

## Subsea Focus Turns To Marginal Fields

ABERDEEN—The future of the U.K. sector of the North Sea seems likely to be based on developing 350 marginal fields, or fields containing less than 50 Mboe in reserves, if one takes at face value the focus on these undeveloped discoveries during Subsea Expo.

These finds with total reserves of 3.4 Bboe are not new. What is new, however, is that for the first time British authorities have put in place a mechanism to assist the industry in producing these reserves. The recently established Oil & Gas Authority (OGA) has been given powers and the oversight to get these discoveries into production, authority in which its predecessor, the old Department of Energy, did not.

Carlo Procaccini, OGA's head of technology, told the audience that it not only had analyzed these finds—of which more than 40% (150) have been relinquished and are now unlicensed—based on their locations in the sector, access to existing infrastructure and proximity to each other but it also had carried out four studies based on the use of new or alternative technologies to determine whether they were economically viable.

With recent industrywide cost-cutting initiatives having reduced development costs in U.K. waters by 30% from £18/bbl to £13/bbl (US\$22.44 to \$16.21), OGA said the studies showed that four of these finds could be

developed based on savings of 15% to 28%. The fields have been divided up by development options: extended-reach wells (30), tiebacks (200) and standalone projects (120).

Eric Marston, who is OGA's Southern Basin and Irish Sea area manager, revealed that the organization has looked at a number of marginal gas fields for ways, most notably cluster developments, of getting gas in these

areas onstream. Marston said there is enough gas in the Southern Basin alone to provide 20% of U.K. consumption for another 20 years.

One process that the OGA wants to progress is bringing together a group of operators with nearby finds to help produce reserves.

An example of this approach is the West Sole Catchment area where there are six existing finds and an equal number of

prospects, some unlicensed, which are held by four different operators with a total of 11 partners. The large number of licensees often has been seen, Marston said, as a big stumbling block with operators having different development priorities. He added that OGA even has the authority to offer unlicensed finds or prospects to a group to make a development scheme more attractive.

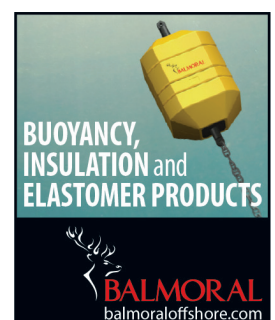
Part of this marginal field initiative is new technology promotion.



At 200, subsea tieback opportunities lead the development options for marginal fields in the U.K. North Sea.

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The U.K. has a plethora of organizations involved in technology development, but the latest one, the Oil & Gas Technology Center (OGTC), is expected to take a leading role in pushing ideas forward, with its 10-year £180 million (\$224 million) budget. A major focus, according to OGTC's Chris Pearson, will be on wells, which represent 30% to 40% of development costs, while another will be on the use of nonmetallic components to provide longer-term asset integrity.

Others also shared technology news during the subsea conference.

### Technology Tidbits

Enpro Subsea has supplied BP with its latest subsea modular access equipment to facilitate the development of its Kepler Field in the U.S. Gulf of Mexico. The equipment provided included a flow access module for tie-in to an existing manifold and an intervention module for the lat-

ter use of scale squeeze. This system allows the tie-in of a single well with a single flowline into an existing looped flowline system.

IKM Subsea expects to have its new R-ROV system in the water this summer for Statoil on its Snorre B Field in Norway. This permanently deployed ROV, which will be housed in its own seabed garage, will have a 1,000-m (3,281-ft) excursion umbilical to allow it to access the seabed complex under this semi-production unit. It is electrically powered, has a variable buoyancy system and will be controlled from shore through the Tampnett fiber-optic seabed cabling system.

One way to save money on projects is to reuse designs that already have been successful. Umbilical specialist JDR has 72 different designs of intervention and workover control system umbilicals that it can offer operators.

—Steve Sasanow

## CONFERENCE REPORT

### Analyst Delivers Frigid Forecast For Subsea Sector

ABERDEEN—The subsea sector will have to keep its overcoat on for a few more years, as the cold wind that has been blowing through the industry since the oil price crash of late 2014 is forecast to continue.

While the oil price is expected to firm up over time, the subsea sector—including in deep waters—will not recover to pre-downturn levels until at least 2019 or maybe not until the beginning of the next decade, Douglas Westwood's Andrew Reid said while delivering the market outlook Feb. 1 during Subsea Expo.

Subsea hardware deliveries in the 2017 to 2021 period are expected to be 20% lower than earlier forecasts, while spending on newbuild offshore vessels is expected to fall 13%, he said.

Reid indicated there would be an uplift in floating production projects this year with new orders projected to hit 22, compared with none in 2016. In more general macro views, he expects some recovery in international capital spending by 2018 and a pickup in offshore activity in 2019.

With many industry watchers and oil company executives commenting on the lower cost of doing business, the latest buzz words heard repeatedly at the conference were "lowest marginal cost," as different parts of the industry try to kick start some new field activity.

### Looking Back, Forward

While Reid provided an outlook, Mark Richardson, group manager for Apache Corp.'s North Sea projects, touched on how the industry got to where it is today.

Richardson has spoken at these events before and has never failed to raise a few eyebrows. He blamed the current parlous state of the offshore business on "20th century management thinking" in the 21st century. He said

the current speed of change and the speed of communications combined with the "failure to learn from failure" have pushed the industry into the position it is in today.

Richardson even suggested that the U.K. should "rethink decommissioning" policy as a result of the referendum, which will push the country out of the EU. Current policy is based on the OSPAR Convention, which was promulgated via the EU. With the country leaving the continental body, he said it should "forget OSPAR."

### Time For Change

Top tier installation contractor Subsea 7, which has been hit as hard as any company in the sector—shedding more than 40% of its workforce and 25% of its fleet—has endured tough times. Phil Simons, who leads the company's North Sea and Canada division, said it was time for "radical change," reducing not only project cost but also risk. He asked, "what is the perfect design now?" and suggested that it was not the gold-plated "Rolls Royce" version often used in the past.

Subsea 7 has adopted the "eliminate, standardize, simplify and automate," or ESSA, approach to business. Also mentioned was the need for more trust between the service and supply sector and its clients, including operators.

But Simons suggested that the greatest threat to the future of the industry is the departure of many of its younger staff. While older employees have weathered earlier downturns, the current prolonged depression has had "a traumatic effect on people" and pushed many in the younger generation away from the industry. A prolonged period with "no raises and no promotions" has given this group the view that there is no future in the offshore industry.

—Steve Sasanow

## DEVELOPMENT

## Wintershall Goes Subsea With Skarfjell

Germany's Wintershall and its partners in production license 418 (PL 418) offshore Norway have opted to move ahead with a subsea development for the Skarfjell Field in the North Sea.

"Under the proposed solution, the Skarfjell reservoir will be connected via a subsea template to the nearby Gjøa platform," Wintershall said.

Partner Engie added, "The Gjøa concept for Skarfjell will include a new 1,000-ton topside module for handling the Skarfjell production. New risers will be installed for production, gas lift, water injection and umbilical. The tieback of Skarfjell production to the Gjøa-platform is in line with our strategy to make the installation a hub for future fields in the area and to extend the lifetime of the Gjøa facility."

The Gjøa platform is a semisubmersible production unit that has full processing and export capabilities. It is operated with power from shore via a 100-km (62-mile) long submarine cable from Mongstad.

"We look forward to working together with operator Wintershall and the partners to further define our part of the development concept toward project sanction," said Cedric Osterrieth, managing director of Engie E&P Norge.

Skarfjell is situated in the northeastern part of the Norwegian North Sea about 20 km (12 miles) southwest of the Engie-operated Gjøa platform and about 130 km (81 miles) northwest of Bergen.

"Based on the proposed plan, hydrocarbons from the Skarfjell reservoir would be sent from a subsea template to the Gjøa platform for processing and export," Wintershall added.

Gjøa also would provide gas-lift services to the field and water injection for pressure support to a second template.

The majority of the Skarfjell discovery is located in PL 418 "with a possible extension into PL 378," Wintershall noted.

The partners in PL 418 are operator Wintershall (35%), Cairn Energy unit Capricorn (20%), Bayerngas (20%), Edison (15%) and DEA (10%).

The partners in PL 378 are operator Wintershall (62.5%), Capricorn (20%) and Repsol (17.5%).

#### 4Subsea Bags Snorre B Deal

Also in the Norwegian North Sea, 4Subsea has landed a deal to supply integrity monitor systems for six flexible risers on Statoil's semisubmersible platform Snorre B.

The contractor said it landed the work on the back of delivering the fifth system in a row for Statoil's Snorre A platform.

"The monitoring solution improves security and reduces risk of production downtime or riser failure. At the same time, the installation will reduce operational



The Gjøa platform is a semisubmersible production unit that has full processing and export capabilities. (Source: Engie)

costs, since the need for manual inspection is eliminated," 4Subsea said.

"Today there are daily inspections of the risers, plus quarterly offshore mobilization of engineering personnel. The new solution automates and simplifies these processes drastically, [while] reducing risk."

The monitoring solution is based on 4Subsea's AMOS system, which analyzes the condition, integrity and expected service life of the flexible risers. AMOS monitors the riser annulus diffusion rate, detecting early signs of riser failure, reducing risk and averting potential costly replacement of risers.

"The contract also includes added functionality developed by 4Subsea's [R&D] department in late 2016 for measuring and trending condensation of liquid in the annulus vent gas," the company added. "Statoil will have a system that is fully integrated with [its] control rooms at Snorre B from day one, providing quicker response time, familiar user interface for the operator, and remote monitoring and trending from onshore."

#### Agility Lands Visund North Contract

Agility Subsea Fabrication has won a contract from TechnipFMC to construct an integrated subsea manifold system for the Visund North Field in the Norwegian Sea.

The work will be performed at Agility's site in Tønsberg, Norway. The work scope "is a copy version of an earlier delivered fast-track project," the company said.

"The integrated template structure is scheduled to be delivered during the second semester of 2017 and the manifold system during the first semester of 2018," Agility added. "Purchasing activities will start immediately and fabrication will commence during the first semester of this year."

Agility said it has previously delivered "a significant number of large subsea structures to TechnipFMC (formerly FMC Technologies) and have several projects under construction."

—Steve Hamlen

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## DEVELOPMENT BRIEFS

**Cameron Awards JDR Umbilical Contract For Project Offshore India**

JDR has landed a major steel tube umbilical contract from Cameron Ltd. for oil and gas wells being developed as part of ONGC's Western Offshore project.

The subsea development, located offshore India, involves completion of 11 oil and gas wells that are either at an infield location or an extension of existing fields, including marginal pools which will be connected to the nearest host facility, in water depths up to 100 m (328 ft), JDR said Feb. 15.

JDR's work scope includes project management, engineering and manufacture of 11 umbilicals, with a combined length of over 53 km (33 miles). The company will also supply subsea terminations and accessories. The umbilicals are scheduled for delivery in fourth-quarter 2017. Cameron awarded the contract on behalf of ONGC.

**Wood Group Wins BP Global Service Agreement**

Wood Group has been awarded a three-year global agreement with BP for conceptual engineering services, pre-FEED and FEED engineering services, according to a news release.

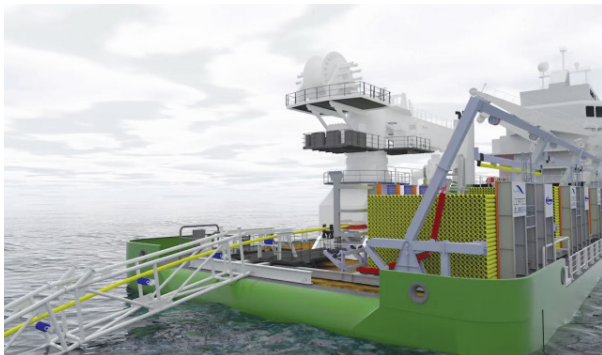
The agreement includes an option to extend for two additional years.

This is not the first time BP has turned to Wood Group for services.

In 2016 BP awarded Wood Group a five-year, \$500 million engineering, procurement and construction management services contract for work in Azerbaijan. BP also contracted with Wood Group in 2015 for engineering services related to BP's existing subsea infrastructure in the Gulf of Mexico, U.K. and Norwegian continental shelves and offshore Azerbaijan, the release said.

**Bourbon Lands Pipelay EPCI Contract Offshore Gabon**

Total Gabon has awarded Bourbon its first pipelay contract as part of the Hylia water injection project, according to a news release.



A multipurpose supply vessel from the Bourbon Evolution 800 series will be used for the work offshore Gabon. (Source: Bourbon)

Bourbon will provide the engineering, procurement, construction and installation (EPCI) of 25 km (16 miles) of 6-in. rigid pipeline. The project will use Zap-Lok technology. Bourbon said it is using subcontractors—including Cortez Subsea for pipelay equipment and Wood Group for the pipeline design and pipelay engineering—to execute the contract.

Operations are scheduled to start in second-quarter 2017 with a multipurpose supply vessel from the Bourbon Evolution 800 series, the release said. ROV services and a platform supply vessel, provided by Bourbon, also will support survey and air diving operations for spool and riser installation.

**Eni Starts East Hub Development Production Offshore Angola**

Eni has started production of the East Hub Development Project, located in Block 15/06 offshore Angola, ahead of schedule, the company said in a Feb. 8 news release.

Production is taking place through the *Armada Olombendo* FPSO vessel, which can generate up to 80,000 bbl/d of oil and compress up to 3.4 MMcm/d (120 MMcf/d) of gas. With nine wells and four manifolds at a water depth of 450 m (1,476 ft), the vessel will put into production the Cabaça Southeast Field, 130 km (81 miles) west of Soyo, Eni said.

East Hub production will add to production from the existing West Hub Project in the Sangos, Cinguvu and Mpungi fields, where the FPSO *N'Goma* vessel is operating. In total, Block 15/06 will reach a peak of 150,000 bbl/d in 2017, Eni said.

Eni is the operator of Block 15/06 holding a 36.84% share with partners Sonangol Pesquisa e Produção (36.84%) and SSI Fifteen Ltd. (26.32%).

**BHP Billiton Approves \$2.2 Billion For Mad Dog Phase 2**

BHP Billiton has agreed to spend \$2.2 billion for its share of the BP-operated Mad Dog Phase 2 project in the U.S. Gulf of Mexico (GoM), according to a news release.

Mad Dog Phase 2, located in the Green Canyon area in the deepwater GoM, is a southern and southwestern extension of the existing Mad Dog Field, BHP Billiton said in the release. The project includes a new floating production facility with the capacity to produce up to 140,000 bbl/d (gross) of crude oil from up to 14 produc-

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tion wells. Production is expected to begin in the 2022 financial year.

BHP Billiton holds a 23.9% participating interest in the Mad Dog Field with BP (60.5%) and Chevron USA affiliate Union Oil Co. of California (15.6%). The project was sanctioned by BP in fourth-quarter 2016.

**Saudi Aramco Considers Expanding Production From Berri Field**

Saudi Aramco is considering expanding its oil and gas production from the Berri offshore oil field, industry sources told Reuters.

Aramco would, over time, add 250,000 bbl/d of crude oil from Berri, possibly by building drilling islands offshore in the Gulf, while also processing higher pressure associated gas for sweetening in Khursaniyah, the sources said.

Low-pressure gas would be sent to the Berri gas plant in Jubail, which will be expanded under a program to recover more NGL and sulfur.

Aramco has invited companies to bid for several packages of FEED work on the project, which one source estimated could cost \$6 billion. Two sources told Reuters the estimated cost of the gas plant expansion is about \$1.7 billion.

Front-end engineering typically takes as long as a year to complete from the day of the award of contracts.

Aramco declined to comment on the expansion plans.

**Energean Names TechnipFMC As Contractor For Karish, Tanin FPSO Unit**

Energean Oil & Gas has appointed TechnipFMC as the concept and FEED contractor for the Karish and Tanin development program offshore Israel, the company said in a news release Feb. 2.

The move followed Energean’s recent decision to develop the fields using an FPSO unit, which Energean believes will facilitate the quickest route to market.

The fields are said to contain 68 Bcm (2.4 Tcf) of gas. Energean said it plans to fast the Karish Field development, followed by development of the Tanin Field.

The company intends to submit the field development plan to the Israeli government in mid-2017. Development costs are expected to run between an estimated \$1.3 billion and \$1.5 billion over the next few years, Energean said.

**Egypt Pays Eni \$650 Million Under Zohr Development Deal**

Egypt paid its \$630 million financial obligation in January to Eni to develop the biggest gas fields ever found in the Mediterranean, Rami Aboul Naga, assistant sub-governor for foreign reserves at the Central Bank of Egypt, told state news agency MENA on Feb. 7.

Petroleum Minister Tarek El Molla said Egypt was committed to repaying the \$3.5 billion it owes in arrears to foreign oil companies, but a foreign currency shortage has made drawing down those debts more difficult.

Egypt’s foreign reserves rose to \$26.363 billion at the end of January but were still about \$10 billion less than the reserves before an uprising in 2011 ushered in a period of political turmoil, scaring away tourists and foreign investors, which are key sources of hard currency. The central bank floated the Egyptian pound in November as part of economic reforms. The move helped Egypt clinch a \$12 billion, three-year loan from the International Monetary Fund.

Zohr, discovered by Eni in 2015, is the largest gas field ever found in the Mediterranean, with an estimated 850 Bcm (30 Tcf) of gas in place. The approval process for development of the field was completed in February, and first gas is expected by year-end 2017.

—Staff & Reuters Reports

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## FLOATERS

**Report: Global FPSO Market Set To Grow Through 2021**

A report from U.S.-based Zion Market Research forecasts global FPSO market growth between 2015 and 2021 as oil and gas E&P expands in deepwater, ultra-deepwater and offshore fields.

“Increasing consumption of oil [and] gas globally, particularly in power generation and transportation sectors has made companies explore more hydrocarbon reserves,” the company said in a release announcing the release of “FPSO Market: Global Industry Perspective, Comprehensive Analysis and Forecast, 2015-2021.”

Zion ties the growth to the highly technical and expensive nature of fixed processing and production facilities in remote production areas. The report also cites factors such as Marginal fields and challenging environments that are driving FPSO expansion.

While Zion noted that the market is dominated by converted FPSO systems, the demand for newbuild FPSO systems has decreased as prices for oil and gas have fallen during this downcycle.

Zion expects North America and Europe to experience considerable growth in this segment as a result of their mature oil and gas reserves.

“South America and East Africa also are expected to experience significant growth due to recent offshore E&P developments and deepwater oil field discoveries,” the company said.

“Further, Brazil is expected to emerge as a major FPSO market in this region due to rising oil and gas activities along with considerable government support. Recent deep sea oil and gas reserves in South China Sea, North Sea and the Gulf of Mexico are expected to positively impact the global market growth in the near future.”

Among the companies dominating the global FPSO market, Zion listed Bumi Armada Berhad, MODEC Inc., BW Offshore, Bluewater Energy Services B.V., COSCO Shipyard Group Co. Ltd., Yinson Holdings Berhad, Sembcorp Marine Ltd., Hyundai Heavy Industries Co. Ltd., Teekay Corp. and SBM Offshore N.V.

—Joseph Markman



## FLOATER BRIEFS

**Iran Reports Arrival Of First FPSO In Persian Gulf**

A \$300 million FPSO unit, the first in the Persian Gulf, will be deployed in first-phase development of the South Pars oil layer, an executive with Petroiran Development Co. has confirmed.

“The ship arrived in Iran’s territorial sea in the early hours of Feb. 10 to mark the first FPSO unit of the Middle East,” said Petroiran CEO Roham Ghasemi. He recently told the Shana news agency that the vessel was built in Singapore.

The deal to purchase the FPSO was announced in October 2016 by Ali Kardor, managing director of the National Iranian Oil Co. (NIOC). The vessel will be deployed in the South Pars oil layer, a joint field operated with Qatar, with the goal of bringing production to 35 Mbbbl/d by late March, the end of the Iranian calendar year.

Gholamreza Manouchehri, NIOC’s deputy head for development and engineering affairs, has commenced talks with Denmark’s Maersk Group over development

of the second phase of South Pars.

The Iranian section of the field contains an estimated 14 Tcm (494 Tcf) of gas and 18 Bbbl of condensates in place.

**P-66 Vessel Makes Its Way To Lula Field Offshore Brazil**

The P-66 FPSO vessel, the first such unit to be deployed by the Lula Consortium in the Santos Basin presalt area, left the Brasfels shipyard in Rio de Janeiro destined for the Lula Field offshore Brazil, Petrobras said Feb. 4.

The floater, built by Keppel Offshore & Marine’s Brasfels, is capable of processing 150,000 bbl/d of oil and 6 MMcm/d (211.8 MMcf/d) of gas as well as storing 1.67 MMbbl of oil. Petrobras said the vessel will come online after it has been moored and the first production well has been connected. The vessel will eventually be connected to 10 production wells and eight injector wells.

Located in the BM-S-11 concession area, the Lula Field is operated by Petrobras (65%) in partnership with Shell subsidiary BG E&P Brasil (25%) and Petrogal Brasil (10%).

—Staff Reports

## VESSELS

**Three Norwegian Shippers Will Merge Into One Vessel Firm**

The pace of consolidation in the crisis-hit shipping industry accelerated on Feb. 6 after three of Norway’s biggest offshore

oil industry service vessel (OSV) operators announced plans to merge to create one of the biggest fleets in the sector.

Shipping tycoon John Fredriksen and Norwegian billionaire Kjell Inge Roekke said they agreed to a restructuring plan for Farstad Shipping, via a debt-for-equity swap and additional share issue, solving long-running efforts to address liabilities worth 12.6 billion NOK (US\$1.53 billion) at the end of September 2016.

The duo will then merge Farstad and Fredriksen's Deep Sea Supply into Roekke's Solstad Offshore.

The move comes just days after Frontline, Fredriksen's listed oil tankers operator, launched a \$475 million offer for Double Hull Tankers, a smaller rival, while Fredriksen also is trying to resolve a \$14 billion debt crisis at his drilling rig firm, Seadrill, where he is chairman and the biggest shareholder.

It also marks the latest deal in a sector hit by overcapacity and low demand from oil firms, due to a halving of the oil price since mid-2014.

The three-way merger between Farstad, Solstad and Deep Sea Supply will create a newly named company, Solstad Farstad, which will have a combined fleet of 154 ships, making it the biggest owner of large vessels in the supply, anchor handling and construction support segments of the worldwide OSV market.

It would rank fourth overall when smaller vessels are included in the count and will have an enterprise value of about 30 billion NOK (\$3.64 billion), according to estimates by brokerage Pareto.

"With this solution, we provide Farstad, Solstad and Deep Sea Supply with an industrial platform to sustain the current downturn in the OSV market and to be well positioned to exploit a market recovery," Farstad's CEO Karl Johan Bakken said in a statement.

—Reuters

## VESSEL BRIEFS

### O'Brien Joins Oil Spill Response Fleet In GoM

*J.L. O'Brien*, representing a \$5 million investment in new Clean Gulf Associates Inc. (CGA) response resources designated for the U.S. Gulf of Mexico (GoM), will be prepositioned in Leeville, La., to help anchor spill response readiness all along the Gulf Coast.



The \$5 million *J.L. O'Brien* is the fourth Midship Marine vessel to join the CGA spill response fleet along the U.S. Gulf Coast. (Source: Clean Gulf Associates Inc.)

*J.L. O'Brien* is the first oil spill response vessel designed with advanced Seakeeper gyro-stabilizer technology that reduces the vessel's rolling motion by up to 75%, allowing productive skimming in rougher seas. The Seakeeper is a computer-controlled gyroscope that provides counter-torque to the natural rolling motion of the vessel thereby reducing fatigue, anxiety and seasickness among the crew of six. The more stable platform also allows skimming in increased sea states.

The new vessel, like the first three, is Coast Guard-certified with overnight accommodations and outfitted with the technologically advanced Aptomar-Rutter integrated X-Band Radar and Infrared oil spill detection systems allowing 24-hr oil skimming operations.

*O'Brien* is equipped with two, three brush Lamor side-mounted skimmers with an effective daily recovery capacity of 22,885 bbl/d of oil and 249 bbl of recovered oil storage and has a 3,500-gal fuel capacity for extended offshore response.

The vessel is named after the legendary James (Jim) L. O'Brien, who pioneered professional oil spill response management for more than 40 years.

### Oceaneering Wins ROV Work From Maersk

Oceaneering International Inc. continues to push further into non-drilling rig markets with an ROV award from Denmark's Maersk.

The Houston-based company said Feb. 13 it entered a long-term agreement with Maersk Supply Service A/S to provide eight work class ROVs, survey and associated services. The contract includes subsea tooling, engineering, communications and data solutions to support Maersk's global operations.

Tudor, Pickering, Holt & Co. (TPH) energy research said it views the award as positive for Oceaneering as activity in the offshore rig market continues to trend meaningfully lower.

"Important to keep in mind, though, vessel-based work, subsea construction and intervention all tend to be shorter-term in nature; thus, high utilization tends to be a more challenging endeavor vs. traditional drilling-based ROV work," TPH said in a Feb. 13 report.

The ROVs will be installed onboard six Maersk new-build vessels: two Stingray-class subsea intervention vessels and four Starfish-class anchor handling tug supply vessels, which are scheduled for delivery through 2017.

Oceaneering provides ROVs, survey and associated services on a number of existing Maersk vessels and drilling rigs, the company said.

### DOF Subsea Snags Vessel Contract For Prelude FLNG

DOF Subsea Australia Pty Ltd. has been awarded a contract for a multipurpose support vessel by TechnipFMC subsidiary Technip Oceania Pty Ltd. for the Shell Australia-operated Prelude FLNG project, a news release said.

The *Geoholm* vessel will be required to provide ROV and light construction support services to Technip-

FMC in Australia for the Prelude FLNG water intake riser installation.

### Norskan Lines Up Jobs For Brazilian Fleet

Norskan Offshore Ltd., a subsidiary of DOF, has won a contract with Petrobras for the Brazilian-built *Skandi Botafogo* anchor handling tug supply vessel.

The contract was scheduled to begin Feb. 15, DOF said.

In addition, the company secured contracts, also with Petrobras, for the *Skandi Leblon* and *Skandi Flamengo* platform supply vessels. The contracts are for 365 days and 668 days, respectively. Norskan noted that the vessels were sold in 2015, but it retained market risk on contract renewal for these vessels after sale.

### ELA Offshore Provides Accommodation For MV Omalius

The multipurpose drilling vessel *MV Omalius*, working offshore France, recently received two Offshore Living Quarters containers built by ELA Container Offshore GmbH.



Two Offshore Living Quarters containers for the *MV Omalius* came equipped with “gangway containers” to allow access to the ship’s deck: (Source: ELA Container Offshore GmbH)

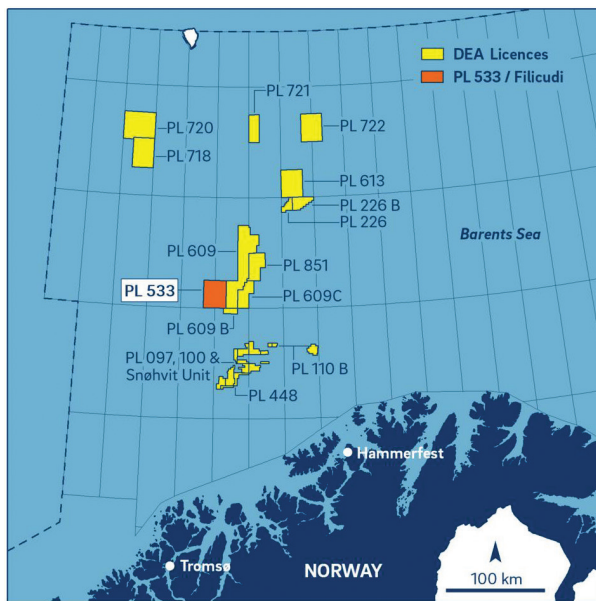
Belgium-based G-Tec Offshore operates *Omalius*, which is participating in the construction of the Merkur wind farm, one of Germany’s largest. The 84-m (275-ft) vessel was designed for offshore geotechnical site investigation, drilling works, ROV inspection and other related offshore support.

Both containers were preassembled, with each equipped with a “gangway container” on its front end to provide access to the deck. ELA loaded the containers at the premises in Haren, Germany, and secured them for transportation.

—Staff Reports

## EXPLORATION

### Lundin Adds To Barents Sea Allure With Oil Find



The Filicudi prospect is located in PL 533. (Source: DEA)

Lundin Norway, along with partners DEA and AkerBP, has struck oil at the Filicudi prospect in the southern Barents Sea, boosting confidence in the Arctic ice-free region’s potential to become a major production area.

Located 40 km (25 miles) southwest of the Statoil-operated Johan Castberg discovery, the Lundin Petroleum subsidiary said the prospect could hold between 35 MMboe and 100 MMboe. Neighboring discoveries include Alta and Gohta, also operated by Lundin, on the Loppa High about 30 km (19 miles) northwest of the latest oil find in PL533.

“This discovery indicates a potential extension of the Jurassic trend from the Johan Castberg area into a promising new region,” Svend Erik Pettersson, exploration manager for DEA in Norway, said in a Feb. 13 statement. Lundin Norway operates PL 533 with 35% interest in partnership with DEA (30%) and Aker BP (35%).

News of the discovery was shared Feb. 13 as the oil and gas industry continued to climb back from a downturn that slowed exploration activity and spending, including in the Arctic region. Rising commodity prices, which have consistently held above \$50/bbl, have improved market conditions and given E&P companies courage to step up drilling plans.

Lundin said its 7219/12-1 well, drilled with the Leiv Eiriksson semisubmersible drilling rig, hit a 129-m (423-ft) hydrocarbon column, which was confirmed by side-track well 7219/12-1A.

“Extensive data acquisition and sampling has been carried out including coring, logging and oil and gas sampled from the wireline tools,” Lundin said in a news release. “Well results indicate significant upside potential that require further appraisal drilling.”

While the Filicudi prospect isn’t as large as Johan Castberg, which has resources of about 500 MMboe, Lundin said drilling additional prospects could lift the discovery to 700 MMboe.

Partners are pondering drilling the nearby Hufsa and Hurri prospects, with prospective resources of 285 MMboe and 218 MMboe, respectively, this year. Both, Lundin said, have been de-risked by Filicudi and carry a 25% chance of success.

During its Feb. 13 Capital Market Day presentation, Lundin Petroleum said about 1 Bboe has been discovered



in the Barents Sea recently, building on the 1.67 Bboe in reserves at the Snøhvit fields and the 180 MMboe at Goliat, operated by Eni. The two are the region's most mature fields.

OMV's Wisting Central and Hansteen discoveries also have added to the region's attractiveness in recent years. The Wisting discovery, in which Statoil holds a 35% stake, could contain more than 1 Bboe. In addition to progressing plans for its Johan Castberg discovery, which calls for an FPSO vessel, Statoil is pursuing a five- to six-well exploration campaign in the Barents Sea.

"The Barents Sea has yielded several of Norway's most significant oil discoveries in recent years," Tim Dodson, Statoil's executive vice president for exploration, said in a Jan. 4 statement. "We are looking forward to test new targets, both in the relatively well-known geology around in the Johan Castberg and Hoop/Wisting area as well as some new frontier

opportunities with greater geological uncertainty but also high-impact potential."

Lundin and partners also are moving forward with exploration activity for its other Barents Sea finds. Among these are Alta and Gohta, which further reduces uncertainty in the area. Alta has contingent resources of up to 400 MMboe and Gohta has up to 184 MMboe. Plans for 2017 include another appraisal well at each field as well as getting new "high-spec" 3-D seismic data, followed by extended well tests in 2018, Lundin said in the presentation.

In November 2016 Lundin's wildcat well 7220/6-2R struck a 20-m (66-ft) oil column and an overlying 10-m (33-ft) gas column in the Ørn Formation at its Neiden prospect about 20 km (12 miles) east of Johan Castberg, according to the Norwegian Petroleum Directorate. Resource estimates for the discovery were between 25 MMboe and 60 MMboe.

—Velda Addison

## Norway's Cara Find May Start Up By 2020

The Cara oil discovery off Norway could start production by 2020 and might contain more hydrocarbons than currently estimated, Norwegian oil startup firm Pandion Energy, a partner in the license, told Reuters.

The discovery in the North Sea, made in 2016 by France's Engie, is estimated to hold between 25 MMboe and 75 MMboe, according to a preliminary estimate.

"It should be a fast-track subsea development with a tie in to the nearby Gjoea platform," Pandion Energy CEO Jan Christian Ellefsen said in an interview. "We believe there is an upside (reserve) potential."

The other partners in the project are Japan's Idemitsu and Wellesley Petroleum, a Norwegian oil firm backed by private-equity fund Bluewater Energy. The partners will have access to drilling and geology data that would underpin their optimism on reserves.

Private-equity investors have been buying up assets in Norway's crisis-hit oil sector over the past year and a half, betting on a recovery in crude prices and cutting deals with energy firms whose focus is elsewhere and are happy to generate some cash.

Pandion is part of that trend. Set up last year by former managers of Tullow Oil's Norwegian subsidi-

ary, it announced this week that it had received \$100 million from Hong Kong-based private-equity fund Kerogen Capital.

Kerogen, led by two former J.P. Morgan bankers, said it could potentially increase investments to up to \$300 million in Pandion Energy.

Pandion Energy already has agreed to buy interests in 10 licenses offshore Norway, including a 20% stake in the production license where the Cara discovery was made, bought from Tullow. Britain's Tullow is focusing away from Norway and more on its core exploration areas in Africa.

The deal is pending approval from the Norwegian oil and energy ministry.

Ellefsen said Pandion Energy was going to focus on appraising discoveries already made to boost their value or to explore in the areas located close to existing infrastructure to minimize the development costs.

"With some oil majors considering sale of their assets on the Norwegian Continental Shelf, we see good opportunities for oil startup companies like ours," he said.

—Reuters

### EXPLORATION BRIEFS

#### Statoil Makes Gas Discovery Offshore Norway

Statoil discovered gas with exploration well 34/11-6 S on the Valemon Field in PL 193 D off Norway. The well was drilled from the Valemon facility, 160 km (99 miles) northwest of Bergen.

The objective of the well was to prove petroleum in the Middle Jurassic (the Brent group), the Norwegian Petroleum Directorate (NPD) said.

Preliminary estimates place the size of the discovery between 3 MMcm and 8 MMcm (105.9 MMcf and

282.4 MMcf) of recoverable oil equivalents, the NPD noted. The well will be completed and will start production from the Valemon facility. Data acquisition was carried out. The water depth at the site is 133 m (436 ft).

Well 34/11-6 S was drilled by the *West Elara* unit, which is permanently stationed at the Valemon facility.

#### Sri Lanka Launches Tender To Develop Natural Gas Site In Mannar

Sri Lanka launched a tender to develop a gas block in the

Mannar Basin off its northwest coast, vacated when Cairn India pulled out of an exploration project in 2015 as oil prices plunged.

Sri Lanka produces no oil and is dependent on imports, but Cairn India Ltd. discovered gas in the area in 2011. The government claims seismic data show the potential for more than 1 Bbbl of oil under the sea in a 30,000-sq-km (11,583-sq-mile) area of the Mannar Basin.

The country invited companies to undertake appraisal and development of gas discoveries and prospects in a 2,924-sq-km (1,129-sq-mile) offshore block in the basin, Petroleum Resource Development Secretariat (PRDS) said on its website on Feb. 13.

“The block will be offered for licensing this year, including the Barracuda and Dorado gas condensate discoveries. A data package will be available containing well data and some 2,600 sq km [1,004 sq miles] of 3-D seismic coverage,” it said.

It also said the remaining blocks off Sri Lankan shores will be released via a bidding round in fourth-quarter 2017.

London-based WesternGeco plans 2-D and 3-D spec surveys ahead of the bids off the east coast and in the Mannar Basin, while the government has planned some airborne surveying, PRDS said.

Cairn India, which is being taken over by Vedanta Ltd., said in 2011 that it struck a 25-m (82-ft) hydrocarbon column showing primarily gas with “other liquid hydrocarbon potential” in the CLPL-Dorado-91H/1z wildcat well, drilled at a water depth of 1,354 m (4,442 ft).

It exited the project in 2015 after a nearly 50% drop in crude oil prices.

Since the end of a 25-year civil war with Tamil separatists over seven years ago, Sri Lanka has tried to reinvigorate oil and gas exploration. Importing oil cost the island \$2.7 billion in 2015.

From the mid-1960s to 1984, American and Russian companies explored the Cauvery Basin off the northern shore, but only traces of oil were found and no commercial oil was produced.

—Steve Hamlen & Reuters

## TECHNOLOGY BRIEFS

### Halliburton Releases Large Bore Subsea Safety System

Halliburton Co. has released its Dash Large Bore Subsea Safety System providing full electrohydraulic control of well safety and intervention functions that has easier testing and assembly, faster activation and ease of configuration to projects, the company said in a February press release.

Deepwater operators doing completions and interventions will have improved critical control of the subsea safety system, tubing hanger and deepwater subsea field developments.

Halliburton said it collaborated with customers to design the Dash Large Bore, which can isolate the lower landing string in six seconds or less, disconnect from the lower landing string in 10 seconds or less and provide downhole data.

The two larger bore sizes, 6 in. and 7 in., in addition to the existing Dash 3-in. system, broaden the use of Halliburton’s electrohydraulic subsea safety systems.

Halliburton said Noble Energy Inc. used the Dash Large Bore recently during plug-and-abandonment operations in the U.S. Gulf of Mexico, where Dash Large Bore was the primary well control barrier and BOP, reducing rig time by several days.

### Completion System Expedites Multizone Frack, Gravel Packs

To speed up sand control completions in land and offshore wells, Schlumberger offers its MZ-Xpress single-trip multizone frack- and gravel-pack system.

After the zones of interest are perforated and the well is cleaned, hardware for all zones is run into the well in a single trip, permitting rapid gravel or frack packing.

To ensure reliable operations in a wide variety of applications from land to deep water, the system incor-



MZ-Xpress is a single-trip multizone frack- and gravel-pack system. (Source: Schlumberger)

porates robust debris management to minimize the risk of malfunctions and nonproductive time during sand control operations. The system also incorporates field-proven, modular subassemblies that increase application flexibility in challenging well architectures, including multiple casings.

### New Subsea Inspection Service Becomes Available

Lloyd’s Register (LR) has released its Subsea Inspection Services to support underwater inspections of subsea pipelines, assets and facilities to energy companies operating offshore, a press release stated.

Services include project management, consultancy, personnel, quality control, data processing and data management, applicable to ROV, AUV and diver projects.

Headed by LR’s Subsea Inspection Manager Andrew Inglis and delivered by the company’s in-house experts in subsea inspection, survey and asset integrity, services will be provided to operators and contractors in the offshore oil and gas, wind farm and submarine cable sectors. Growth is forecast in all of these areas with research by Rystad Energy highlighting that subsea installations will

increase production levels in the oil and gas sector from 15 MMbbl/d to 35 MMbbl/d by 2030. It anticipates a rapid recovery in maintenance, modifications and operations expenditure.

As operators begin to prepare for their annual subsea inspection programs, the company's expertise will help clients achieve their subsea asset integrity requirements by optimizing project planning, execution and delivery,

and facilitating the potential for multiclient multiproject operations. The company already has delivered subsea inspection contracts for major operators in the North Sea and Trinidad. Managed and co-ordinated in Aberdeen, the Subsea Inspection Service will be delivered to clients in all offshore energy regions through LR's global network of office locations.

—*Staff Reports*

## BUSINESS

### Statoil Lowers Breakevens Amid Innovation Push

Margareth Øvrum, executive vice president of technology, projects and drilling for Statoil ASA, believes in setting "impossible targets" that require "radical changes."

Speaking during the company's latest earnings and capital markets update Feb. 7, Øvrum highlighted ways in which the company has made the impossible possible during tough times for the industry. Reaching a breakeven of \$50/bbl was the benchmark many believed would be difficult to achieve in 2015. Back then, a barrel of oil was trading below \$40/bbl by year-end 2015, levels not seen so low since early 2009, according to U.S. Energy Information Administration.

But a year later, the breakeven for Statoil's portfolio was \$41/bbl, she said. Today, the company's so-called next-generation portfolio—which includes projects such as the North Sea's Johan Sverdrup and Oseberg Vestflanken, Johan Castberg in the Barents Sea, Peregrino II offshore Brazil, and Trestakk in the Norwegian Sea with anticipated startups by 2022—has a breakeven of \$27/bbl. The figure is down from \$70/bbl in 2013.

"This demonstrates we can make the impossible possible, and we will work just as hard in the execution phase to beat these figures," Øvrum said during the presentation, which was broadcast online. "We see this positive development in all types of projects globally."

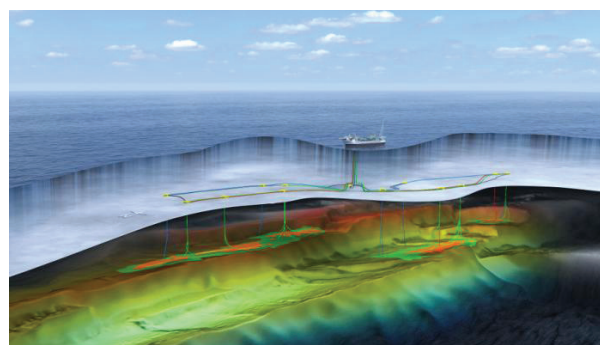
This came as the Norway-based company, which was among the first to cut back spending before oil prices fell near year-end 2014 and deepened into an historic transformational downturn, reduced its capex by 43% since 2015 while it increased recoverable resources by 12%.

With oil and gas bringing in less revenue, companies worldwide were forced to change traditional ways of doing business. Focus turned to capital discipline, bargaining with suppliers, shedding assets, partnering with peers, halting some projects and focusing more on efficiency and technology.

Like its peers, Statoil initiated cost-saving measures and tackled drilling efficiency, among other areas.

Competitive pricing was behind some of Statoil's falling production costs, Øvrum said, but she credited simplification, standardization and use of existing infrastructure as well as technology and performance-based contracts to the drop as well.

She used the Johan Castberg oil development in the remote Barents Sea as an example. With proven resources between 450 MMboe and 650 MMboe, according to



The Johan Castberg Field, which will be developed with an FPSO unit, has proven resources of up to 650 MMbbl of oil. (Source: Statoil)

Statoil, capex for the project has fallen by more than 50% from NOK 100 billion (US\$11.9 billion) to between NOK45 billion and 50 billion (US\$5.4 billion and \$6 billion). The breakeven price has dropped from more than \$80/bbl in 2013 to less than \$45/bbl in 2016 and down to less than \$35/bbl today.

"This is a result of a project team willing to challenge the conventional way of thinking and collaborate closely with suppliers," Øvrum said. She added Statoil optimized the field layout, reduced the number of wells and reduced seabed intervention costs. "We have challenged the supplier to find new subsea solutions, and they have responded."

The results, she said, are less weight, lower complexity, less documentation and lower costs. The company now has a standard package that can be implemented at other fields in Statoil's portfolio, she added. Power solutions involve using power turbines on offshore platforms for gas generation, given the high costs associated with powering the subsea development from land.

A final investment decision on Johan Castberg is expected sometime this year. Partners include Eni Norge (30% interest) and Petoro (20% interest).

Statoil also continues to develop its remotely operated factory, something that Øvrum said will reduce the company's carbon footprint. Instead of having a standard "big, heavy and complex" platform, she said, "imagine the benefits of having several smaller standardized building blocks that you can combine for better field utilization and optimization."

She called it the "mix-and-match solution; and everything is operated from shore."



Both trains for the Åsgard subsea compression system are installed on the seabed. (Source: Aker Solutions)

One component, a subsea gas compression system, is already operating on the Åsgard Field in the Norwegian Sea. The system, which has been operating for more

than a year, has increased the recovery rate from Åsgard's Midgard and Mikkel reservoirs from 67% to 87% and from 59% to 84%, respectively, Statoil said in a September 2016 news release.

Statoil worked with Aker Solutions and MAN Diesel & Turbo to develop the system, and the two companies are currently working to further reduce the size and weight of the system by at least 50%.

Statoil also is making progress on its unmanned wellhead platform at Oseberg Vestflanke 2. The platform is under construction. Other pieces of the factory include an unmanned production platform supported by a host and a standalone unmanned production platform.

"We combine subsea with unmanned topside technology to find the optimal solution for each project. It will improve the robustness of our project portfolio by making even the smaller field developments profitable," Øvrum said, adding it could reduce capex by \$1 billion for some projects. "We see this as a future development solution for several of our fields. It may seem like a science fiction, but we are getting closer."

—Velda Addison

## BUSINESS BRIEFS

### Oceaneering: Larson To Succeed McEvoy As CEO

Oceaneering International Inc. said Feb. 14 that Roderick A. Larson will succeed M. Kevin McEvoy as CEO in May.

Larson has served as president of the Houston-based company since February 2015 and is expected to continue in that role. He previously served as senior vice president and COO.

Prior to joining Oceaneering, Larson was with Baker Hughes Inc. for more than 20 years, where he held various positions, including serving as president of Latin America. He currently serves on the board of Newpark Resources Inc.

McEvoy will continue serving on Oceaneering's board as a Class III director until at least 2019. It is anticipated that Larson will join Oceaneering's board concurrent with his appointment as president and CEO.

The planned succession will be effective after Oceaneering's annual shareholder meeting on May 5, the company said.

### Energiean Gets Financial Boost From Kerogen For Karish, Tanin

Kerogen Capital has committed to investing an initial \$50 million in Energiean Oil & Gas subsidiary Energiean Israel ahead of the planned \$1.3 billion development of the Karish and Tanin gas fields offshore Israel.

The investment, however, still needs the Israeli government's approval. If given the green light, Kerogen will own a 50% interest in Energiean Israel. Energiean will hold the rest.

Energiean shared the news Feb. 15, about two months after it acquired the fields from Delek Group for an upfront consideration of \$40 million plus \$108.5 million in contingent payments.

The operator said proceeds from Kerogen's investment will finance the acquisition and key work streams to investment sanction, including FEED studies and the field development plan being prepared with TechnipFMC.

Plans are to develop the fields, which Energiean said contain at least 67.9 Bcm (2.4 Tcf) of gas, through an FPSO unit. First gas is expected in 2020.

In addition, Energiean said Roy Franklin, an executive board member for Kerogen, will become nonexecutive chairman for Energiean Israel.

### Farley Joins Anadarko's Board As Independent Director

Claire S. Farley was elected as an independent director, Anadarko Petroleum Corp. said Feb. 9. Her appointment will become effective that day.

Farley is currently the vice chair of energy, advising KKR & Co. LP's energy group. Prior to joining KKR in 2011, she was co-founder and co-CEO of privately owned RPM Energy LLC, which partnered with KKR. Prior to founding RPM Energy, she was a senior adviser at Jefferies Randall & Dewey, a global oil and gas industry adviser, and was its co-president from February 2005 to July 2008.

Prior to that, she was CEO of Randall & Dewey, an oil and gas asset transaction advisory firm, from September 2002 until February 2005, when Randall and Dewey became the oil and gas investment banking group of Jefferies & Co.

Farley's oil and gas exploration experience includes positions at Texaco from 1981 to 1999, including as president of worldwide exploration and new ventures, as president of North American production and as CEO of Hydro-Texaco Inc.

Farley is a director of LyondellBasell Industries NV and TechnipFMC Plc. In addition to her public directorships, she is also a board member of Samson Resources.

## Oceaneering Reports Full-year 2016 Financial Results

On Feb. 8 Oceaneering International Inc. reported a full-year 2016 net income of \$24.6 million on \$2.3 billion in revenue and reported an \$11 million loss on \$488 million in revenue for third-quarter 2016, which ended Dec. 31.

CEO M. Kevin McEvoy said Oceaneering had \$450 million in cash at year-end 2016 and a \$500 million revolving credit facility. He said this liquidity will provide resources to manage the business during the downturn in offshore activity.

However, McEvoy said Oceaneering projects a further decline in its profitability, with a loss from the equity investment in Medusa Spar, and slightly higher interest expense. He said marginal profitability at the operating income level is expected on a consolidated basis for 2017.

McEvoy projected the 2017 capex would total between \$90 million and \$120 million, with between \$55 million and \$65 million for maintenance capex, and some amounts set for completing the Ocean Evolution Jones Act vessel. Other capex will support well intervention equipment purchased in the Blue Ocean Technologies acquisition.

McEvoy also said that, beyond this year, Oceaneering foresees increased deepwater expenditures and demand for its products and services.

## Schlumberger's Cameron Group Head Joins Flowserve As CEO

R. Scott Rowe has been appointed president and CEO of Flowserve Corp., a provider of flow control products and services, effective April 1. He succeeds Mark Blinn, who previously announced his intention to retire. In addition, Rowe will join Flowserve's board of directors.

Rowe brings nearly 20 years of senior leadership and operational experience in the industry to Flowserve. He most recently served as president of the Cameron Group, a position he assumed in April 2016 following the merger between Schlumberger and Cameron International Corp.

At Cameron Rowe served in a variety of progressive roles during his 14-year career, culminating as its president and CEO. His accomplishments include contributing to Cameron's growth and profitability during his tenure, leading Cameron through the transition to Schlumberger and overseeing the business integration while maintaining strong business performance. Additionally, he led the transformative pre-merger joint venture between Cameron and Schlumberger, which formed OneSubsea, a \$3 billion-dollar business that he later ran as CEO.

As planned, in connection with Rowe's appointment, Blinn will step down from the Flowserve board, effective March 31.

## Energy XXI Gulf Coast Names Interim CEO

Michael S. Reddin became interim CEO and president of Energy XXI Gulf Coast Inc. (EGC), effective immediately, the company said on Feb. 3.

This follows John D. Schiller's decision to resign as director, CEO and president. Schiller will serve the board as an adviser during the transition, EGC said.

Schiller said now was a good time to transition the company's leadership because the financial restructuring of Energy XXI was completed late last year.

Reddin, who was appointed as chairman of EGC's board in 2016, most recently was the chairman, CEO and president of Davis Petroleum Corp. Prior to that, Reddin was CEO of Kerogen Resources Inc., the vice president of BP America's Gulf of Mexico business unit and also worked for Vastar Resources Inc.

EGC also said that the board appointed Scott M. Heck to join the company as its new COO. As EGC's COO, Heck succeeds Antonio de Pinho, who chose to pursue other interests.

Heck has more than 36 years of experience in upstream engineering and leadership with Tenneco Oil Co., Hess E&P and Bennu Oil & Gas LLC. His last 14 roles were senior executive roles with extensive offshore accountabilities.

The company also said that Bruce Busmire will be departing to pursue other interests and Chief Accounting Officer Hugh Menown will become interim CFO.

EGC said the board is considering internal and external candidates for the role of permanent CEO and president.

Jay Swent will become the lead independent director due to Reddin's interim dual role as chairman and CEO. Swent is an existing board member with more than 35 years of global business and senior leadership experience.

## Ezra May Write Down \$170 Million In Subsea JV

Singapore's Ezra Holdings Ltd. said it might have to take a \$170 million writedown on its subsea services joint venture, putting further pressure on the oilfield services firm as it tries to restructure to remain in business.

"The company's investment in, shareholders loan to and the inter-company balances owed by the EMAS Chiyoda Subsea Group amounts to \$170 million and the full amount may have to be written down after the company's assessment," Ezra said in a stock exchange filing Feb. 3.

It reiterated that it was reviewing all options to restructure its businesses, operations and balance sheet and would be faced with a "going concern issue" if it did not achieve a favorable and timely outcome.

Ezra recorded a net current liability position of \$887.2 million for the financial year ending Aug. 31, 2016.

Ezra holds a 40% stake in EMAS Chiyoda Subsea.

## Shell CFO Will Depart And Join Board Of Rio Tinto

Rio Tinto, the world's second-largest mining company, appointed three former senior managers from the energy industry to its board as nonexecutive directors, including Royal Dutch Shell Plc's departing CFO Simon Henry, the company said Feb. 10.

Henry, who is stepping down as CFO at Shell after seven years on March 9, will join Rio Tinto on July 1. Former Centrica CEO Sam Laidlaw and ex-Sasol CEO David Constable will take up their nonexecutive posts immediately, Rio Tinto said.

Nonexecutive directors Anne Lauvergeon, the former CEO of French nuclear reactor maker Areva, and Robert Brown will step down from their roles at the company's annual general meeting on May 4.

Henry, who has worked at Shell for 34 years, will hand over the CFO role to Jessica Uhl on March 9 and leave Shell on June 30. Henry was one of the driving forces behind Shell's bumper \$54 billion acquisition of BG Group in 2016.

### Delek Group Expands In North Sea With Ithaca Energy Deal

Delek Group Ltd. offered to buy Ithaca Energy Inc. in a deal valuing the North Sea oil producer's equity at \$646 million and building on Delek's expansion in the North Sea ahead of a planned London listing.

Ithaca said Feb. 6 its board had recommended the Israeli conglomerate's cash offer of C\$1.95 (US\$1.49) per share, which equates to 1.20 British pounds (US\$1.49). Delek, with natural gas E&P activities in the eastern Mediterranean, already owns 19.7% of Ithaca.

The offer, a premium of about 12% to Ithaca's closing price of C\$1.74 (US\$1.33) on Feb. 3, implies an enterprise value of about \$1.24 billion (US\$947.7 million), Ithaca said.

Ithaca has its headquarters in the Scottish city of Aberdeen and is focused on North Sea oil and gas. The market for North Sea assets has heated up in recent months as oil prices have steadied above \$50/bbl.

Last month Chrysaor Holdings Ltd., backed by private equity, said it would buy many of Royal Dutch Shell Plc's North Sea assets for up to \$3.8 billion. In addition, EnQuest Plc agreed to buy a 25% stake in BP Plc's Magnus oil field.

Delek itself bought a 13.18% stake in Faroe Petroleum Plc, another North Sea operator, for 43 million pounds (US\$53.7 million) in December.

Delek's \$524 million bid for 80% of Ithaca values the company's shares at \$646 million and is conditional upon more than 50% of shares not held by Delek accepting the offer.

"This is a full and fair offer from a very credible buyer who have the financial resources to complete the transaction," Ithaca CEO Les Thomas told Reuters. "They are knowledgeable, they are credible, they can back up the offer and complete the transaction."

### Eco Atlantic's London Listing Will Fund Drilling Offshore Guyana

Eco Atlantic Oil & Gas, a Canadian oil exploration company, will list on London's junior AIM market on Feb. 7, raising 4.8 million British pounds (US\$6 million) to help finance a drilling campaign offshore Guyana with partner Tullow Oil. 20,000,000

Eco Atlantic, which expected to have a market cap of about 20 million British pounds (US\$24.9 million) on Feb. 7, will be the only AIM-listed company with oil assets in offshore Guyana, an area that the U.S. Geological Survey has earmarked as one of the world's top-rated underexplored basins, and where ExxonMobil Corp. already has made a large discovery.

"We want to list now because of our recent Guyana discoveries and our exploration program with Tullow Oil that is set to start at the beginning of the second quarter," Eco Atlantic CEO Gil Holzman told Reuters. "The overall improvement in the oil exploration sector also is helping."

—Staff & Reuters Reports

## UPCOMING

The next issue of *Subsea Engineering News* will be distributed March 9. Until then, visit [epmag.com](http://epmag.com).

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