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DECEMBER 2015 | EXPLORATION | DRILLING | PRODUCTION
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Front cover

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Comment

December 2015

David Bizley, Editor
david.bizley@oilfieldtechnology.com

As one year draws to a close, it is only natural to be looking ahead to the next and wondering what it holds in store. The oil industry is no different in this regard and speculation as to the fate of the oil price continues unabated. The price estimates being shared and discussed across much of the media range from the worryingly pessimistic, right through to the overly optimistic.

Much of the reasoning behind the more pessimistic reports comes from worries about Iran and the likely impact of this major exporter's full return to the field, as it rushes to reclaim market share when sanctions expire next year. Daniel Yergin, Vice Chairman of IHS, commented on this fear that is causing sleepless nights across the upstream industry, "new petroleum supplies are likely to come into the market in 2016. Assuming the nuclear sanctions are lifted on Iran in late winter or spring, Iran could bring what we currently estimate to be another 400 000 to 600 000 bpd within several months. Iran's oil minister pegs the number higher – around a million bpd."[1] Though Yergin doesn't offer any specific examples of where the price might be, back in September Goldman Sachs suggested that prices as low as US$20 might be on the cards;[2] not a pleasing prospect for anyone in the upstream industry. With predictions like this being shared, it is perhaps little surprise that a recent survey showed that of the analysts and investors interviewed, just 21% felt that the oil price had already bottomed out.[3]

For every gloomy prediction, however, there's a more positive one. The U.S. Energy Information Administration has predicted in its 'Short Term Energy Outlook' that Brent crude will make a modest rise, supported by falling US production over 2016, and average US$54 – 56/bbl next year, with WTI on average US$4 lower.[4] Whilst that's not exactly the US$60 that many had been hoping for, it is at least a step in the right direction.

More positive news comes from recent analysis conducted by the Bank of England, which bucks the general consensus and suggests that the oil price decline was actually a result of complex demand factors rather than issues with oversupply. The theory posits that issues with currency exchange rates, specifically China's pegging of the yuan to an increasingly strong US dollar, led to decreased Chinese industrial efficiency and reduced demand for *all* commodities, not just oil.

To quote Steven Kopits, Managing Director of Princeton Energy Advisors, who commented on the report: "There was no weakness in global demand; rather, there was specific weakness in China's industrial sector – the primary purchaser of global commodities – specifically due to China's failure to devalue the yuan in line with the currencies of other US trading partners."[5] According to Kopits, if the Bank of England's model is accurate, prices could rise by as much as US$35 as China adapts to the situation – a devaluation of the yuan might not even be necessary.[6]

Optimistic or pessimistic, there's only so much that these predictions can achieve. I said last month that when it comes to predicting the oil price, "one might almost be better off reading tealeaves." I still stand by that comment; the price of crude oil is impacted by a huge variety of factors and vested interests, many of which have no direct connection to the actual oil industry at all and are subject to change at the whim of equally unrelated external factors.

What the oil and gas industry can do in the meantime is invest in efficiency boosting technologies and processes, reducing production costs, and learning lessons from other industries. It is innovation, forward thinking and the willingness to push technology to its limits that has allowed the oil and gas industry to spread across the globe, unlocking harder-to-reach assets and doing what was previously thought impossible. It is this drive to innovate that will see the industry not just survive the downturn, but come out the other side, stronger and more efficient than before. See you in 2016!

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World news December 2015

Sterling Energy completes acquisition of an interest in Block C-10 offshore Mauritania

Sterling Energy, the AIM listed upstream oil and gas company with interests in Africa, has announced that completion has now occurred under the sale and purchase agreement between its wholly owned subsidiary, Sterling Energy Mauritania Limited (SEML) and Tullow Mauritania Limited (Tullow) to acquire a 13.5% working interest in the production sharing contract for Block C-10, located offshore in the Islamic Republic of Mauritania.

The holders of the PSC are now Tullow (operator, 76.5%), SEML (13.5%) and Société Mauritianienne des Hydrocrabures et de Partimonie Miner (10%).

The PSC, awarded in 2011, is in the second phase of the exploration period (Phase 2) and covers Block C-10, offshore Mauritania, comprising an area of approximately 10 725 km^2. Phase 2 of the PSC is due to expire on 30 November 2017 and has a minimum work obligation of an exploration well.

Block C-10 lies in water depths of 50 to 2400 m with full legacy 3D seismic coverage. Tullow has matured a drill ready Neocomian carbonate prospect in water depths of approximately 100 m. The joint venture anticipates that an exploration well to test this prospect will be drilled in 2017.

The gross cost of the well is likely to be substantially less than the US$77 million (US$11.55 million net to SEML) initially budgeted, given market conditions. Should the joint venture not fulfil the minimum work obligation, the gross liability to the government would be US$7.5 million (US$1.125 million net to SEML).

Rockhopper to merge with Falkland Oil and Gas

According to *The Telegraph,* two Falkland Islands-focused companies are set to merge in a £57 million deal as Rockhopper prepares to buy Falkland Oil and Gas.

The combined assets of these two companies will create an entity that holds the most licenses to drill in the North Falkland Basin, making it more competitive and better able to combat the low oil price environment.

Given both companies' recent exploration successes in the region earlier this year, it is thought that the coast of the Falkland Islands could yield up to 1 billion boe.

The merger, which is waiting on approval from shareholders, will mean that Rockhopper shareholders will own 65% of the company and FOGL investors will retain the remaining 35%. Rockhopper's executives will keep their positions in the company, and FOGL's John Martin and Chief Executive Tim Bushell will join the board as non-executive directors.

Edvard Grieg field achieves first oil

Lundin Petroleum AB has announced that first oil from the Edvard Grieg field in the Norwegian North Sea was achieved on 28 November 2015.

The Edvard Grieg field has commenced production and marks the beginning of a transformational increase in Lundin Petroleum's production levels. Alex Schneiter, President and CEO of Lundin Petroleum commented:

"I am extremely proud that we have delivered first oil from Edvard Grieg on schedule and on budget. This is a remarkable achievement by our Norwegian project team, our contractors and subcontractors that was made possible by the excellent support received from our partners and the government in Norway.

"I am particularly thankful and proud of the people who discovered, executed the development of and are now operating the Edvard Grieg field in an exemplary way."

In brief

Saudi Arabia

Unique Group, an integrated subsea and offshore solution provider, is making its first move into the Kingdom of Saudi Arabia with the opening of two new facilities in Riyadh and Dammam. With the opening of the two new sites, Unique Group aims to signal its commitment to growth in the Kingdom, as well as the wider Middle East.

The Riyadh office is already open, with Dammam to follow shortly in early 2016.

Iran

As Iran prepares for the end of the sanctions that have stifled its energy production, it has revealed a new model of flexible oil and gas contracts to attract foreign investment, which it will pitch to 70 oil and natural gas companies at a two day conference in Tehran.

The event will be attended by executives from oil majors including Total, Statoil, BP and Royal Dutch Shell with whom Iran hopes to secure US$30 billion in investments during the first week of January when all banking and economic sanctions are set to be lifted.

Australia

DOF Subsea has entered into an agreement for the sale of *Skandi Protector* to the government of Australia. Delivery to new owners is expected in Q1 2016 and the sale will release approximately NOK 300 million in liquidity after repayment of debt.

Skandi Protector, of Aker ROV 06 design, was built in 2007 and served under contract with the Australian authorities from 2010 to end of 2014. This year, the vessel has been operated as a subsea project vessel for the Asia Pacific region.

World news December 2015

Diary dates

09 - 11 February, 2015
IP Week
London, UK
E: ipweek@energyinst.org
www.energyinst.org/events/ip-week

03 - 05 February, 2016
Subsea Expo
Aberdeen, UK
E: events@subseauk.com
www.subseaexpo.com

24 - 26 February, 2016
AOG
Perth, Australia
E: aog@infosalons.com.au
www.aogexpo.com.eu

01 - 03 March, 2016
IADC/SPE
Fort Worth, USA
E: jpayne@spe.org
www.spe.org/events/dc/2016

07 - 10 March, 2016
GEO 2016
Manama, Bahrain
E: aridgway@oesallworld.com
www.geo2016.com

Aker Solutions awarded contract by BP

The five year contract is valued at NOK 3.2 billion, with the option of extending the agreement by up to four years. The deal starts early December 2015 just as an existing agreement for similar services is due to expire.

The agreement is for work on the North Sea fields Ula, Tambar, Hod and Valhall in addition to the Skarv deposit in the Norwegian Sea. The work will be managed and executed by Aker Solutions' maintenance, modifications and operations units in Stavanger and Sandnessjøen at the company's fabrication yard in Egersund.

"This contract was won in stiff international and national competition and will help secure jobs on the west coast of Norway as well as provide crucial support for our development of operations further north," said Per Harald Kongel, head of Aker Solutions in Norway. "We're very pleased to continue our strong partnership with BP on the Norwegian shelf."

Contract wins for Wood Group in Iraq

Wood Group has won a new contract to deliver services to one of the world's leading blue-chip international oil companies in Iraq worth approximately US$90 million. Wood Group (WGPSN) will provide project management for an onshore facility under the three year contract, which is effective immediately.

Concept and FEED work for future projects will also be included in the contract, which creates more than 100 new positions and retains 20 jobs. Personnel will be based in Wood Group offices in Iraq and Dubai.

David Buchan, WGPSN's Eastern Europe, Russia, Caspian and Middle East (ERC & MER) managing director said: "This major contract builds on our strong partnerships with clients in Iraq. We look forward to leveraging Wood Group's international knowledge and expertise towards the continued success and development of our client's facility."

Subsea Integrity and Efficiency Conference to focus on the North Sea

According to *Subsea UK,* the North Sea's outlook is on the agenda at the 2015 Subsea Integrity and Efficiency Conference, with speakers set to outline how the latest technological developments can prolong the life of subsea assets.

Jointly organised by Subsea UK and the Society for Underwater Technology (SUT), the one-day event will welcome a line-up of speakers from Douglas Westwood, DNV GL, Proserv, OneSubsea, Trelleborg Offshore, Innospection and Astrimar.

Beginning with a session on the current outlook and prospects for the North Sea, the conference will explore advances in underwater technology, inspection and data collection designed to prolong the safe life of subsea assets and infrastructure and increase production.

Other topics to be covered include the technology and logistical challenges of deepwater developments, the benefits of autonomous vessels over traditional survey vessels and the use of subsea inspection data to reduce cost and risk.

Neil Gordon, chief executive of Subsea UK will chair the afternoon session. He was quoted as saying: "As the subsea sector matures and infrastructure ages, integrity is one of the biggest challenges facing us. Extending the life of assets, reducing risk and operating costs while optimising production have never been so important. This conference aims to tease out the issues and explore new ways of approaching subsea integrity to achieve the ultimate prize of increased efficiency. The subsea sector with its ingenuity and inventiveness will play a major role in sustaining the North Sea industry and this conference will demonstrate that the sector is up for the challenge."

Web news highlights

- Douglas Westwood: North America to feature heavily in a 2016 FPS resurgence
- Protecting the oil and gas industry from email threats
- Seeking new acreage on the NCS
- Montana Exploration increases oil and gas lands to a total of 447 000 acres

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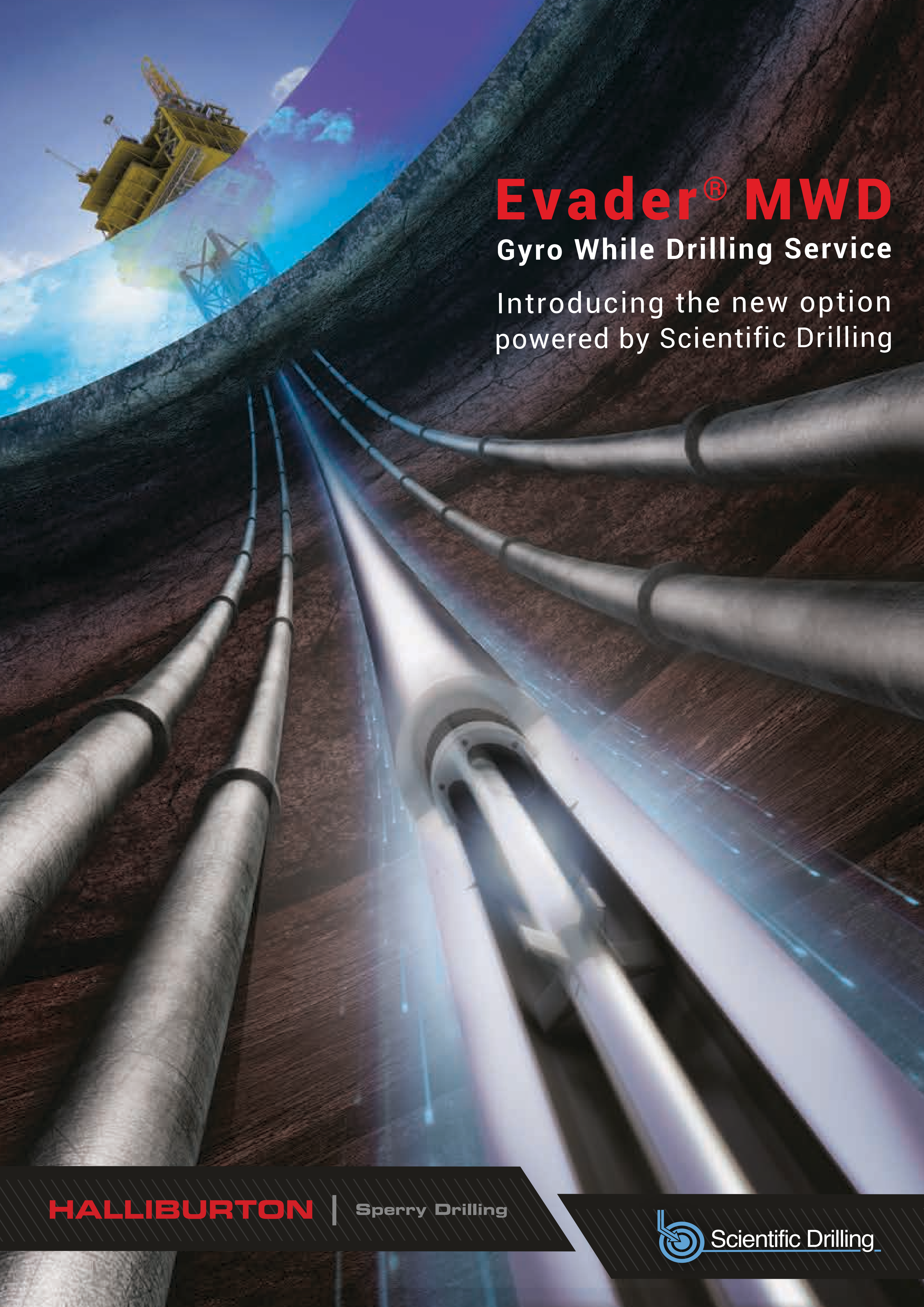

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EPI contract allows GNPC to explore the Voltaian Basin

EPI's Group Ghanaian Joint Venture Company – EPI SonarTusk – has signed a contract to provide project management consultancy to support seismic exploration by Ghana National Petroleum Corporation (GNPC) in the Voltaian Basin. The two-year contract will see EPI support the first onshore exploration in Ghana for nearly 40 years, and is intended to acquire a regional 2D seismic programme within the 104 000 km^2 basin.

The Voltaian Basin covers approximately 40% of Ghana's land mass. It is a sedimentary Neoproterozoic basin, with a number of similarities to areas in North Africa and elsewhere, which are already producing significant volumes of hydrocarbons. Exploration in such a basin carries higher risk than most conventional petroleum plays because of its age and probable geological history. Adding to the challenge is the basin being home to the Volta Lake – the world's largest man-made lake by surface area.

Mr. Alexander Kofi-Mensah Mould, Acting Chief Executive of GNPC, said: "Given the risks associated with the industry, and an onshore area for that matter, we selected EPI to manage our seismic project work because of their proven expertise in seismic exploration. We want to explore and better understand the basin and its potential for development before inviting partners to join us. We are looking forward to working together in close partnership."

Under the terms of the contract EPI will bring together a team of project managers, geophysicists, surveyors, QC consultants and environmentalists to define the scope of work to be carried out. It will then manage a tender process, from creating tender documents, evaluating bids from acquisition companies, and assisting GNPC in the selection and supervision of the chosen contractors. EPI will additionally develop the scope of work to process and manipulate the acquired seismic data, and support GNPC in the selection and supervision of contractors.

Rosneft and BP sell 20% share of Taas

Rosneft and BP have announced the completion of a transaction to sell a 20% share Taas-Yuryakh Neftegazodobycha.

The joint venture will continue further development of the Srednebotuobinskoye oil and gas condensate field which is one of the largest fields in Eastern Siberia. The JV will also undertake the development of suitable infrastructure for further exploration and development of the region's reserves.

The companies' co-operation within the project will contribute to expanding local infrastructure and boosting the production capacity of these Eastern Siberian fields, one of the key regions of Rosneft's business.

Rosneft also plans to select a second partner in Taas-Yuryakh Neftegazodobycha, which is hoped will have positive effect on the project's development in the long term.

DNV GL highlights cyber security vulnerabilities

DNV GL has delivered a study to the Lysne Committee that reveals the top ten most pressing cyber security vulnerabilities for companies operating offshore Norway.

An international DNV GL survey of 1100 business professionals found that, although companies are actively managing their information security, just over half (58%) have adopted an ad-hoc management strategy, with only 27% setting concrete goals.

"Headline cyber security incidents are rare, but a lot of lesser attacks go undetected or unreported as many organisations do not know that someone has broken into their systems. The first line of attack is often the office environment of an oil and gas company, working through to the production network and process control and safety systems," says Petter Myrvang, head of Security and Information Risk, DNV GL - Oil and Gas.

Five-year contract win for Expro in Qatar

International oilfield services company, Expro, has achieved a significant milestone in entering Qatar for the first time and has succeeded in increasing its Middle Eastern presence with a five-year contract win.

Under the contract, Expro is to provide its range of well intervention and slickline services including high deviation and heavy-duty fishing offshore Qatar, as well as in drilling and workover locations in-country.

Tarek Hekal, Senior Area Manager – Middle East, said: "This contract is a key win for Expro in the region as we expand our presence to better serve our clients.

"In current market conditions, Expro recognises the need for operators to lower production costs. We will work closely with operators in the region to bring planning, operational and technical expertise that adds real commercial benefit to the cost of intervention."

Statoil to sell Trans Adriatic pipeline

Following the divestment of its share in the Shah Deniz gas field in Azerbaijan, Statoil is to sell its 20% interest in Trans Adriatic Pipeline AG to the Italian infrastructure company Snam SpA for a total of €208 million.

This amount is for both Statoil's shares in TAP and its pro-quota portion of the loans currently granted to TAP by its shareholders.

The total consideration will be adjusted at closing.

"We are pleased to announce this agreement with Snam which will realise value from our stake in TAP, of which we have been a part owner since 2008. This divestment increases our financial flexibility and is in line with our strategy of portfolio optimisation and capital prioritisation," says Jens Okland, executive vice president for Marketing, Midstream and Processing.

Statoil and Snam have agreed to undertake the transaction provided certain conditions are met. The transaction is expected to close by end 2015.

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WHAT'S UP DOWN UNDER?

David Bizley, *Oilfield Technology*, takes a look at some of the challenges facing the Australian oil and gas industry.

Over recent years, Australia has seen a huge wave of investment into its oil and gas industry, spurred on by growing demand, both globally and in the Asia Pacific region. This surge of investment has seen Australia become host to some of the world's biggest upstream projects, which look set to significantly expand the nation's hydrocarbon output over the coming years.

The majority of investment has been directed towards projects across northern Australia, including Western Australia, Northern Territory and Queensland. A distinguishing feature of these new projects is that they have been designed to make use of the country's significant natural gas reserves and focus predominately on LNG production rather than crude oil. According to Geoscience Australia, the country's reserves are recorded at 132 trillion ft^3, or 11^{th} largest in the global rankings.[1] The scale of these projects can perhaps be best understood when one considers that they are estimated to supply around 100 million t of additional LNG production by the beginning of the next decade. Such an increase would take Australia from 3^{rd} place in global production rankings up to 1^{st} place, overtaking Qatar, which is currently the leading exporter by convincing margin.

However, despite the significant investment of recent years, it's not all plain sailing ahead for Australia's oil and gas industry. A global economic slowdown, Japan's decision to revert back towards nuclear power, and a reduced crude oil price has seen

the profitability of many of the region's major projects take a hit. The International Energy Agency has even announced that no fewer than six major LNG projects, valued at roughly US$200 billion in total, are likely to struggle to break even.[2]

Major project examples

Prelude & Concerto

The Prelude and Concerto fields, situated in the Browse Basin, 200 km offshore Western Australia, will act as host to the very first deployment of Shell's Floating LNG (FLNG) technology. Rather than piping gas to an onshore plant, the Prelude facility will be able to cool and condense natural gas into its liquid form offshore. The key advantage of this system is the ability to move the processing facility to more isolated natural gas reserves that might have been too remote to be economically viable with conventional infrastructure.

Once operational, the Prelude facility is expected to produce 3.6 million t of LNG, 400 000 t of LPG and 1.3 million t of condensate. The facility will be able to store 220 000 m^3 of LNG, 90 000 m^3 of LPG and 126 000 m^3 of condensate. According to Shell, the LNG output from the facility, which is due to be moored on location for 25 years, will be enough to comfortably meet the demand of a consumer like Hong Kong.

Ichthys

The colossal Ichthys project, lies some 220 km off the northern coast of Western Australia. The field, which when first discovered represented the largest hydrocarbon find in Australia for 40 years, contains estimated reserves amounting to 500 million bbls of condensate and 12 trillion ft^3 of natural gas. Once Ichthys is up running at peak output, it should be capable of producing 8.9 million t of LNG and 1.6 million t of LPG and 100 000 bpd of condensate. The field is estimated to have a life-span of approximately 40 years.

However, like many major oil and gas projects in Australia, Ichthys has encountered delays and cost overruns. Earlier this year, INPEX, the operator of the project, announced that development would cost roughly 10% more than the original US$34 billion budget and that initial production would be pushed back from late December 2016 to September 2017.

Gorgon

The Gorgon project, operated by Chevron, covers the Gorgon and Jansz-lo gas fields and is located within the Greater Gorgon area between 130 and 220 km offshore northwest Western Australia. The Greater Gorgon area is estimated to hold approximately 13.8 trillion ft^3 of proven hydrocarbon reserves. Initial production from the 15.6 million tpy LNG plant located on nearby Barrow Island is expected in early 2016.

All of this makes the Gorgon project a giant operation and, according to Chevron, it is "the largest single-resource project in Australian history."[3] In fact, Gorgon was considered to be so significant that an early 2005 version of its 'Draft Environmental Impact Statement/Environmental Review and Management Programme for the Gorgon Development' stated that: "In response to increased revenues and economic growth, governments may increase expenditures, and reduce the average personal income tax rate to keep the ratio of public debt to GDP from falling."[4]

Gorgon also happens to be the world's most expensive LNG project, with total costs amounting to roughly US$54 billion after rising significantly over the development period. These rising costs, coupled with falling LNG prices and an oversupplied market, have taken some of the shine off the optimistic comments from 2005.

The oil price downturn

The downturn in oil prices has hit producers around the world and nowhere has escaped completely unscathed. Australia is certainly no exception to this rule with, as mentioned earlier, some US$200 billion worth of LNG projects likely to struggle to break even over the coming years. Exactly why low oil prices are impacting the profitability of Australian LNG is down to the fact that LNG prices in Asia, a key market for Australia, are indexed against Brent crude.

Origin Energy is one company dealing with the downturn. CEO Grant King said in the company's recent annual report that "While changes in oil price do not have an overly material impact on Origin's current earnings, should these conditions persist for a longer period of time, earnings from Origin's investment in Australia Pacific LNG will be lower than previously estimated."[5] The company has already put in cost-saving measures designed to shave US$1 billion off the Australia Pacific LNG facility, US$650 million of which has been achieved so far, with a further US$350 million to be saved by the end of the 2016 financial year.[6]

Woodside Petroleum, operator of the Browse FLNG project, is also facing challenges posed by the low-price environment, and has been pushing hard to sign up South Korea as a potential customer for future LNG supplies from the project. The company has also attempted to lobby the South Korean government for reduced costs, especially as the vessels to be used on the project are being constructed in South Korean yards; Reinhardt Matisons, Executive Vice President of Marketing was quoted as saying, "We value Korea's support – both in terms of cost reductions and LNG purchases – in achieving a final investment decision."[7]

With Brent crude hovering around the mid US$40s, and no rapid recovery on the horizon, it looks as though the immediate price woes facing the Australian gas industry aren't likely to disappear overnight. Some analysts looking at future crude prices see it rising to no higher than the mid US$70s over the coming decade, meaning that the long-term financial viability of several major LNG projects could be in jeopardy.

Japan's nuclear u-turn

Japan has long been one of Asia's (and the world's) largest LNG importers, relying on the fuel for a significant percentage of its energy needs. Prior to the Fukushima nuclear disaster, which was to result in the nation shutting down all of its nuclear reactors, this figure was in the region of 29%. By the end of March 2015, it had risen as high as 46% or 89 million t of LNG.[8]

Sadly for the LNG market, this trend now looks set to reverse as Japan begins bringing its reactors back online and gradually cutting back on LNG imports until they reach pre-Fukushima levels by 2030.[9] The process is already underway, with the Abe government pushing for nuclear power as a key energy source. Several reactors have already restarted, the first returned to commercial power generation on 10 September. However, it is not just LNG demand that is expected to take a hit; fossil fuels across the board are likely to see reduced Japanese demand, with oil consumption estimated to fall by 80 000 - 100 000 bpd.

Conclusion

The current outlook for many of the major oil and gas projects in Australia is certainly somewhat bleaker than it was a few years ago. The natural gas and LNG markets of Asia, Australia's main export destination, are oversupplied and demand growth has slowed. Mega-projects, such as Ichthys and Gorgon, would now be considered uneconomical and be unlikely to get off the drawing board. Operators of those projects that are already in development are looking at ways to cut costs and get through the downturn.

However, the all-important crude oil price is expected to rise over the next few years. Global demand for hydrocarbons continues to grow, and current low prices will likely drive further consumer demand. Like much of the global oil and gas industry, the focus for operators in Australia now is to cut costs, plan for the long-term and endure the downturn.

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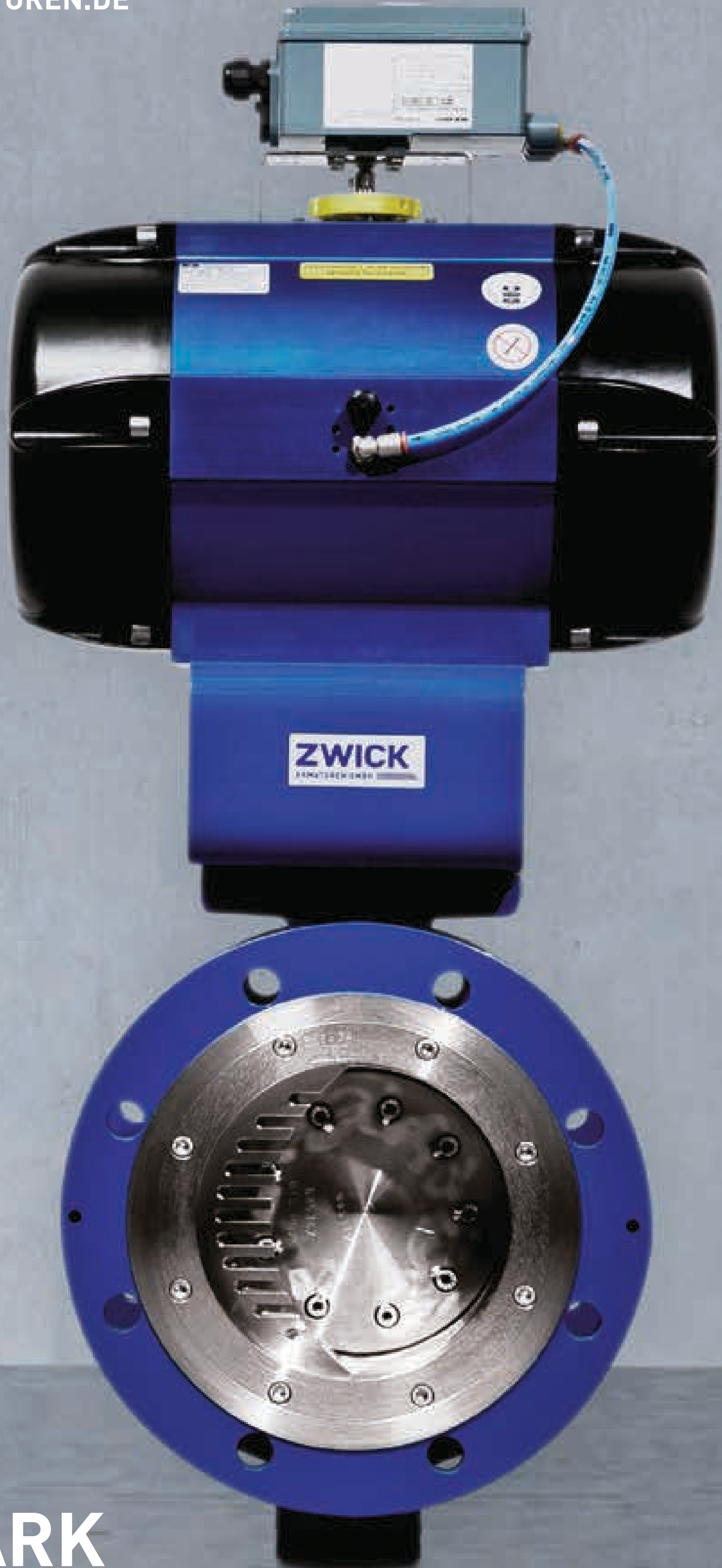


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