “mid-major” manufacturing and service companies with niche products being added to create bigger packages.

As always, it will depend on the price and how much the buyer wants its target. And if any venture capital owners are involved, they may see this as a good time to bail out.

Happy hunting.

Cobalt Hives Off Angola Assets

From Houston (DB): Houston's Cobalt International Energy Inc. (CIE) isn't quite so international anymore after selling its offshore Angola interests.

Sonangol agreed to purchase Cobalt's 40% participating interest in offshore Blocks 21/09 and 20/11 for \$2.1 billion. The price includes \$1.75 billion for the interests and \$400 million for expenses.

Bob Brackett, senior analyst, Bernstein Research, summed up the sale as a case of “desperate times call for prudent measures.”

“With the expected relinquishment of Block 9 around the end of 2015, CIE will no longer have any active licenses in Angola,” Brackett said. “CIE is shifting its focus to North America, dominantly deepwater GoM [Gulf of Mexico].”

The deal marks a significant change for the company after seven years of work in Angola, including opening the Kwanza Basin's presalt play and making five significant discoveries, said Joseph H. Bryant, Cobalt's chairman and CEO.

By June 2014, the company had made discoveries of 3.4 Bboe (1 Bboe net).

Cobalt's activities in Angola also brought unwanted scrutiny for more than three years. The Securities and Exchange Commission (SEC) investigated the company for possible violations of the Foreign Corrupt Practices Act, at one point causing the company to lose \$700 million in market value. The SEC's investigation was terminated in January.

A new relationship between Cobalt and Sonangol will now move forward, Bryant said.

“We remain committed to continuing our joint efforts with Sonangol to move the **Cameia** (SEN, 32/7) development project to sanction by year-end,” he said.

Cobalt plans to concentrate on its asset portfolio in the deepwater GoM.

The Heidelberg discovery is on track to produce first oil by mid-2016. The company is actively appraising GoM operations in **North Platte**, **Shenandoah** and **Anchor**.

Cobalt's exit gives the “fat tail” to Sonangol, although Brackett questioned how Sonangol will develop the assets. But since a large integrated company did not win bids for the blocks, the market may be cautious of investment in deepwater assets.

EMAS Chiyoda Subsea Launched

Another subsea tie-up, although not quite on the scale of Schlumberger/Cameron also was done recently, with Ezra Holdings subsidiary EMAS AMC and Japan's Chiyoda Corp. teaming up to create EMAS Chiyoda Subsea, a 50:50 joint venture (JV).

The companies said the rationale behind the deal is that EMAS Chiyoda Subsea will be able to undertake larger and more complex offshore engineering, procurement, construction and installation (EPCI) projects through a combination of capabilities and resources.

Chiyoda, which is an important provider of onshore engineering to the likes of Shell and Exxon Mobil, said its involvement will begin early in the concept development phase of offshore projects together with EMAS Chiyoda Subsea, where the ability to influence cost is the greatest.



EMAS AMC has the Lewek Constellation at its disposal.

EMAS Chiyoda Subsea will then use its technologically advanced fleet and operational expertise to deliver these solutions offshore.

Chiyoda wants to boost its profile in its home market where a position in the subsea market is seen as a sign of importance. There is little in the way of offshore developments in home waters now, but the coming development of methane hydrate deposits off Japan could be an area of expansion.

Chiyoda already is a majority shareholder in Xodus Subsea, a JV with Xodus Engineering and Saipem so how the new tie-up will impact on this triumvirate is yet to be seen.

The new EMAS Chiyoda JV will benefit from project management capability backed by technologically advanced assets; a global network of engineering centres; supply chain management capability and global vendor

networks; wider global client networks; R&D capabilities in engineering and construction technologies; and financial strength, the company said.

Under the EMAS branding, Ezra operates in more than 16 locations across six continents spanning Africa, the Americas, Asia, Australia and Europe.

Lionel Lee, group CEO and managing director of Ezra, said, "This JV will allow us to realise our vision of being a trusted partner and leader in the subsea construction business. It will enable us to undertake large complex EPCI projects as well as full field developments, which combine onshore and offshore facilities. Chiyoda will be able to lend tremendous support in many areas of our business operations."

Aker Solutions Wields the Axe Again

Aker Solutions is slashing more subsea jobs in Norway as the market continues to suffer.

The company said about 500 permanent positions at facilities in Fornebu, Stokke, Moss and Tranby in Norway may be affected through employee turnover, reassignments to other parts of the company and redundancies.

The cuts come on top of the earlier axing of 200 jobs in the company's subsea services business in Ågotnes, Norway, and about 300 positions in its Norwegian maintenance, modifications and operations unit.

Outside of Norway, the company is eliminating about 400 permanent positions this year, primarily in the subsea area.

Aker Solutions said it also has initiated a process to strengthen the structure of its global subsea business with news on this due before year-end.

"Activity in the Norwegian offshore services market

has declined considerably over the past year as oil companies scale back spending and postpone projects," said Per Harald Kongelf, head of Aker Solutions' Norwegian operations. "This has made it necessary to reduce capacity in parts of our business."

Aker Solutions has about 16,000 permanent employees in about 20 countries. About 8,000 employees are in the subsea area, of which about 3,000 are in Norway. The rest are in countries including Brazil, Angola, Malaysia, the U.S. and the U.K.

The company is expanding internationally and is well-positioned in key subsea markets. Africa accounted for 37% of Aker Solutions' \$5.3 billion order backlog at the end of second-quarter 2015, compared with 30% for Norway, helped by major subsea contracts in Angola and Congo.

BUSINESS BRIEFS

From Australia (LB): Tap Oil said its decision to hold on to its flagship **Manora** (32/3) oil asset in the Gulf of Thailand is the best outcome for shareholders against a backdrop of prevailing volatile market conditions.

The Perth-based company launched a strategic review of its business in March to ward off a potential board coup attempt, which included mulling the divestment of the Manora development that had been adversely impacted by the falling oil price.

While the review process confirmed there was considerable interest in the company's Manora asset, Tap advised shareholders that the depressed oil price environment and the ongoing payment disputes between the company and its major shareholder Northern Gulf Petroleum had added to "the complexity of successfully executing any transaction at an acceptable price."

"After carefully considering all of the available options, the board strongly believes the best outcome for shareholders in the current market conditions is to retain its interest in the Manora asset and its current

portfolio of assets in Australia and Myanmar," Tap said in a statement.

Tap plans to focus its attention on maximising the value of Manora through near-field exploration and the progression and evaluation of growth and acquisition opportunities in the Southeast-Asia region.

Faroe Petroleum has snapped up a 12.5% stake in the **Blane** (30/13) Field in the U.K. North Sea and a 12% interest in the **Enoch** (32/6) Field from Roc Oil (Europe) Ltd. in a deal worth up to \$20 million.

Blane has been developed as a subsea tieback to the BP-operated *Ula* platform located on the Norwegian continental shelf.

The Enoch Field has been developed as a single well subsea tieback to the Marathon-operated **Brae** (31/6) Field. The field was closed in due to a leak at the subsea wellhead, which has since been repaired, and the field is currently planned to be brought back on production during the second half of this year.

Rotork has acquired subsea and wellhead control systems specialist Bifold in a deal worth up to \$191 million.

Bifold is headquartered in Manchester, U.K., and employs about 300 people across its operations in Manchester and Taunton, U.K.

Bifold will sit within Rotork's Instruments division, and its current management team will remain with the business.

Peter France, Rotork CEO, said, "The acquisition of Bifold represents an exciting step forward in the continued development of Rotork Instruments. This strategic acquisition of a long held target of Rotork's is directly in line with our core strategy of strengthening Rotork's presence in the flow control sector and broadening our product portfolio."

Two well-known names in the subsea sector—Jim Marchbanks and Jim Cattanaich—have set up the consultancy **Tamjen & Associates** out of Kuala Lumpur, which will focus on the umbilicals and power cables side of the business plus rigid and flexible pipelines.



Petrofac saw its H1 revenue climb.

Petrofac said its revenue grew 25% to \$3.2 billion in the six months to the end of June from \$2.5 billion a year earlier.

However, underlying net profit slipped 4% to \$130 million from \$136 million in the first six months of 2014. Group backlog was \$20.9 billion at the end of June.

Total is offloading its 100% stake in the Frigg U.K. Pipeline (FUKA), its 67% interest in the Shetland Island Regional Gas Export System (SIRGE) and the St. Fergus Gas Terminal to North Sea Midstream Partners in a \$905 million deal.

FUKA is a 362-km, 32-in. gas pipeline that was originally constructed in 1977 to connect the **Frigg** Field on the U.K.–Norway median line to the St. Fergus Gas Terminal in Scotland.

The Frigg Field is now decommissioned but the FUKA pipeline is still operational, delivering gas from some 20 fields in the Northern North Sea to the terminal at St. Fergus.

The SIRGE is a 234-km, 30-in. gas pipeline with a capacity of 533,000 sq cm/d connecting the Shetland Gas Plant to the FUKA pipeline.

Patrick de La Chevardière, Total's CFO, said, "Transferring ownership to an entity specialising in midstream U.K. assets creates value for us and ensures a long and bright future for the facilities."

More job losses are expected at **DeepOcean's** operations in the U.K., Thailand and Malaysia following continued slowdown in the oil and gas market.

The subsea engineering firm expects to shed up to 50 jobs in its offshore team on top of 45 redundancies that already have been made.

Norwegian number cruncher **Rystad Energy** believes that due to a lack of growth in North American shale production and increased decline in mature fields, a Brent price as low as \$50/bbl is not sustainable beyond 2016.

About 10,000 shale wells would need to be drilled each year to keep North American shale production flat.

Rystad said that assuming balanced cash flows, costs would need to be decreased by 20% in 2015 vs. 2014 at a price of \$50/ bbl to drill those wells according to conducted well-by-well breakeven modelling.

Rystad added that while \$70/bbl is likely too high an average price for 2016, it is too low an average price beyond 2017 as the additional effect of nonsanctioning of projects reduces the global supply potential longer term.

Noted offshore technical pioneer **Edward E. Horton III** passed away in Houston in August, at age 87. The Yale and USC graduate, petroleum engineer and U.S. Navy veteran was principal engineer for Project Mohole in 1961, the original deepwater drilling project of the National Academy of Science.

During his career, he helped develop first-generation floating systems and is a named inventor of standard concepts such as the spar and tension-leg platform.

He received the lifetime achievement award at the Offshore Technology Conference in 1997 and was inducted into the National Academy of Engineering in 2002. In 2008, he was named an Offshore Pioneer by the Offshore Energy Center in Galveston, Texas.

Horton was most recently on the advisory board of the American Bureau of Shipping's offshore technical committee and Rice University's Civil and Environmental Engineering Department.

Keppel Offshore & Marine has picked up Cameron's offshore rigs business for \$100 million.

The business includes the LeTourneau jackup rig designs, rig kit business and aftermarket services. The rig kits include jackup leg components, elevating units/jacking system and cantilever/skidding system. Support equipment, such as cranes and anchor winches, also are options in the rig kits.

About 100 of the rigs are currently operating worldwide. “With the current low oil price, we have seen a slow-down in newbuild rig orders. Rig owners are instead looking at repairing and upgrading their current fleet,” said Chow Yew Yuen, CEO of Keppel O&M.

“These are popular designs operating in many of the world’s offshore oil fields and rig owners can now utilize our global network of yards to service and maintain their rig assets cost-effectively.”

Royal Dutch Shell gained EU antitrust approval on Sept. 2 for its 47-billion-pound acquisition of BG Group after regulators said the deal did not pose any competition issues.

The European Commission said the transaction would not grant Shell market power in oil and gas exploration, the liquefaction of gas and the wholesale supply of liquefied natural gas.

The merged company, which will be the world’s top liquefied natural gas company, will be better able to compete with world No. 1 oil major ExxonMobil.

Houston-based **ION** Geophysical Corporation is slashing 25% of its global workforce in a bid to further cut costs.


ION employs around 850 staff, mainly in the U.S. “The difficult cost reduction initiative we are undertaking today is necessary to prudently scale the company during this period of significantly decreased revenues, which we believe will extend into 2017,” Brian Hanson, ION’s chief executive officer, said.

Subsea cable protection specialist, **Tekmar Energy**, is one company that seems to be doing well, despite the downturn.

Since the start of the year the company has expanded its reach into new global regions, won multiple orders of repeat business and brought in six new clients so far this year including JDR Cables, FlexLife and GE Oil & Gas.

Tekmar has also successfully supplied and installed equipment on the **Martin Linge (32/7)** Field off Norway. The company supplied bend restrictors on the world’s longest high voltage subsea power cable at 170 km (105 miles).

Tekmar’s growth has seen the company expand into the Gulf of Mexico and Middle East for the first time. To support its expansion in the United Arab Emirates, Tekmar has also appointed Emdad as its strategic, local partner.



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