

## Campos Basin: Old But Still Worth The Value

Over the past few years, it has been said that the Santos Basin will replace the Campos Basin as the most prolific E&P area offshore Brazil. In fact, due to the great exploratory success in the Santos Basin’s presalt layer, the Campos Basin has been eclipsed. Currently, oil production in the Campos Basin is about 1.3 MMboe/d. This volume represents 64% of the total country’s output.



Brazilian energy officials say the Campos Basin holds opportunities for oil and gas companies. (Source: Leo Francini/Shutterstock.com)

Yet, against all odds, the Campos Basin—which celebrates 40 years of E&P activity this year, was the star in the latest licensing round and helped avoid a bidding disaster when 13 oil companies placed bids on only 13% of the 287 oil fields offered in seven sedimentary basins.

Thanks to Petrobras and ExxonMobil, the Campos Basin raised roughly \$1 billion with the acquisition of eight of 10 blocks offered. The duo beat other majors such as Shell, Repsol and CNOOC. The amount of money bid by Petrobras and ExxonMobil accounted for almost 90% of the total bonus revenues raised in the round.

While some experts were surprised by the result, Brazil’s Oil and Gas Secretary Marcio Felix asserted that the Campos Basin still offers great opportunities.

“Contrary to many people’s beliefs, [the] Campos Basin is actually on the rise. This rising is not only seen in the recovery of its mature areas but also in its explor-

atory frontier,” Felix said after the end of the 14th licensing round Sept. 27.

For Fernanda Delgado, an energy researcher at the Getulio Vargas Foundation, the fact that Petrobras bet high on the Campos Basin shows the area’s huge potential. “Petrobras’ operational staff knows the Campos Basin very well, and the company has proven that the basin can still offer good opportunities for the oil and gas industry,”

Delgado said. “That’s why oil majors such as Exxon-Mobil worked to establish partnerships with Petrobras.”

### Technology Is Key

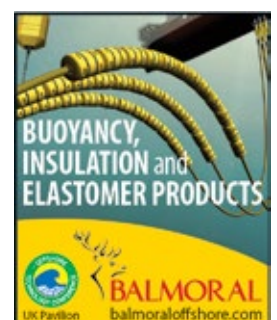
Although the Campos Basin has a number of mature fields, since 90% of its fields’ production have reached their peak and have started to decline, current subsea technologies are capable of extracting more oil from these fields. Technology advances are capable of extending the life of these fields.

Polymer injection is among the technologies being used to increase oil and gas recovery in the Campos Basin, according to Delgado.

“Recovery is a very strategic area to prepare companies for the future. Companies are beginning to look at this segment with different eyes. Several service companies are

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working to develop solutions for offshore recovery operations,” Delgado said.

She also mentioned that it is often cheaper to drill a new well than to invest in recovery, which has higher costs for companies. But she predicted that recovery should become increasingly profitable in the near future.

Some moves attest the attractiveness of the Campos Basin for oil companies.

Recently, Petrobras announced the company will invest roughly \$6.1 billion in the Campos Basin by 2021. Within these investments, there are intentions to install four new platforms in the area over the next few years. Petrobras said the first unit will be the FPSO *Cidade de Campos de Goytacazes*, which will produce oil from the Tartaruga Verde and Tartaruga Mestiço fields. Two other units will operate in the Marlim Field, located in the Campos Basin, and the fourth will operate in the presalt area of the Alba-

cora Field. The company expects to produce oil by 2052 in Campos Basin.

In 2015, Petrobras was able to achieve an oil recovery factor above 50% in the Marlim Field. The field currently produces 160,000 boe/d.

The Campos Basin has been developed through increased recovery, with the application of technology and knowledge gained in recent years. Currently, there are ongoing research projects at the Leopoldo Américo Miguez de Mello Research & Development Center, in partnership with Universidade Federal do Rio de Janeiro, aimed at improving the recovery factor through the use of nanotechnology. The Brazilian government will hold the second and third presalt rounds Oct. 27. According to Brazil’s oil regulator ANP, 24 oil companies have been approved to participate in the upcoming rounds. Eight blocks will be auctioned in the Santos and Campos basins.

— *Brunno Braga*

## DEVELOPMENT

### Northwest Europe Sees Rise In Activity

Upstream activity offshore Norway and the U.K. has seen a steady increase in the last couple of weeks, coinciding with a general rise in global crude prices.

This hike has manifested in the shape of numerous multimillion-dollar contract awards, new exploration plans and a Norwegian project getting the green light. This all comes on the backdrop of declining development costs, with an exception, and a new player gearing up to enter the arena.

The sector will be further boosted by the Norwegian government forecasting that oil industry investments will rise by 2.2% in 2018 after having dropped for the last three years, the Oslo government said in its budget. However, one consultant was quick to avoid any overreactions following the surge of action.

Yet, developments are getting green lights.

The latest to receive approval from the Norwegian Ministry of Petroleum and Energy is the Statoil-operated Snefrid Nord gas discovery in the Norwegian Sea.

Snefrid Nord was discovered in 2015 and lies about 12 km (7 miles) north of the Aasta Hansteen Field. Recoverable reserves are estimated at about 5 Bcm (176.5 Bcf) of gas.

The development concept includes one well in a single-slot subsea template. This will be tied back to the Aasta Hansteen platform through the Luva template 6 km (4 miles) away. Snefrid Nord will produce 4 MMcm/d (141.2 MMcf/d) to 176.5 MMcf/d of gas in the plateau phase. The project has a planned production life of five to six years.

The field is located about 300 km (186 miles) from the mainland and has a water depth of more than 1,300 m (4,265 ft).

The total capex for the Snefrid Nord development is about \$151 million. Snefrid Nord is scheduled to start producing in fourth-quarter 2019, about one year after Aasta Hansteen.



Activity has picked up offshore Norway in recent weeks. (Source: Shutterstock.com)

### Contract Awards

In terms of new awards, the pick of the crop saw Statoil hand out renegotiated framework agreements to Bilfinger Industrier and Kaefer Energy for insulation, scaffolding and surface treatment (ISO) services worth a total of more than \$876.5 million. The contracts will run until the end of 2030.

The framework agreements cover ISO services for the Norwegian Continental Shelf (NCS), with flexibility for use across all facilities on the NCS and onshore Norway.

The agreements facilitate increased innovation and technology development within the ISO services performed at Statoil facilities. This also includes stimulating further upgrading of specialist skills and increased percentage of apprenticeship certificates, Statoil noted.

Weatherford International has been awarded a contract for plug and abandonment services by Repsol Norge in the U.K. North Sea.

The work will start in October and is estimated to take three years to complete. The work scope includes multiple services, including fishing, cutting and milling; casing pulling; and drilling and pinning multiple strings of casing. Weatherford will provide these services on up to 50 wells, which will be plugged and abandoned.

### Falling Costs

Costs for Statoil's Johan Sverdrup Phase 1 project declined by \$873.5 million to \$13.0 billion, while costs for Wintershall's Maria oilfield project were down by \$367.2 million at \$1.66 billion, according to the Oslo government's 2018 budget.

The decreases mean that Johan Sverdrup's costs are down 18% from original 2015 estimate, while Maria's costs have dipped 19% from its 2015 estimate.

Partners in Johan Sverdrup Phase 2 are expected to make a final investment decision in third-quarter 2018. Statoil is also expected to present plans for the Arctic Johan Castberg oilfield development project and the expansion of the Snorre Field by year-end 2017.

However, costs for Total's Martin Linge oil and gas field offshore Norway increased by \$177.2 million in the last year to \$5.23 billion. The cost estimate has risen by a total of 42% since the original plan was submitted to the authorities in 2012.

Overall costs for 12 new offshore projects, including the Polarled pipeline, were down by \$1.33 billion from

last year, or about 5% down from the original estimates, the government said.

The Oslo administration forecast oil industry investment will rise by 2.2% in 2018 after having dropped for the last three years.

### New Player

The new operator to be formed by a joint venture between Bayerngas Norge and Centrica's E&P business will be called Spirit Energy.

Once launched, Spirit Energy will be 69% owned by Centrica, with Bayerngas Norge's existing shareholders led by Stadtwerke München and Bayerngas owning the remaining 31%.

Production in 2017 will be in the range of 50 MMboe to 55 MMboe from 27 producing fields and 2P reserves and 2C resources of 625 MMboe.

The deal is expected to complete with Spirit Energy being launched before the end of the year.

### Cautionary Note

However, this activity rise came with a hefty note of caution from consultancy Wood Mackenzie, which this week said, "The oil industry is no stranger to decline. But next time it could be permanent. The oil industry has gritted its teeth and suffered through the past few years, emerging with heads held high and looking to the future."

The analyst pointed to the rise of renewable energy and how technological advances in fuel efficiency and the move to hybrid and electric vehicles could disrupt demand.

"While transport demand will flatline around 2030, we forecast continued growth in overall global oil demand, supported by the petrochemical sector," WoodMackenzie said. Nonetheless, the prospect of peak oil demand is very real. The industry needs to start planning now if it is to be prepared for what lies ahead."

—Steve Hamlen

## Chevron Starts LNG Output At Australia's Wheatstone

Chevron Corp. has started producing LNG at its Wheatstone project in Australia, slightly later than expected, and plans to ship its first cargo soon.

The LNG market will be focused on how smoothly Wheatstone progresses following the troubled startup at Chevron's bigger Gorgon LNG project. Both projects are fed from natural gas fields offshore the state of Western Australia.

"The first cargo is on track to be shipped in the coming weeks," Chevron Corp. said in a statement Oct. 9. It had

originally hoped to start exporting from Wheatstone in the middle of 2017.

Wheatstone is the sixth out of eight projects in a \$200 billion Australian LNG construction boom that is now in its final stretch. The two remaining ones are Royal Dutch Shell's Prelude floating LNG project and Ichthys, led by Japan's Inpex.

This massive expansion, which has suffered numerous delays, has propelled Australia past Malaysia to become

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**Wheatstone To Weigh On LNG Prices**

Wheatstone, co-owned by Australia's Woodside Petroleum, Kuwait Foreign Exploration Co. and Japan's Kyushu Electric Power Co., has two gas liquefaction units, which at full capacity will supply 8.9 million metric tonnes of LNG per year to customers in Asia.

The company expects the second unit to start producing six to eight months after the first.

Woodside has been closely involved in Wheatstone, looking to ensure smooth development, as the company expects the project to be the largest contributor to its planned 15% production growth over the next three years.

"Wheatstone is a world-class asset and the safe startup of the facility was one of our priorities for 2017, supporting our near-term growth strategy," Woodside CEO Peter Coleman said.

Wheatstone exports could stall rising spot LNG prices, which have surged 55% since March to \$8.50 per million Btu (MMBtu) on strong demand and the delayed ramp-up of many of the Australian LNG export facilities.

"[Wheatstone] comes at just the right time ahead of winter. ... Together with Wheatstone, several new LNG trains, such as Yamal LNG, Cove Point and Train 4 from



Chevron has achieved first LNG production at Wheatstone. (Source: Chevron)

Sabine Pass, will ramp up or start up production by year-end [2017]," said Nicholas Browne, head of Asia gas and power research at Wood Mackenzie in Singapore.

"This will sow the seeds for strong production through winter 2017-18, pushing the market into increasing over-capacity as we move into the summer of 2018. We therefore expect to see prices dip below \$6/MMbtu once this winter is over."

—Reuters

**DEVELOPMENT BRIEFS**

**Wood Wins FEED Contract For World's First LNG Production Platform**

Wood has landed a \$12 million FEED contract from the Honghua Group for its LNG platform development in the U.S. Gulf of Mexico's West Delta area, according to a news release.

The award follows Wood's completion of pre-FEED work for the project, which will be designed to produce up to 4.2 million tonnes per year of LNG. The latest award aims to finalize the design of the world's first offshore platform-based natural gas liquefaction and storage facility. Wood's work scope includes the onshore gas pretreatment plant configuration and layouts, general utilities, feed gas processing and compression, and transportation and delivery via repurposed pipelines from the existing onshore Toca and Venice, Louisiana, facilities to the LNG facility 16 km (10 miles) offshore, the release stated.

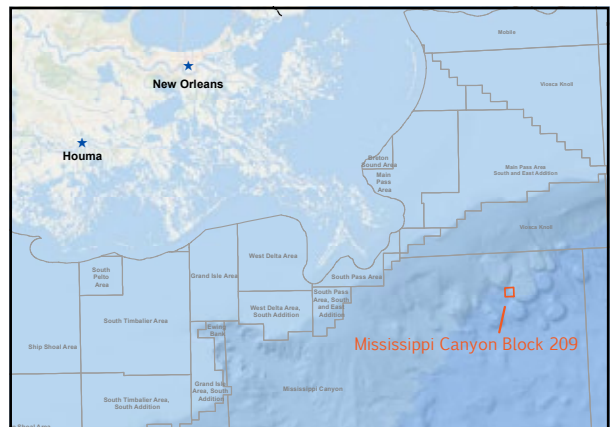
In addition, Wood will compile and develop technical documentation for a deepwater port permit application to U.S. Maritime Administration (MARAD). This includes designing onshore, pipelines and offshore elements of the facility in sufficient detail to satisfy the MARAD, the release stated.

Wood will work in collaboration with EnTX GasTek Global Ltd.; Baker Hughes, a GE Company, and Brae-

mar Technical Services, the owner's engineer on the LNG 21 project.

**Oil Release From GoM Platform Prompts Investigation**

The U.S. Bureau of Safety and Environmental Enforcement (BSEE) has started a panel investigation following an oil release from the subsea flowline at the Delta House platform in the U.S. Gulf of Mexico's (GoM) Mississippi Canyon area.



The oil release occurred at Delta House platform in the U.S. GoM. (Source: BSEE)

LLOG Exploration reported the flowline release to BSEE, stating the company isolated the pipeline leak and stopped the leak the morning of Oct. 12. The estimated unaccounted for oil volume is between 7,950 bbl to 9,350 bbl.

“This panel investigation is a critical step in ensuring BSEE determines the cause, or causes, of the incident and develops recommendations to prevent similar events from occurring in the future,” said Lars Herbst, director for BSEE’s GoM region.

The agency said LLOG reported the company observed, through use of an ROV, a fracture in a jumper pipe leading from Mississippi Canyon Block 209 Well No. 1 to a manifold on the seafloor. The flow through the fracture in the pipe stopped after the well was shut in. The company also reported there is no recoverable oil on surface, BSEE said. LLOG also reported two skimming vessels, provided by Clean Gulf Associates and Marine Spill Response Corp., were onsite.

### Tulip Oil Raises \$103 Million To Develop Dutch Gas Field

Tulip Oil has placed a \$103 million secured bond and said the proceeds will be used to develop a gas field offshore the Netherlands where it is based.

Tulip Oil Netherlands Offshore, a subsidiary of Tulip Oil Holding, has applied for the five-year senior secured bond to be listed on the Oslo Stock Exchange, the company said in a statement.

The company said proceeds will primarily be used for the development of the Q07A gas field, which was discovered in 2015.

In July Tulip Oil was awarded a production license by the Dutch government for the Q7/Q10a blocks.

“The proceeds from the bond will enable Tulip Oil to put Q07A into production and generate significant cash flow,” Tulip Oil CEO Imad Mohsen said. “It will ulti-

mately also allow the company to explore the considerable potential of the Q7/Q10a blocks together with the other assets in the group.”

Tulip Oil said it will now start developing the field, which is expected to produce gas at a rate of 3 MMcm/d (106 MMcf/d).

Tulip Oil Netherlands Offshore owns a 60% interest in the Q07a/Q10 blocks and is the operator. Energie Beheer Nederland holds the remaining interest.

### Anadarko Petroleum To Invest \$200 Million In Peruvian Oil Area

Anadarko Petroleum Corp. will invest some \$200 million to develop an offshore oil area near Peru’s northern coast, Peruvian President Pedro Pablo Kuczynski said Oct. 9.

Kuczynski and executives with The Woodlands, Texas-based company signed three exploration and drilling agreements with state oil agency Perupetro SA in blocks Z-61, Z-62 and Z-63 in the Pacific Ocean adjacent to the Lambayeque and La Libertad regions.

“It’s important that Anadarko has chosen to come to Peru, to an area as vigorous as the northern region,” Kuczynski said. “These are deep waters of 1,000 m [3,280 ft] where it is very difficult to work,” he said in a speech after signing the contracts.

Peru is trying to increase oil output, which has fallen to about 40,000 bbl/d of crude, about one-third of what it produced in the 1970s, as investment lagged.

### Aker BP Wins Approval For Gas Lift At Tambar Oil Field

Norway’s oil and gas watchdog has approved Aker BP’s plans to modify facilities at the Tambar oil field to support North Sea oil production.

The approved modification includes installation of a gas-lift module to inject natural gas into wells to help to produce oil from the reservoir.

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Aker BP and partner Faroe Petroleum have agreed to invest about \$215 million to extend the Tambar Field's lifetime. (Source: Aker BP)

"The gas lift is being installed because the reservoir pressure at Tambar is no longer sufficient to ensure satisfactory production," The Petroleum Safety Authority Norway said in a statement Oct. 12.

In March the Tambar license partners agreed to invest about \$215 million to extend the field's lifetime by 10 years until 2028.

Aker BP also plans to drill two new production wells in fourth-quarter 2017 with startup expected in first-half 2018.

Aker BP and its partner in the license, Faroe Petroleum, expect the modification to add between 4,000 and 6,000 new bbl/d over several years, the company said previously.

The Tambar Field, which started production in 2001, uses an unmanned wellhead platform remotely controlled from the nearby Ula oil field.

### Reliance Taps OneSubsea For Production System Offshore India

OneSubsea, a Schlumberger company, has landed an engineering, procurement and construction contract from Reliance Industries Ltd. for supply of a subsea production system offshore India, according to a news release.

The system is for the R Cluster (Block KG-D6) Project.

According to Schlumberger, the scope of the project includes trees, subsea manifolds, control system, tie-in system, multiphase meters, intervention tooling and test equipment for the R Cluster Field. The contract also includes installation and commissioning support and life-of-field services.

Reliance has the option to award the supply of the subsea production system for more wells for the Satellite fields, Schlumberger said in the news release.

The award marks the first for OneSubsea from Reliance.

### Rosneft Gains Stake In Zohr Gas Field Offshore Egypt

Eni said it has finalized its \$1.125 billion deal with Rosneft for the sale of a 30% stake in the Shorouk Concession, where the Zohr gas field is located.

The completion of the sale brings Eni's stake in the concession, through its subsidiary Upstream Projects PTE Ltd., to 60%. Eni maintains operatorship. BP has the remaining 10% stake.

Zohr, located in the Mediterranean offshore Egypt, was discovered in August 2015 and is on a fast track for development with startup scheduled by year-end 2017.

### CH2M Wins Marine Engineering Support Contract For BP's Tortue

KBR has tapped CH2M to provide marine engineering support for the BP-operated Tortue development offshore Mauritania and Senegal, according to a news release.

The engineering services contractor for the project selected CH2M as the BP-approved civil and marine engineering support provider. CH2M's pre-FEED deliverables will support final decision-making on the hub location, layout, and the form and method of construction of the inshore hub and support to marine operations and project execution planning.

The Tortue subsea development will be a floating gas treatment facility, a pipeline with domestic gas connection points and a nearshore hub facility where the gas is converted into LNG, the release stated.

—Staff & Reuters Reports

## EXPLORATION

### Woodside Bets On Myanmar Offshore Prospects

A Woodside Energy-led consortium is betting on prospects in the A-6 Block offshore Myanmar after making its fourth successive gas discovery in four exploration wells.

The operator said it is looking to drill four more exploration and appraisal wells in the A-6 Block to acquire additional data to assess extractable oil and gas reserves and to evaluate the commercial development of discovered resources.

"Depending on the outcome from the 2017 drilling and subject to decisions by the A-6 JV [joint venture],

an additional four wells may be drilled during 2018 and 2019," Woodside said in a report.

The operator found gas in both the third and fourth exploration wells drilled during third-quarter 2017. The fourth well, Pyi Tharyar-1, was drilled in water depth of 2,450 m (8,038 ft) in the western part of A-6 and intersected a gross gas column of 9 m (30 ft), including at least 3 m (10 ft) of net gas pay in Pleistocene zone.

Transocean's *Dhirubhai Deepwater KG2* ultra-deepwater drillship drilled the fourth well.

However, citing unnamed sources familiar with the situation, *Reuters* reported Oct. 16 that Woodside and its partners have deferred Myanmar exploration plans until 2018 after not finding as much gas as hoped in blocks A-6 and AD-7.

“They drilled [in A-6]... and found the gas but had to stop now because the company needs to evaluate commercial viability of the project... The results from two wells are not sufficient to decode whether the project is commercially viable or not,” a senior government official in Myanmar told *Reuters*.

The unnamed sources said Woodside canceled a tender for seismic work. However, Woodside in the *Reuters* article declined to comment on whether the tender was canceled but said drilling had been completed.

### Gas Discoveries

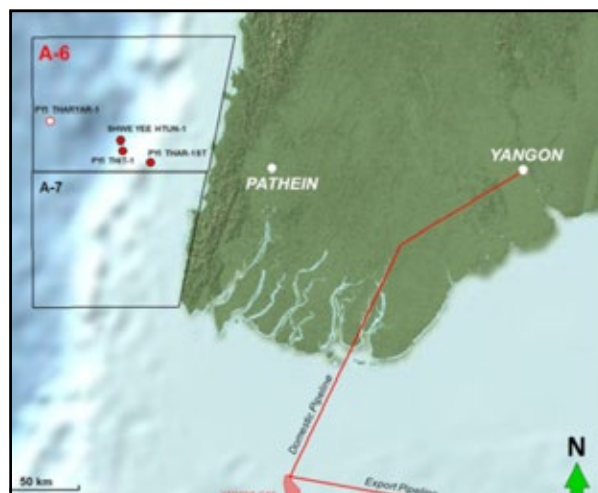
The third exploration well, Pyi Thit-1, reached a total depth of 4,570 m (14,993 ft) in a water depth of 6,565 ft (2,001 m) and intersected a gross gas column of 207 ft (63 m), including minimum 115 ft (35 m) of net gas pay in Pliocene. A drillstem test carried out on the gas-bearing sand flowed 50 million standard cubic feet per day of gas through a 44/64-in. choke. The well is now being plugged and abandoned.

The second exploration well, Shwe Yee Htun-1, drilled to the total depth of 5,306 m (17,408 ft) and hit a dry gas column of about 129 m (423 ft) in Pliocene Formation. This well is considered to be the country’s deepest well by water depth at 2,030 m (6,660 ft).

The first exploration well, Pyi Thar-1, was drilled at a water depth of 211 m (691 ft) and was a wildcat. The well was sidetracked as Pyi Thar-1ST, and 6 m (20 ft) of net gas pay was logged in good quality sandstones.

The operator carried out a 1,700-sq-km (65-sq-mile) 3-D seismic survey over a structural lead mapped by MPRL E&P’s 2-D seismic survey in 2009. The studies indicated the presence of an entirely new biogenic gas play in the frontier offshore southern Rakhine Basin, including charge and sealed reservoirs in a mixed structural sedimentary trap.

The A-6 Block is spread across shallow to deep waters with water depths ranging from 10 m (32 ft) to about



(Source: MPRL E&P)

2,400 m (7,870 ft) offshore Rakhine’s southern coast. The block is about 35 km (22 miles) offshore Myanmar.

Perth-based Woodside Energy farmed into the offshore Myanmar block after the making the Pyi Thar-1ST discovery in 2013. The company acquired a 40% participating interest in the block MPRL E&P Ltd. of Myanmar.

The company is also the operator the neighboring offshore AD-7 Block in Myanmar.

In October 2015 Total farmed in for a 40% participating interest in the A-6 Block, leaving 20% for the local partner.

MPRL E&P made the Pyi Thar-1ST discovery in 2012 after acquiring 1,955 km (1,215 miles) of 2-D seismic and 554 sq km (214 sq miles) of 3-D seismic data.

Woodside has identified the A-6 as one of the projects to be developed between 2022 and 2026.

“We have already had some initial discussions on it, but assuming a success case on the current well in Block A6, we’ll be ready to be inputting development proposals in front of government as to the pathway forward,” Woodside CEO Peter Coleman said during a conference in August.

Woodside was scheduled to deliver its third-quarter 2017 report Oct. 18.

—Ravi Prasad

## EXPLORATION BRIEFS

### FairfieldNodal Gears Up For Projects Offshore Brazil, Trinidad, US

FairfieldNodal is heading for deepwater offshore Brazil to acquire and process high-resolution 3-D marine seismic to help the Petrobras-led Libra consortium make field development decisions.

The project, which the seismic company said is its first offshore Brazil, will use the proprietary Z3000 ocean-bottom node system, FairfieldNodal said. Other companies in the consortium include Total, Royal Dutch Shell Plc, China National Petroleum Corp. and CNOOC.

In addition, FairfieldNodal said it will launch its inaugural ZXPLR survey in the U.S. Gulf of Mexico in October. This project is scheduled to last two months.

The company is also gearing up for a Z700 acquisition project offshore Trinidad in late October. This acquisition project is expected to take four months to complete.

### Eni, Novatek, Total Consortium Bids For Lebanon Offshore Blocks

The only bidder in Lebanon’s first tender for five offshore energy blocks was a consortium made up of Total, Eni and

Novatek, Minister of Energy and Water Cesar Abi Khalil said Oct. 13.

The consortium submitted two bids for Block 4 and Block 9, Abi Khalil said in a statement on Facebook.

The Lebanese Petroleum Administration (LPA) will now evaluate the bids and present them to the energy minister by Nov. 13. Final approval will then be sought from Lebanon's council of ministers.

The exploration phase lasts up to five years with a possible one-year extension, the LPA said.

Lebanon sits on the Levant Basin in the eastern Mediterranean along with Cyprus, Egypt, Israel and Syria. A number of gas fields, such as Leviathan and Tamar, have been discovered there since 2009.

Block 9 borders Israeli waters. Lebanon considers Israel an enemy state and has an unresolved maritime border dispute with it over a triangular area of sea about 860 sq km (332 sq miles) that extends along the edge of three of the five blocks put up for tender.

The country relaunched the licensing round for five offshore blocks (1, 4, 8, 9 and 10) in January after a three-year delay due to political problems.

A total of 51 companies qualified earlier in the year to bid in the latest round, according to the LPA.

### Chevron Ditches Plans To Drill Off Australia's South Coast

Chevron Corp. has abandoned plans to explore the deep water offshore Australia known as the Great Australian Bight as weak oil prices are making the work hard to justify, the company said.

Chevron's move follows a decision by BP a year ago to walk away from the Great Australian Bight, which industry consultants Wood Mackenzie have estimated could hold 1.9 Bboe.

"While the Great Australian Bight is one of Australia's most prospective frontier hydrocarbon regions, in the current low oil price environment it was not able to compete for capital in Chevron's global portfolio," Chevron said in a statement.

The decision came a week after Chevron acquired more exploration acreage off Western Australia, where it said it plans to focus its efforts, having already invested billions of dollars in two huge LNG projects there.

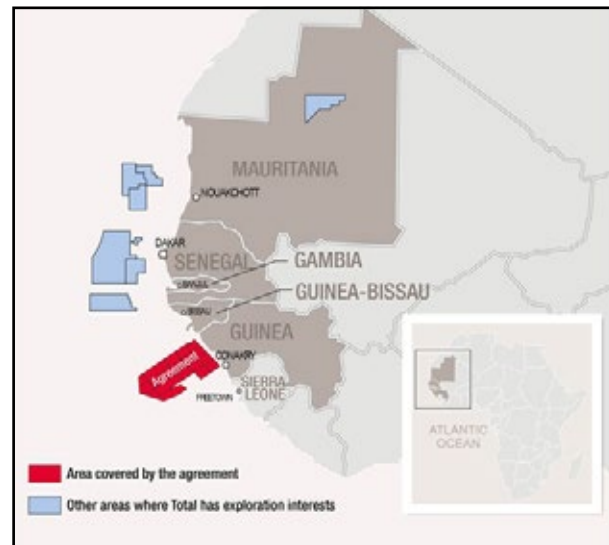
### Total Lines Up Rig For Work Offshore Malaysia

Total E&P Malaysia has awarded a contract to Maersk Drilling for use of the Maersk Deliverer semisubmersible unit to drill one exploration well in the DW-N Sabah Block.

The well, which will be placed at a water depth of 2,835 m (9,301 ft), will require managed-pressure drilling and pressurized mud cap drilling capabilities, according to a news release.

The work is expected to last about 60 days. It is due to start after the rig wraps up a job with JX Nippon that is schedule to begin in fourth-quarter 2017 and last about 30 days.

### Total Reinforces Exploration In West Africa



Total SA and ONAP signed a technical evaluation agreement to study deep and ultradeep areas offshore Guinea Conakry. (Source: Total)

Total SA strengthened its exploration in West Africa through an agreement with the National Office of Petroleum of Guinea (ONAP), the company said.

Total SA and ONAP signed a technical evaluation agreement to study deep and ultradeep offshore areas located off the coast of Guinea Conakry, covering about 55,000 sq km (21,236 sq miles).

According to the terms of this agreement, Total will have a year to assess the potential of the basin on the basis of existing data. At the end of this period, the group will select three licenses to start an exploration program. As part of the agreement, Total will also train ONAP staff to develop their technical skills in E&P.

"By taking this position on a new underexplored area, Total pursues its exploration strategy targeting deep offshore prospective basins," Kevin McLachlan, senior vice president for Exploration & Production at Total, said. "Therefore, Total has the opportunity to evaluate a very large area, located in an extension of the prolific Mauritania/Senegal Basin where we already are. This will allow us to capitalize on our know-how and experience acquired in West Africa."

### Statoil Makes Discovery, Says Two UK Exploration Wells Disappoint

Statoil's exploration campaign off Britain yielded one discovery, one dry well and one noncommercial discovery this year, the company said.

Results of the Mariner Segment 9 and Jock Scott wells were disappointing, while the third, a sidetrack to Statoil's Verbier well in the outer Moray Firth, proved at least 25 MMbbl of oil.

"Whilst the results of the other two exploration wells were disappointing, we are convinced of the remaining, high-value potential on the U.K. Continental Shelf,"



Jenny Morris, Statoil's vice president for U.K. exploration, said in a statement.

"The Verbier result certainly gives us the confidence and determination to continue our exploration efforts," she added.

The preliminary results suggest that the Verbier discovery could hold from 25 MMbbl to 130 MMbbl, but more drilling will be needed to refine the range and potential for commercial development, Statoil said.

Statoil holds 70% in the license with Jersey Oil and Gas (18%) and CIECO Exploration and Production (UK) (12%).

At the Mariner well, where noncommercial quantities of hydrocarbons were found, Statoil's partners were JX Nippon, Siccar Point Energy and Dyas, while the dry Jock Scott well was a partnership with BP.

### Argentina Plans Offshore Auction For Oil, Gas Exploration Next Year

Argentina plans to auction offshore oil and gas exploration rights next year in the hope of developing fields

off its Atlantic coast like those in neighboring Brazil, the energy minister said.

Earlier this year Argentina hired Norway's Spectrum to do a seismic survey in cooperation with state-run oil firm YPF SA. A spokesman for the energy ministry said Australia's Searcher Seismic also was surveying the area, which to date has been little explored.

"There is a high probability that the subsalt basin that exists on the coast of Brazil continues south and so we see the discovery of any formation of oil and conventional gas in the area as very attractive. It could be very profitable for the country," Minister Juan Jose Aranguren said at a conference in Buenos Aires.

Since taking office in late 2015 business-friendly President Mauricio Macri's government has prioritized investment in the energy sector to try to reverse a costly energy deficit. Attention has mostly been focused on Argentina's Vaca Muerta shale fields, rather than offshore exploration.

—Staff & Reuters Reports

## TECHNOLOGY

### Continued Service With Composite Repairs

When engineers set out to define specifications 20 years ago for offshore units that were expected to stay on site for 20 to 25 years, it was not uncommon to take a very conservative approach. That conservatism is reflected in the many assets that are reaching the end of their design lives but still have the basic structural stability to continue operating for years.

While the hulls and superstructures of some offshore production systems are fit for continued service, some of the components that have been exposed to significant stresses and fatigue over the years are not. For operations to continue safely, it is vital that the necessary repairs and replacements are carried out effectively.

#### Evaluating Assets

Today asset owners have no difficulty getting assistance with the task of evaluating their facilities for continuing service, including an analysis of critical parts and determining which components have experienced sufficient wear to warrant repair or replacement.

This is a critical first step, but the next step is most likely the one that will determine the cost-effectiveness of the life-extension project. If repairs need to be made, how



Using rollers to apply adhesive, the installation team places and secures the composite sleeves. (Source: Clock Spring)

will they be done, and what products will be used?

#### Considering Composites

Composites could be the answer. Composites have been used for offshore repairs for years in a broad range of applications such as structural repairs to risers, caisson leak repairs and for life extension work on large components that have experienced corrosion and sustained environmental damage.

Crevice corrosion, which is a major integrity threat on offshore assets, is one of the challenges for which a composite solution is ideal. Because of the way it is formulated and applied, Clock Spring composite repairs provide 360 degrees of protection, ensuring that each square inch of the interphase between the pipe and the sleeve is well sealed. The ability to seal the repair mitigates the effects of previous existing corrosion while preventing further damage.

Because there is not a lot of information readily available to explain how composites are being used offshore, it is difficult for decision-makers to feel confident in selecting composite repair technology for their assets.

As with every technology offering, all are not created equal. It is important to know the historical successes of

individual composites to understand when a composite repair is a good option.

### Putting Composites To Work

External corrosion is a safety issue for assets that have been deployed for extended periods offshore. Particularly important are high-risk areas on the platform that are difficult to inspect because of limited access, such as riser pipe sections close to the water line and longer pipe networks that are hard to get to. These areas also can be difficult to repair using traditional products. Damage to these components can be addressed with composite technology that not only provides structural reinforcement in weakened areas but protection from future deterioration.

A recent repair concern came to light when an asset owner was performing an inspection on a rig that had previously experienced a leak. Unwilling to risk an environmental incident, the owner began looking for a way to address the problem. The most critical criterion was to find a solution that would not necessitate shutting in production. Because the Clock Spring repair could be carried out without taking the system offline, it was ideal for this offshore production unit.

Normally, a composite solution can be designed around two commonly used design specifications—The American Society of Mechanical Engineers' PCC-2 article 4.2 and International Organization for Standardization technical specification 24817. This design guidance allows experts to factor the design conditions and life expectancy of the repair into a formula to determine the composite thickness needed.

Before a product could be introduced on the rig, engineers needed to understand the conditions under which the material would have to perform. The composite solution design was based on knowledge of the pipe, upper bound design temperature/pressure limits and loading conditions that would be experienced in this unique offshore application. Once the specifications were established, the composite repair manufacturing process began with qualifying the manufacturing and design process using one of the trusted international standards. To exercise the best process control, Clock Spring provided a method statement and a full design report that presented the basis for the engineering calculations used in the design and outlined the installation procedure.

Because of the critical nature of these repairs the composite must be formulated accurately. The repair plan included a well-defined scope for surface preparation and an inspection checklist to be used during the installation process and after the composite repair was completed.

Trained installers carried out the repair using Snap Wrap sleeves that were manufactured to specifications. Prefabricating the sleeves ensures the correct size and thickness for the job and allows the installation process to be carried out more rapidly because the composites do not have to be made up on site.

Fabricating the pieces in a manufacturing facility also affords greater quality control in the construction process



Composites have been used for offshore repairs for years in a broad range of applications, such as riser pipe sections close to the water line and longer pipe networks that are hard to get to. Here, trained technicians use rope access to repair a riser. (Source: Clock Spring)

and allows each unit to be numbered and tracked.

The location of the repair required installers to use rope access to install the sleeves. Using the prepared sleeves, the team began the installation process, receiving the first shell via a pulley system and applying it to a pipe length that had been prepared for installation. Using rollers to apply adhesive, the team placed and secured the first sleeve. The next layer was rotated 90 degrees from the first seam so the seams did not overlap. This process was repeated until four layers had been installed on the first riser section.

When all the layers were placed, ratchet straps were secured around the shells to keep them in compression until they fully adhered to the riser. This process took about 1 hr. Since the Snap Wrap arrived on site ready to be bonded to the riser, there was no need for it to cure on site. The entire installation of 12 sleeves was accomplished in a single day, three times faster than would be possible using a wet composite installation.

The team inspected the installation as it was being carried out using the prepared checklist and made sure the fully installed system passed all the performance requirements. The team also provided the owner with a check list to be used on subsequent inspections, indicating intervals at which the repair should be evaluated to verify integrity.

### Future Applications

Composite solutions have been used on riser connections, caisson and hull structures, but the scope for application is far broader. They are ideal for many areas where corrosion prevention and mitigation are required. The simple installation process allows repairs to be executed in a range of conditions, including under water to depths of 9 m (30 ft).

Work is underway to find a way to use ROVs to carry out composite repairs to remove people from the process for improved safety. Because composite repairs can be carried out quickly and at low cost, they also could be valuable in decommissioning projects, when operators must ensure the integrity of pipelines and flowlines to prevent unplanned discharge. As the industry begins to consider composites a viable repair option, the use of the technology will continue to expand.

—Buddy Powers, Clock Spring

## TECHNOLOGY BRIEFS

**JIP Takes Aim At Hydrate Growth, Blockages In Jumpers**

The formation of hydrates in subsea equipment can lead to costly flow-assurance headaches on the seafloor, but an effort is underway to find better solutions for managing risks associated with hydrate growth and blockages.

A joint industry project (JIP) led by the University of Western Australia with support from the Industry Technology Facilitator (ITF) is taking aim at subsea jumpers. As part of a 12-month study, project partners—which include Chevron, Total and Woodside—will develop a new 2-in. jumper test section on the Hytra flow loop in Western Australia to simulate the flow geometry and risk of hydrate blockage in subsea equipment, ITF said in a news release.

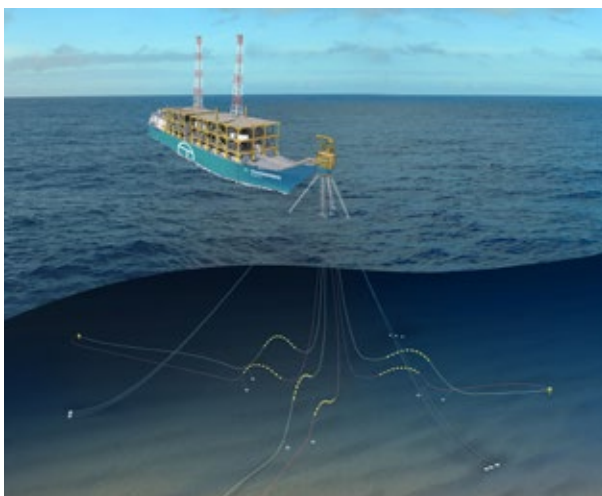
Plans are to use this section to help characterize the hydrate growth rate and blockage severity.

“While previous studies have evaluated hydrate blockage risk for inclined pipe segments, the HyJump Project seeks to enhance that knowledge further. It will investigate the viability of allowing gas to sweep liquids from the affected section, further analysis of chemical injection to clear blockages and aims to deliver novel insight and experimental data that may be used to enhance existing multiphase flow/analysis tools, or service as a guideline to support risk-based system designs or operating conditions,” Will Davies, general manager for ITF, said in the release.

The yearlong study will include 14 tests with the simulated jumper.

**Effort Underway To Unlock Small Offshore Gas Assets**

Add Energy has partnered with Transborders Energy and joined forces with TechnipFMC and MODEC to create a fast deployment business model for the floating LNG



Key to the model is the deployment of a small-scale FLNG vessel, according to companies involved with the project. (Source: Add Energy)

(FLNG) industry that will free up small-scale stranded resources around the world and establish a new concept in global gas field development, a press release stated.

The new business model targets discovered gas resources of about 0.5 Tcf to 2 Tcf (550 Bcf to 2,000 Tcf) of gas that have little value to their current owners because they are either in remote locations where tieback is capital-intensive or lack an economically viable development concept.

Key to the model is the deployment of a small-scale FLNG vessel. Rather than investing up to five years in identifying a gas resource, understanding its size and potential and creating a bespoke development concept, the new model establishes a predefined concept incorporating the use of an about 1-million-ton-per-annum FLNG vessel and applies it to fields that fit the concept. This low-cost concept is designed to unlock hundreds of the world’s previously uneconomic smaller natural gas plays.

**New HP/HT Subsea Valve Coating Developed, Deployed For First Time**

An international collaboration between Hardide Coatings and Master Flo Valve Inc. (MFV) has developed a new solution to protect HP/HT subsea choke valves, a press release stated.

The valves are the first of their kind to feature the Hardide-T coating, which can be applied to choke valve stems so they can withstand temperatures up to 204 C (400 F) and pressures of 20,000 psi. MFV found that alternative hard coatings previously applied to the stem assembly were not rated to sufficiently high temperatures. The challenge was to have a durable coating with a completely smooth finish to form a tight metal-to-metal seal.

The new coating has been applied to MFV’s P4-15K choke valve, which is rated from -29 C (-20 F) to 204 C and 15,000 psi, and the P4-20K choke valve, which is rated to the same temperatures but a greater pressure of 20,000 psi. They are typically installed on subsea production trees and are used for single/multiphase production or water/chemical/gas injection. There is also an application for use on a capping stack, designed to be deployed in the event of a blowout situation.



The valves are the first of their kind to feature the Hardide-T coating. (Source: Hardide Coatings)

### Shell Brazil, COPPE Select 4Subsea For Multimillion-dollar Research Project

4Subsea has been awarded a \$3.1 million Shell-funded contract to support COPPE, the company said.

The project is funded by Shell Brazil and is a partnership with UFRJ-COPPE EMBRAPPII. 4Subsea's primary goal is to extend the safe operational life of flexible risers. The research project focuses on reducing operational risk and increasing the life expectancy of flexible risers. The project runs for three years and has a contract value of about \$3.1 million.

4Subsea will deliver digital solutions for monitoring riser integrity and develop new methodologies for life extension of risers. 4Subsea will also support UFRJ-COPPE with a material research program to develop improved models for polymer aging and steel corrosion.

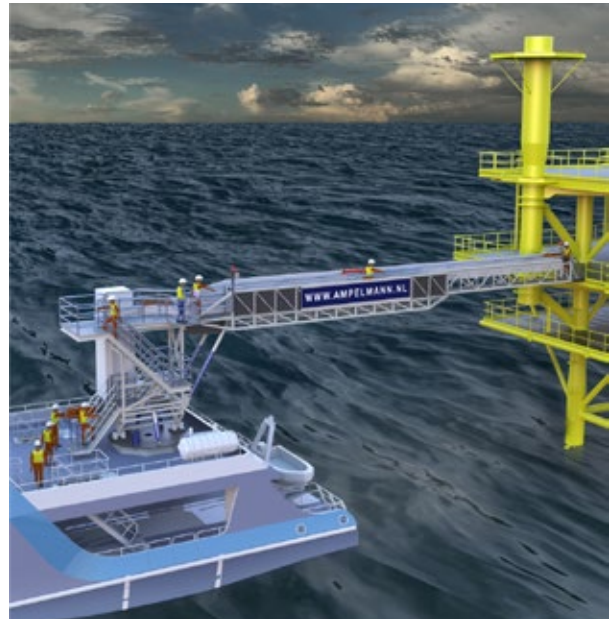
"The project encourages technology exchange between Brazil and Norway, aligning the development of digital and automated solutions for live follow-up of flexible risers in operation," 4Subsea CEO Peter Jenkins said.

### Ampelmann, Seaqualize Team Up To Develop S-type Gangway

Ampelmann and Seaqualize have formed an exclusive partnership to collaborate on the development of the S-type gangway.

In a news release, Ampelmann said its latest gangway solution, the S-type, is designed to be fully integrated into large, high speed vessels and dedicated to long-term crew change operations.

The design of the S-type, which has reduced power requirements and weight, aims to safely compensate the



Production of the S-type gangway is scheduled to begin in early 2018. (Source: Ampelmann)

challenging motion characteristics of these vessels when in dynamic positioning alongside the platform, the release stated. Ampelmann said Seaqualize's balanced heave compensation technology is part of the solution. The patented technology engages the nonlinear force of a gas spring to create an easily adjustable counterbalance, enabling balanced heave compensation.

S-type gangway production is set to begin in early 2018.

—Staff Reports

## FLOATER BRIEFS

### Keppel Secures FPSO Conversion Project With SBM Offshore

SBM Offshore has awarded Keppel Offshore & Marine affiliate, Keppel Shipyard, an FPSO conversion contract.

The contract covers the conversion of a very large crude carrier into an FPSO unit, which upon completion, will be deployed to the Liza Field, located about 193 km (119 miles) offshore Guyana in the Stabroek Block.

Keppel Shipyard's tasks includes refurbishment and life extension works, such as the upgrading of living quarters, fabrication and installation of spread mooring systems as well as the installation and integration of topside modules.

The converted FPSO unit will have a storage capacity of 1.6 MMbbl of crude oil with a production capability up to 120,000 bbl/d of oil. The vessel will have a gas treatment capacity of about 170 MMscf/d as well as a water injection capacity of about 200,000 bbl/d of water.

### FPSO Vessel For Premier Oil's Catcher Field Arrives

The *Catcher* FPSO vessel has arrived in the Cromarty Firth to work on Premier Oil's Catcher Field.



The *Catcher* FPSO unit is undergoing a conversion to use in the North Sea in the Keppel Shipyard in Singapore. (Source: Premier Oil)

The vessel left the Keppel Shipyard in Singapore in August and has begun a seven-year fixed-term contract in the U.K. North Sea.

The FPSO vessel, owned by Norway-based BW Offshore AS, could be used for 18 years on the field.

The FPSO vessel was built in Japan and converted for use in the North Sea in Singapore.

It can process up to 60,000 bbl/d of oil and store 650,000 bbl. It has a design life of 20 years of uninterrupted operations. BW Offshore was awarded the front-end engineering study in 2012.

The Catcher development covers three fields—Catcher, Burgman and Varadero—160 km (100 miles) east of Aberdeen. The asset is thought to contain about 96 MMbbl of oil.

Premier Oil Plc has a 50% stake, alongside Cairn Energy Plc and Mol Group (20% each) and Dyas (10%).

When fully complete, the \$1.5 billion development will comprise 20 subsea wells that will be tied back to the FPSO vessel.

Premier, EnCore, Wintershall Holding GmbH, Nautical Petroleum and Agora Oil & Gas AS announced their Catcher discovery in June 2010, when it was thought the central North Sea field may contain up to 300 MMbbl of oil.

—Staff Reports

## VESSEL BRIEFS

### Naming Ceremony Held For New Icebreaking Supply Vessel

The official naming ceremony for *Fyodor Ushakov*, a new icebreaking multipurpose supply vessel for production platforms, was held Oct. 11.

Named after an 18<sup>th</sup> and 19<sup>th</sup> century Russian naval commander, the vessel has a length of 99.9 m (327.8 ft), breadth of 21.6 m (70.9 ft), draught of 7.6 m (24.9 ft) and deadweight of 3,824 tons.

PAO Sovcomflot commissioned the vessel for the Sakhalin-2 project. *Fyodor Ushakov* is the third of four icebreaking multipurpose supply and support vessels under construction. Supply vessels *Gennadiy Nevelskoy* and *Stepan Makarov* have been commissioned.

The vessels were designed to operate in the difficult ice conditions of the Sea of Okhotsk, ensure the safety of the Sakhalin-2 project personnel working on the vessels and to promptly respond to emergencies.

The construction work is being performed at Arctech Helsinki Shipyard (a subsidiary of United Shipbuilding

Corp. JSC). Technical supervision during construction of all four vessels is carried out by RS.

*Fyodor Ushakov* will fly the flag of the Russian Federation with St. Petersburg as its port of registry. The crew will consist of 28 people.

### Maritime Aquarium To Receive Tanker Vessel Safety Award

American Maritime Safety Inc. included OSG Ship Management Inc. among the recipients of its 2017 Safety Awards.

OSG Ship Management will receive the Tanker Vessel Safety Award, which recognizes the implementation of safe working practices for vessel personnel that serve to promote the safe navigation and operation of tankers calling at U.S. ports.

The company provides global energy transportation services.

—Staff Reports

## BUSINESS

### Borr Drilling Adds To Fleet With \$1.3 Billion Sembcorp Deal

Borr Drilling Ltd. is building up its fleet, having reached a deal to buy nine jackup drilling rigs from Sembcorp Marine subsidiary PPL Shipyard (PPLS) in a \$1.3 billion deal.

Sembcorp Marine said Oct. 6 that its subsidiary had signed agreements for the Pacific Class 400 rigs. Under the terms of the agreements, which are subject to certain conditions being met by both parties, Borr Drilling will take delivery of the rigs over a 14-month period starting in fourth-quarter 2017, according to a news release.

The deal comes about four months after Borr completed its purchase of 10 high-specification shallow-water jackups from Transocean in a \$1.35 billion deal as the company works to grow its fleet. Borr was founded in 2016 by former executives of Seadrill. Schlumberger Oilfield Holdings Ltd. has a 20% ownership in Borr Drilling.

“Since purchasing two modern jackups in December 2016, Borr Drilling has acquired 15 additional rigs,” Borr said on its website. “The company is presently the operator of a fleet of 12 jackup drilling rigs. Further, we have five high specification units on order from Keppel FELS with delivery dates ranging from Q1 2018 to Q4 2020.”

As part of the latest deal, Borr will pay \$500 million upfront with balance of about \$800 million to be paid at any time within five years from the respective delivery dates of the rigs, Sembcorp said in the release. The drilling company is expected to pay interest at market rates from the delivery dates of the rigs to full payment of the balance amount.

Three of the rigs included in the sale are under construction, and PPLS terminated original contracts for customers for the remaining six rigs.

Sembcorp said the sale will result in a loss of about US\$11 million (S\$15 million); however, it is expected to “significantly improve the liquidity position of the company and help strengthen its ability to offer quality solu-

tions to customers, ride through the current cycle trough and be well-positioned for the industry’s recovery.”

—Velda Addison

## BUSINESS BRIEFS

### Subsea 7, Sapura Energy Berhad End Joint Venture

Subsea 7 has decided to end the SapuraAcergy joint venture (JV) with Sapura Energy Berhad, citing “the evolution of both companies’ long-term strategic priorities.”

The subsea company said the JV’s heavy-lift and pipeline vessel, *Sapura 3000*, has been sold to a subsidiary of Sapura Energy Berhad. As a result of the sale, Subsea 7 said it expects to receive about \$100 million in cash dividends and recognize a loss of about \$10 million in third-quarter 2017.

In the news release, Subsea 7 pointed out that all of SapuraAcergy’s projects have been finished.

### Fugro Names Former Vattenfall Head To Replace Retiring CEO

Surveying and marine floor services company Fugro NV on Oct. 16 said the former head of Swedish energy company Vattenfall, Oystein Loseth, would replace Paul van Riel who is retiring April 26, 2018.

Loseth was CEO of Dutch firm Nuon when Vattenfall bought it for \$11.7 billion in 2009 just as power markets softened in the wake of the global financial crisis. He took the top job at Vattenfall in 2010 and oversaw a difficult period for the company as it struggled with debt from the Nuon buy and falling German energy prices and write-downs on its assets. He stepped down in March 2015, citing personal reasons.

Loseth said in a statement he was ready for the job after several years in a nonexecutive role on the board of Norway’s Statoil AS. Loseth, whose appointment must be approved by Fugro shareholders, will begin shadowing Van Riel in the first months of 2017 before taking over as the CEO, Fugro said in a statement.

### Sonangol Aims To Slash Oil Production Costs With Board Revamp

Angola’s state oil company Sonangol is aiming to slash breakeven costs on new oil production to as low as \$20 to \$30 per barrel and make its contracts more attractive to investors and oil and gas companies, the company’s chief Isabel dos Santos told Reuters.

On the sidelines of the FT Africa Summit in London, dos Santos said changes to the Sonangol board announced recently would help the company revamp new E&P agreements and significantly cut costs.

“We are rethinking all our strategy, with a view of being able to produce barrels within \$40-\$50 per barrel,” dos Santos said.

She said some projects were targeting a breakeven as low as \$20 to \$30 per barrel, adding the changes were

essential so new concession agreements could begin “delivering dollars per barrel, rather than just cost.”

### Aqualis Offshore Names New Norwegian Head

Bjarte Røed has been named the head of Aqualis Offshore’s Norwegian operations, the global marine and offshore engineering consultancy said Oct. 18.

He moves into the position after having served as head of engineering and risk consulting for Aqualis since August 2015.

Prior to joining Aqualis Offshore, he served as technology manager and managing director of Future Subsea AS in Norway, senior principle consultant for Lloyd’s Register and a naval officer with the Norwegian armed forces, Aqualis said in a news release.

### Global Marine Acquires Fugro’s Trenching, Cable Lay Business

Global Marine Systems Ltd. (GMSL), a subsidiary of Global Marine Holdings, has entered an agreement to acquire Fugro’s trenching and cable lay services business for \$73 million.

The purchase consideration includes the issuance of a 23.6% interest in Global Marine Holdings to Fugro subsidiary valued at \$65 million and an obligation for GMSL to pay Fugro \$7.5 million within one year, according to news release. The acquisition also includes the transfer of 23 Aberdeen-based Fugro employees, the *M/V Symphony* multipurpose vessel, two Q1400 trenchers and two work-class ROVs.

The deal, which is subject to customary closing conditions, is expected to close in fourth-quarter 2017.

### WorleyParsons To Buy Amec Foster Wheeler’s Former Upstream Assets

Australian engineering firm WorleyParsons Ltd. said it would buy the former upstream oil and gas assets of Britain’s Amec Foster Wheeler \$298.22 million, marking its entry into the U.K. North Sea market.

WorleyParsons expects to tap Amec’s maintenance, modifications and operations capabilities through the deal, which is to be funded by a 1 for 10 entitlement offer of about \$250.36 million and existing WorleyParsons debt facilities at about \$10.20 per new share. The enterprise value will be about \$238 million before adjustments for surplus working capital and cash in the AFW U.K. business, the statement said.

The deal is expected to reduce net debt and be accretive to WorleyParsons’ earnings per share in the first year

of ownership and is expected to be completed by the end of October.

The sale is an attempt by Amec to get regulatory approval for its merger with John Wood Group.

Britain's Competition and Markets Authority (CMA) said in August the merger could lead to competition concerns in the supply of engineering and construction services and operation and maintenance services on the U.K. continental shelf.

The CMA said later that month that divesting almost all of Amec's upstream offshore oil and gas servicing assets may be adequate for regulatory approval for the merger.

### Subsea Technologies Snags Contracts Worth \$4.9 Million

Subsea Technologies Ltd. (STL) has won two new global contracts totaling \$4.9 million, the company said.

The subsea technologies specialist was awarded the first contract, worth \$3.1 million, by a major international service company.

STL will supply a number of proprietary STL connectors over an 18-month period including SLIC connectors, electric line and slickline pressure control heads and associated support equipment, the development and supply of STL's new HB Connector as well as the supply of a number of bespoke handling and shipping skids.

The SLIC connectors incorporate a number of STL's new proprietary 1/4-in. subsea hydraulic couplers, and the HB Connectors include STL's new 2-in. hydraulically retractable couplers.

The second contract awarded was a \$1.3 million agreement by a major operator. The project is scheduled for completion in 2017 with the scope of supply including an upgrade to an existing SLIC connector and well intervention system.

### Cairn Plans To Invest \$4.6 Billion In New Exploration

Cairn Oil and Gas, part of Vedanta Ltd., will invest \$4.6 billion in exploration projects offshore India's east coast and in the onshore fields of Barmer in the west, its acting CEO said.

The company expects approvals to be in place by the end of October, Sudhir Mathur told Reuters on the sidelines of the India Energy Forum in New Delhi as Cairn undertakes a fresh investment plan after the extension of its production contract until 2030.

The fresh investments are part of the company's plan to produce oil and gas in India beyond 2020, Mathur said.

Cairn will also start drilling for oil and gas in the Krishna-Godawari (KG) Basin in the Bay of Bengal by the end of March.

The projects, apart from KG Basin, include its gas field in the Raageshwari Field in Barmer and an EOR program in the Bhagyam and Aishwariya fields. The company is now planning to increase output from its Mangala Field in Barmer under a second EOR phase, Mathur said.

—Staff & Reuters Reports

## UPCOMING

The next issue of *Subsea Engineering News* will be distributed Nov. 2. Until then, visit [epmag.com](http://epmag.com).

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