

## Airborne Flying High with Flowline First



Two 500 m TCP test pipes ready for delivery to Petronas.

Airborne Oil & Gas has notched up a world-first with a deal to supply a thermoplastic composite pipe (TCP) flowline for a pilot project off Malaysia.

The scope, which comes after the successful completion of a three-year qualification programme, includes the delivery of a 550-m TCP flowline, ancillaries, offshore installation, engineering and field support.

The 6-in. flowline is to be installed in 30 m of water and will connect two platforms located on the **West Lutong** Field offshore Malaysia.

Airborne's Business Development Manager Bart Steuten told *SEN*, "This is not the first pipe we have supplied to the oil and gas industry, but it is the first application ever of TCP for a flowline. A particular benefit is that the materials we use do not corrode and in the area we are installing in the South China Sea there is a lot of corrosion. We are now doing the first pilot project resulting from the qualification work.

"We will install a pipeline to connect a satellite well-head platform on the field with the central processing platform. It is replacing a steel pipeline."

Steuten said installation had been planned for this year, but was not now likely to begin until early next year because of a delay in awarding the installation contract and the upcoming monsoon season.

He said the noncorrosive nature of the TCP flowline means that there is no risk of pollution. "It also reduces cost in managing integrity. The in-service benefit is that you do not have to use corrosion inhibitors and there are less inspections needed.

"Installation costs are also lower because we have a spoolable pipe, which comes on a reel. Installation can be achieved with a much cheaper installation spread compared to steel pipe, which requires an expensive pipelay vessel."

He said the simple installation method for the TCP flowline reduced installation costs "dramatically."

Steuten added, "After having done years of qualification testing in laboratories, we now go out for the first time to actually install the pipe and will get the operational feedback from it. We will also be able demonstrate that the installation can be achieved in the way that we foresee it. It is about proving the business case and that the installation cost is cheaper than installing a steel pipeline."

As well as Petronas, Airborne also is working with Shell, which became a shareholder in the company last year, Chevron, OneSubsea and Saipem.

"We are working on a Shell project for delivery of a downline system for well intervention in Nigeria. We recently delivered a downline system for IKM Testing that will be used on the **Aasta Hansteen** (32/6) Field by Subsea 7 for Statoil."

The TCP downline will be used for the precommissioning of risers and pipelines.

Airborne also is delivering well intervention jumpers to OneSubsea and jumpers to Chevron for a North Sea project.

Martin van Onna, Airborne's chief commercial officer, added, "With this project, we now have commercial

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deliveries on all our thermoplastic composite pipe products: downlines and dynamic jumpers for well intervention, static jumpers and spools for injection, and flowlines for hydrocarbon service.

“The potential for flowlines in particular is very large; we manufacture up to 7-in. ID [inside diam-

eter] TCP flowlines, replacing 8-in. nominal steel pipe as well as conventional flexible pipe. We manufacture these in lengths up to 3,000 m per spool, allowing fast installation by reel lay method, reducing installation cost significantly and with that the total project cost.”

## DEVELOPMENT

### Lundin Eyes Subsea Option for *Luno II*

Lundin Petroleum looks to be leaning towards a subsea tieback of its newly discovered **Luno II North** and **Luno II** oil fields offshore Norway to the **Edvard Grieg** (*SEN*, 32/9) facilities.

The fact that both the Luno II North and Luno II discoveries are located wholly in PL359 with a fully aligned ownership between PL359 and Edvard Grieg's PL338 makes the tieback option more compelling.

The new Luno II North discovery, made with the 16/4-9 S well, is estimated to contain gross contingent resources of between 27 MMboe and 71 MMboe. The find is located in a separate sub-basin northwest of the Luno II discovery in PL359.

The well is located on the southwestern flank of the Utsira High about 15 km south of the Lundin Petroleum-operated Edvard Grieg Field and 4 km northwest of the Luno II discovery well, 16/4-6 S.

The well encountered a gross oil column of 23 m in reasonable quality Jurassic/Triassic conglomeratic sandstones.

The pressure data indicates that the petroleum system in the Luno II North discovery is different to that seen in the Luno II discovery. Extensive data acquisition and

sampling was carried out in the reservoir including conventional coring and fluid sampling.

One production test (drillstem test) was performed in the oil zone, producing at a rate of 1,000 bbl/d of oil through a 32/64-in. choke.

The gross contingent resource range for the Luno II North discovery, representing the southern part of the prospect, is estimated to be 12 MMboe to 26 MMboe.

Lundin said, “Whilst the analysis of the economic viability of the various development concepts is ongoing, one possible development solution could be a combined Luno II and Luno II North subsea tieback to the Edvard Grieg Field.”

Appraisal well 16/4-9 S is the fourth well drilled in PL359 after it was awarded in 2006.

The well was drilled to a total depth of 2,305 m below mean sea level in a water depth of 100 m.

The well was drilled using the semisubmersible drilling rig Bredford Dolphin and will be permanently plugged and abandoned.

Lundin Norway AS is the operator of PL359 with a 50% working interest. The partners are OMV (20%), Statoil Petroleum (15%) and Wintershall (15%).

## DEVELOPMENT BRIEFS



Infrastructure being installed on the *Tamar* field.

*From the U.K. (SS):* When is a monopoly not a monopoly? When it is sanctioned by the government and there is no inherent competition.

The Israeli antitrust commissioner decided last year that it should punish the Noble Energy-led consortium, which found and developed the big **Tamar** (*SEN*, 32/6) gas field and later discovered the aptly named **Levia-**

**than** (32/6) gas giant, which together transformed the Israeli energy market and its whole economy. The group's crime? Its exploration success.

One understands the philosophy behind antitrust action against monopolies, but if the Noble group had not found Leviathan, this whole series of events would have been moot.

So the group invested the money in exploration and were successful and thus, were to be sanctioned and made to sell off part of its stakes in the fields. How does that make sense?

In any event, the commissioner resigned when he was not backed by the government of Israel, which has now just signed a new deal with Noble and its partners.

This allows further offshore development and gas supply deals covering Jordan, Egypt, the Palestinian Authority and Cyprus to move forward.

*From Houston (BN):* InterMoor stepped in at short notice for Heerema to help Anadarko moor the **Heidelberg**

(32/9) truss spar in the Gulf of Mexico. Reports blamed the situation on problems with Chevron's **Big Foot** (32/7) installation, during which tendons lost buoyancy, delaying that project indefinitely.

The setback delayed Heerema's being able to send the installation vessel *Balder* to Heidelberg.

To help Anadarko, Intermoor said it mobilised two tugs and three anchor-handling vessels attached three lines to start mooring the 80-Mbbl/d facility in 1,600 m in Green Canyon Block 860. Heerema then came in, installed six more lines and finished the job.

Det norske oljeselskap is making good progress with its developments in the Alvheim area off Norway.

First oil from the second well on the **Boyla** Field has flowed the 28 km back to the *Alvheim* FPSO, while the extension manifold for the **Boa** Field has been safely installed on the seabed.

Boyla has been developed with two horizontal production wells and one water injection well. The first production well came onstream in January this year, and the second last week. Total production from Boyla will be about 20 Mbbl/d.

The wells at Boyla were drilled with the *Transocean Winner*, and the subsea installation was carried out by Technip on an engineering, procurement, construction and installation contract.

Estimated recoverable reserves on Boyla are about 23 MMboe gross (15 MMboe net) to Det norske.

Boa, meanwhile, is a part of the IOR project on **Alvheim** with production startup expected in second-quarter 2016.

Boa is located in license 088 BS and three new wells are part of this campaign: *East Kameleon*, *Kneler* and *Boa Kam North*.

East Kameleon came onstream in second-quarter 2016, and the Kneler well is being drilled now. Boa Kam North will be drilled when the well at Kneler is completed.

Aquatic Engineering and Construction has been awarded a multimillion pound contract on the \$10 billion **Moho Nord** (32/2) subsea project off the coast of the Republic of Congo, West Africa.

The contract was awarded by a U.K.-based subcontractor working for Total E&P Congo. Aquatic will begin work on its 10-month campaign in October.

Aquatic will supply reel drive systems and will be instrumental in the installation of 23 km of subsea flexible pipes and 50 km of umbilicals.

The Moho Nord subsea deepwater offshore project, which is expected to produce 140 Mboe/d by 2017, is located about 75 km off the coast of Pointe Noire and is the latest project being developed in the Moho-Bilondo Licence.

Since 2013, three other Acteon companies (2H Offshore, SRP and UTEC Survey) have been awarded work on the Moho Nord subsea project.

*From the U.K. (SS):* It is always good to get in early in a new opportunity. Wood Group has picked up a three-year engineering deal with Pemex, valued at up to \$28 million, which covers concept and basic engineering services for both shallow-water and deepwater projects.

Its subsea-riser division Wood Group Kenny (WGK) and topside specialist Wood Group Mustang will get in on the action working on a spectrum of projects for the Mexican national oil company including **Lakach** (32/6) and other unnamed deepwater prospects.

WGK also has scooped a FEED contract for the subsea development of Talisman Energy's **Ca Rong Do** (31/21) Field offshore Vietnam.

WGK will carry out comprehensive flow assurance studies and full FEED of the subsea system and structures, risers, flowlines, and power and control umbilicals for the field, which is estimated to contain about 67 MMboe.

Work on the subsea FEED will be carried out from WGK's Kuala Lumpur office and be supported by other WGK Asia-Pacific offices.

This follows the award of the top tensioned riser FEED contract for design of the dry tree production/injection and drilling riser systems.

The WGK Houston office, a centre of excellence for dry tree riser system engineering, will carry out the engineering for the tension-leg wellhead platform supported riser systems.

Statoil has received consent to use pipelines and subsea production facilities on the **Åsgard** (32/7) Field.

Åsgard comprises the **Smørbukk**, **Smørbukk South** and **Midgard** finds.

The field has been developed using subsea completed wells tied back to a production and storage vessel, *Åsgard A*, which produces and stores oil, and a floating semisubmersible facility, *Åsgard B*, which processes gas and condensate.

The Petroleum Safety Authority Norway has granted consent to use pipelines and subsea production facilities.

FMC Technologies delivered four subsea wellheads for Total's **Egina** (32/2) project off Nigeria.

The wellheads were built for FMC by Nigerian company Oiltools Africa and feature a 36-in. diameter conductor housing and a 20-in. diameter wellhead assembly.

"Locally manufacturing these wellheads marks a significant milestone for the company and for Nigeria's energy industry," said Shelagh Daley, area manager at FMC Technologies. "FMC Technologies is committed not only to delivering on time to its customers, but developing local talent to do so."

Heerema Marine Contractors' crane vessel *Thialf* has completed the installation of the 280-mt predrilling template on the **Johan Sverdrup** (32/8) Field.



The *Thialf* has installed a template on Johan Sverdrup.

The predrilling template contains eight well slots that allow production wells to be predrilled before the drilling platform is installed in 2018 and production starts in late 2019. The predrilling template is 32 m long and 10 m high.

India's ONGC has approved a development plan for the **GK-28/42** Field as part of its **Neelam** Field redevelopment project offshore India. The plan, which is due to be completed in March 2023, will consist of a 27-well drilling programme, including 14 production wells and 13 sidetrack wells.

The project scope also includes the installation of three platforms, three clamp-on facilities and associated pipelines to be completed by August 2018.

First oil and gas from the *H5* wellhead platform (*H5-WHP*) of the **Te Giac Trang** (TGT) Field offshore Vietnam flowed on August 10, more than a month ahead of schedule, SOCO said.

Startup followed perforation of the first of the *H5* development wells. The perforation campaign will continue targeting a balance between maximising new production from the *H5-WHP*, natural production decline rates and water-cut from the existing wells with total liquids handling capacity on the FPSO facility, SOCO said.

The *H5-WHP* is located in Block 16-1 in the Cuu Long Basin off the southern coast of Vietnam, about 20 km northwest of the **Bach Ho** Field and 35 km west of the **Rang Dong** Field. The *H5-WHP* is TGT's third platform to be brought on production, according to the release.

Montrose Port Authority (MPA) is pushing the Scottish port as a centre for the decommissioning of offshore oil and gas structures.

Major investment at the port in recent years has seen the creation of three heavy-lift pads with a capacity of 15 mt per square metre.

In all, about £15 million (US\$23.5 million) has been invested in the port since 2012, including major upgrades to quays on both the north and south sides of the harbour.

Nik Scott-Gray, CEO of MPA, said, "Over the next 12 months, we will undertake a master planning process that will, amongst other things, allow the further development of additional deepwater berths and even more heavy-lift pads.

"We believe this investment in our infrastructure will attract interest from companies involved in off-shore decommissioning."

The steel jacket for the Statoil-operated *Mariner A* platform on the U.K. Continental Shelf left the Spanish Dragados yard August 10 and is on its way to the North Sea.

Construction of the large platform substructure started in October 2013 and was completed in May of this year. At 134 m high and weighing 22,400 mt, the steel jacket is the largest built for a Statoil project.

The load-out from the Dragados yard in Cadiz onto the *S44* barge took place in late July.

The 1,835-nautical-mile journey from the southern part of Spain to the **Mariner** Field in the North Sea is expected to take about two weeks.

OceanWorks has been awarded a contract by Safe Marine Transfer to define, engineer and quantify the equipment required for development of a deepwater permanent subsea pressure compensated chemical storage and injection system.

The work includes the pumps, tanks, controls, sensors, electrical and battery systems necessary to support the subsea system.

The system will be carried on a towable barge containing a large quantity (3,000-plus bbl) of methanol and other production well management chemicals, and the pumping systems.

The entire system can be quickly, accurately and cost effectively placed on the ocean floor at point of use. Upon consumption of the chemical, the system can be refilled from a surface vessel via a riser or towed to quayside for refill and for inspection, maintenance and upgrades if desired.

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## FLOATERS

OneSubsea Lands *Stones* Scope

An artist's impression of the *Turritella* FPSO unit.

OneSubsea will supply subsea processing systems for Shell's **Stones** (*SEN*, 32/9) development in the Gulf of Mexico (GoM), including the industry's first 15,000-psi subsea pump system, to be installed in the GoM at about 2,900 m.

The subsea processing systems scope of supply includes a dual pump station with two 3-MW singlephase pumps and two subsea control modules, a topside power and control module, a barrier-fluid hydraulic power unit with associated spares as well as installation and maintenance tools. Manufacturing and testing will take place

at OneSubsea's processing centre of excellence facility in Horsøy, Norway.

The system will be tied back to the *Stones* FPSO vessel. The system is expected to be ready for delivery from Horsøy in early 2018.

Jon Arve Svaeren, OneSubsea's vice president of sales processing systems, told *SEN*, "The *Stones* award is a very important job and the first 15,000-psi system in really deepwater. It is a confirmation of our foothold in the Gulf of Mexico where we have supplied a 13,000-psi high-pressure pumping system for Chevron at **Jack St Malo** (32/3) in 2,200 m (7,218 ft). That is installed and ready to go. We also are doing **Julia** at 13,500 psi, which is a tieback to Jack St Malo and now *Stones*, which is another notch up in pressure rating and deeper.

Svaeren said OneSubsea has been working on the *Stones* project for the past 18 months.

"It has been a thorough qualification process to take it to 15,000 psi working closely with Shell's expertise both in Houston and Stavanger," he added.

*Stones* will start with two subsea production wells tied back to the FPSO vessel. In later phases, six more wells will be added with multiphase pumping.

All eight wells will be connected to the FPSO through a single drill centre. The reservoir depth is about 8,077 m below sea level and 5,181 m below the mud line.

## Petronas' PFLNG 1 Nears Completion

Malaysian national oil company (NOC) Petronas is nearing completion of its first offshore unit, the *PFLNG 1* (*SEN*, 31/19) facility, which is due onstream in early 2016.

At the same time, the NOC's second and larger unit—*PFLNG 2*—being done in partnership with Murphy Oil of the U.S. is now well underway in terms of its construction.

*SEN* understands that Petronas already has been approached by other operators to potentially lease them to the other companies to help unlock their own stranded gas resources in the region, not only just within Malaysia's waters.

*PFLNG 1* (to be named the *PFLNG Satu*) will be moored over the **Kanowit** gas field 180 km offshore Sarawak in 1,150 m of water and has been designed to produce up to 1.2 metric tonnes per annum (mtpa) of LNG as part of the wider **Kumang Cluster Development Phase 1**.

Scheduled for commercial startup early in 2016, the 365 m long *PFLNG 1* is apparently on time to start operations in first-quarter 2016 and remains on budget.

It is being built at Daewoo Shipbuilding & Marine Engineering shipyard in Okpo, South Korea.

The facility consists of 22 modular systems including gas treating, liquefaction, storage and offloading systems, with the liquefaction system to convert the gas to liquid

at a temperature of -162 C (which reduces the volume of the gas by 600 times).

The floating liquefaction vessel will be powered by 100 MW of electricity using natural gas as the source, and weigh in at 132,000 tonnes in total.

According to Petronas, it also has been careful to put in place a "more robust than usual" operational system so it will need less frequent maintenance than what is normally expected for an onshore plant; the company already has eight existing onshore LNG trains.

Other innovations have included the use of nitrogen as a refrigerant, which Technip said gives easier operability and is a world-first for this capacity.

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*PFLNG 2*, meanwhile, is destined to be commissioned during 2018 and initially employed and centered on the deepwater **Rotan** gas field in Murphy-operated Block H, 130 km offshore Sabah. It also is planned to receive gas in later phases from at least four other satellites in the block—**Alum, Bemban, Buluh** and the recently revealed 5.6 Bcm **Permai** Field. Murphy holds a 56% interest in Block H with Petronas owning the remainder.

Petronas and Murphy recently ticked off a key milestone in the latter project's progress with the official steel cutting taking place at the Samsung Heavy Industries (SHI) shipyard in Geoje Island, South Korea.

SHI is responsible for the engineering, procurement, construction, installation and commissioning of the unit along with its consortium partners JGC Corp. and JGC (Malaysia) Sdn Bhd.

SHI said the keel laying ceremony for the vessel is on schedule for this December. The hull is expected to be

launched in April 2016 and integration works are planned to get underway by July of that year. The American Bureau of Shipping will be providing classification and statutory certification services for the vessel.

The hull and topsides of the *PFLNG 2*, which has a design capacity of 1.5 mtpa, will weigh 152,000 tonnes in total. The facility, which will be operated by Petronas, is expected to achieve a 10-year peak gas rate of about 5.8 MMcm/d gross, according to partner Murphy.

Petronas' expectation is that the *PFLNG 2* will monetize a number of stranded gas fields when it is commissioned in 2018.

Once onstream, the two FLNG plants will raise Malaysia's total LNG production to an estimated 28.9 million mt/year.

The nonpropelled unit will, like its smaller sister, be moored using an external turret and be designed to operate for 20 years without drydocking.

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## Key Milestone Reached on *Browse*

*From Australia (LB):* The Woodside Petroleum-led **Browse** (*SEN* 32/8) FLNG project has reached a major milestone after receiving federal environmental approval, albeit with strict conditions imposed.

The environmental tick of approval covers the installation, operations and decommissioning phases for the development of the **Torosa, Brecknock** and **Calliance** fields using FLNG technology.

The three fields, located about 425 km north of Broome in the Browse Basin, will underpin Browse's ability to produce 12 million tonnes per annum of gas.

The environmental approval will remain valid until 2070, with one of the conditions stating that work on the development must begin within the next five years.

The Department of Environment has slapped 26 conditions on its conditional approval for Browse, with a majority of the conditions relating to the need to protect and minimise the impact of operations on marine life contained in Scott Reef, located in the Browse Basin.

Under the conditions stated, the Browse joint venture (JV) is banned from releasing hydrotest fluid into the

Scott Reef region while production-induced subsidence cannot exceed 100 mm at Scott Reef.

Furthermore, the Browse proponents will need to develop a coral health and water quality management plan to protect the habitat of threatened and migratory species in the Scott Reef region.

Woodside will not be able to place accommodation flotel within the reef region and must follow standard management procedures of the Environment Protection and Biodiversity Conservation Act to minimise impacts to whales that migrate past the reef.

The federal environmental approval will bode well for the project's final investment decision, expected to be made at year-end 2016. The project, however, still requires the environmental green light from the Western Australian government.

The Woodside-operated Browse JV counts Shell, BP, Japan Australia LNG and PetroChina as its partners.

Browse is currently in the FEED stage, which will assist in finalising the costs and technical definition to enable a final decision.

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## EnQuest Nears Startup on *Alma/Galia*

EnQuest is on the verge of pumping first oil from its U.K. North Sea **Alma/Galia** (*SEN*, 32/5) development, with commissioning of the subsea and topside systems largely complete.

Operator EnQuest said the project, which will revitalise the U.K. North Sea's first producing oil field, **Argyll**, will produce first oil "within weeks."

The development, which has been delayed from startup in 2014, is using the *EnQuest Producer* FPSO vessel, which will be capable of processing 57 Mboe/d and storing 625 Mbbl of oil.

EnQuest said that in first-half 2015, the FPSO vessel left the yard in Newcastle, successfully completed marine performance trials and was towed out to the field, where it was securely moored.



The *EnQuest Producer* will start production shortly.

It was first made “storm safe” and then all the remaining anchor chains were installed. All the risers were then pulled in and the vessel was able to weathervane.

The subsea equipment was successfully function tested from the vessel via the umbilicals. The Galia production well also has been completed and tied into the production manifold.

Six wells are available to be brought onstream in second-half 2015 in a phased sequence. Power systems also will be ramped up in a phased manner through the third

and fourth quarters and completion of the water injector WI1 is scheduled in the third quarter.

The company also said that on its **Kraken** (32/7) project, first oil is scheduled in 2017. Batch drilling of the top-holes at the first drill centre has been completed. The FPSO vessel continues to be on track for delivery in 2016.

The fixed pipelines for the first two drill centres have been installed on the seabed. Installation of the mooring system for the FPSO vessel also started in the first half.

The *Kraken* FPSO vessel is at the shipyard in Singapore and the conversion programme is continuing on plan. Equipment procurement and fabrication of the modules is in progress.

The turret/mooring buoy has been manufactured and is being transported to the field from Southeast Asia.

Drilling on the project is progressing as planned.

“As indicated by our geotechnical probe in Q1 [first quarter] of this year, drilling conditions have been good with no difficulties experienced so far. Procurement, manufacture and installation continues in relation to the next phases of wells, subsea infrastructure and the FPSO [vessel],” the company said.

The drilling of an appraisal well in **Kraken West** in first-quarter 2015 confirmed the presence of oil, with potential for upside. Further evaluation is ongoing.

## Ophir Hunts Fortuna Partners

Ophir Energy, busy pushing on with its pioneering **Fortuna** (SEN, 32/8) FLNG Block R project offshore Equatorial Guinea, expects to have farm-in deals done with potential new partners before it takes a Final Investment Decision mid-2016.

With an estimated gross investment of \$800 million for the development by the time of first gas, Ophir wants to sell down its current 80% operated stake in the block so that the entire cost of the project is funded by the sales proceeds.

In its results presentation last week Ophir stated: “The next milestones will be securing gas buyers and equity partners. Processes for both of these have commenced with the aim of signing agreements ahead of FID. Ophir’s plan is to utilise our high equity position in the Fortuna FLNG project to enable farm-downs such that, the project funds itself to first gas.”

It added that it was “encouraged by the levels of interest at this early stage”.

In July the operator confirmed that the Fortuna FLNG project had entered the FEED stage, with the competitive process involving two consortia.

The FEED is expected to take nine months and the two consortia will then enter bids for an EPCIC contract that will deliver the installed subsea systems.

With the FID expected mid-2016, and first gas mid-2019, Ophir says the FEED process will provide better definition of the costs to first gas, with the current estimates at approximately \$800 million (gross).

Golar LNG was earlier this year appointed as the Mid-stream provider, and will supply a 2.2 MTPA vessel (the *Gimi*) in return for a liquefaction tariff. The selected concept

will utilise a retrofitted LNG carrier vessel, with the associated processing facilities for handling the near pure methane produced from the reservoir. The plan envisages a production plateau of around 330 MMcf/d for more than 30 years.

Ophir is also evaluating the feasibility of commissioning a second vessel to come onstream in the middle of the next decade. It added that initial screening “suggests that this would not materially increase project capital or operating costs but would significantly advance project cash flows, making it value accretive”.

- Elsewhere in the world, Ophir says it has been ‘actively reloading’ its exploration portfolio over the past 12 months, with the company earlier this year completing the acquisition of four deepwater exploration PSCs in Eastern Indonesia, although it did not give further details.

In east Africa’s Tanzania, meanwhile, it has a 20% non-operated interest in Blocks 1 and 4. The blocks partners BG Group, Pavilion Energy and Ophir continue to make progress with pre-FEED and concept selection activities, said the latter. An independent audit confirmed gross contingent (2C) resources to be in excess of 15 Tcf. A joint project team, in collaboration with the Block 2 partners (Statoil and Exxon), is conducting pre-FEED studies for the Tanzania onshore LNG project. The formal award of the land for the site of the proposed LNG plant is the next milestone that will enable the project to gather momentum, says Ophir.

During the first half of this year Ophir also gave notice of its intention to relinquish the Block 3, East Pande and Block 7 licences off Tanzania.

## FLOATER BRIEFS

Subsea work on Ithaca Energy's U.K. North Sea **Greater Stella Area** (GSA) (32/9) project is almost complete, with Technip scheduled to return in October 2015 to perform the final pipeline tie-ins that will conclude the 2015 subsea work programme.

Installation of the oil export pipeline from the *FPF-1* riser base to the single anchor loading structures has recently been completed.

The primary focus of the on-going GSA development activities now centers on completion of the *FPF-1* modifications programme being undertaken by Petrofac, which continues to advance towards the planned vessel sailaway from the Remontowa yard in Poland in late first-quarter 2016.

Operations on the *FPF-1* are currently focussing on closing out the main construction phase activities and transitioning into the startup of commissioning operations.

"Pipework pressure testing on the topsides processing and utility systems is well advanced and electrical cable termination activities are nearing conclusion, close out of which will facilitate the commencement of the main commissioning phase. Precommissioning activities are ongoing," Ithaca said.

The temporary generators required for commissioning are ready on site, hot oil flushing of package lube oil pipework has begun and site acceptance testing of the integrated control and safety system equipment is in progress.

Bumi Armada has contracted Keppel Offshore & Marine to carry out the conversion and upgrade of the FPSO for Hess's **Madura BD** gas development, offshore Indonesia, under a \$125 million deal. The unit will have a processing capacity of 3 MMcm/d and 7,500 bbl/d of condensate.

First Subsea has successfully completed the installation of bend stiffener connections (BSCs) for gas lift and production risers, power cables and umbilicals, for the *Goliat* (32/9) FPSO vessel in the Norwegian Barents Sea.

In total, the *Goliat* FPSO features 11 Type II BSCs at present, with a further 10 receptacle I-tubes pre-installed within the base of the vessel, enabling more tiebacks to be added as field production increases.

The Type II BSC was selected for the *Goliat* tiebacks because the receptacle has no moving parts, enabling a simpler riser, umbilical or cable connection.

The First Subsea Type II BSC comprises a ball and taper connector attached to a bend stiffener, which is pulled into a premachined I-tube. The connector is self-energising, self-aligning and features First Subsea's Automatic Release Clamp enabling both diverless and ROVless BSCs.

Sevan Marine said it has granted a licence to construct a Sevan Marine-designed cylindrical drilling unit for a new market entrant.

A decision on whether this project will proceed is expected in third-quarter or early fourth-quarter 2015.

The company also said FLNG remains a key initiative and that several meetings were held with oil and gas majors regarding specific FLNG prospects.



The *Sevan Voyager* FPSO vessel operates in the U.K. sector of the North Sea.

"Sevan Marine continues to believe that the advantages of the cylindrical design for FLNG, such as no turret and improved motion characteristics, will make the design very cost competitive and less capital intensive vs. ship-shape solutions," the company said.

Sevan Marine also has been working on several studies and tenders for upcoming FPSO/FSO prospects, like the potential FPSO unit for a U.K. sector field and the potential FSO for the **Culzean** (32/8) Field.

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## EXPLORATION

## Bidders Sleepwalk through Western GoM Sale

From Houston (BN): Western Gulf of Mexico lease sales are always tea and biscuits with grandma compared to the high-rolling brawls at Central Gulf auctions, but Western Sale 246 was almost funereal.

Only five companies bid on 33 blocks, risking less than \$23 million, and each block drew a single offer. It was over in 10 minutes. Despite the quiet round, deepwater was dominant.

BHP Billiton was most active, exposing more than \$16 million and apparently winning 26 blocks for less than \$800,000 each. BHP was the only bidder in Alaminos Canyon (AC), submitting apparent winners of \$608,888 for each of the 22 blocks.

BHP's AC tracts include three just west of Shell's **Perdido** (SEN, 32/8) hub. Eight others are in northeast AC's Lower Tertiary fairway, just west of hugely promising northwest Keathley Canyon (KC), home of Chevron's Guadalupe and the Conoco-BP-Chevron partnership's **Gila, Tiber** and **Gibson**.

BHP also was lone bidder for a four-tract cluster in southern KC, blocks 673, 674, 717 and 718, scoring them all for less than \$775,000 each.

Next most active was a partnership of Anadarko and Ecopetrol, which bid \$800,000 each for three blocks in Garden Banks, seemingly in the middle of nowhere but northeast of existing Anadarko-operated production at Gunnison.

Ecopetrol alone bid relatively big with the apparent winning offer of \$2.9 million for East Breaks Block 685, hard up against the Anadarko-operated **Nansen-Boomvang** complex.

BP was lone bidder for KC 139 immediately south of the **Gila-Gibson** blocks, offering \$878,552.

The only other bidder was shallow-water operator Peregrine, alone in reeling in two tracts in the High Island area.

All bids are subject to a qualification process before the U.S. Bureau of Ocean Energy Management makes final awards.

As usual, more than 4,000 tracts were on offer. In the previous Western Gulf auction, Sale 238 in August 2014, some 14 companies exposed \$135.5 million in 93 bids on 81 tracts. In Sale 233 in August 2013, 12 companies exposed \$102.3 million in submitting 61 bids on 53 blocks.

## Third Time Lucky for North Energy?



*Tvillingen South* could be tied back to Kristin

North Energy is hoping for better news from the *Tvillingen South* exploration well offshore Norway in which it is currently participating, after two dusters on *Zumba* and *Haribo* so far this year.

*Tvillingen South* is a candidate for a possible tieback to Statoil's **Kristin** (SEN, 32/8) facilities should a discovery be made.

A well was initially spudded on *Tvillingen South* in December 2014, but this operation was terminated at a depth of about 2,000 m because of technical problems.

Following a detailed study of the reasons why the technical problems arose and a review of the well design by the operator, the licensees resolved to drill a new well.

*Leiv Eiriksson* spudded this on August 11. North Energy has a 20% interest in the licence, which is operated by Maersk.

North also is set to take part in an exploration well on the *Ørnen* prospect in the Barents Sea in fourth-quarter 2015.

*Ørnen* is defined by North Energy as a robust oil prospect with rocks corresponding to those tested in the **Gohta** (32/3) discovery. Lundin is operator and North Energy has a 10% interest.

A secondary drilling target is Carboniferous/Permian reservoirs represented by carbonate rocks similar to those which have yielded a discovery in the *Alta* structure on the *Loppa High*.

North also has warned that it will be forced to make cost reductions after participating in the two failed exploration wells during second-quarter 2015.

Both the *Zumba* and the *Haribo* drilling prospects proved to be dry, and the company said the lack of commercial success combined with persistently difficult market conditions mean it needs to assess further cost-cutting measures.

"Given the difficult market conditions facing the industry and the fact that we're still seeking our commercial breakthrough, we must as a responsible company consider further measures to reduce costs," said Knut Sæberg, acting CEO of North Energy.

More bad news came when the company received a notice of claim in July from former CEO Erik Karlström, in which he disputes the legality of the board's decision to terminate his employment. A judgement in this case by the court of first instance is expected in late 2015 or early 2016.

## Green Light for Senegal Exploration

Cairn Energy is set to push ahead with more exploration and appraisal drilling off Senegal after being given the go-ahead by Senegalese authorities.

Cairn said that with its partners it is currently finalising the sequence, location and evaluation targets for three firm appraisal and exploration wells.

Drilling operations are expected to begin in third-quarter 2015 with a 3-D seismic acquisition programme beginning at the same time.

Cairn estimates that the two discoveries made in fourth-quarter 2014 and the currently identified prospects and leads have a gross mean risked resource base of more than 1 Bbbl.

Last year, Cairn discovered oil in two wells, SNE-1 and FAN-1. SNE-1 encountered a 95-m gross oil-bearing column with a net pay thickness of 36 m in the Albion sandstone reservoir. High-quality 32 C API oil was recovered at the surface.

SNE-1 is in 1,100 m about 100 km offshore in the Sangomar (32/4) Block. The find followed a discovery in the nearby FAN-1 well to the north that intersected a 500-m gross oil-bearing section in multiple stacked clastic reservoirs.

The two wells were the first to be drilled in deepwater off Senegal in 20 years. Cairn operates (40%) for ConocoPhillips (34%), FAR (15%) and Petrosen (10%).

Meanwhile, Cairn said the U.K. North Sea **Catcher** (32/5) project remains within budget and on schedule for first oil in 2017.

Fabrication of the FPSO hull and topsides is ongoing and subsea installation has commenced. The Ensco rig is on hire and development drilling has commenced (Cairn with 20% working interest).

The company's North Sea **Kraken** (32/7) development also continues to be within budget and on schedule for first oil in 2017.

## Shell Gets Final Nod for Arctic Drilling

*From Houston (BN):* Shell has received regulator approval to drill into hydrocarbon-bearing zones at its Burger J (SEN, 32/7) prospect in 44 m in the Chukchi Sea, about 110 km northwest of Wainwright, Ala.

Newly permitted deeper drilling had not started at SEN press time. The *Transocean Polar Explorer* already had been permitted to drill a tophole to 915 m, and that drilling was still underway.

A Shell spokesman declined to say how far tophole-drilling had progressed or to estimate when drilling towards actual hydrocarbon targets would begin.

But the spokesman did disclose completion of the mud line cellar to house the BOP below the seafloor. Granting of the permit to drill Burger J to target depth had awaited return of the icebreaker *Fennica* from an Oregon shipyard.

In early July, the vessel suffered a 1-m gash in its hull trying to depart Dutch Harbor in the Aleutians to head to the Chukchi, and it had to be sent to Oregon for repairs.

The icebreaker carries blowout-control equipment that regulators require to be on scene prior to drillers penetrating potential hydrocarbon-bearing zones.

The *Fennica* arrived in the vicinity of Burger J on August 11, at which point Shell requested an amended



The *Noble Discoverer* is on standby at Burger

permit allowing deeper drilling, and the U.S. Bureau of Safety and Environmental Enforcement granted it.

Shell hopes to drill a second well this summer before sea ice starts returning in the fall. Not even the 915-m tophole has been started at that well, dubbed Burger V, about 15 km east of Burger J.

Shell has a second rig, the *Noble Discoverer*, at Burger in case a relief well has to be drilled.

But environmental officials said Burger J is too close to Burger V for simultaneous drilling, which might disturb marine life.



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## EXPLORATION NOTES

From *Houston (BN)*: Cobalt has raised its ownership to 47% in the **Goodfellow** (32/7) prospect in the Gulf of Mexico and assumed operatorship after buying Eni's share.

Located in Walker Ridge Block 89, Goodfellow is considered a promising Inboard Lower Tertiary target. Cobalt Chairman and CEO Joe Bryant said plans call for exploration drilling in 2016.

The deal is subject to the preferential-right-to-purchase of partners Total and Samson but is expected to close in August.

New regulator rules for calculating abandonment credit-worthiness have caused LLOG to withdraw plans to drill four wells at **Mothball** in Mississippi Canyon 801.

The U.S. Bureau of Ocean Energy Management said, "Each company must have assets to cover abandonment costs of not only existing wells but also permitted wells that have not been drilled," Rick Fowler, vice president of deepwater projects, told *SEN* by email.

"Historically, E&P companies (including LLOG) would permit up to five wells on a block when they planned to drill one just so they would have flexibility to change the surface location if needed. Now, industry E&P companies tend to withdraw any permits that they don't plan to drill in the near term in order to reduce their total abandonment liability (as calculated by the BOEM)."

Fowler said LLOG remains optimistic about Mothball and still plans to drill it before the lease expires in 2018. The prospect is in 1,022 m of water about 90 km off the Louisiana Coast.

Schlumberger has launched a new survey in the Campeche Basin to expand its Gulf of Mexico multiclient wide-azimuth seismic data portfolio.

The survey offshore Mexico will cover 80,000 sq km using two fleets of WesternGeco vessels, including *Amazon Class*, the world's first purpose-designed 3-D seismic vessels.

Total said it is on track to start drilling for oil and gas off Bulgaria's Black Sea coast early next year.

Total, operator of the offshore Han Asparuh 1-21 Block along with OMV and Spain's Repsol, had postponed drilling there due to the fall in oil prices.

Earlier, Bulgarian Prime Minister Boiko Borisov said that exploration was expected to begin in February.

The Brazilian government plans to hold a new oil bidding round for areas in the subsalt polygon by 2017, Marco Antonio Almeida, the secretary of oil and gas at the Mines and Energy Ministry, said on August 17.

Almeida denied during a presentation in Rio that the current corruption scandal plaguing state oil company Petrobras was delaying the auction being held sooner.

GeoPartners, in partnership with MAGE, Seabird Exploration and DownUnder GeoSolutions, has kicked off the acquisition of a new regional multiclient 2-D (MC2D) seismic survey called North Celtic Sea 2015. This Ireland/U.K. cross-border project is located mostly in the Irish North Celtic Sea and St. Georges Channel.

Acquisition commenced in early July using the MAGE vessel *Nikolay Trubyatchinsky* (formerly *Polar Explorer*). Plans are to acquire up to 6,000 km of long offset broadband data.

Noble Energy has kicked off drilling on the deepwater **Humpback** (32/3) prospect offshore the Falkland Islands in the South Atlantic. The company is operating the wild-cat with a 35% interest, with the probe targeting more than 250 MMbbl of gross unrisks oil resources. It is expected to hit total depth within the next three months. Humpback lies in the Fitzroy sub-basin in the South Falkland Basin. It is the first of several multiple stacked fan prospects in the sub-basin that are likely to be drilled. The cluster of prospects have a combined total of more than 1 Bbbl of estimated recoverable oil reserves. Humpback sits in 1,271 m of water and will be drilled to a planned 5,349 m total depth.

## VESSEL BRIEFS

U.K.-based Awilco Drilling, which owns and operates two semisubmersible drilling rigs, has warned that the rig market remains quiet in the North Sea with limited tendering activity.

Rigs are continuing to come off contracts and with limited prospects of new work, rig availability and subsequent stacking are set to increase further in 2015 and 2016.

"The uncertain market outlook has led to some cold stacking and attrition," the company said.

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The *WilPhoenix* is working for Apache in the north Sea.

Despite this, Awilco made a net profit of \$35.3 million in second-quarter 2015, down from \$39.2 million in the first quarter. Revenue was \$69 million in the period, while contract backlog at the end of second-quarter 2015 was about \$371 million.

At the end of the second quarter, the *WilPhoenix* was continuing drilling operations for Apache in the U.K. North Sea and the *WilHunter* was mobilised to Invergordon following successful completion of the decommissioning programme for Hess.

Harkand has completed the \$10.5 million upgrade of the *Swordfish* dive support vessel, which it acquired in the deal for Veolia Marine Services Gulf of Mexico business two years ago. The vessel, built in 2007 and said to be the youngest hull in the sector, has an upgraded three-bell, 15-man sat diving system plus a new 18-man hyperbaric lifeboat plus dual active heave compensated cranes with 70-mt and 150-mt capacity.

Saipem has awarded Keppel Offshore in Singapore a contract to upgrade its *Saipem FDS* field development ship. The work will include a new 750-t abandonment and recovery winch, new thruster and an expansion of its accommodation capacity.

Helix Well Ops UK has awarded more fabrication contracts to Osbit Power for the kitting out of its two new well intervention vessels—*Siem Helix I* and 2. Each vessel will be kitted out with a maintenance and storage tower, BOP support stand and moveable deck. Earlier, Osbit was contracted to supply ROV launch and recovery systems plus umbilical and guidewire handling systems.

Prosafe has agreed to a \$164 million deal to provide the *Safe Eurus* semisubmersible safety and maintenance support vessel to Petrobras for work offshore Brazil.

The contract, commencing first-quarter 2017 with a firm period commitment of three years, will be the first for the *Safe Eurus*, a vessel designed and built to service the Brazilian market.

*Safe Eurus* will be the second Prosafe vessel under charter to Petrobras. The vessel can accommodate up to 500 people.

Prosafe also has cemented a deal with an unnamed customer to supply an accommodation vessel in the U.K. sector of the North Sea. The firm period is for eight months and will involve an initial short period using the *Safe Zephyrus*, starting in second-quarter 2016. That vessel will be replaced with the *Safe Notos* on its arrival in the North Sea.

Odfjell Drilling and Metro Exploration have put the *Deepsea Metro II* ultradeepwater drillship up for sale. The vessel is a Gusto P10000 design delivered by Hyundai Heavy Industries in South Korea in 2011.

The vessel, which is designed for operations in water depths up to 3,048 m is currently ready stacked in Curaçao in the Caribbean.

Lundin Norway has exercised a one-month option for the provision of the *Safe Boreas* semisubmersible accommodation vessel on the **Edvard Grieg** Field in the Norwegian North Sea.

The one-month option extends onsite operations through mid-December 2015 and is worth \$10 million.

Norway's Egersund Group recently set a new oil spill recovery record when its newly developed MOS Sweeper system managed to recover 96.4% of oil released in a North Sea exercise.

The record was set when the Norwegian Clean Seas Association for Operating Companies (NOFO) recently carried out a realistic oil on water exercise in the North Sea.

Egersund said the MOS Sweeper system, which is suitable for harsh weather conditions, is also cost effective as only a single vessel—for example a fishing vessel, supply or offshore supply vessel, coast guard vessel or standby vessel—is required to operate it.

DOF's subsidiary, DOF Rederi AS, has sold and delivered the *Skandi Fjord* PSV to new owners. The vessel has been laid up since year end 2014.

The *Transocean Barents* has been awarded a one well extension in the Norwegian North Sea at a dayrate of \$300,000, while the Dhirubhai Deepwater KG2 has won a contract extension for approximately three months offshore India at a dayrate of \$295,000.

## BUSINESS

## Oceaneering Takes Bite of Viper

*From the U.K. (SS):* Oceaneering International, the ROV to umbilical supplier, has acquired an unidentified minority shareholding in U.K.-based Viper Subsea.

Usually when a big company takes a small stake in a much smaller company, it is a prelude to a takeover. This is not the case here, *SEN* has been told.

The two founding Viper principals, Neil Douglas and Max Nodder, are “in it for the long term,” it was said this week, but are very animated about the prospect of working with Oceaneering.

This is seen as the classic “win-win” deal. Oceaneering gets access to some pretty interesting technology

relating to umbilical and cable remediation, control systems and integrity monitoring; much of the best new technology comes out of small companies, while bigger ones can be too busy managing their business and keeping shareholders happy. There is even some “synergy” between Oceaneering’s stabplate product line and Viper’s V-Lock design.

From the Viper perspective, it gets access to Oceaneering’s global marketing organisation which should allow it roll out its various bits of kit worldwide.

This appears to be a good deal all around, even if one is a bit sceptical about “the long term.”

## BUSINESS BRIEFS

BP and **Emerson** have signed a global agreement under which Emerson Process Management will provide automation technologies and aftercare services for BP’s upstream oil and gas operations.

The new 10-year deal extends the existing arrangement between the companies, allowing Emerson to provide an expanded scope of technologies and expertise that help ensure safe and competitive projects and support BP’s Field of the Future programme for enhanced operating efficiency and oil recovery.

Emerson will continue to supply automation system technologies, including distributed control systems and safety instrumented systems, but will now also provide valves and measurement instruments as well as technologies for supervisory control and data acquisition, asset management and machinery health monitoring.

Emerson is currently providing automation services to BP for an FPSO vessel for the **Quad 204 (32/10)** development and **Clair Ridge (32/10)** offshore platform, both in the North Sea to the west of Shetland, and for the **Chirag (32/8)** oil project and **Shah Deniz Stage 2 (32/8)** project in the Caspian Sea.

*From Houston (BN):* They’re not deepwater, but let’s hope they’re not a harbinger. **Hercules Offshore**, a shallow-water jackup driller prominent in the Gulf of Mexico (GoM), filed for Chapter 11 reorganisation, listing \$546.3 million in assets and \$1.3 billion in debts. The stock, over \$38 as recently as 2009, fell to 7 cents on August 18. HERO got into difficulty during the 2009 recession and was nearly finished off when the 2010 BP oil spill halted GoM drilling.

Some analysts expressed optimism about its future when drilling recovered after the spill ended and oil prices soared past \$100/bbl. But the stock never rose to \$10 again, and plunging oil prices sent it spinning towards



Emerson provides automation services on *Shah Deniz*.

the drain again. HERO is getting debtor-in-possession financing, will keep operating and hopes to emerge from bankruptcy in the fourth quarter.

*From the U.K. (SS):* **John Smith**, one of the key management figures in the subsea contracting business over the last several decades, has resigned as chairman of newbie player Ceona as a result of ill-health.

Smith first made his name as CEO of Subsea 7, founded through the merger of Rockwater and DSND in 2002 and later expanded when it was taken over by Acergy by which time he was gone.

In 2007, he went down under to help revive Clough. Smith came back to this side of the equator and became chairman of Ceona in 2012. In the last several months, the company recently saw the departure of founding CEO Steve Preston.

**Bill Smart** has joined the Delmar Systems Inc. global business development team. Based out of Delmar’s engineering and subsea office in Houston, Smart will be focused on developing existing and potential new clients’ knowledge of Delmar’s subsea services capabilities.



The P-63 FPSO produces on the Pappa-Terra field.

From Australia (LB): **Woodside Petroleum's** half-year profit has fallen 39% on the back of weaker oil prices, which slumped by almost half.

The Perth-headquartered company reported a net profit after tax (NPAT) of \$679 million to the end of June, down from \$1.1 billion achieved in first-half 2014.

NPAT was underpinned by half-year operating revenue of \$2.5 billion, down 28% year-on-year, which Woodside attributed to lower commodity prices and to a lesser extent reduced sales volumes, predominantly arising from the planned turnaround work at Pluto. The company produced 42 MMboe, down 9.7% on first-half 2014.

Woodside CEO Peter Coleman acknowledged the impact of the fall in commodity prices over the past 12 months but went on to highlight some of the key milestones achieved.

"We have achieved some significant milestones this year, which are part of our strategy to transform the business," he said.

"With the purchase of interests in Wheatstone, Balnaves and Kitimat we have substantially increased our reserves and production capacity while de-risking our future growth.

"The recent decision to move to FEED on Browse is a significant step towards developing this world-class resource."

Coleman said, FEED for the Browse FLNG project was progressing well, with cost savings already having been identified in the projects upstream component. In parallel, Woodside has kicked off marketing for the project in hopes of bedding down firm marketing arrangements in 2016.

From Houston (BN): In Brazil, the Carwash scandal rolls on. A judge sentenced former top executive Nestor Cervero to 12 years in prison for money laundering and corruption in a scheme to bribe the speaker of Brazil's lower house in congress.

Meanwhile, business continues. **Petrobras** reported 55% lower net income for first-half 2015, \$2.03 billion vs. \$4.51 billion. Looked at quarter-to-quarter, the picture is worse; second-quarter 2015 net income was \$171 million vs. \$2.23 billion in second-quarter 2014.

This decline comes despite producing more oil and reflects sharply lower oil prices, higher debt-carrying costs and a weakened Brazilian Real.

Executives in a conference call played down the impact of the bribery-and-kickback scandal on both profits and operations, while acknowledging the suspension of some contractors is causing a few delays.

For July, Petrobras reported average production of oil and natural gas in Brazil and abroad was 2.796 MMboe/d. That is 1.8% higher than in June and 3.6% higher than in July 2014.

On July 8, presalt output reached a new daily high, 865 Mbbl, helping monthly production average 798 Mbbl/d, some 6.9% higher than the record set in June.

Malaysia's **Barakah Offshore Petroleum** is hooking up with Norwegian subsea service provider Ocean Installer.

Barakah's PBJV Group has signed a memorandum of collaboration with the subsea specialist for an exclusive tie-up to provide deepwater installation of subsea umbilicals, risers and flowlines and related services in Malaysia.

"This collaboration will allow us to serve the full spectrum of the subsea installation market for Malaysia's oil and gas industry and is a step up for Barakah to be involved in deepwater segment," Barakah Deputy Executive Chairman Nik Hamdan Daud said.

**ShawCor's** second-quarter revenue of \$398 million was 10% lower than the \$441 million reported in second-quarter 2014, the company said.

Revenue also decreased by 16% from the \$472 million reported in first-quarter 2015.

The company said revenue and operating margins were negatively impacted by low levels of activity in the Asia-Pacific region and in North America where the severe decline in well completions had a detrimental effect on several of the company's businesses.

**Electromagnetic Geoservices (EMGS)** made a net loss of \$26 million in second-quarter 2015.

Revenues were \$12.1 million in the second quarter, down from \$32.3 million in the previous quarter and from \$42.5 million in second-quarter 2014.

EMGS said the results were negatively affected by extraordinary costs related to the company's cost-reduction programme.

**Premier Oil's** profit before tax and impairments came in at \$170.6 million in first-half 2015 compared to \$194.4 million in the same period a year earlier.

Production averaged 60.4 Mboe/d in first-half 2015, down from 64.9 Mboe/d in the same period a year earlier.

Revenue in the six months to June 30 fell to \$577 million from \$844.7 million a year ago.

Premier said momentum is increasing across its sanctioned developments with first oil on the U.K. North Sea Solan project targeted for fourth-quarter 2015 and Catcher first oil on track for 2017.

Premier also is progressing the offshore Norway Vette project and Sea Lion off the Falklands for 2016 investment decisions, while it said ongoing engagement with the supply chain indicates significant potential for reduced costs.

*From the U.K. (SS):* This is not a subsea story nor even an upstream one, but just one with oilfield minutiae that shows why this is such a complex business.

For years, U.K. drivers with diesel cars have been the suckers of the motoring industry. Successive governments encouraged drivers to buy diesel cars because of the bet-

ter miles per gallon figures, even though they knew that the particulates in the exhaust were worse for the environment—and people—than the exhaust from petrol engine cars.

At the same time, the refining of diesel fuel was becoming more problematic with major companies pulling out of the downstream business, leaving it to relative minnows, and safety incidents occurring at some of the refineries.

The result was that diesel at the pump was much more expensive—up to 8-10p/litre at one time—than unleaded fuel.

Scroll forward to the last month and the price of diesel has now fallen below the price of unleaded for the first time in decades. Why? Because the Saudis are apparently flooding the market with fuel refined in their own downstream complexes, the so-called “value-added” proposition that they have been trying to take advantage of for years.

This must be good, no? But the current Tory government has finally fessed up that diesel is responsible for growing air pollution and respiratory issues in the U.K. So now they are telling drivers to go buy petrol driven cars. You figure.



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## CONTACT INFORMATION

**JOHN SHEEHAN** Editor  
[jsheehan@hartenergy.com](mailto:jsheehan@hartenergy.com)

**STEVE SASANOW** Editorial Director  
[steven@keld.co.uk](mailto:steven@keld.co.uk)

**MARK THOMAS** Editor-In-Chief, E&P Franchise  
[mthomas@hartenergy.com](mailto:mthomas@hartenergy.com)

### CONTRIBUTORS

Ian Forsyth (Aberdeen), Bruce Nichols (Houston), Mark Thomas (UK), Lauren Barrett (Australia).

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