www.oilreview.me

Oil Review Middle East

Covering Oil, Gas and Hydrocarbon Processing

VOLUME 18 | ISSUE 5 2015

Critical factors for effective HSE performance

Covering Oil, Gas and Hydrocarbon Processing

UK £10, USA $16.50

- Iran comes in from the cold
- Brightening prospects in Egypt
- The 'tectonic' shifts in global energy
- The evolving landscape of offshore communications
- Tackling wellbore challenges
- Drilling innovations for increased productivity

Oman will be home to one of the world's largest solar plants, to be used for thermal EOR
See page 64

18 Years

Serving the regional oil & gas sector since 1997

ONE CLICK...

... and you will learn everything you need to know to make the right decision for recovering and refining PGMs from your spent process catalysts—quickly, safely, conveniently, and profitably. Visit our new website now, and let us tell you what we can do for you.

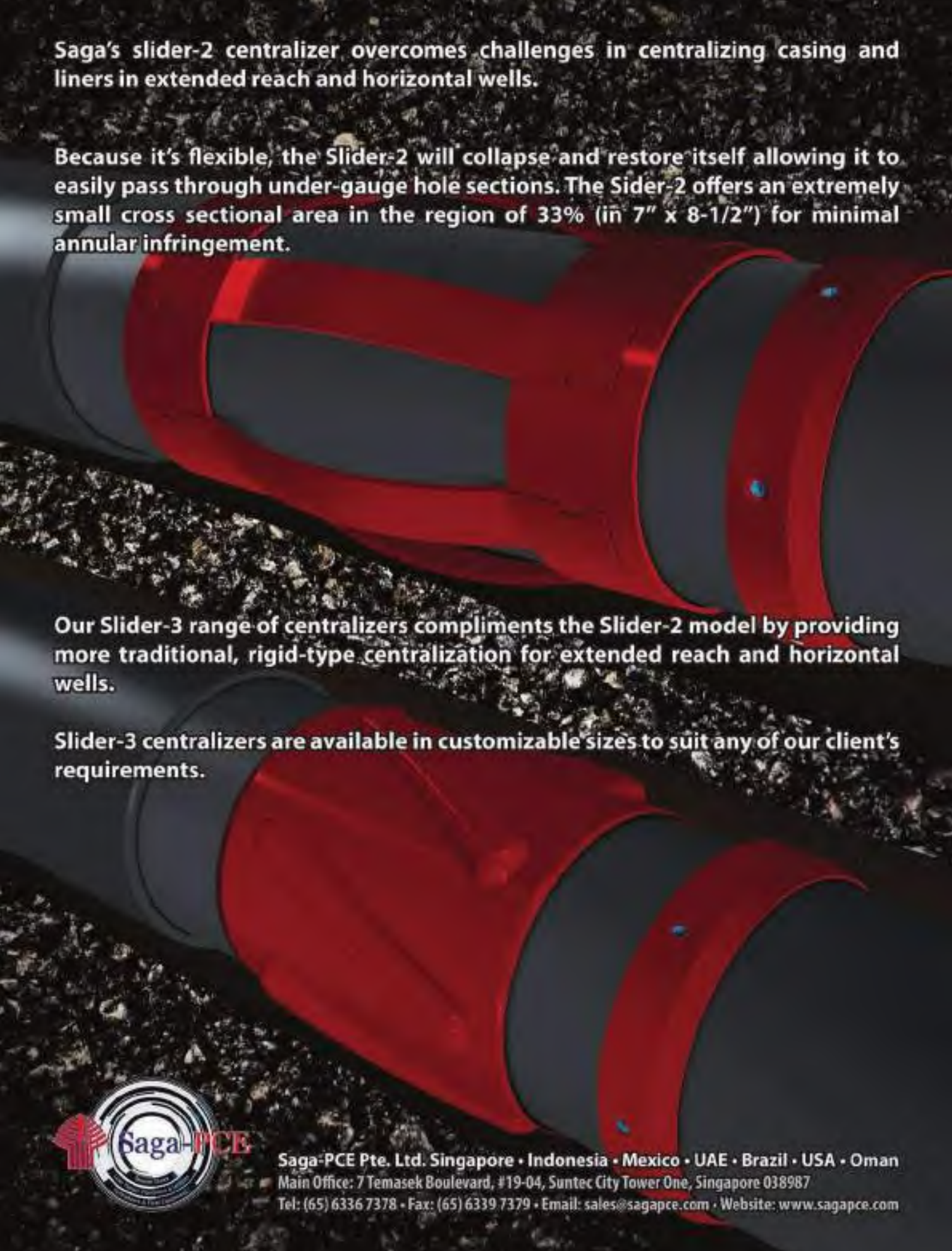
www.sabinmetal.com

sabin METAL CORPORATION

SABIN METAL CORPORATION 70th PLATINUM ANNIVERSARY • 1945-2015

Platinum • Palladium • Rhodium • Ruthenium • Rhenium • Gold • Silver

Processing facilities and technical service offices around the world



Saga's slider-2 centralizer overcomes challenges in centralizing casing and liners in extended reach and horizontal wells.

Because it's flexible, the Slider-2 will collapse and restore itself allowing it to easily pass through under-gauge hole sections. The Sider-2 offers an extremely small cross sectional area in the region of 33% (in 7" x 8-1/2") for minimal annular infringement.

Our Slider-3 range of centralizers compliments the Slider-2 model by providing more traditional, rigid-type centralization for extended reach and horizontal wells.

Slider-3 centralizers are available in customizable sizes to suit any of our client's requirements.

Saga-PCE

Saga-PCE Pte. Ltd. Singapore • Indonesia • Mexico • UAE • Brazil • USA • Oman
Main Office: 7 Temasek Boulevard, #19-04, Suntec City Tower One, Singapore 038987
Tel: (65) 6336 7378 • Fax: (65) 6339 7379 • Email: sales@sagapce.com • Website: www.sagapce.com

➔ Editor's note

THE RECENTLY RELEASED second quarter results of international oil companies show significant losses, although they have to some extent been mitigated by higher refining margins and capital efficiencies. With the oil price creeping ever lower, many are planning for a prolonged period of depressed oil prices with further cost-cutting on the cards; Shell, for example, has announced it is to shed 6,500 jobs.

While the prospect of increased production from Iran may be exerting a downward pressure on the oil price, the country offers huge potential opportunities as it seeks to rebuild its oil and gas industry following several years of sanctions (see p18), and we are already seeing some of the major international oil companies beating a path to its door. In future issues, we will be looking to bring you advice and information on how best to go about doing business with this exciting market, once sanctions are lifted.

➔ Contents

Front cover image:
Fotobug11/Shutterstock
Back cover image:
Zorandim/Shutterstock

Oil Review Middle East
Covering Oil, Gas and Hydrocarbon Processing

Alain Charles Publishing
Serving the world of business

Editor: Louise Waters - ✉ louise.waters@alaincharles.com

Editorial and Design team: Bob Adams, Prashant AP, Hiriyti Bairu, Sindhuja Balaji, Andrew Croft, Thomas Davies, Ranganath GS, Tom Michael, Rhonita Patnaik, Prasad Shankarappa, Zsa Tebbit, Lee Telot and Ben Watts

Publisher: Nick Fordham

Publishing Director: Pallavi Pandey

Magazine Sales Manager: Graham Brown
✆ +971 4 448 9260 🖷 +971 4 448 9261
✉ graham.brown@alaincharles.com

International Representatives

China **Ying Mathieson**
✆ (86) 10 8472 1899 🖷 (86) 10 8472 1900
✉ ying.mathieson@alaincharles.com

India **Tanmay Mishra**
✆ (91) 80 65684483 🖷 (91) 80 40600791
✉ tanmay.mishra@alaincharles.com

Nigeria **Bola Olowo**
✆ (234) 8034349299
✉ bola.olowo@alaincharles.com

UK **Steve Thomas**
✆ (44) 20 7834 7676 🖷 (44) 20 79730076
✉ stephen.thomas@alaincharles.com

USA **Michael Tomashefsky**
✆ (1) 203 226 2882 🖷 (1) 203 226 7447
✉ michael.tomashefsky@alaincharles.com

Head Office:
Alain Charles Publishing Ltd
University House, 11-13 Lower Grosvenor Place, London SW1W 0EX, United Kingdom
✆ +44 (0) 20 7834 7676 🖷 +44 (0) 20 7973 0076

Middle East Regional Office:
Alain Charles Middle East FZ-LLC
Office 215, Loft 2A, P.O. Box 502207, Dubai Media City, UAE
✆ +971 4 448 9260, 🖷 +971 4 448 9261

Production: Priyanka Chakraborty, Nikitha Jain Nathanielle Kumar, Donatella Moranelli and Sophia Pinto - ✉ production@alaincharles.com

Subscriptions: ✉ circulation@alaincharles.com

Chairman: Derek Fordham

Printed by: Emirates Printing Press, Dubai.

Printed in: August 2015

abc

www.oilreview.me
email: oil@alaincharles.com

JOTUN

Jotachar

the time saving solution

Mesh-free Jotachar wins on time and cost savings

Chosen for Passive Fire Protection projects across the globe

Tested under the toughest conditions, 350kw/m² Jet Fire Test

Jotachar, the first mesh-free epoxy Passive Fire Protection for all jet fire scenarios, provides rapid constructability and is approved by leading Classification Societies.

jotun.com

The drive for best practice in **health and safety**

Ahead of the *Middle East Health & Safety Forum* to take place in Dubai in September, event director Riad Mannan seeks speakers' views on the region's HSE challenges.

WITH WORKPLACE HEALTH and safety becoming a key priority for GCC governments, organisations across all sectors need to have the right strategies in place and ensure best practice.

The new chair of hte Institution of Safety & Health (IOSH) UAE, Ahmed El Hadidi, notes, "Despite the variations, we can say that there is progress on awareness and implementation. The maturity level depends on each country, but in general there is a positive trend towards a conscious attitude in considering employees' and workers' health and safety."

From oil and gas through construction, industrial, manufacturing and the marine sector, safe working practices are key to all segments of the regional economy. While great strides have been made in recent years to ensure better HSE conditions for workers and the public, it is essential that modern health, safety and environmental management be fully incorporated and integrated into businesses.

However, barriers remain to achieving best practice, not least around securing buy-in from organisational leaders. As Saleh Ali Saleh, HSE director of shared services at TECOM Investments puts it, "In some organisations the top management has to be convinced of the benefits of HSE from an economic point of view."

> "Barriers remain to achieving best practice"

Better communications between leaders, senior management, supervisors and the workforce can lead to better HSE practices, but this has to come from the top, and hence intertwining business strategy and safety strategy has become more critical. According to Saleh, "Leaders should not consider the HSE department as something of a luxury for the company or as adding extra costs."

Another continuous challenge is the age-old issue of embedding and maintaining a strong HSE culture into the workplace community. At the outset, defining what a positive safety culture is can be problematic, particularly given the different backgrounds of the GCC workforce. HSE professionals have to understand the different safety behaviours and competencies of staff who often come from different parts of the world.

Communications are key to embedding a positive safety culture but, as Ismail M. Ahmed, superintendent safety & occupational hygiene at BAPCO, observes, "One of the key challenges is maintaining that positive HSE culture once attained. Overcoming such a challenge is not straightforward – it mainly requires breaking the communication barriers not only between the HSE legislators and the employers but also between all levels of management and employees within the organisation."

Much progress has been made throughout the region in achieving better HSE conditions (Photo: Lindsey G)

But by having strong safety credentials and practices, organisations can use HSE as a tool to differentiate themselves from the competition. As El Hadidi notes, "Good health and safety performance should be a tool to strengthen the reputation, resilience and overall performance of any company."

Linking tangible HSE benefits and gaining buy-in from the leadership, Mohammad Abdulrazaq Alawadhi, general manager – HSEQ & Business Excellence at DryDocks World comments, "Convincing company leaders of the benefits of having a positive HSE culture can in itself lead to more commitment and support by company leadership."

Having a holistic approach to safety, whist aligning it with corporate structure, is another challenge that many organisations face. Issues around silo mentality, efficient communications and effective trust all come in to play.

These are challenges that can be overcome, and experts are optimistic about the future of HSE in the region. ■

The Middle East Health & Safety Forum, taking place on 6-7 September in Dubai, will provide a platform for sharing knowledge and expertise on these and other issues. The event will include four panel discussions highlighting HSE leadership; implementation of safety strategies in complex work environments; the latest regulations and compliance issues; and how to foster better behavioural-based safety practices. Supported by IOSH, IIRSM, CIEH, FCIA and the EPSC, the event will also include 12 hands-on practical workshop options led by Dubai and Abu Dhabi Municipalities. See the website at http://www.hse-forum.com.

Production wells scattered across several thousand square kilometres.
And one is going to shut-in tomorrow.

IT'S IMPOSSIBLE

If only I knew which one...

Smart Well Management from Emerson puts protective eyes and ears in the field even when no-one is around. Now, instead of managing well pad inspections and maintenance by calendar and possibly missing a shut-in hundreds of kilometres away, even your most remote wells can tell you when they need attention with time to respond. This means better production performance, greater utilisation of your field personnel and mitigating safety risks to them in hazardous and remote locations. If you want your personnel focussed on the highest value problems, making a difference every time they go into the field, then visit **www.EmersonProcess.com/SmartField** or e-mail **mea.marcom@Emerson.com**

EMERSON™
Process Management

EMERSON. CONSIDER IT SOLVED™

➔Executives' Calendar 2015

SEPTEMBER 2015			
6-7	**Middle East Health & Safety Forum**	DUBAI	www.hse-forum.com
8-11	**Offshore Europe**	ABERDEEN	www.offshore-europe.co.uk
9-10	**22nd Annual IORS**	MUMBAI	www.oilasia.com/IORS
15-17	**MEPEC**	MANAMA	www.mepec.org
5-17	**Global FPSO Forum**	GALVESON, USA	www.emergingfpso.com
23-24	**Global Oil & Gas Black Sea and Mediterranean Exhibition and Conference**	ATHENS	www.global-oilgas.com/BlackSeaMed
OCTOBER 2015			
6-7	**Oil & Money**	LONDON	www.oilandmoney.com
11-13	**Data Driven Visualisation Technology Workshop**	ABU DHABI	www.ppdm-course.com
11-14	**Kuwait Oil & Gas Show**	KUWAIT	www.kogs2015.com
18-20	**Plastics & Petrochem Arabia**	DAMMAM	www.plaschem.4p-arabia.com
19-21	**Negotiation in Oil & Gas**	DOHA	www.cwcschool.com
25-27	**Second HR Forum: Oil & Gas**	DUBAI	www.hrforumoilandgas.com
27-30	**Gastech**	SINGAPORE	www.gastechsingapore.com
NOVEMBER 2015			
9-12	**ADIPEC**	ABU DHABI	www.adipec.com
23-25	**Saudi Arabia International Oil and Gas Exhibition**	DAMMAM	www.saoge.org
24-26 November	**Intergas**	CAIRO	www.intergas-egypt.com
25-26	**Middle East Heavy Oil Congress**	MANAMA	www.meheavyoil.com
30 Nov - 2 Dec	**KIOG**	ERBIL	www.cwckiog.com

Readers should verify dates and location with sponsoring organisations as this information is sometimes subject to change.

MEPEC 2015 to facilitate exchange of expertise on process engineering challenges

THE 3RD MIDDLE East Process Engineering Conference & Exhibition (MEPEC 2015) will be held from 15 to 17 September, 2015 at the Bahrain International Exhibition & Convention Centre, Kingdom of Bahrain, under the Patronage of His Royal Highness Prince Khalifa bin Salman Al Khalifa, Prime Minister, Kingdom of Bahrain.

With the theme of 'Delivering Process Efficiency through Innovation and Value Creation', the event will provide a forum for facilitating the exchange of practical experiences in all aspects of process engineering, in addition to seeking solutions to the various challenges that process engineers face. Some of the main topics that will be addressed during the technical programme of the conference are Process Synthesis, Modelling and Optimisation, Process and Equipment Design, Process Retrofitting, Debottlenecking and Constraint Management, amongst others.

The event will address the growing needs of the oil, gas and petrochemical industries (Photo: Shell)

The leading processing engineering conference in the oil and gas industry, MEPEC 2015 will attract hundreds of international companies, professionals and scientists. It will provide a forum for regional and international operators and owners as well as technology, product and service providers to connect, network and discuss how to develop innovative ideas and feasible solutions that will address the growing needs of the oil, gas and petrochemical industries, both upstream and downstream.

Alongside MEPEC will run the Leadership Excellence for Women Awards (LEWA), an award programme dedicated to recognising excellence for women in the oil and gas industry, which will celebrate innovation, leadership, achievement and talent as demonstrated by women in the academic and business sectors of the industry. While students are catered for by the ChemME programme, which will foster the participation of young people in process engineering, providing a forum for students to share ideas and meet with industry leaders.

For further information see the website at www.mepec.org

ResFlow MP Float

MULTIPOSITION SLEEVE ICD

Multiposition ICD eliminates washpipe or float liner, allows fluid displacement, and manages fluid inflow.

The ResFlow MP Float* multiposition sleeve ICD eliminates the need for washpipe or float liner—saving rig time and service-related costs. With no washpipe, the assembly is lighter and able to run to TD in highly deviated, extended-reach wells.

The ResFlow MP Float ICD features a multiposition sliding sleeve, which is activated by pressure cycles without intervention, giving it the flexibility for a range of applications—from stimulation and injection to inflow control.

Find out more at

slb.com/resflow

Schlumberger

Upstream contracting awards pick up in Q2 despite overall fall in oil and gas activity

THE LATEST ENERGY Industries Council (EIC) Monitor quarterly report shows a further decline in contracting activity across the global oil and gas midstream and downstream sectors in Q2 2015 as the industry faces up to low oil prices. The number of major contract awards contracted by 17 per cent from the previous quarter and by 39 per cent from the same quarter a year earlier, says the report. More positively, however, is a quarterly rise of 20 per cent in the number of upstream awards, although these, too, were down year on year by 71 per cent.

Upstream, from a regional perspective, Brazil and Norway were hotspots of activity in the last quarter, together accounting for 13 engineering procurement and construction (EPC) contracts. However, there was also significant activity in Oman, with four EPC contracts awarded: three for work on BP'S Khazzan and Makarem Gas Fields and one for state-run PDO's Yibal Khuff Sudair Integrated Enhanced Oil Recovery Project. As part of its Khazzan & Makarem tight gas development, BP appointed Galfar Engineering & Contracting to build a gas gathering system; Oman Construction Company to build a 60km 36" gas export pipeline; and Gulf Petrochemical Services & Trading to build a 68km 12" condensate export pipeline in the last quarter. Nearby in Yibal, PDO awarded Petrofac a four-and-half-year EPC contract for work at its Yibal Khuff Sudair integrated enhanced oil recovery project.

Midstream, the USA dominated activity, both in EPC and front end engineering design (FEED), particularly in relation to shale gas. There was also significant activity in Russia. Overall midstream activity decreased 44 per cent from the previous quarter.

The USA and Russia continued to dominate downstream activity in Q2, namely EPC and FEED activity. However, most project management contract activity in the last quarter has been in the Middle East and the Caspian

region, where four out of the five contracts were awarded. In Oman, ORPIC awarded MAN Diesel & Turbo a contract to overhaul and revamp the residue fluid catalytic cracking unit on its Sohar refinery improvement project. In Saudi Arabia, Jacobs Engineering will provide PMC services for all phases of InoChem's soda ash (sodium carbonate) and calcium chloride plant in Yanbu Industrial City.

There was further refinery improvement activity in Iraq, where South Refineries Company appointed a joint venture between Technip and Unico a contract to project manage the EPC work, commissioning, start-up and warranty management phase for its Basra Oil refinery rehabilitation and expansion in the south of the country.

Algeria increases crude oil production by 32,000 bpd

ALGERIA HAS INCREASED its crude oil output by 32,000 bpd after initiating production at the Bir Sebaa and Bir Msana fields in the Hassi Messaoud area.

According to a Reuters survey, Algeria produced 1.1mn bpd last month. Production increased on 1 August 2015 when the Bir Sebaa field began producing 20,000 bpd in addition to the 12,000 bpd from the Bir Msana field, added Reuters.

Algeria has been trying to procure foreign investment in oil production (Photo: DaniSimmonds/sxc.hu)

State-owned energy firm Sonatrach holds a 25 per cent stake in the Bir Sebaa field, Thailand's PTTEP owns 35 per cent and Petrovietnam owns 40 per cent. Reserves in the field are estimated at 758mn barrels.

Meanwhile, in the Bir Msana field, Sonatrach owns a 25 per cent stake, Malaysia's Petronas holds 35 per cent and Spain's Cepsa 40 per cent. Reserves are at 144mn barrels.

The North African nation has been trying to procure foreign investment in a bid to increase oil output that has stagnated over the recent few years. Only four out of 31 blocks were offered during a bidding round held in September 2014.

However, Sonatrach stated that it would stick to its plan to invest US$90bn over the next five years in the oil and gas sector, despite a crude oil price slump on global markets.

Shaikan oilfield production to hit 40,000 bpd by end 2015

GULF KEYSTONE HAS announced that the production at the Shaikan field in Kurdistan Region of Iraq will remain between 36,000 and 40,000 bpd until end-2015.

The announcement follows a five-week suspension of production operations at the end of Q1 2015, which was caused by adverse market conditions, according to Gulf Keystone.

As a result of the halt in operations at the start of the year, the production average for this year is expected to be between 30,000 and 34,000 bpd. Gulf Keystone is the operator of the Shaikan field and a new daily production record of 44,600 bpd was reportedly achieved at the field on 21 June 2015 and the cumulative production from Shaikan has now surpassed 13mn barrels of oil. The company also stated that it continues to make progress towards a regular payment cycle for its current production. Further to a payment of US$4.9mn gross received beginning of July 2015, an additional payment of US$6.7mn gross has been received recently by Gulf Keystone for crude oil exported in June 2015 to the Turkish coast.

Oman's oil production and export volumes increase

OMAN'S OIL PRODUCTION has increased by 2.9 per cent to touch 175,672,200 barrels in the first half of 2015, compared to 170,802,400 barrels during the same period last year, according to the data published by the National Center for Statistics and Information (NCSI).

According to the sultanate's Ministry of Oil and Gas, production is expected to hit one million barrels per day in 2015. The peak average daily production this year stood at 992,700 barrels. Peak monthly production was recorded in March with 30,275,400 barrels with an average daily production of 976,600 barrels.

China remains the top importer of Omani crude oil (Photo: Troy Stoi/sxc.hu)

Oman's total oil exports during the first half of the year increased by 7.6 per cent compared to the same period last year. The total exports stood at 154,865,100 barrels compared to 143,875,000 barrels during the first half of last year and 148,285,400 barrels during the second half of 2014. China was the at the top of Oman's crude oil import list, with 79 per cent or 122,283,200 barrels - a growth of 21.1 per cent compared to the same time period last year. Taiwan's imports of Omani crude oil increased by 16.8 per cent to hit 17,188,500 barrels compared to 14,714,100 barrels during the first half of last year. Thailand came third with 5,713,200 barrels and Japan came fourth with 3,241,900 barrels, despite the fact that its imports declined by 67.7 per cent during the first half of this year. Other main importers of oil from Oman include South Korea, India and Singapore.

'Iran's oil output to increase post lifting of sanctions'

AFTER SANCTIONS ARE lifted, Iran's oil output could increase in just one week, the country's oil minister, Bijan Namdar Zanganeh, has announced.

Production will increase by 500,000 bpd within a week, and one million bpd within a month of the lifting of sanctions, which is expected to come into effect late November, said the minister. However industry views differ as to how quickly Iran could ramp up production.

According to Bloomberg, oil producers such as BP and Royal Dutch Shell have expressed interest in developing Iran's reserves, considered the world's fourth-biggest, once sanctions are removed. In addition, Iran is organising a conference in London in December to discuss new oil contract models with international companies. According to Dr Amir Hossein Zamaninia, Iran's deputy oil minister for commerce and international affairs, Tehran has idenitifed nearly 50 oil and gas proejcts worth US$185 bn that it hopes to sign by 2020.

Iran's production is expected to rise after sanctions are lifted (Photo: Darren J. Bradley/Shutterstock)

Iran had the second-biggest output in OPEC before USA-led sanctions banned the purchase, transport, finance and insuring of its crude from July 2012.

Based on Bloomberg estimates, Iran produced nearly 2.85mn bpd in July compared to 3.6mn bpd at the end of 2011. The sanctions hampered Iran's crude oil exports – they declined to 1.4mn bpd on average last year due to sanctions, said USA's Energy Information Administration (EIA). Sales averaged about 2.6mn bpd in 2011 prior to the sanctions sanctions, added the EIA.

The buzz around Iran's production capabilities has only grown. Recently, Azerbaijan's economy and industry minister Shahin Mustafayev said that the country would offer Iran its infrastructure to export oil and gas, in particular the Baku-Tbilisi-Ceyhan (BTC) pipeline. In the future, Iran could join the Trans Anatolian Natural Gas Pipeline (TANAP) project as well, he added.

THE FIRST SEAMLESS PIPE MILL IN MIDDLE EAST

Jubail Energy Services Company (JESCO) with the most modern state-of-the-art technology produces OCTG and Line pipe carbon steel seamless pipes with diameters ranging from 5 ½" up to 16" with annual capacity of 400,000 MT.

For Regional and International Sales: sales@jesco.com.sa

Subsidiary of Industrialization & Energy Services Co. طاقة TAQA

Duferco is exclusive exporter to international market

Egypt awards five oil and gas concessions for US$100mn

Egypt is keen to increase local oil production (Photo: KateyHouston/sxc.hu)

EGYPT HAS AWARDED five oil and gas concessions, expected to bring in at least US$100mn in investments, said the country's oil ministry.

A consortium comprising Pacific and Hibiscus Petroleum will explore the 68 sq km area in the Southeast Ras el-Ush concession in the Gulf of Suez, with a minimum investment of US$68mn, added the ministry. Kieron Megawish will explore in the 194 sq km North Megawish concession in the Gulf of Suez, with a minimum investment of US$23mn. Three other concessions were awarded with minimum investments of US$7mn.

State-owned Ganoub El Wadi Petroleum Holding Co (Ganope) opened bidding at the end of 2014 on 10 concessions in the Gulf of Suez, Eastern Desert and west and east of the Nile in the areas of al-Naqra and Kom Ombo.

The North African nation has become a net energy importer following political turmoil. Now, it wants to boost local production in a bid to regain its economic growth curve, stated a report in Reuters.

Lebanon could be a frontier oil and gas province

US-BASED NEOS HAS announced that a frontier oil and gas province could be emerging in Lebanon, after completing prospective studies in the country. The company, which specialises in multi-measurement sub-surface interpretation, has interpreted geoscience datasets and identified several indicators of a hydrocarbon system.

The results have emerged after the company carried out the neoBASIN study to evaluate the prospects in the 6,000 sq km area onshore in the northern half of the country. NEOS president and CEO Jim Hollis said, "Given that only seven wells have ever been drilled in Lebanon, I believe the potential upside from additional exploration – including drilling – is huge."

Based on the results, there is evidence of hydrocarbon-generating source rock and oil seeps, structural traps with resistivity anomalies and multiple 'stacked' play types throughout the project area. NEOS is developing plans to acquire additional data, including seismic over the most promising structures, to further de-risk the opportunity and to secure the capital needed to drill the most promising locations, revealed Hollis.

Iraq leads OPEC's highest supply figures in three years

RECORD OR NEAR-RECORD oil output from Iraq and Saudi Arabia has resulted in OPEC's oil supply reaching a three-year high, with the biggest increase coming from Iraq.

OPEC supply rose to 31.60mn bpd in June from a revised 31.30mn bpd in May, according to a *Reuters* survey. Despite outages in Libya and Nigeria, output inched ahead of the the OPEC target of 30mn bpd. The group has raised output by more than 1.3mn bpd since it decided to defend market share rather than prices. The latest results underline the focus of the group's top exporters on market share.

Iraq split its crude stream into two grades for export this year (Photo: Panbrazil/Shutterstock.com)

Iraq exports jumped to three million bpd after the country split the crude stream into two grades – Basra Heavy and Basra Light – to resolve quality issues. Some companies have since increased production. Shipments from Iraq's north via Ceyhan in Turkey had remained steady despite tensions between Baghdad and the Kurdistan Regional Government (KRG), although they have since been disrupted by sabotage. Major OPEC exporter Saudi Arabia has not scaled back output from May's record as Riyadh is expected to meet higher demand internationally and from domestic power plants and refineries. Kuwait's output was reduced slightly as a result of the shutdown of the Wafra oilfield, shared by Saudi Arabia and Kuwait.

Saudi Aramco launches carbon capture project

SAUDI ARAMCO HAS launched its first carbon capture and enhanced oil recovery project, which is expected to mitigate the release of CO_2 into the atmosphere.

Carbon capture and sequestration is a process that entails the capturing of waste CO_2 from power plants, storing and depositing it underground, from where it cannot escape into the atmosphere. Saudi Aramco has stated that the carbon capture project is the largest of its kind in the Middle East.

The pilot project will see 40mn standard cubic feet per day (scfd) of CO2 being captured at the Hawiyah gas recovery plant and piped 85 km to the 'Uthmaniyah field. At 'Uthmaniyah, it will be injected and sequestered/stored in flooded oil reservoirs under high pressure to enhance oil recovery, stated Saudi Aramco.

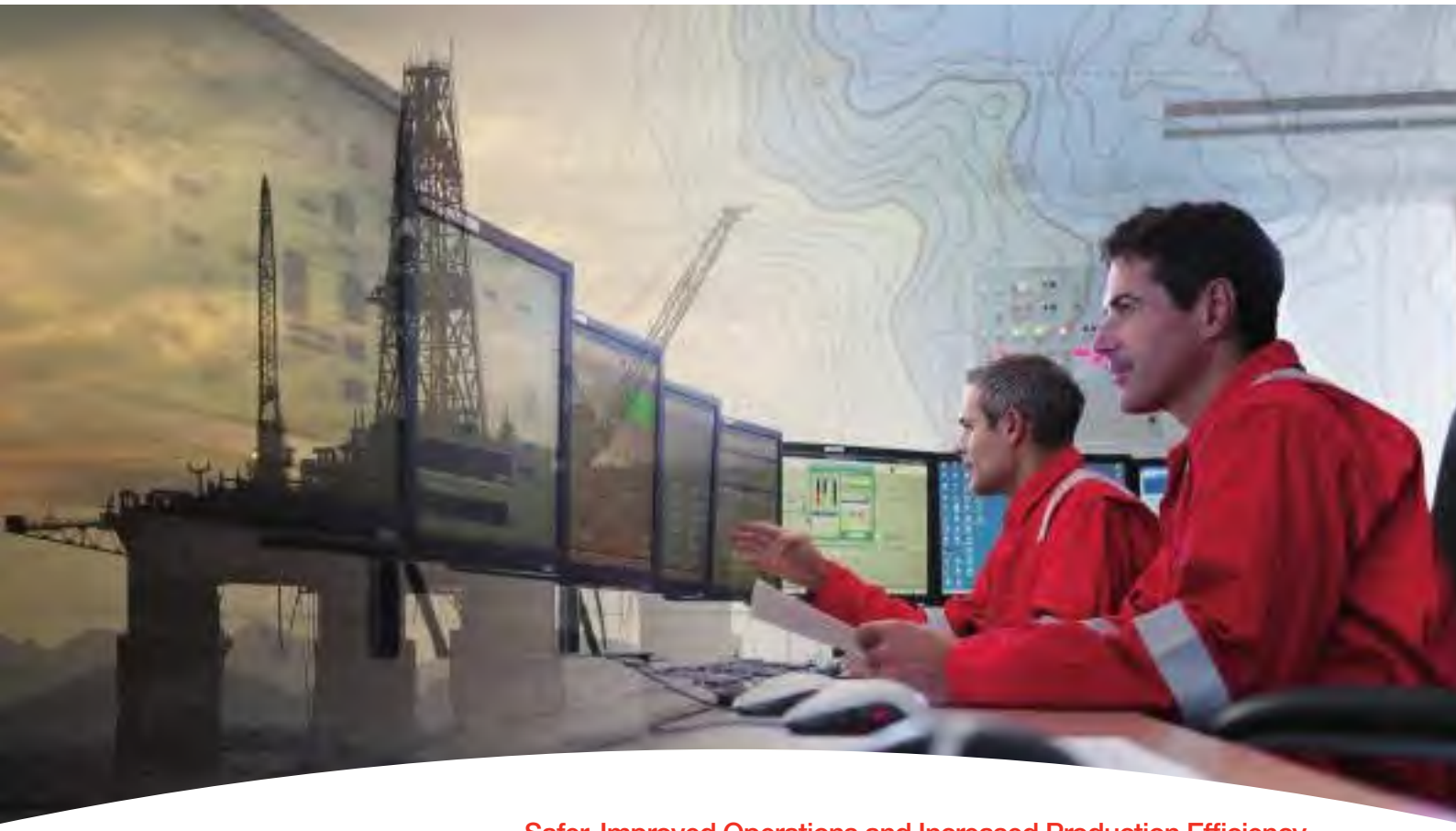
Near the 'Uthmaniyah field, a new standalone high pressure production trap, compressor and associated facilities for handling high concentrated CO2 production streams have been built. This gas-oil separation plant – GOSP – is where the monitoring of produced fluids will take place, and where Saudi Aramco engineers will ensure that as much of the CO_2 as possible remains sequestered underground.

The new method of EOR will focus on lowering the carbon footprint (Photo: Chase Clausen/Shutterstock.com)

Saudi Aramco acting president and CEO Amin Nasser said, "This breakthrough initiative demonstrates that we are part of the solution to proactively address global environmental challenges. Saudi Aramco is carrying out extensive research to enable us to lower our carbon footprint while continuing to supply the energy the world needs."

The project, led by the company's EXPEC Advanced Research Center, aims to enhance oil recovery beyond the commonly-used method of water flooding.

dare to discover



Safer, Improved Operations and Increased Production Efficiency.

Honeywell offers a full range of integrated solutions to enhance safety, reliability and production efficiency for your offshore operations. Honeywell's portfolio of universal I/O, distributed architecture systems with advanced visualization, operator training simulation, and measurement and control solutions helps offshore customers integrate their operations protecting both people and assets while keeping CAPEX and OPEX down. With Honeywell's new software suite, upstream producers can improve production performance up to 5% resulting in better productivity, higher uptime and more efficient remote operations. All around the globe, Honeywell customers are safer and their operations are more profitable because of Honeywell's integrated solutions.

Discover More with Honeywell.

Honeywell

Visit us at SPE Offshore Europe, Stand 2B50.

For more information about our Offshore Production solutions visit **www.honeywellprocess.com/oilandgas**

Subsea 7 awarded BP contract offshore Egypt

SUBSEA 7 HAS been awarded a contract worth US$500mn by BP and partner DEA for the development of the Taurus and Libra subsea fields offshore Alexandria, Egypt. The work scope includes the engineering, procurement, installation and pre-commissioning of subsea infrastructure required to develop the hydrocarbon resources from nine wells, including 75 km of umbilicals and 100 km of pipeline.

Fabrication of the subsea structures and spools will be carried out at the Petrojet Maadia yard near Alexandria.

The contract is part of the first phase of the West Nile Delta field development (photo: Maersk)

The offshore installation is scheduled to commence in the second half of 2016 using the Subsea 7 pipelay vessel – Seven Borealis – and heavy construction vessel – Seven Arctic.

According to the company, engineering and project management work will commence immediately and will be undertaken at Subsea 7's Global Projects Centre in London. The contract is part of the first phase of Egypt's West Nile Delta Field development.

Eni makes new discovery in Egypt

ITALIAN OIL AND gas explorer Eni has discovered significant gas reserves in the Nile Delta and production is set to begin in two months, the Egyptian Oil Ministry has announced.

The discovery was made in Western Abu Madi, 120 km northeast of Alexandria, where the company holds 75 per cent of exploration rights through an Egyptian subsidiary with Britain's BP holding a 25 per cent stake.

Eni made the discovery at a depth of 3,600 metres and initial estimates point towards reserves of up to 15 billion cubic metres of natural gas and natural gas condensate, an Egyptian oil ministry statement quoted the company as saying.

Egypt's minister of petroleum and mineral resources Sherif Ismail and Eni's CEO Claudio Descalzi have also recently signed a contract that describes the commitment of the parties to jointly evaluate the development opportunities of the discovery by renegotiating the terms and contract extension of the concession.

According to both parties, the agreements marked an attempt by Egyptian authorities to improve terms for foreign oil and gas businesses to encourage investment in the North African country.

Carillion Alawi wins Oman gas contract

A SUBSIDIARY OF UK construction firm Carillion has announced that it has been awarded a US$124.6mn contract by BP for the Khazzan gas project in Oman

According to Carillion Alawi, the deal centres on plans to build the operational base and accommodation complex for the project.

The contract involves the construction of accommodation facilities, including an operational base, a residential complex for 250 personnel and other infrastructure buildings in the Khazzan gas field, approximately 350 km south west of Muscat.

Work on the contract is expected to start in September 2015 and is scheduled for completion in mid 2017.

The Khazzan tight gas field project represents the first phase in the development of one of the Middle East region's largest unconventional tight gas accumulations, which has the potential to be a major new source of gas supply for Oman for many decades.

The project involves drilling around 300 wells over the next 15 years and will achieve production of around 28.3mn cu/m of gas per day, equivalent to an increase of around one-third of Oman's total daily domestic gas supply.

Firms submit bids for Saudi gas plant

ENGINEERING FIRMS HAVE submitted bids for the construction of the Al Fadhili gas plant in eastern Saudi Arabia.

Some firms such as South Korea's Daelim Industrial and Hyundai Engineering and Construction, as well as UK's Petrofac have submitted individual bids, while others such as South Korea's GS Engineering and Construction with Spain's Tecnicas Reunidas, Italy's Saipem with Japan's JGC and South Korea's Samsung Engineering with Daewoo E&C, have submitted joint bids.

The new plant, which is being developed by Saudi Aramco, will have a processing capacity of 2.5bn standard cubic feet per day (scfd) of sour gas from the onshore Khursaniyah and offshore Hasbah fields, said Reuters.

The new plant will have a processing capacity of 2.5bn scfd

The project construction will be split into three major packages – gas processing unit, utilities and offsite facilities for steam, nitrogen, power and water systems and sulphur recovery.

Industry sources said that it usually takes around two months to evaluate bids for projects after they are submitted.

The Al Fadhili gas plant, along with Saudi Aramco's other gas projects in Wasit and Midyan, are expected to add more than five billion scfd of non-associated gas processing capacity, which will help the company meet the rising domestic demand for electricity generation and further enable opportunities in industries such as steel, aluminium, petrochemicals and downstream value-added industries.

GENAVCO

Your Perfect Partner

All you need is...

Complete Package...
Complete Solution

YOUR CHALLENGE IS OURS

PROVEN RELIABILITY. QUALITY ENGINEERING

GENAVCO introduces the Ultimate and Powerful solution for Oil & Gas Industries. MTU Electric Drilling Package.

Best Quality . Best After Sales . Best Value

800 GENAVCO
800 436 2826

Dubai . Sharjah . Abu Dhabi . Al Ain
www.genavco.com
equipment@genavco.com
Member of Juma Al Majid Group

mtu

Power. Passion. Partnership.

Opening up energy-rich Iran to **foreign investment**

Moin Siddiqi, Economist, examines what the prospective lifting of international sanctions on Iran could mean for the development of its oil sector and for future oil supply.

THE HISTORIC DEAL between Iran and the P5+1 (USA, Russia, China, UK, France and Germany) on limiting Tehran's nuclear programme in return for the lifting of crippling sanctions in Vienna on 14 July could have a profound impact on global petroleum markets, further pushing down oil prices on concerns over rising supply.

Sanctions on energy, trade and the financial sector are to be removed as Tehran's compliance is verified by the International Atomic Energy Agency (IAEA), but, if any aspect of the nuclear deal is violated, UN sanctions will automatically 'snap back' within 65 days.

International sanctions have blocked upstream hydrocarbons investment, whilst it is estimated that Iran has lost more than US$160bn in oil revenue since 2012 alone. Technological transfers and the expertise of Western supermajors – along with massive capital expenditures – are needed to elevate Iran into the top rank of global oil producers.

Need for technology

"The energy sector in Iran is in critical need of technology, capital and markets if it is to attempt to recover from its current condition," said London-based think tank Chatham House. It estimates that US$185bn-200bn in new investment is needed by 2020 to rehabilitate and expand production in the oil sector – which has lagged behind in modernisation. The state-owned National Iranian Oil Company (NIOC) faces significant challenges in offsetting the natural decline of ageing fields and using enhanced oil recovery (EOR) techniques, done mainly by reinjecting associated gas into oil wells to improve recovery rates. Given the maturity of the country's larger oilfields, the replenishment of crude reserves is also crucial.

Decline rates at mature fields are high, ranging from eight to 11 per cent, while recovery rates are quite low, at 20 to 25 per cent, according to Facts Global Energy.

Table 1: Iran's oil reserves, production & consumption

	2005	2007	2010	2012	2014	% change 2014-05	R/P ratio #
Proved reserves							
Crude oil (bn barrels)	137.5	138.4	151.2	157.0	157.8	14.7	100+
As percentage of world total	11.3	11.2	9.3	9.3	9.2		55.5/
As percentage of OPEC	15.2	14.8	13.0	12.9	13.0		99.1/
As percentage of Middle East	18.5	18.3	19.7	19.4	19.5		77.8/
Production							
Crude oil ('000 bpd) *	4,184	4,303	4,352	3,742	3,614	-13.6	
As percentage of world total	5.1	5.2	5.2	4.3	4.0		
As percentage of OPEC	11.9	12.2	12.4	10.0	9.9		
As percentage of Middle East	16.4	17.0	16.9	13.1	12.6		
Refining capacity ('000 bpd)	1,642	1,772	1,860	1,892	1,985	20.9	
As percentage of Middle East total	22.7	23.4	23.2	23.1	21.0		
Domestic oil consumption (mn tonnes)	80.6	89.4	86.8	89.6	93.2	15.6	
As percentage of Middle East total	27.5	28.4	24.5	24.0	23.7		

 # Reserves-to-production ratio, measured by years of E&P activity
/ Middle East, OPEC and global average
**Includes crude oil, condensate & natural gas liquids (NGLs)*

Sources: BP, IEA, OPEC, Iran Ministry of Petroleum

Hence, the period of protracted sanctions, under-funding and inadequate field and well maintenance have severely depleted Iran's productive sustainable capacity – once second only to Saudi Arabia during the mid-1970s. In such a situation, a significant revival of production to pre-sanction levels could take three to four years from when sanctions are actually lifted.

> "It is estimated that Iran has lost more than US$160bn in oil revenue since 2012"

Tehran's international reconciliation might seem bearish for oil prices, but analysts at investment bank Morgan Stanley reckon that, in reality, Iran will probably not be contributing to the glut in oil supply as quickly as some fear – not until at least 2016. Despite the P5+1 accord, a full lifting of multilateral and unilateral sanctions is

KAESER
KOMPRESSOREN

Maximum Quality and Reliability

KAESER instrument air skid packages provide users with a dependable, efficient and continuous supply of high quality compressed air – even under the toughest conditions.

KAESER KOMPRESSOREN FZE
P.O. Box 17485 – Jebel Ali Free Zone – Dubai – UAE
Tel: +971 4 805 0000 – Fax: +971 4 805 0077 – E-Mail: info.dubai@kaeser.com

www.kaeser.com

likely to be a complicated, gradual process. That said, if Iran boosts production by 1mn barrels per day (bpd) – it could defer a recovery in crude prices by as much as a year, they say. Even if everything goes smoothly, and sanctions (after verification from the IAEA) are officially ended, Morgan Stanley estimates a "sustainable export increase of only 500,000-700,000 bpd given underinvestment."

Some 20mn to 30mn barrels of floating storage could also come to market. This might increase Iranian exports to 2.4mn bpd next year from 1.6mn bpd in 2015.

Exploration and development

As of June 2015, Iran had dropped to fourth position within the OPEC cartel – producing 2.83mn bpd (excluding other liquids), behind Saudi Arabia, Iraq and UAE.

Iran's petroleum sector at a glance

- Original-oil-in-place(OOIP): 561.9bn bbl, second only to Saudi Arabia's 735bn bbl.
- Hydrocarbons reservoirs mainly comprise carbonate formations (dolomite and limestone).
- Two-thirds of Iran's landscape is comprised of sedimentary basins with significant potential.
- NIOC holds exclusive rights to oil/gas exploration and development. The hydrocarbons sector is overseen by the Supreme Energy Council, chaired by the President of Iran.
- Proved oil reserves: 158bn bbl (the world's 4th largest). The bulk of reserves (70 per cent) are in the south-western Khuzestan region and the remainder offshore in the Persian Gulf.
- Total petroleum and other liquids production (2014): 3.37mn bpd, of which crude 2.8mn bpd.
- Supergiant fields: Ahwaz-Asmari (16.8bn bbl); Marun (14.6bn bbl); Agha Jari (8.7bn bbl); Gachsaran (8.5bn bbl); Karanji-Parsi (6.5bn bbl); Bangestan (6.5bn bbl); and Soroosh & Nowruz (6bn bbl). Roughly 80 per cent of reserves were discovered before 1965.
- Post-2000 discovered fields: Azadegan (OOIP:26bn bbl); Dasht-e-Abadan, which NIOC estimates could yield 'reserves comparable' to Azadegan; Yadavaran (OOIP:18.3bn bbl); three adjacent offshore fields near southern port of Bushehr (38.5bn bbl of OOIP, of which a quarter is deemed recoverable); and the Darkhovin (3bn to 5bn bbl).
- Iran has around 40 productive oilfields (27 onshore and 13 offshore).
- Half of Iranian production is sourced from fields over 70 years old, which include Ahwaz-Asmari, Marun, and Gachsaran (IEA).
- Iran also shares a number of onshore and offshore fields with neighbouring countries, including Iraq, Qatar, Kuwait and Saudi Arabia.
- Crude oil exports (2014): 1.4mn bpd – 1.2mn bpd less than the volume exported in 2011. The largest buyers of Iranian crude were China and India, followed by Turkey.
- The annual value of petroleum exports (2013): US$61.9bn, down from US$114.8bn in 2011, thus reflecting the effects of US and EU sanctions.
- Quality of crude: Iranian oil is mainly medium in sulphur, with gravities in the 29-36 American Petroleum Institute (API) range.
- Export terminals: Kharg Island (the largest with oil storage capacity of about 28mn bbl); Lavan Island (5.5mn bbl); Sirri Island (4.5mn bbl); Abadan; Bandar Mahshahr; and Neka.
- Refining capacity (2014): 1.98mn bpd, representing 21 per cent of Middle East total capacity of 9.42mn bpd, reported in BP Statistical Review of World Energy June 2015.
- Major refineries: Abadan (400,000 bpd); Isfahan (375,,000 bpd); Bandar Abbas (330,000 bpd); Tehran (250,000 bpd); Arak (250,000 bpd); Borzuyeh (120,000 bpd); and Tabriz (110,000 bpd).
- Iran exported about 300,000 bpd of petroleum products in 2014 – mostly naphtha, fuel oil, and liquefied petroleum gas (LPG) to the Asian markets.
- Oil consumption (2014): 93.2mn tonnes, second highest in the Middle East after Saudi Arabia.

Source: Various, including US Energy Information Administration (EIA), BP, IEA, OPEC, Iran Ministry of Petroleum

Iran's Ministry of Petroleum remains confident oil output could reach 3.8mn bpd within six months of sanctions being lifted, before rising to 4mn bpd by March 2016. The International Energy Agency (IEA) envisages Iran pumping 3.6mn bpd within three months of the dismantling of UN sanctions.

Beyond near-term plans for restoring pre-sanctions output, Iran seeks to add a further 550,000 bpd to production capacity by developing western fields straddling its borders with Iraq under a four-year exploration and development plan costing over US$15bn, according to ISNA news agency. Future production plans hinge chiefly on a few megaprojects – namely the Azadegan and Yadavaran oilfields (near Iraq's border) operated by China Petroleum & Chemical Corp (Sinopec) and China National Petroleum Corp (CNPC) – which, between them, could produce 700,000 to 900,000 bpd – equivalent to the total output of Azerbaijan.

> "Iran is likely to re-emerge as a 21st century energy giant and as a source of new hydrocarbons supplies to global markets"

Supermajors, including BP, Royal Dutch Shell, Total and ENI, are eager to work in Iran – one of the world's few areas left that is mostly still untapped in terms of lucrative exploration and production activities – where the cost of extracting onshore oil averages US$5/barrel (bbl) to US$6/bbl, rising to US$8/bbl in offshore areas, according to Mehdi Hosseini, Iran's former Deputy Petroleum Minister. In a statement, Shell said that when all appropriate sanctions were lifted, it would be "interested in exploring the role Shell can play in developing Iran's energy potential".

Looking ahead, Leonardo Maugeri, an associate at Harvard University's Kennedy School, told Bloomberg recently, "Iran is one of the wild cards. The country really has the ability to arrive in a relatively short period of time, let's say five years, at production capacity of 5mn bpd of crude." However, energy consultancy Wood Mackenzie is more cautious – projecting total crude output reaching 3.4mn and 4.4mn bpd, respectively, by 2020 and 2005 (compared with 2.7mn bpd in 2015).

Improving contract terms

In early 2014, Tehran unveiled a new pricing model called Integrated Petroleum Contracts (IPCs) to replace the traditional buyback

المنصوري
ALMANSOORI

ALMANSOORI SPECIALIZED ENGINEERING

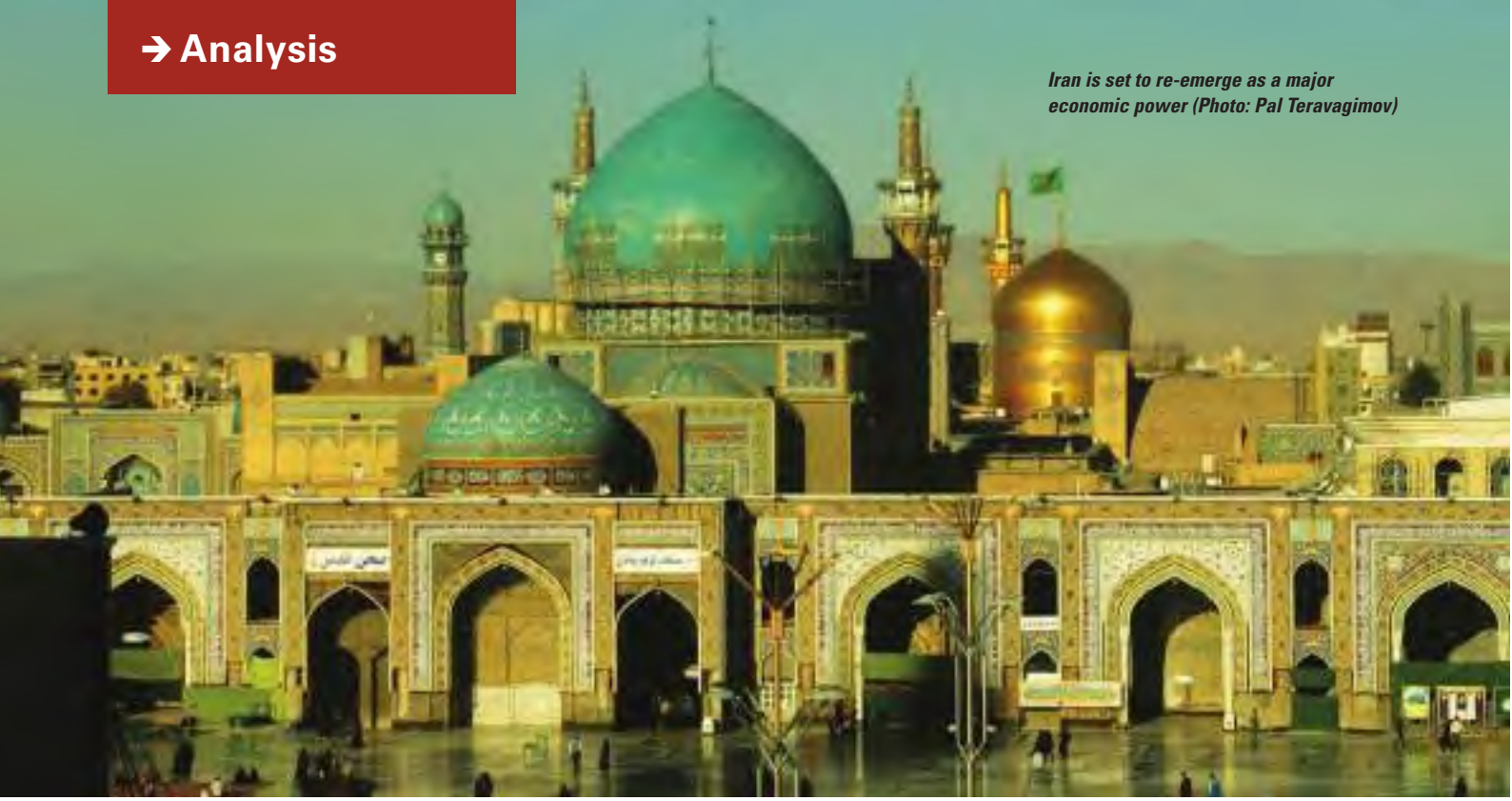
ALWAYS INNOVATING

- Production Testing & EPF
- Coil Tubing & Stimulation
- Drill Stem Testing (DST)
- Tubing Conveyed Perforating (TCP)
- Slickline & Completion
- Logging
- Workover Drilling
- Tubular & Ring Inspection
- Directional Drilling
- H2S & Safety
- Technical & Safety Training
- Manpower Supply
- Oilfield Manufacturing
- Sponsorship & Representation of Companies

SUSTAINABLE EXCELLENCE in SERVICE
with World Class Health, Safety, Environment & Quality

www.almansoori.biz
Tel: +971 2 815 7000 | Fax: +971 2 678 4638 | Email: info@almansoori.b

ALWAYS ALMANSOORI

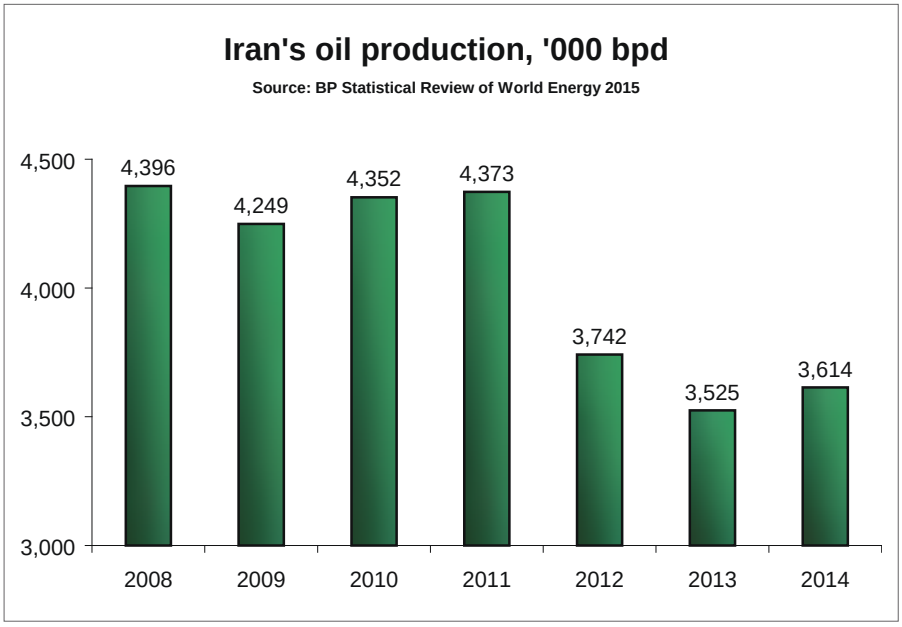


Iran is set to re-emerge as a major economic power (Photo: Pal Teravagimov)

contract formula – which proved unpopular among international oil companies (IOCs), with its inflexible/and risky conditions deterring foreign direct investment. The Iranian Constitution prohibits the foreign and private ownership of natural resources; however, under a recent IPC draft, IOCs can enter into a joint venture with NIOC or form a subsidiary to manage a project without owning the reserves. The new contract embraces field development – exploration and production – along with an option of extending EOR phases. This contrasts with current buyback schemes, which only cover the exploration and development phases.

The IPC model offers a much longer cost-recovery period (20-25 years) – twice the time authorised in buyback contracts. Additionally, there is a risk/reward element – tied to the complexity of respective fields that pays higher fees for 'very high risk' offshore projects compared with 'low-risk onshore' fields. Once production starts, IOCs will share in the revenue streams of a project in instalments, which is similar to standard production-sharing agreements. Hence, IPCs are more in tune with international norms – providing favourable and flexible working conditions for foreign energy companies.

According to the US Energy Information Administration, "This modification aims to rectify issues with field decline rates by including the IOC in the production and recovery phases, while optimising technology and knowledge transfers." To help facilitate technology transfers in mega-projects, managing mature fields, and exploitation phases, IOCs will be expected to fulfill local content requirement, which may be 51 per cent of the contract. Es'haq Jahangiri, Vice President of Iran, stressed that "Iran is determined, in a short period of time after signing new oil contracts, to increase its oil production capacity to bring it up to the same level as before sanctions were imposed."



Tehran is expected to unveil new oil contracts in London to replace the old, unappealing buyback schemes this autumn.

In brief, Iran is likely to re-emerge as a 21st century energy giant and as a source of new hydrocarbons supplies to global markets. Its oil and gas resources combined exceed those of Russia's. Sanction-free Iran could lead to a bonanza for IOCs, not seen since the opening of Iraq in the post-Saddam Hussein era. The difference, however, is that Iran is a relatively safer country for inward investment given its established political and legal environment as well as civil stability. Iran could be an energy superpower – with expanding oil production capacity challenging its Arab neighbours.

Due to technical obstacles, for Iran to reach its pre-Revolution 6mn bpd level will not be easy, and is likely to take at least a decade. During an initial phase of sanctions removal, IOCs may prefer short-term technical assistance contracts — building goodwill and positioning themselves, without making heavy capital commitments, until they can judge the longer-term outlook – for Iran itself and for the oil market in general. ■

Dana Gas continues to prosper in Egypt

DANA GAS, THE Middle East's leading private sector natural gas company, entered the Egyptian market through the acquisition of Centurion Energy International. The deal, worth US$950mn, was completed in January 2007.

"The acquisition provided Dana Gas with a strategic entry point into North Africa, as its upstream operations included exploration and production from 10 development leases and four exploration licenses in Egypt, Tunisia and West Africa, in addition to 150 highly skilled management and technical staff," says Dr Mark Fenton, General Manager, Dana Gas Egypt.

"Our current activities cover 13 development leases in the onshore Nile Delta area, two operated exploration concessions (of which one is offshore) and an additional non-operated exploration concession. Two rigs are currently drilling development, appraisal and exploration wells, and our programme will extend for the next two years. New offshore and land 3D seismic programs will start shortly and production enhancement projects are ongoing.

Dana Gas entered the Egyptian market in 2007

"Our experience has been positive despite the local and regional political issues. Egypt is one of the world's largest natural gas producers in the world. It has expanded its natural gas sector rapidly since 2000, tripling production to 2.2Tcf in ten years to 2010. Despite a sector-wide slowdown in exploration and production and delays in payment over the last five years, the Petroleum Minister has worked hard to ensure the energy sector remained intact and the Ministry has taken proactive steps to address these issues. We have been part of this, recently signing a GPE Agreement with the government which commits us to a work programme in return for the ability to sell the government's share of incremental condensate production at international market rates. This is an extremely novel approach and shows the government's desire to be flexible and safeguard the future of the energy sector. However, more flexibility is required in negotiating gas prices, with regards to exploring and developing new gas discoveries."

Brightening prospects in Egypt

Egypt is making encouraging progress in tackling its energy crisis, by raising gas import capacity and kick-starting upstream development, says Samuel Ciszuk.

The government needs to start delivering economic recovery and growth, as well as a return to stability (Photo: Pietro Ferreira)

AMID THE LINGERING question marks over Egypt's political situation, the government has launched a concerted push to unlock upstream investment and alleviate the country's persistent gas shortages. While government funding and debt repayment remain an issue, red tape is being slashed and contract terms improved, all with the goal of reviving the energy sector's role as one of Egypt's main growth, as well as hard currency, generators.

Much has been written about Egypt's recent political turmoil since the 2011 uprisings, popularly known as the Arab Spring. The rapid ascent to power by the Muslim Brotherhood in the wake of the previous regime's collapse, and the equally rapid collapse of the Brotherhood-led administration amid high levels of diverging popular expectations and political turmoil, has in many ways given way to a calmer state of affairs. The overt role played by the military, for now, means that long term questions about the political stability of the country will stay very much on oil and gas investors' minds, given the long-term nature of the sector.

The political uncertainty – and to some extent impasse – on the constitutional and systemic level has, however, provided the relatively technocratic government with a window of opportunity through which to push through economic reforms and shake up bureaucratic processes. The government desperately needs to start delivering economic recovery and growth, but it is also spurred on by what seems to be a growing part of the electorate, which is clamouring for a return to some kind of normalcy and stability. From an investor perspective it is encouraging that the Egyptian government is expressing interest in businesses' concerns, and more proactively trying to de-bottleneck the energy project sector. It is perhaps even more heartening that fundamental deadlocks, such as for instance domestic energy subsidies and their consumption spurring effect, are being dealt with. In the long run, this promises more clarity for upstream actors on the eventual prospects for export ventures.

> "Other efforts to allay the severe domestic power shortages are gaining pace"

Tackling power shortages

Given the domestic fuel price cuts last year, it is likely that the pace of subsidy cuts in the energy sphere will slow in the forthcoming budget, as the government looks to ease the strain for the general consumer. However, it is likely just a temporary pause. Meanwhile, the government is continuing to roll over gas shortages from the power sector, where rolling blackouts have for years been aggravating the general population, onto gas-intensive industry, despite the possible knock-on effects on employment and desperately sought economic growth. However, given the unrest of the past years and the incendiary effect of power shortages on the population, the new prioritisation represents a solid investment in stability.

> “World-class gas reserves are continuously being discovered offshore Egypt”

Other efforts to allay the severe domestic power shortages are gaining pace too. An easing of restrictions on industry building and supplying its own coal-fired generation or process capacity has been made to compensate for the gas diverted from large industrial customers to power plants. It might not be a policy scoring environmental points, but with Egypt’s economy falling off a cliff in the past few years, at least it provides a short-to-medium term response to its deep energy shortages.

Raising gas import capacity

The state has also hurried on projects deemed strategic in order to quickly balance supply with demand, in particular raising Egypt’s gas import capacity. A first floating regasification facility (FRSU), the Hoegh Gallant, came onstream in April this year, following some teething problems and delays in connecting the facility to the country’s gas network in the Gulf of Suez port of Ain Sukhna. A second FRSU, based at the port of Adabiya, is being tendered, with industry sources indicating that a quicker connection and commissioning phase should be expected now that state-owned Egas can draw on some experience in this field. Still, the government’s target of having two FRSUs onstream towards the end of 2015 could well to slip towards early 2016. Together, the two facilities are hoped to supply just under 1 Bcf/d of gas to the Egyptian grid from a range of IOCs, NOCs and trading houses.

Egypt has commenced LNG imports (Photo: BP)

Movement on LNG imports and the promise of fewer domestic gas shortages are of course welcome. Still, it underlines how things have changed for the worse in Egypt over the past decade. The country's LNG export facilities have been idled and despite strong domestic demand growth, as well as a seemingly plentiful and promising reserve situation, gas production has fallen off a cliff to well below 5 Bcf/d and even below 4.4 Bcf/d during some months last year. For a country producing over 6 Bcf/d at the start of the decade, the decline is startling. Given officially expected demand growth – amid a continuing economic crisis in Egypt – to around 7.42 Bcf/d in 2017, according to the Petroleum Ministry, it is clear that expected LNG imports of 1 Bcf/d, when both regasification units are in place, will not suffice.

The remaining solution to Egypt's energy conundrum in the medium-to-long term – and it should come as a surprise to no-one – is kick-starting upstream development. World-class gas reserves are continuously being discovered offshore Egypt, in increasingly deepwater acreage off the Nile Delta. IOCs actually never lost interest in picking up Egyptian offshore acreage in the past years, despite all the turmoil. This puts Egypt in a very enviable position with regards to seeing quick upstream results, compared to for instance Algeria, as it moves to sweeten investor terms. In Egypt's case, reluctance to invest in expensive deepwater production capacity did not stem from illiberal contract practices and state insistence on prohibitive government-take rates in production-sharing contracts. Rather, it stemmed from the set gas offtake prices paid by state gas company Egas to the producers, in combination with the state's rising need to supply domestic consumption and curtail more lucrative export opportunities in order to do so. As Egypt continues to sell gas domestically at highly subsidised rates compared to international market prices, despite recent price-reforms, it is increasingly costly for the state to raise offtake prices enough to guarantee a reasonable rate of return for deepwater projects.

Seeing results

Recently, price negotiations on a project-by-project basis have, however, started to move more swiftly. Taken together with the Petroleum Ministry's other efforts to cut red tape and speed up project permit issues, for instance, results are already being seen. A deal was finally unlocked in March for US$12bn of planned investments into the BP and Dea-led West Nile Delta (WND) gas project, on the West Mediterranean Deepwater and the North Alexandria blocks. The project has been discussed for decades, but complexity and expected production costs have held it back. The WND project is aiming to produce 1.2 Bcf/d of gas, achieving first production in 2017, contributing significantly towards closing the Egyptian gas supply gap.

BG Group is a major player in the development of Egypt's gas industry through its West Delta Deep Marine (WDDM) and Rosetta concessions (Photo: BG Group)

Crucially, the Egyptian government agreed to pay between US$3-4.1/mmBtu for the WND gas, while also moving away from a typical production-sharing agreement (PSA), to a more straight-forward Tax Royalty contract. In exchange, BP and Dea agree to sell 100 per cent of their production to the state at the set prices agreed, with no volumes allowed for export. While promising a relatively swift relief of the gas shortages, the deal has also received some political flak from opposition and industry critics given the change of the contract model, so getting the tax rate right, from a political perspective, might turn out to be crucial for the contract to remain stable as future currents shift.

> "The WND project is aiming to produce 1.2 Bcf/d of gas"

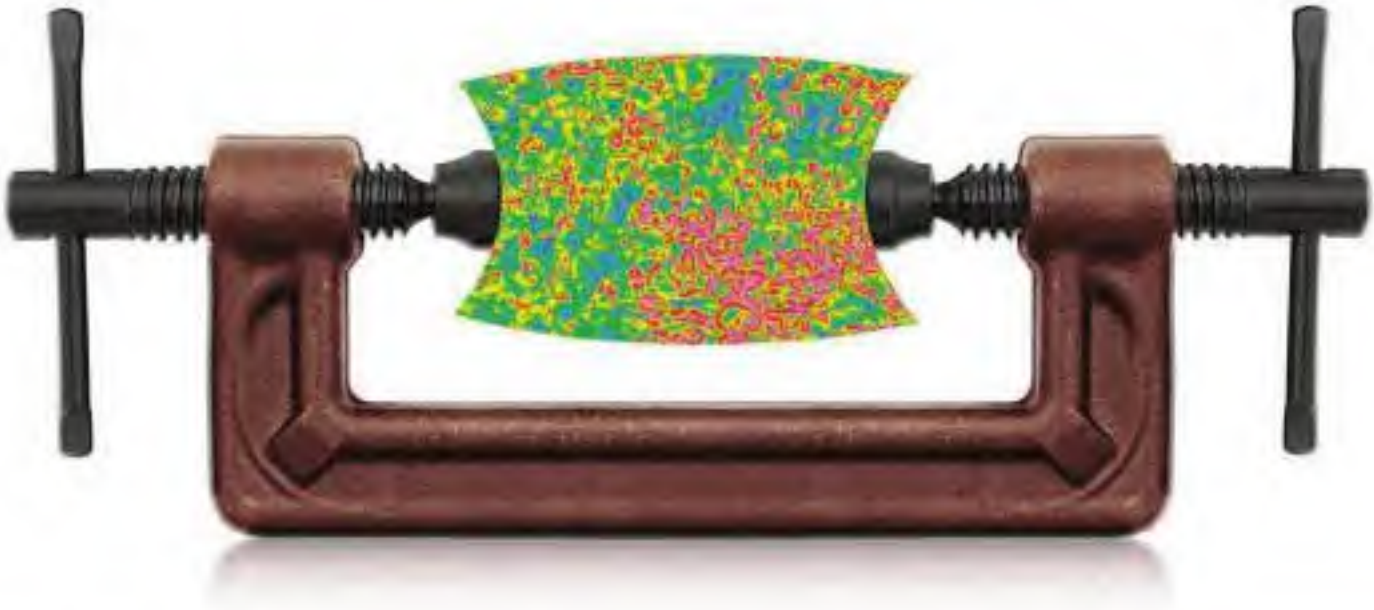
WND could be seen as a particular breakthrough, but there are others. Exploration has again been picking up off Egypt, as the government has worked hard to borrow on the international and national market to pay down the large debts owed to oil and gas producers for their production and project shares. Official Egyptian numbers suggest debts have shrunk to around US$3bn, however industry sources say this is in part due to definition issues (the government sometimes does not define late payment as debt until after 90 days, while IOCs expect payment within 30 days). Still, the government seems to have managed to convince the industry that it is doing the best it can considering the situation, as the increased project activity would suggest.

In July, Eni announced a new offshore gas discovery it will be able to fast-track to production. The Nooros prospect in the Abu Madi West license could hold as much as 15 Bcf of gas in place, the company said. The structure will be developed through a tie-in to nearby Abu Madi production facilities and brought onstream in about two months' time. The speed also indicates rather impressively the real effect of recent state red tape cuts.

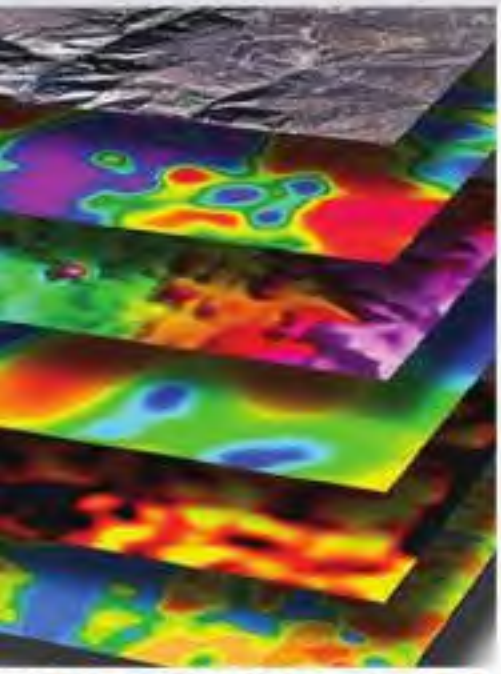
Eni also said some months ago that it had managed to double its oil production to 70,000 bpd in Egypt's Western Desert over the past three years, the area in the country which still seems to hold crude upside potential, as well as potential for gas. There too, IOCs remain interested and projects proceed, even though the sector's overall cost cutting in the wake of the oil price crash has made a mark. The Western Desert has seen some additional far-reaching encouragement from the Egyptian government's side, with an US$5.5/mmBtu offtake deal agreed with Apache this year for eventual shale gas production.

With the current overall direction and given minimum back-sliding on curbing domestic energy subsidies, Egypt's aim to reach gas self-sufficiency sometime around 2018-2020 no longer looks unreasonable, while very real and positive effects on the economy from rising upstream activity should be seen well before then. ■

Squeeze the Most Out of Your Existing Data



SEISMIC • WELL LOGS & CORES • POTENTIAL FIELDS • ELECTROMAGNETIC • RADIOMETRIC • REMOTE SENSING



Keep Exploring with the neoSCAN

Low prices and tight budgets don't mean you need to stop exploring. The neoSCAN™ helps you get the most out of your legacy G&G investments by integrating existing data with additional publicly available, multi-physics datasets. In under 100 days and for less than 50 cents per acre, neoSCANs deliver the interpretive products you need to help identify potential exploration leads. Moreover, predictive analytics methods are applied on all neoSCAN projects, providing rich insights that can be used to highgrade acreage in underexplored areas.

Don't feel squeezed by low prices and tight budgets. Let NEOS relieve the pressure.

neosgeo.com

neos

Effective HSE in oil, gas and petrochemicals

The oil, gas and petrochemicals industry has suffered high profile incidents such as the Deepwater Horizon oil spill (Photo: Ideum)

Good HSE performance comes from having the right culture in place, says Euro Petroleum Consultants (EPC).

THE OIL, GAS and petrochemicals industry has had many high profile incidents such as Deepwater Horizon, Texas City, Flixborough, Piper Alpha, Exxon Valdez. Much information has been shared as a result of such incidents, and changes in design and operation have resulted — but as we see far too often in the news, incidents keep happening, and devastating ones at that.

The industry has matured greatly in the Middle East in recent years. Rightly so, there is now the expectation that companies which have world class production facilities and world class products, must also have world class HSE performance. This has meant benchmarking against industry peers, rapid adoption of best practices, training of personnel, and communication throughout the workforce and to contract personnel. It is also very encouraging to see that mega projects in the region, such as Sadara, have excellent HSE performance as a result of implementing the very best HSE practices right from the very start of the project.

Good business sense

Effective HSE management is not just about the prevention of accidents and incidents, it is also makes good business sense and has a direct impact on the bottom line. Typically those businesses which demonstrate good governance in HSE are those with strong operational performance and better-than-average profitability. This is no coincidence; there is a very strong link between operational excellence and excellence in HSE performance, as both come from having strong leadership, good practices and a strong focus on operational discipline.

There are three main areas of HSE focus for companies in the sector. These are process safety; occupational health and safety; and sustainability. All are interlinked and all require senior management focus, preferably at board level, if performance excellence is to be achieved.

Process safety is all about preventing the fires and explosions that can cause so much damage in refining and petrochemicals. It comes from designing plants well and operating them to the highest standards.

Sustainability is generally less well understood. According to the formal definition, "Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generation".

In practical terms, a corporate approach to sustainability means having business practices that promote social responsibility, protect health and the environment, drive productivity, maintain shareholder value, reduce risk, control costs and support communities. All things we should be doing as responsible businesses and good neighbours.

Occupational health and safety is about risk minimisation — to

> "The starting point has to be absolute commitment from company management"

prevent accidents and to ensure that health and wellbeing of employees is not negatively impacted.

Starting point

The above may sound relatively straightforward but if that really were the case, we would not be having any incidents or near misses in our businesses. This is certainly not the reality. So how do we go about achieving world class performance?

The starting point has to be absolute commitment from company management. Once there is a realisation that good HSE equals good business, this should become a given. The commitment is demonstrated through effective and consistent communication to the organisation and by putting the resources in place to drive HSE.

Having the right culture in place is critical for effective HSE performance (Photo: Shell)

> “Good HSE performance can only come from continuous improvement”

It is then possible to carry out a series of gap analyses in all of the areas of focus in order to pinpoint existing strengths and weaknesses and develop an action plan to implement those actions needed to achieve a step change in performance. This will be in a number of areas — organisation, skills, training, procedures, equipment etc. What is important is not to try and do everything at once but instead to prioritise, using a risk-based approach. This will ensure that the most important issues are addressed first.

Continuous improvement

For even the very best companies, good HSE performance can only come from continuous improvement. This means having the right key performance indicators in place and constantly reviewing them in order to identify any issues and put actions in place to address them.

In effect, good HSE performance comes primarily from having the right culture in an organisation. Once this is achieved, it is relatively straightforward to address the structural and procedural issues. However, if the culture isn’t there, best-in-class performance will never be achieved. ■

Euro Petroleum Consultants [EPC] is an independent consulting group which provides safety benchmarking services to oil, gas and petrochemical producers. For further information, please contact EPC president Mr Colin Chapman at office@europetro-me.com.

SABIC and SK Global Chemical sign joint venture

SAUDI ARABIA'S SABIC and South Korea's SK Global Chemical have concluded negotiations for a 50-50 joint venture (JV) to purchase a special solution technology and a manufacturing plant for US$640mn.

The JV is SABIC's latest investment in the Far East's manufacturing sector.

The JV, called SABIC SK Nexlene Company and headquartered in Singapore, will purchase the Nexlene solution technology and a plant that makes a range of high-performance ethylene/alpha-olefin copolymers products in Ulsan, South Korea. The plant will produce metallocene based linear low-density polyethylene, polyolefin plastomers, and polyolefin elastomers to meet the growing needs of diverse industries such as flexible packaging, industrial and agricultural film, automotive, consumer products (footwear), medical, and construction.

The signing ceremony

The Singapore firm's wholly-owned subsidiary, Korea Nexlene Company (KNC), owns the manufacturing plant in Ulsan, which has an annual capacity of 230,000 tonnes. The parties intend to further expand capacity with the construction and operation of additional plants globally.

Meanwhile, Nexalene will offer customers better performance, manufacturability, and final product properties, including impact strength, enhanced toughness, superior transparency, low heat-seal temperature, incremental output, and improved organoleptic properties. The packaging industry will benefit from lighter versions of Nexlene (mLLDPE) for producing films to manufacture flexible food packaging and wrapping materials. They can also be used in pipes and consumer goods.

SABIC acting vice-chairman and CEO Yousef Al-Benyan said, "We are very pleased to launch this partnership with SK Global Chemical, which is the latest stage in SABIC's global expansion. By growing our presence in South Korea, we are opening up new markets globally and reinforcing our position as a global leader – a major goal of our 2025 strategy."

The new venture is expected to help both partners grow in the highly-specialised polyethylene market by providing high-value polymer products to global customers. The solidification of the partnership with SK Global Chemical will complement SABIC's polymers portfolio and enable them to offer a more varied, cost-effective, and customer-focused selection of products.

KNPC awards al-Zour refinery contracts

KUWAIT NATIONAL PETROLEUM Company (KNPC) has awarded US$11.5bn worth of contracts to build the al-Zour oil refinery, set to be one of the largest in the world.

Kuwaiti state news agency KUNA reported that KNPC has commissioned a consortium including Spain's Tecnicas Reunidas, China's Sinopec and South Korea's Hanwha Engineering and Construction to build the main process units of the refinery. The contract is worth more than US$4.2bn.

The refinery will have a capacity of 615,000 bpd (Photo: Ken Doerr)

The support units and infrastructure services will be built by a consortium made up of Daewoo Engineering and Construction, Hyundai Heavy Industries and US-based Fluor Corporation under a contract that is worth about US$5.75bn.

Another consortium comprised of Hyundai Engineering and Construction, SK Engineering and Construction and Italy's Saipem was awarded a US$1.5bn contract to build a marine export terminal, KUNA quoted KNPC spokesman Khalid al-Asousi as saying.

The last contract for the project is expected to be awarded in the first half of August 2015, while signing of all contracts is set to take place in early October, added al-Asousi.

When completed, the refinery will have a capacity of 615,000 bpd, making it one of the biggest refining plants in the world. The project was originally planned more than a decade ago but has been delayed repeatedly. Officials have said that the refinery, which will provide fuel with low sulphur content to power stations, is scheduled to start operations by late 2018 or early 2019.

Technip signs Egypt refinery modernisation deals

TECHNIP ITALY S.p.A. signed two agreements for refinery modernisation in Egypt during the visit of the Egyptian prime minister Ibrahim Mahlab and members of the Egyptian government to Italy in July.

Technip and SACE, the Italian export credit agency, announced the finalisation of a joint agreement with Midor (Middle East Oil Refinery) for a US$1.4bn project to modernise and expand the MIDOR refinery near Alexandria, which aims to improve production quality and increase refining capacity from 100,000 to 160,000 barrels of crude oil per day. SACE will support the project with an export credit facility.

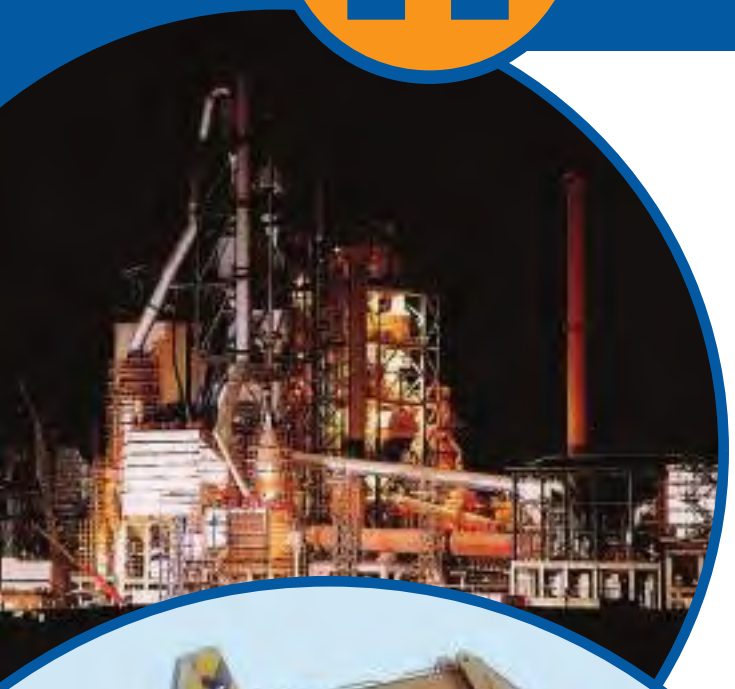
Technip will modernise two oil refineries (Photo: Roy Luck)

Technip also finalised a joint agreement with Egyptian General Petroleum Corporation (EGPC) and Assiut Oil Refining Company (ASORC) for the modernisation of the Assiut refinery, Upper Egypt, designed to refine the "bottom of the barrel". The investment has an estimated total value of US$1.5 bn. The project, which aims at maximising diesel production, will introduce the most modern refinery technologies and satisfy the growing local demand for petroleum products. SACE is ready to evaluate a possible intervention to support the project.

Technip will take responsibility for the EPC phase of both projects in due course.

Italy and Egypt have a long history of co-operation in the oil and gas sector. Italy's Eni, one of the main oil producers in Egypt, recently signed a US$2bn exploration deal with the Egyptian oil ministry.

RELIABILITY IN OIL WELL CEMENTS



Oil Well Cement (OWC) produced by Oman Cement Company (S.A.O.G) under accurate temperatures is an obvious choice for oil well cementing worldwide and now it is ready to face the challenges of highly specialized arctic and horizontal cementing:

- Conforms to the American Petroleum Institute (API) specification – 10A Class-G- (HSR), Class-B- (HSR) and Class-A- (O) grades.
- Tested and used by worldwide cementing companies
- Easy to disperse resulting in considerable cost savings
- First choice of major oilfield companies
- Exported to GC Countries, Iraq, Yemen, Libya, Sudan, Tanzania, Turkmenistan, Ethiopia, Pakistan, India and Syria.

Oman Cement manufacturing facility operates on world class quality management system ISO 9001 and environmental management system ISO 14001. Quality control is online and laboratory automation systems consist of online x-ray spectrometers and robotic samplers, linked to process controllers and a raw mill proportioning system.

OCC has an enduring commitment to customer satisfaction, continual improvement and a stronger foundation for tomorrow.

Winner of His Majesty's Cup for the Best Five Factories in the Sultanate of Oman for 10 times.

ISO 9001
CERTIFIED CO
CERT NO. IND13.3020/U/Q

ISO 14001
CERTIFIED CO
CERT NO. IND10.7570

API CERTIFIED CO
LICENSE NO. 10A-0059

Oman Cement Company (S.A.O.G) Corporate Office:
PO Box 560, Ruwi, PC 112, Sultanate of Oman
Tel: +968 24437070 Marketing: Ext 145 / 444
Fax: +968 24437799

Email: admin@omancement.com
Website: www.omancement.com

Cables for a moving world

Tratos, the leading European manufacturer of electrical, electronic and fibre-optic cables, continues to experience business success. Oil Review spoke to its CEO, Dr Maurizio Bragagni.

ONE OF THE few remaining independent cable manufacturers, the company has recently expanded its UK manufacturing facility at Knowsley, to enable it to increase the range of its products, and with a view to developing it as an innovation hub.

A family company with 50 years' history in the industry, Tratos has expanded into an international operation with distribution centres across the globe and sales in 52 countries. It has a strong CSR ethos, contributing to job creation and development in deprived areas, both in Italy, home to its headquarters, and the UK.

Tratos offers cables for a diverse range of applications in sectors ranging from telecommunications and defence to transport and energy, and including limited fire hazard and other specialised cables. Due to the extensive research and development performed within Tratos's manufacturing facilities based in the UK and Italy, the company can also provide bespoke cabling solutions as part of the 'Cables Tailor Made' department, to meet the most complex and demanding of applications.

With long experience in the oil and gas sector, Tratos can provide cables for a large variety of onshore and offshore operations, including umbilical cables for offshore applications, as well as highly specialised submarine cables. These can be supplied to meet numerous standards, such as Lloyd's for mud resistant types, as well as American, British and European standards including NEK606, BS6883 & UKOOA.

The company's cable range specifically designed and manufactured for the oil and gas market, 'Tratos JBA®', has been favoured by Tratos's clientele thanks to its improved quality of mud resistant and fire resistant qualities, as well as resistance to extreme temperatures and conditions, including water and impact. Customers who have adopted this product include Saipem, for their SSDR Scarabeo 5, an Italian-built rig designed specifically for Norwegian conditions, which has been refurbished using several million euros worth of Tratos oil and gas cables.

According to Tratos's CEO, Dr Maurizio Bragagni, the Middle East is one of the company's largest markets, although the low oil price and competition are threatening prospects there. "The USA is a particularly promising region for us, and has great potential," he says.

"We are delighted that the market recognises us as one of the most innovative and quality-oriented companies in this sector," comments Dr Bragagni, who attributes the company's success to its unique business model, which has enabled the company to modify its strategy to survive in a very competitive and globalised market without compromising its business values.

> "The market recognises us as one of the most innovative and quality-oriented companies in this sector"

Dr Maurizio Bragagni, CEO, Tratos (left), with Nick Clegg, former UK Deputy Prime Minister, at the Knowsley plant

Engagement is key

"Specifically, engagement is key, in terms of the companies we target, ie the OEMS and the end-users. We are focused on the people in the field, who require someone who listens to them, and helps them with sustainable solutions," he adds. "Not with the cheapest solution, which after a period of time results in recurring problems, but rather one that is sustainable and long-lasting.

"The engagement of the customer, the monetisation and the delivery of the Tratos model are key. Tratos is a unique entity; people who engage with us wish to continue to engage with us. We do not simply supply a 'product' - we supply the trust as well."

Dr Bragagni also highlights the benefits the company is reaping from his experience studying for an MBA at the prestigious Cass Business School, particularly in terms of networking and expertise.

Due to the wide range of cables produced, the flexible approach and know-how, Tratos is able to meet the evolving needs within this ever-changing market, says the company.

So where does Dr Bragagni see Tratos in five years time? "In five years, Tratos will certainly be the last independent cable manufacturer in existence in the market, with a turnover of £1 billion. Moreover, we will have the strongest global presence in the world, in terms of our sector. We will follow our vision, 'Cables for a Moving World'." ■

www.tratos.eu

TRATOS

Tratos have been manufacturing cables for the Oil and Gas Industry for nearly 50 years. We provide cables of Low Voltage through to High Voltage, including Fibre Optic and Umbilicals.

Visit our stand 1D22

2015 Offshore Europe 8-11 SEPT 2015 ABERDEEN, UK

SPE Offshore Europe CONFERENCE & EXHIBITION

London Office - Tratos Ltd - 10 Eagle Court, London, EC1M 5QD, UK - tel. +44 (0)203 5534 810 - e-mail: paolo.bragagni@tratos.co.uk

Aberdeen Office - Tratos Ltd - Nigg Kirk Road Aberdeen, AB12 3DF, UK - tel. +44 (0)845 413 9990 - e-mail: craig.ormsby@tratos.co.uk

What lies beneath

Hugh Morris, Managing Director, TDI, outlines measures for mitigating risk in Explosive Remnants of War (ERW) contaminated areas.

THE RESOURCE CURSE is a well-documented conundrum. Too many countries with an abundance of natural resources paradoxically experience lacklustre economic growth and poor social development, whilst many are plagued by ongoing conflict and the persistent legacy of war. One of the untold, but no less damaging legacies of conflict, is the ground contamination posed by Explosive Remnants of War (ERW).

Today, there are over 100 million laid and active landmines globally – and that's not to mention millions of tonnes of other unexploded ordnance (UXO), such as rockets and improvised explosive devices (IEDs). Of course, as a result of ongoing and historical conflict many of these mines and other ERW are located in areas where natural resources, namely oil and gas, can be found. For example, many resource-rich areas of the Middle East and Africa are contaminated by ERW, with Libya, Syria, Iraq and South Sudan offering some of the most obvious examples as conflict continues unabated.

> "Many resource-rich areas of the Middle East and Africa are contaminated by ERW"

With the perpetual quest for natural resources requiring organisations to explore further and further afield, many are now entering post-conflict zones. Clearly, this presents a unique set of challenges that these organisations need to consider long before new infrastructure, such as pipelines, can be developed. More often than not, expert advice will be required.

Risky business

There's no doubt that dealing with ERW poses large risks, in part because it involves such a broad range of UXO – from anti-personnel and anti-tank mines to cluster munitions, from IEDs to air dropped weapons and Land Service Ammunition. These munitions can be dormant indefinitely after the end of a conflict, continuing to pose a significant threat to any passing human, equipment or vehicle, even after removal efforts. In Kuwait, for example, where TDI has recently been working, a massive clean-up was conducted between 1991 and 1997 that cleared over 111,000 tonnes of ordnance. Despite this action, the clean-up was hampered by environmental conditions (such as high temperatures, sand storms and flash floods) and therefore, cluster sub munitions and UXO continue to be encountered in Kuwait today. For those looking to further exploit the small nation's oil reserves, significant consideration must be given to what might be found beneath the desert sand.

Given the challenges outlined above, it is essential that prior to commencing operations in potentially contaminated areas, organisations are prepared and well aware of the risk.

In TDI's experience, companies should consider the following six-step process to mitigate the risk posed by ERW to their personnel and equipment:

1. Mine Risk Education (MRE)

Probably the most important risk mitigation tool is MRE. Keeping employees and contractors informed as to the potential hazards they may encounter and educating them about suspicious items will significantly reduce the chance of an incident – it is an ongoing tool that should be used all the time. Actions on what to do should one encounter ERW is an important process in the risk matrix, ensuring people remain safe and aware of their surroundings at all times. However, MRE does not remove nor negate the fact that hazardous items are out there and will require experts to locate, remove and / or dispose of this inherent threat.

Hugh Morris, managing director, TDI

Demining in Kuwait, where ordnance continues to be found today

TDI mine clearance training

2. Desktop Survey

The Desktop Survey involves the offsite collation and review of as much information as possible about the target area in order to determine whether or not there is likely to be the presence of ERW, and if so, what kind. As broad a base of information as possible is sought and reviewed, ranging from old military records to news reports, all in a comprehensive effort to determine whether or not a threat is likely to exist.

3. Non-technical Survey

A Non-technical Survey involves the deployment of a specialist, non-intrusive team on the ground to the actual suspected area in order to better define and understand, as well as confirm, the information gathered in the desktop survey. They assess the likelihood of a threat being present through discussion with local inhabitants (often the best source of information) and local authorities, then carry out their own evaluations. Based on physical evidence, the team are better able to determine the likely presence of ERW, and more accurately assess which are threat areas and which can be ruled out.

Based on the Non-technical Survey, the experts can decide the next procedure to follow – either take no further action, conduct a Technical Survey, or continue to full clearance.

4. Technical Survey

A Technical Survey requires deploying limited clearance assets into the suspected hazardous area to confirm or discredit the presence of ERW. This process usually uses subsurface detector aided searches, i.e. intrusive works. If any ERW is found, the Technical Survey is of tremendous use in better defining the extent of the hazard to ensure that the most economic clearance solution is found, without compromising safety standards.

5. Verification, clearance and cancellation

The procedure following a technical survey, should a threat have been confirmed to exist, is to deploy a capacity to clear the required areas of items of unexploded ordinance using either manual or mechanical demining methods.

> “There remains the need to dispose of them safely, efficiently, and without presenting a risk to the surrounding community”

It is also possible to carry out verification operations where a threat may have existed in the past, and which has already been subjected to clearance, but where further verification may be required if the original clearance was not in adherence to the International Mine Action Standards (IMAS).

If the Non-technical / Technical Survey justifies it, a cancellation of the area may be carried out if it is proved that no further clearance is required.

6. Explosive Ordinance Disposal

Following clearance operations and the location of items of ERW, there remains the need to dispose of them safely, efficiently, and without presenting a risk to the surrounding community or environment. Once the area has been fully cleared and all ERW has been removed or destroyed, this represents the culmination of the task, where a clearance certificate would be issued and the area can safely be handed over for its intended use.

While the residual threat posed by conflict is difficult to eliminate in its entirety, by following the simple steps outlined above, businesses and organisations looking to operate in post-conflict zones can be confident that they have taken steps to reduce the dangers. However, this process invariably requires expert and experienced practitioners.

Ultimately, TDI aims to help clear the way for businesses and people in regions which are often negatively impacted by the legacy of conflict. While the resource curse will take decades to fully address, we like to believe we are playing an increasing role in helping countries overcome it. ■

[1] *Jha, U.C - Armed Conflict and Environmental Damage, Vij Books, India*

Middle East HEALTH & SAFETY Forum

6-7 September 2015
Habtoor Grand Beach Resort & Spa, Dubai, UAE

The Middle East Health & Safety Forum will address the key challenges and solutions for health, safety and environment professionals and provide a platform for debate and solution-finding for regional industries:

OIL & GAS | CONSTRUCTION | INDUSTRIAL | MANUFACTURING | MARINE

BENEFITS OF ATTENDING:

- Examine and understand aspects related to regulation and compliance issues
- Maximise business opportunities through better HSE management
- Hear and gain cutting-edge industry insight from HSE leaders
- Benefit from 12 workshops focused on HSE management systems, critical safety processes, safety strategies in a complex work environment, injury prevention techniques and more

PLUS - AN INVITE-ONLY NETWORKING GALA DINNER

Silver Sponsors

Bronze Sponsors

Organised by

Strategic Partners

Media Partners

www.hse-forum.com

For more information and to register : ☎ +971 4 448 9260 ✉ enquiry@oilreview.me

Bahrain boasts its own large refinery, plus other infrastructure (Photo: Bapco)

Flying the flag for **Bahrain**

These are not the easiest of times for the GCC's smallest oil and gas producer, but Bahrain's strategic energy projects are in capable hands with state firm Bapco, says Martin Clark.

BAHRAIN MAY NOT be the most prolific Gulf oil and gas producer - it is by far the smallest of all the GCC states in terms of its output - but the country has always done its best to maximise any limited hydrocarbon potential.

Much of this responsibility rests with the Bahrain Petroleum Company, or Bapco, the state-owned oil and gas firm. It falls under the National Oil & Gas Authority (NOGA), and works in conjunction with foreign operators across both the upstream and downstream sectors.

Though small in size, Bahrain boasts its own large refinery - the first in the Gulf, in fact, built in 1935 - plus other infrastructure, as well as its own upstream production predominantly from the Awali field (also known as the Bahrain field). Data from Noga shows the Bapco refinery processed 100mn bbl during 2014.

And then there are strategic alliances with other regional ally states, notably oil kingpin, Saudi Arabia, which funnels around 220,000 bpd of crude into Bahrain, much of which ends up for processing at the Sitra refinery (also known as the Bahrain refinery).

AB Pipeline

In fact, the US$350mn modernisation and expansion of this key energy corridor - which will boost Saudi imports into Bahrain to 350,000 bpd - is arguably Bapco's primary focus right now.

> "The new AB Pipeline is expected to be in operation in 2019"

Although it is not the most expensive project on the books – that honour goes to the estimated US$5bn Sitra refinery upgrade – it is of immense national interest, underpinning the smooth flow of Saudi oil into the country.

The so-called AB Pipeline will be a new 30-inch diameter pipeline running 115 km from Saudi Arabia into Bahrain, designed to replace the older, existing line. Much of it, about 74 km, will run onshore, with the remaining 42 km subsea.

Industry players are keenly awaiting contracts to start building the new line after Australia's WorleyParsons completed front-end engineering and design work last year.

Capacity at Saudi Aramco's Abqaiq plant across the border is being upgraded to 350,000 bpd (up from 230,000 bpd currently) in conjunction with the new pipeline build.

The new AB Pipeline is expected to be in operation in 2018, ahead of the planned refinery expansion.

Sitra upgrade

Without the guarantee of Aramco's oil, Bapco's Sitra refinery expansion plans would be meaningless.

This high cost venture is expected to lift refinery output to 360,000 bpd, putting it on a par with the region's biggest and most sophisticated refineries.The facility, on Bahrain's eastern coast, currently has a capacity of around 267,000 bpd.

The bulk of crude oil input comes from across the border, with the balance, around

Anything. Anywhere. Anytime.

We've got you covered.

With threats possible from any angle, the unexpected is pretty much a guarantee for critical infrastructure. That's why Axis focuses on securing you from perimeter to core. Our network video surveillance products help you secure your site in even the harshest conditions. Yet beyond that, we constantly work together with our partner network to bring you solutions that ensure safe, uninterrupted production that's also more efficient.

www.axis.com/critical_infrastructure

AXIS®
COMMUNICATIONS

40,000 bpd or so, coming from the local Bahrain field.

The Sitra refinery produces fuel products such as diesel, benzene, kerosene and jet fuel, which means Bahrain is able to benefit from selling advanced, higher cost fuels and products on higher profit margins both to regional states and to international markets.

Despite unsettled market conditions, work is progressing on the upgrade, with Bapco handing Technip of France the front-end engineering design for four main work packages. This portion of the work is expected to be completed by the first quarter of 2016, with energy minister Abdul-Hussain bin Ali Mirza stating recently that completion is now anticipated around 2019.

A final investment decision is pencilled in for next year, according to Bapco chief executive Dr Peter Bartlett, a former Chevron senior executive.

Cash squeeze

For sure, the financial challenges facing any US$5bn rated project, especially at a time when oil revenues are tumbling as a result of the decline in world oil prices, will be tough. Like all other oil producing states - probably more so given its limited resources - the global oil price slump is costing Bahrain dearly.

Bahrain's Central Information Organisation said recently that the total value of the nation's oil and gas fell to BHD 429mn in the first quarter of 2015; that's way down on BDH 777mn in the same period just a year earlier.

Analysts estimate the oil and gas sector now makes up less than 15 per cent of Bahrain's economy overall, although the sharp fall will surely affect the government's budget, which remains heavily reliant on oil revenues.

One of the upsides to having limited natural resources, of course, is that Manama has been forced to develop alternative industries, such as banking and finance.

Still, the drop in revenues will hurt as Bapco planners seek to make progress on the current raft of new projects.

The Sitra refinery is planned to be financed through borrowing, which will mark a major test for Bartlett and a new-look Bapco leadership team, following a recent board reshuffle.

Upstream boost

Upstream, there are equally ambitious plans, with the hope of raising production capacity at the Bahrain field to as much as 100,000 bpd long-term.

In 2009, Bahrain assigned a joint venture firm, Tatweer Petroleum, responsibility for the redevelopment of the field, which spans a large swathe of the tiny island nation.

Bahrain has recently inaugurated a new solar energy pilot project (Photo: Bapco)

It groups state-owned nogaholding (a division of Noga) with US firm Occidental Petroleum and UAE-based Mubadala Petroleum.

The idea is to inject new life into this strategic asset - also the Gulf region's oldest oil field - with state-of-the-art technology.

And, in June, the field logged its highest average production since 1978, reaching more than 55,000 bpd of crude oil and condensate.

The challenge is to sustain output at this level – and above – in the years to come, which is a formidable challenge given the field's maturity.

Tatweer Petroleum has invested US$3.5bn in the field since its establishment in 2009, and plans to continue with more wells to raise both production and reserves with the aid of new technology.

> "The challenge is to sustain output at this level – and above – in the years to come"

Water flooding, steam flooding and other techniques are being used to boost output from the legacy field's reservoirs, while exploration in new zones continues.

As well as boosting oil output, the project is also significant not only as a testing ground for new technology, but in training up the local Bahraini workforce with modern industry skills.

Deep gas

In the gas sector too, Bapco is also engaged in efforts to enhance the kingdom's reserves and production.

Like Kuwait and the UAE, Bahrain has been faced by an energy squeeze in recent times and is similarly contemplating a liquefied natural gas (LNG) import facility to ease supply concerns.

A contract to import LNG could be awarded by the year end, according to energy ministry officials.

One key upstream project entails drilling deeper for gas onshore in the Bahrain field, an initiative being led by the Tatweer group.

It has already increased gross gas production capacity more than 50 per cent from an initial level of 1.5bn cubic feet per day to over 2.3bn cubic feet per day.

On a broader level, a gentle move away from subsidies may help Bapco and other operators balance supply and demand more comfortably.

Bahrain is to start raising the price of gas and electricity sold to domestic users in a gradual shift to a more cost reflective market.

New horizons

Bapco is also likely to find itself leading the charge in new ventures too, such as alternative energy and the search for unconventional oil and gas.

Later this year, a congress on heavy oil takes place in Manama, although these remain early days for Bahrain in this challenging area.

Bapco is already active exploiting some of the kingdom's other natural resources, notably the abundant sunshine.

The company recently inaugurated a new five megawatt (MW) solar energy pilot project at Awali. The US$25mn Awali project, which was built by the USA's Petra Solar, in collaboration with the country's Electricity & Water Authority, is now plugged into the national grid.

Bahrain is keen to boost the uptake of clean energy generation, particularly solar energy technologies, to offset local demand for gas as well as respond to environmental challenges. ■

Become a PPDM Certified Petroleum Data Analyst.
Register by 13 Sept 2015 and save $500!

Oil Review
TECHNICAL WORKSHOP

DATA DRIVEN VISUALIZATION

for Upstream and Downstream Oil and Gas Analytics and Information Management

11 - 13 OCTOBER 2015, ABU DHABI

A highly interactive 3-day technical workshop for data and information managers to learn from industry experience and from each other. Case studies are drawn from a wide variety of geographic areas, disciplines and organization types. Participants will create deliverables that can be applied directly to challenges in their own groups.

WHO SHOULD ATTEND:

THE COURSE IS DESIGNED FOR:

- E&P Data Managers
- Heads of Data Management
- Subsurface Data Managers
- Data Scientists
- Heads of Information Management
- Data Engineers
- Seismic Data Engineers
- Well Data Managers
- Data Application Managers

WORKSHOP FACILITATOR

Jess Kozman
Regional Representative, Asia-Pacific
Professional Petroleum Data Management (PPDM) Association

TAKE AWAY KEY KNOWLEDGE SO YOU CAN:

- **Understand** the common terms, definitions, roles and responsibilities
- **Embed** analytics data governance in your daily activities
- **Assess** data analytics methods and techniques for upstream and downstream
- **Apply** industry standards and business rules in analytics workflows
- **Visualize** analytics data for technical applications
- **Identify** and resolve duplicate data and achieve high integrity of data
- **Work** with external stakeholders, vendors, partners, and regulators
- **Evaluate** security policies used for document management in analytics data flows
- **Put** in place metrics for measuring success of analytics visualization
- **Use** geospatial data analytics for enhanced oil recovery, reservoir management and reserves optimization

Organized By

Alain Charles MANAGED EVENTS

Supported By

Oil Review Middle East

Oil Review Africa

WWW.PPDM-COURSE.COM

TO REGISTER FOR THIS TECHNICAL WORKSHOP CONTACT: Riad Mannan +971 (4) 448 9260, riad.mannan@alaincharles.com

Global energy: a year of 'tectonic' shifts

BP's latest Statistical Review of World Energy highlights some significant shifts in global energy production and consumption - notably the USA's overtaking Saudi Arabia as the biggest global oil producer.

THE 64TH EDITION of BP's Statistical Review of World Energy, launched in June, highlights how significant changes in global energy production and consumption have profoundly affected prices, the global fuel mix and carbon dioxide emissions.

The review highlights the continuing importance of the US shale revolution, with the USA overtaking Saudi Arabia as the world's biggest oil producer – a prospect unthinkable a decade ago. US oil output grew by 1.6mn bpd in 2014, its largest increase on record. The growth in US shale gas in recent years has been just as startling, with the USA surpassing Russia as the largest producer of oil and gas.

Meanwhile, the review shows primary energy consumption has slowed markedly, with growth of just 0.9 per cent in 2014, a lower rate than at any time since the late 1990s (other than in the immediate aftermath of last decade's financial crisis). Chinese growth in consumption slowed to its lowest level since 1998 as its economy rebalances away from energy-intensive sectors, though China remained the world's largest growth market for energy.

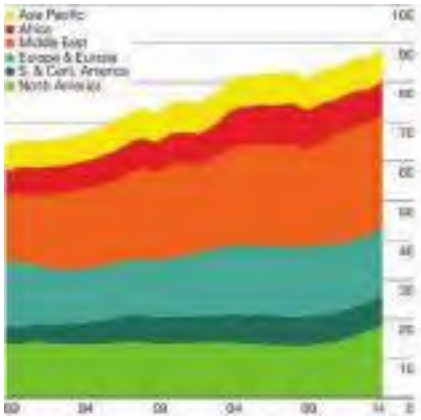
Shifts in production and consumption

Speaking at the Review's launch on 10 June, BP Group chief executive Bob Dudley said: "The eerie calm that had characterised energy markets in the few years prior to 2014 came to an abrupt end last year. However, we should not be surprised or alarmed. These events may well come to be viewed as symptomatic of a broader shifting of the tectonic plates that make up the energy landscape, with significant developments in both the supply of energy and its demand. Our task as an industry is to meet today's challenges while continuing to invest to meet tomorrow's demand, safely and sustainably."

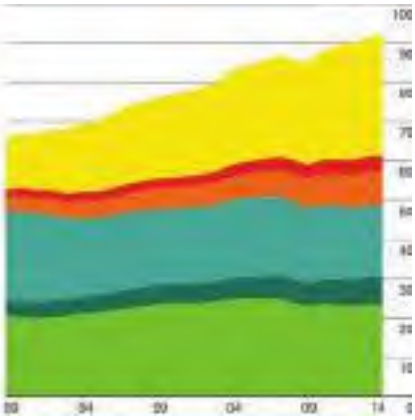
Oil production/consumption by region

Million barrels daily

Production by region



Consumption by region



BP Statistical Review of World Energy 2015

The shifts in production and consumption affected energy prices significantly. Oil prices fell sharply, largely driven by the strength of supply as non-OPEC production grew by a record amount, while OPEC maintained its output levels to maintain market share.

Elsewhere, the growth of China's coal consumption stalled as the pace of industrialisation slowed, and global natural gas growth was also weak due to a sharp fall in consumption, triggered by a mild European winter.

> "Renewables were the fastest-growing form of energy, but oil remained the dominant fuel"

Renewables were again the fastest-growing form of energy, accounting for one third of the increase in overall primary energy use during a year in which global primary energy consumption growth slowed. Even so, they accounted for only three per cent of primary energy.

Oil remained the dominant fuel, accounting for 32.6 per cent of global energy consumption, but lost market share for the fifteenth successive year.

Global carbon dioxide (CO_2) emissions from energy use grew by just 0.5 per cent; the slower growth relative to its average over the past 10 years was largely attributable to the changing pace and pattern of Chinese economic growth.

47.4%	31.7%	34.8%	17.3%	+4.4%	6.4%
Middle East share of global oil reserves	Middle East share of global oil production	Middle East share of global oil exports	Middle East share of global natural gas production	Growth in Middle East energy consumption	Middle East share of global energy consumption

Middle East

In relation to the Middle East, key points in the review were as follows:

- Energy consumption increased by 4.4 per cent, the fastest of any region in 2014.
- Natural gas now accounts for more than half of energy consumption in the Middle East.
- The Middle East provided over a third of global oil exports, three quarters of which headed to Asia Pacific.

More than half of primary energy consumption in the region is now sourced from natural gas; its share rising to a record high 50.6 per cent. Growth was driven by Iran and Saudi Arabia. Oil's share fell to 47.5 per cent. However, oil consumption still rose by 260,000 bpd, or 2.8 per cent, driven by strong growth in Saudi Arabia and the UAE. Consumption in the rest of the region was flat on aggregate.

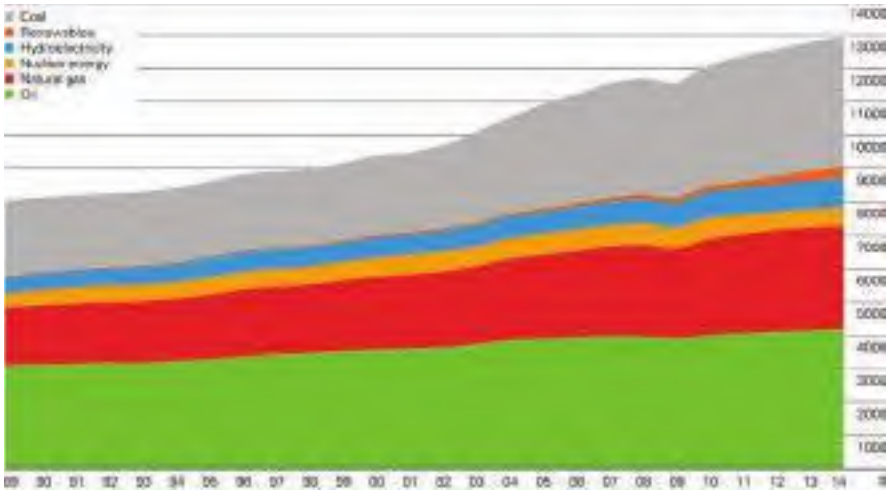
Oil production in the Middle East hit a record high of 28.6mn bpd, up 360,000 bpd from the previous year. Iraq (+140,000 bpd) and Saudi Arabia (+110,000 bpd) were the largest contributions to growth. Iraq (3.3mn bpd) recorded its highest output since 1979.

Refining capacity expanded by a record 740,000 bpd to 9.4mn bpd, due to the completion of two 400,000 bpd refineries – one in Saudi Arabia and the other in the UAE.

Oil exports from the Middle East were essentially flat at 19.8mn bpd, (down -0.1 per cent), but were still more than a third of global exports and more than double exports from the FSU, the next largest exporting region.

Primary energy world consumption

Million tonnes oil equivalent



BP Statistical Review of World Energy 2015

> "Oil production in the Middle East hit a record high of 28.6mn bpd"

Just over three quarters of Middle Eastern oil exports headed East to Asia Pacific.

Gas exports (pipeline and LNG) fell by 2.9 bcm or -1.8 per cent. Qatar remained the largest LNG exporter at 103bcm, accounting for almost a third of global LNG exports.

CO_2 emissions rose by 4.1 per cent, the fastest growth of any region last year. ■

Maintaining on-site **power**

Most oil/gas installations have a genset(s) available to supply permanent or standby power. Compression ignition is the most common source of energy, but output problems often arise at the alternator end.

TROUBLESHOOTING ANY ENGINE generator is normally a two-stage process. First comes making sure the diesel (the most common prime mover by far) actually starts and runs smoothly, a routine set of procedures based on checking the condition of the battery, the actuation of system controls, the status of all warning lights/alarms, the fuel supply system including the condition of the injectors and pump themselves, an adequate volume of gasoil in the tank, both the oil switch and governor handle being turned on, and adequate air supply/exhaust arrangements. All routine procedures for any diesel mechanic used to conditions on road or rig.

However, with any industrial-scale, three-phase engine generating set there are further checks to carry out at the output end where the alternator (brushless if fitted) is located. This is usually driven by a mechanical shaft, which may itself need attention (eg. if slipping). Subsidiary on/off generating controls are likely to be installed here and need to be checked, too. The most likely cause of inadequate supply following start-up is a damaged capacitor (condenser), which can be readily changed on the spot if a matching spare can be found.

If inadequate voltage is still indicated, the second probable cause is a short circuit within the rectifier assembly, which can be checked with a hand-held multimeter. The next required step is to ensure a good connection between this key component and the coil itself, another task for that handy little meter which every plant technician carries. With this done and all connections checked for tightness, adequate power should be available when the engine is warm and up to speed.

> “Other reasons for voltage droop may include slippage of the power take-off shaft”

However, the voltage available may be still be below specification, in which case the engine controls and/or governor may not be working properly, a job for a diesel mechanic rather than an alternator specialist. Low or varying output voltage may also be due to short-circuiting of the rotor reels or the stator within the alternator itself, according to the type of excitation built in; after routine checking of performance these key components may themselves need to be changed.

Well organised plant rooms always have original-supplier approved (OEM) spare-part versions of these key alternator components available in store.

Other reasons for voltage droop (which may cause critical equipment down the line to falter) may include slippage of the power take-off shaft, another task for the engine-end specialist first as this can lead to overheating of the whole damage-prone and very costly alternator. Too much heat may also be due to a short circuit existing within the rotor or stator assemblies; again these should be changed if necessary.

Specialised suppliers of large engine generators can be found at big energy exhibitions such as Middle East Electricity

With the alternative carbon brush-type alternator, power output problems can be due to excessive wearing or complete mis-fitting (pole reversal) of this sensitive component. Over-high voltage is rarely encountered because of the automatic operation of the regulation system; low-potential indications are likely to be due to problems within the AVR system itself (most likely as this device is susceptible to burn-out and other malfunctioning), and/or the rotor or stator, all of which should be checked and if necessary replaced.

Once again a PTO shaft problem or short-circuiting of either rotor or stator may be the cause of overheating, in which case checking of these last two components should be carried out before the engine is disassembled for corrective maintenance to be carried out on the power-drive shaft itself.

Operators of large “permanent” engine generators will come across specialised suppliers at most of the big energy conferences and exhibitions such as Adipec and SAOGE (Abu Dhabi and Dammam, Saudi Arabia, both held in November). Power-Gen ME (Abu Dhabi, October) and Middle East Electricity (Dubai, March 2016) are good alternative venues.

For users of stand-by gensets the big construction shows, such as the Big 5 series (various timings and locations) are useful sources of contacts; try also WE Power (Dammam, April 2016) and Saudi Elenex (Riyadh, May 2016). ■

HR FORUM

OIL & GAS

25 - 27 October 2015
Dubai, UAE

TEAM DISCOUNTS AVAILABLE
CALL: +971 4 448 9260

Addressing the talent crunch

in the **oil and gas downturn** through improved talent management and leadership development

Key Discussion Topics:

- Recruitment: Attracting and retaining the right staff
- Strategic employment and talent management development
- Developing e-learning strategies
- Re-imaging performance measurement
- Motivating and incentivising employees
- Empowering women in the energy sector

Our expert industry speakers include:

Rob Veersma
Director, Training & Development
Gazprom International, Netherlands

Dr. Nadia M. Al-Hasani
Dean
Petroleum Institute, UAE

Chris Shennan
Head of Oil and Gas Consulting
Hay Group, UAE

Munib Amin shadid
L&D Specialist, Chartered HR Consultant
Kuwait Oil Company, Kuwait

Rayed Al-Eskandrani
Talent Management Manager
Baker Hughes, UAE

Ademola Ogubano
Head - Human Capital Management
Oando Energy Resources, Nigeria

Shahid Mahmood
Senior Personnel Officer
Abu Dhabi Oil Refining Company (TAKREER), UAE

Kartikey Singh
Portfolio Manager - Oil and Gas
Hay Group, UAE

Shaima Al-Awadi
Lead Training Specialist
Dolphin Energy, UAE

VIEW THE FULL AGENDA & BOOK YOUR SEAT

www.hrforumoilandgas.com

T: +971 4 448 9260
E: enquiry@oilreview.me

Organised by: Oil Review Middle East

Media Partners: Oil Review Africa, CLOMEA

Knowledge Partners: Oxford Strategic Consulting, Oxford Business Group

Using e-line technology to tackle wellbore challenges

Brian K. Sidle, vice president – corporate marketing, Welltec, outlines the advantages of e-line technology in keeping wells flowing.

PRODUCING WELLS HAVE problems, and the older the well, the more likely it is to have problems: for instance, failed valves, stuck sliding sleeve doors, produced sand, fill, scale, restrictions. All of them, however, contribute to an ever decreasing performance and, subsequently, cash flow position.

As wells are being designed, a universal design criteria is the capability to keep production flowing as long as possible without having to intervene. This is why, typically, interventions are only done when something 'breaks;' ie, production becomes restricted, or stops. But this conventional strategy often forces operators into a position where they must cope with unnecessary levels of uncertainty, leading to inefficient responses.

Similar to a vehicle or other expensive asset, regularly performed maintenance will increase the current performance and extend the overall life of the asset. Operators can prolong production and achieve the highest return on investment possible, while simultaneously increasing recovery and reservoir drainage. Conversely, however, if the well has been operating for several years and has never had any maintenance on it, then what?

Let's take a look at a somewhat subjective measurement system. Figure 1 compares some of the potential options using a scoring system of 1-10, with the higher scores being the best.

Defining efficiency as the ability to quickly mobilise, rig-up, run in and out of the well, rig-down and demobilise off location, it is clear that a WO rig is the lowest, while slickline and e-line score the highest.

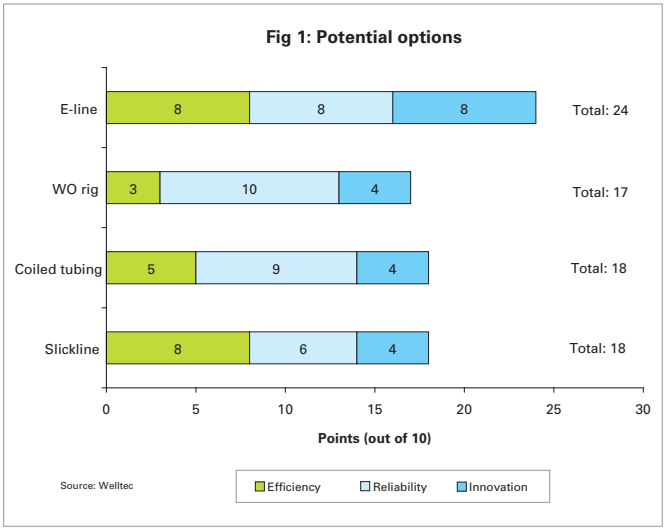
> "A universal design criteria is the capability to keep production flowing as long as possible"

Reliability is defined as the ability to solve the problem once on location. Here the WO rig scores the highest as it can generally overcome even the most severe of challenges.

On the definition of innovation, this is the ability to understand what the problem is, adapt to the challenge and bring the appropriate technology to bear quickly, minimising downtime and restoring production as quickly as possible. With real time, surface controllable features enabled by e-line versus the mechanical solutions offered by the others, it scores the highest in this category, offering a 40 per cent advantage over the WO rig.

Extra benefits

While a WO rig has the highest chance of success to rectify the problem, what about the trade-off on efficiency and innovation? Slickline may be efficient as per our definition, but what is the confidence level on its reliability and innovation to overcome and fix the unknown challenge? Overall, e-line stands out as the overall winner for these key elements of success.



Another important factor which has not been addressed or scored, but should be considered as part of the innovation content, is the ability to accomplish the work in the safest, most sustainable and cost-effective way. A quick comparison of a CT unit to an e-line crew with regards to some simple metrics: total footprint, size, number of people, number and weight of lifts, sustainability, complexity of operations and carbon footprint, demonstrates that there is significant additional value to be gained from deploying e-line. If a WO rig were to be compared, the contrasts become even greater. When you consider these additional benefits, it becomes even more apparent that an e-line solution offers significant advantages, especially if you have the right portfolio of tools.

Platform for new technology

Does this approach work? Yes. Since the 1990s, Welltec's technology has been put to work redefining the boundaries of what e-line workovers could accomplish. Not only does this methodology provide efficient operations, e-line is a proven, reliable method of accessing and addressing wellbore challenges. And it is also a proven platform for the development and successful introduction of new, innovative technology.

Trying to future-proof wells by installing current technology in them can be a risky proposition since it remains in the ground indefinitely, unable to be updated. Rather, the application of new, appropriate technology as it develops is the solution for maximum value. A problem occurs and modern technology is applied quickly and efficiently, capitalising on what is available now and not relying

on earlier technology that was 'new' five, 10 or 20 years ago.

Perhaps the industry will never get to the stage where regular interventions are made universally, but certainly the point about applying modern e-line technology is relevant and applicable immediately.

Case studies

Offshore Mexico, subsurface safety valves (SSSV) require periodic function testing to ensure reliable operation when needed. Typically, they are tested and, if they fail, a workover rig is scheduled to shut in the well and replace them.

A new technique has successfully been implemented which precludes the requirement to shut in the production or even to mobilise a workover rig. Using the Well Cleaner® Wishbone Honer (WBH), the operator has been able to repair the valve in-situ with the well flowing.

The deployment of Welltec's e-line solutions can result in significant efficiency gains as well as time and cost savings

Analysis determined that often the SSSV failed to close completely due to debris, which limited its ability to hold pressure during the testing. After careful planning, a Well Tractor® and Well Cleaner® WBH were mobilised and run on e-line to the desired depth. There the WBH was activated and cleaning of the SSSV and surrounding tubing was performed. Following the cleaning, the SSSV was successfully tested.

The entire operation was completed in only 18 hours compared to around one week for the rig operation to pull the SSSV. And the well remained in production throughout, demonstrating the benefits that e-line interventions can provide.

Baku, Azerbaijan, time and costs were mounting during an operation when a 17.8cm retrievable packer and the setting tool got stuck at 1,977m, preventing the operator from putting this oil producer on production.

Determined to return the well to production as quickly as possible, the operator called out Welltec's new double stroker. Capable of accurately exerting force up to 27,216 kilos, the Well Stroker® XXS latches the assembly, locks into place and exerts the force directly onto the fish (or sliding sleeve or plug) with no strain on the e-line or other parts of the toolstring. Surface read-out allows direct measurement and control of the force downhole.

On the first run, the Well Tractor® deployed the Well Stroker® XXS to the fish where it latched and applied 24,948 kilos to release the stuck setting tool from the plug. Then the entire assembly was pulled from the well and operations resumed to put the well on production.

Use of Welltec's e-line solutions enabled the operator to prevent mobilisation of a heavy duty coiled tubing unit, providing a fast, effective solution and saving a minimum of five days rig time as well as the environmental and cost differences.

The following case describes an operation in a new, deep, high pressure gas reservoir in the Middle East. In this well, Saudi Aramco needed to test the casing integrity and perform a perforation. Because of the environment, 310°F (154°C), 91° horizontal well, standard wireline conveyance was not an option. Since the well was designed as a multi-stage frac project, pump down logging wasn't feasible and coiled tubing (CT) was deemed to be too time consuming.

Because of the recent advances in DC electronics, the Well Tractor® 318 proved able to execute the job despite the high temperatures, high well deviation and a 5,705 m extended reach section.

The job was composed of two runs; the first to convey a cement bond log and a multi calliper imaging tool. Here the toolstring was run in hole with the Well Tractor® and logging tool to the kick-off point at about 4,755 m, at which point the Well Tractor® was engaged and conveyed the toolstring to 5,707m. On the second run, the Well Tractor® conveyed an 8.6 cm gun to perforate the desired zone at 5,707 m. In total, the Well Tractor® covered a distance of almost 2,591 m.

Using Welltec's e-line solution, the operator achieved better data quality by utilising more advanced depth determination tools, as well as reducng costs and increasing operational efficiency by saving valuable time. The environmental impact and risks were also reduced as the e-line solution eliminated the need to mobilise a rig. ■

> "E-line is a proven, reliable method of accessing and addressing wellbore challenges"

This is an edited version of Brian K. Sidle's paper 'Prolonging production and increasing recovery through regular well interventions'.

The evolving landscape of offshore communications

Middle East operators are becoming increasingly receptive to wireless technology solutions for offshore scenarios, says Asfar Zaidi, principal consultant, Huawei Middle East.

"THE TECHNOLOGY FOR the oil and gas industry is advancing at a very rapid rate; this is affecting the landscape and requirement of offshore operations," says Zaidi. "There are issues relating to big data - the acquisition of huge amounts of data, such as micro-seismic data, and the need to transport that data real-time to facilitate accurate decision making about drilling, exploration and production.

"Secondly, with safety being a top priority, operators are increasingly wanting their platforms to be unmanned. So again, a solution is needed that provides a real time operation with a means of communication.

"Operating an unmanned operation or acquiring big data heightens the need for data security, so the data communications mechanism needs to be as secure as possible.

"Remote video surveillance of platforms is also increasingly in demand, to monitor any threat or illegitimate activity – and this requires a lot of bandwidth.

"All these parameters and challenges require a strong communications infrastructure. Wireless technology offers a cost-effective, flexible means of fulfilling all these requirements and parameters.

"Right now 4G technology is very hot. Huawei has a dedicated enterprise solution for this technology called Enterprise LTE, (eLTE) a dedicated wireless network that provides comprehensive coverage and complete data security."

Rapid advances in technology are changing the landscape and requirement of offshore operations (Photo: Maersk)

First offshore LTE wireless communications network

Huawei is a pioneer in this technology, having implemented the world's first offshore LTE wireless communications network, for an operation in the North Sea. This solution provides a secured network with 1 Mbit/s upstream and 2 Mbit/s downstream data transmission, enabling voice communications and data transmission between drilling platforms and FPSOs, tankers, and onshore stations over an area of 37 km in a harsh environment, and an advanced network design that supports service expansion, including video surveillance uploading and wireless cluster services.

The solution uses Huawei's feature-rich DBS3900 in BBU+RRU mode, adopting advanced wireless communications technologies such as Mobile International Network Operator (MINO), high-gain antennas, and Customer Premises Equipment (CPE) terminals with external antennas to optimise Maximum Allowable Path Loss (MAPL) and enlarge the coverage area.

> "Wireless technology offers a cost-effective, flexible means of fulfilling all these requirements and parameters"

Now, because of the rapid changes in technology, Middle East operators are increasingly looking to move to wireless for offshore fields as well as for new onshore fields, and have started researching the options, says Zaidi. "Before going into real scenarios Middle East operators are looking to do some pilots to gain an understanding

> “Soon it will move towards the bigger picture, that is the Internet of Things (IoT)”

of the technology and how it can be applied in their operations. We will soon see a couple of these projects coming online in the region.

“As far as oil and gas is concerned, the Middle East is the number one region for us,” he continues. “We are focusing strongly on Middle East oil and gas and are working closely with customers not only on wireless technology, but also in data processing, for which high performance computing is needed; we have a number of product lines available to fulfil all requirements. Most operators now want to adopt digital oilfields technology, and this needs to be supported by an effective communications network infrastructure – the two are interlinked.”

ICT solutions

Huawei offers a complete set of ICT solutions for oil and gas exploration, production and transportation, deploying ‘smart’ oilfield technologies aimed at boosting production efficiency while protecting the workforce and assets. These range from its wireless network-based multimedia digital trunking communications system, which enables users to monitor site conditions in real-time by combining voice, data and video services into one; to intelligent pipeline solutions, which offer fault and risk detection and an automated response in the case of any leak.

“It is not only about the customers, it is also about the partners,” adds Zaidi. “We are cooperating with the oilfield service companies and automation companies, so they can look into embedding these technologies in their devices, with a view to providing our customers with a complete solution.

“Soon it will move towards the bigger picture, that is the Internet of Things (IoT); there will be more machines in the field than ever before, which will all need to be connected together.”

As for the future of wireless communications, Huawei is pioneering research into 5G, which will offer enhanced support, says Zaidi. ■

Asfar Zaidi, principal consultant, Huawei Middle East

Harris CapRock offers enhanced mobile connectivity

HARRIS CAPROCK COMMUNICATIONS has introduced a service that enables remote maritime and oil rig crew members to stay connected with family and friends anywhere in the world via their cellphones or smartphones.

The service provides crew members — even in the most remote locations — with reliable mobile roaming as well as pay-as-you-go voice, text, email and some smartphone data services. Global on-site assistance is also available.

“Our expanded offshore GSM service increases connectivity and boosts morale for our energy and maritime customers’ crew members,” said Tracey Haslam, president, Harris CapRock Communications. “This allows reliable communication with management as well as loved ones at home.”

Crew members can use either a local prepaid SIM card or home network roaming option. With home network roaming, they can keep their existing handsets and phone numbers without changing their SIM cards. Billing is sent directly to the individual’s home network account.

Harris CapRock Communications is a global provider of managed satellite and terrestrial communications solutions specifically for remote and harsh environments including the energy, government and maritime markets. The company owns and operates a global infrastructure that includes teleports on six continents, five 24/7 customer support centres, a local presence in 23 countries and more than 275 global field service personnel. Nine out of the ten largest offshore drilling contractors rely on its services, according to the company.

EMC delivers satellite solution in Iraq

EMERGING MARKETS COMMUNICATIONS (EMC), a global satellite and terrestrial communications company, has announced that it has delivered the first high-throughput, satellite connectivity solution, leveraging O3b technology, for the oil and gas industry. The satellite communications service is for a global energy company, providing ultra-low latency, fully redundant connectivity, high speed bandwidth and local, ongoing support in Iraq.

EMC’s fully redundant satellite connectivity solution combines O3b’s high throughput, Ka-band capacity, as the back-up for the terrestrial link and C-band for additional redundancy. The technical solution is designed to provide seamless communication between multiple sites in Iraq, supporting back office applications, voice, Internet access, and high definition video conferencing.

“Oil and gas customers demand lower-latency connectivity solutions for bandwidth-hungry applications, with more reliability, even in the most remote places of the world,” said Abel Avellan, founder and CEO, Emerging Markets Communications. “Our investments in global infrastructure, local field support centers, patented technology and key partners, such as O3b, allow us to build a custom communications solution, tailored for oil and gas customers looking to implement new technology.”

The use of O3b satellites, which are closer to the earth than conventional geostationary satellites, reduces latency, increases Internet speed and improves voice and video quality for the user, says EMC. O3b’s next generation IP trunking solution boosts existing link capacities to rival the affordability and latency of fiber.

EMC currently provides satellite connectivity services for several global energy companies in Iraq for oilfield operations and remote offices. The company provides satellite connectivity in C-Band and Ka-Band and local field support from its centres in Basra and Baghdad to provide on-site technical assistance and spare parts.

The next step for **walking rigs**

Integrated Drive Systems outlines its new patent-pending ReelRig™ distributed power and control system that enhances rig mobilisation.

THE OIL AND gas industry is drilling and completing wells faster and more efficiently than ever before. Along with hydraulic fracturing and horizontal drilling, new pad drilling techniques, coupled with advanced drilling rig designs, have been among the most important innovations driving US production growth over the last decade.

Rig manufacturers developed 'walking rigs' that started appearing in the Barnett Shale as early as 2004. In 2006, according to Drillinginfo statistics, multi-well pads employing walking rigs made up about five per cent of wells drilled in nine US unconventional plays. By the third quarter of 2013, the percentage had risen to 58 per cent. Today, these new mobile rigs have surpassed older conventional units in operation. The primary design purpose of this class of rigs was to decrease mobilisation complications.

Houston–based Integrated Drive Systems (IDS) has developed the new patent-pending ReelRig™ Distributed Power and Control System that it says greatly enhances walking rig mobilisation and operations.

According to Norm Myers, president of IDS, "The ReelRig system is a significant step-change in the way drilling rigs are powered. It has effectively eliminated the many maintenance, trouble-shooting and safety issues the industry has had with the standard maze of power cables required to operate walking rigs."

> "Drilling rigs are complex machines with many components and multiple systems"

Recently, Orion Drilling has added two walking rigs to its fleet that employ this new distributed power and control system. Orion has another new build planned for 2015 designed around the ReelRig concept, and has plans to retrofit an older rig with the new system.

Old problems

Drilling rigs are complex machines with many components and multiple systems that require electrical power to operate, run, lift, rotate, pump, illuminate, etc. It all starts in what is called the 'backyard' with the power control house, generators and electrical plug panel (see Fig. 1). Traditionally, this can be a spider web of 46 cables or more connected to the plug panel, each carrying 600v for power or control.

On a walking rig, the network of cables must 'travel' with the rig across the pad as the rig moves from one wellbore to the next, getting further away from the power house with each move. There are hundreds of feet of multiple cables chasing in and around and over and under the rig structure, involving sometimes more than 200 or more plugs or cable connectors and a traditional 'festoon' cable-handling system that unfolds like an accordion as the rig travels.

The problems with these systems are many. There are multiple connection points that can be broken or compromised, requiring wasted hours of troubleshooting and repair; not to mention safety concerns. Because of the cables, rig moves are cumbersome, often requiring extra personnel and equipment.

New solution

The new IDS distributed power and control system replaces a traditional centralised power network with a clean, streamlined power

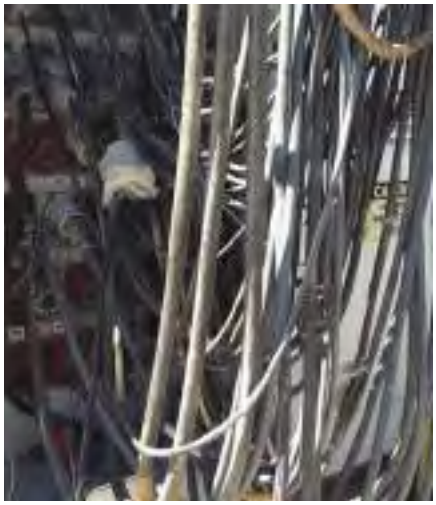


Fig. 1: A traditional electrical power plug panel

Fig. 2: ReelRig™ power house, transformer and power cable connecter

and control cable-handling system designed specifically for moving rigs over drill pad sites more safely and efficiently, says the company.

The distributed system locates variable frequency drives (VFDs) and programmable logic controllers (PLCs) near the driven equipment. It involves eliminating multiple power and control cables and connectors by adding a transformer to the backyard power house area (see Fig 2); stepping-up' the power from 600v to 4,160v, sending that power through a single medium-voltage cable, 'stepping-down' the voltage at the rig via another transformer, then distributing the power closer to where it is needed on the rig. A single control cable is backed up with a redundant wireless network, assuring uninterrupted operation and control without multiple connectors and 'noise' problems associated with long runs of cable.

> "The new system has revolutionised the way we power our rigs"

Instead of a plug panel that looks like a busy Houston freeway interconnector at rush hour on a Friday afternoon, there is a single-power cable connection point that includes ground-fault/check protection and a three-key safety lockout mechanism. There is a skid-mounted power cable spool, or 'reel', that attaches to the walking rig substructure. The spool pays out or reels in the power cable as the rig moves further away from or closer to the power house during rig moves (See Fig. 3). There is also a companion reel that handles the rig's fibre communication system's cable in a similar fashion.

From the spool, the power cable is connected to another transformer, where the 4,160V power is stepped back down to 600v and then distributed to the local equipment room (LER) and driller's cabin on the rig floor. The VFDs and motor control centres (MCCs) for the drawworks, top drives, and other rig floor equipment are housed in the LER (on the rig floor) closer to the driven equipment.

The entire ReelRig system consists of the power control house with mud system VFDs, transformers, cable and cable-handling system/skid, local equipment room VFDs, driller's cabin with integrated driller's controls, AC drawworks controls, and AC topdrive controls.

Wayne Squires, president of Orion, says, "This new system has revolutionised the way we power our rigs. It's safer, more efficient, reduces cable weight and footage, and dramatically reduces power system maintenance and troubleshooting. Our rig moves are faster, require fewer people and no cranes are needed for a move. In short, this system has solved the electrical limitations to walking a rig." ■

Fig. 3: ReelRig™ power cable and communication cable spooling skid

Orion Drilling's Aries Rig with ReelRig™ distributed power and control system skid attached to the rig's substructure.

Lower oil price spurs demand for drilling technologies

Companies like Schlumberger, Baker Hughes and AlMansoori are providing specialised oilfield services for optimal drilling in the Middle East.

THE OIL AND gas industry has witnessed a technological revolution in the extraction of oil and gas with the advent of new drilling technologies, for instance, rotary steerable systems. These systems have facilitated the production of oil and gas in hostile environments, such as HPHT wells. Innovations in the field of wireless communications have also facilitated the gathering of downhole information in real time, thus providing increased control over the well trajectory. These progressions have reduced the overall well drilling costs while increasing hydrocarbon production.

Directional drilling is advancing beyond conventional mud motor applications. With the growing demand for energy and depletion of existing reservoirs, untapped reservoirs with typical geological structures are quickly becoming a crucial alternative. However, these resources cannot be tapped effectively with the existing vertical well technology. Companies need to adopt directional drilling technologies to explore the most difficult formations across the Middle East.

The Middle East is a lucrative market for new drilling technologies (Photo: Huyangshu/Shutterstock)

Rise in hydrocarbon production

Technavio, in its latest report, also emphasises the advances in drilling technology and equipment, which will significantly increase the efficiency, control, and monitoring of oil and gas wells.

"Market vendors are increasing their R&D investments that will improve the reliability and efficiency of drill pipes and other downhole drilling tools," said Faisal Ghaus, vice president of Technavio.

The drilling tools market can be segmented based on type, application area and geography. Major drilling tools include bails, adapters, switchers, drill gaskets, drill collars, stabilisers, subassemblies, reamers, core drilling tools, core pipe, air swivels, drill pipe and other drilling accessories. These equipment form an essential part of drilling unit and help to perform effective drilling operation providing safer and faster drilling with negligible damage to the environment.

Conventional drilling technologies include horizontal drilling, multilateral drilling, extended reach drilling, complex path drilling, etc.

The focus on research and advancements in drilling technologies has aided companies in minimising their cost of operation and maintenance. This has not only increased the efficiency and stability of the product/service but has also increased the production rate, thus, generating increased revenue. R&D in directional drilling involves substantial investments and significant risks. In order to minimise the same, leading players are seeking new products and service developments and signing new contracts and agreements.

Although the directional drilling market is currently dominated by a few major players, the market scenario is expected to become competitive in the future with various companies catering to onshore and offshore applications. The Middle East is currently one of the most lucrative markets for directional drilling owing to continuing investment in maintaining and increasing production in the region.

MENA operators benefit from Baker Hughes technologies

In the Middle East and North Africa (MENA) region, Baker Hughes uses advanced technology to enable operators to increase profitability while reducing risks and environmental issues, resulting in record-breaking improved drilling performance, as illustrated in the following examples.

Baker Hughes enabled operators to access remote reserves by drilling the longest extended-reach wells in United Arab Emirates, setting the record for a second time in 2015. The extended-reach wells were drilled to total measured depths of up to 8,606 metres with 5,273 metres lateral lengths using Baker Hughes' drilling technologies, including the AutoTrak X-treme™ rotary steerable system combined with the OnTrak™ integrated measurement-

The Baker Hughes Kymera FSR directional hybrid drill bit delivers fast, smooth, and reliable performance while drilling curve sections in challenging carbonate formations

while-drilling system. The LWD system used the LithoTrak™ service and StarTrak™ high-definition advanced LWD imaging.

Baker Hughes continues to break drilling performance records with Kymera™ hybrid drill bits in Africa. Baker Hughes drilled the longest bit run for a major operator in Tunisia. The Kymera™ bit drilled 1,475 metres at a rate of penetration (ROP) of 12.36 m/h in challenging conditions. Baker Hughes also completed a footage and ROP record on one of the most prominent fields in Algeria. A single Baker Hughes Kymera bit drilled through interbedded sandstone and clay, containing igneous dolorite intrusions to 1,130 metres with an average ROP of 6.6 m/hr, replacing six bit runs used in offset wells, and providing significant savings and operational improvements to the operator. The previous record was 4.2 m/hrs as an average for the six runs.

"Enabling operators to achieve more of their goals while minimising drilling costs for nonproductive time, and achieving improved well productivity, remains at the forefront of Baker Hughes technology delivery; evident by a recently awarded multi-rig drilling contract with a major operator in the Middle East," said Ashraf Zeid, Baker Hughes vice-president of sales and marketing for the Middle East & Asia Pacific region.

"We have developed technologies that address many of the challenges seen in the region. Replacing costly wireline measurements through improved logging- and measurements-while-drilling, Baker Hughes continues to integrate drilling innovation with improving reservoir characterisation. One of our most recent successes has been our new FASTrak™ LWD fluid analysis sampling and testing service, which samples reservoir fluids and pressures during drilling. The valuable reservoir fluid information, with less near-wellbore contamination through shorter sampling times and reduced costs, opens new possibilities to field development concepts and enhances management of development geological risks."

Innovation aids mature fields: AlMansoori

The drilling market in the Middle East and North Africa is currently being driven by two basic factors — increase in gas projects and sustainable oil development. Several countries in the MENA region are now looking towards increasing gas output to tackle energy issues, AlMansoori's deputy CEO Ibrahim Al Alawi says.

Drilling technology is becoming increasingly important as fields are maturing and innovation is aiding production in the aging wells. With the biggest markets within the UAE and Saudi Arabia, Abu Dhabi-based

Ibrahim Al Alawi, deputy CEO, AlMansoori

AlMansoori's focus is to bring the best technology to its clients.

"We are continuing to expand services in the value of packages and looking for opportunities in the market," Al Alawi notes.

With regards to offerings in the region, AlMansoori provides oil intervention as well as coiled tubing and logging.

The steep decrease in oil prices may have been a reason for many companies not to adopt newer technologies. But Mr Al Alawi reckons that that is not the reason. "Companies are unwilling to invest more on quality of both people and products in the beginning. If they invest during the early stage, then drilling could be made more efficient."

Talking about opportunities in the region, the deputy CEO said that with so many rigs operational, huge investments are being made to improve efficiency. This could save billions of dollars with better technology. However, the only challenge he mentions is the lower oil prices cutting spending costs. Therefore, the question the companies need to ask is how to make technologies cost-effective, he says.

The company has invested hugely in its corporate social responsibility (CSR) as well in the region. AlMansoori has been present in the region for almost four decades and its CSR policies are stauncher than its competitors, Al Alawi claims. "Our four pillars of CSR include workplace impact, impact on market place, impact on community and impact on environment."

The Middle East is living two different trends: Schlumberger

Schlumberger's activities in the Middle East region are basically divided into two main areas — GCC and non-GCC states. Operating from Egypt to India, the company is the world's leading supplier of technology, integrated project management and information solutions to customers working in the oil and gas industry worldwide with principal offices in Paris, Houston, London and The Hague.

With turbulent oil prices, there have been activity level drops across the globe but in fact, the opposite has been the case in some of the countries of the Middle East region.

The GCC members — Saudi Arabia, UAE, Qatar, Oman, Kuwait and Bahrain — continue increased investments to improve drilling activity and production. In the non-GCC area, the trend is the same as across the globe, i.e., reduction in rig activity.

Gokhan Yarim, VP Middle East, Drilling & Measurements, Schlumberger, says, "The Middle East is living through two different trends today. With regards to technology, there are customers that are driven by cost reduction, which makes them reduce the usage of new drilling technologies. On the other hand, there are also value-conscious customers who are able to realise the value of the technology, making more investments into new technology in order to reduce NPT and drilling costs even further."

With regard to the Middle East region, Yarim says that many of the reservoirs are carbonate reservoirs where the well placement and fracture characterisation technology add tremendous value for customers.

For well placement, using deep, directional electromagnetic measurements, the GeoSphere* service reveals subsurface-bedding and fluid-contact details more than 30 metres from the wellbore. This reservoir-scale view provides an unprecedented depth of investigation, enabling operators to optimise landing, maximise reservoir exposure, and refine field development plans. This technology was commercialised in Abu Dhabi in 2014.

With regards to fracture characterisation, Schlumberger's MicroScope HD* high-definition imaging-while-drilling service provides unmatched logging-while-drilling (LWD) imaging for reservoir description, from structural modelling to sedimentology analysis, to enable detailed fracture characterisation and completion optimisation in conductive drilling fluids.

Schlumberger's customers are looking for more integrated bottomhole assemblies (BHA) which can improve overall drilling and production performance. Schlumberger develops its technology with the goal of improving reliability, reducing cost of service delivery, and adding more value to the customer's operations.

Some technologies that Schlumberger offers in Middle East include:

- PowerDrive Archer* high build rate rotary steerable system: The PowerDrive Archer RSS combines the benefits of a motor and RSS in a single tool, delivering complex 3D well profiles while maintaining high ROP and wellbore quality. This fully rotating system is the only RSS that builds high angles from any deviation in one run without requiring a trip out of the hole, increasing hydrocarbon production potential and reducing risk.
- PowerDrive Orbit* rotary steerable system: Featuring an innovative pad actuation design, the push-the-bit PowerDrive Orbit RSS enables increased drilling efficiency and enhanced trajectory control — on any rig type in any environment.

PowerDrive Orbit rotary steerable system by Schlumberger

Although offshore drilling is increasing in the Middle East region, according to Yarim, customers drilling offshore prefer to build artificial islands, which are more cost effective than bringing in expensive offshore rigs. Many of the wells drilled in the Middle East region, have very harsh downhole conditions, such as challenging carbonate reservoirs, deep gas wells, and H2S presence.

Talking about reviving aging wells, Yarim says that in the region there have been more and more requests by customers for technologies that allow re-entry to rejuvenate existing wells.

The Schlumberger expert states that with a strong technology focus, it is equally sensitive to environment. As an example, the company has developed many of its M/LWD technologies with turbines to power them downhole instead of utilising lithium batteries and have been leading the industry with its sourceless measurements.

"We focus on well-placement and directional drilling technologies that help reduce the customers cost per barrel and cost per foot. We display our commitment by bringing fit-for-purpose technology for our customers especially in the current market environment.

"We continue to align with customers to improve reliability and drive excellence in execution for health, safety and environment," Yarim affirms. ■

** Mark of Schlumberger*

Promoting efficiency and reduced **operational risk**

Petrotechnics, a leading provider of Enterprise Operations Excellence Management software solutions, is strengthening its Middle East presence in response to the growth in demand for its flagship solution Proscient.™

INTRODUCED IN 2013, Proscient is the Enterprise Operations Excellence Management platform specifically designed to enable organisations in hazardous industries to optimise production efficiency and lower operational risk. With powerful capabilities to ensure the strategic intent of policy is systematised in operational practice, organisations can ensure workload is consistently managed against risk, according to policy, across one or many of their plants.

"One of the main drivers behind digital oilfields is to enable operators to get more out of their existing assets," comments David Bleackley, vice president of sales at Petrotechnics. "This offers many parallels with what we're doing and how we fit into operational excellence programmes — it is all about enabling people to get more out of their existing assets, by which we mean both capital assets and human assets. In order to do that, companies are striving to understand the gaps in their business processes to enable them to drive these business processes more effectively — that's where we fit in. It is not sufficient to keep individual plant, assets or operators safe, you need a much wider understanding of the operational risk you face as an organisation in order to be able to make safe and effective operational decisions."

David Bleackley, vice president of sales, Petrotechnics

> "Our technology allows people to make better decisions about how to continue to operate"

How does Proscient work? "All our customers have a range of operational management systems and risk control systems associated with their plant, and for each of those systems they will have a set of performance standards or criteria which they are managing those systems to," explains Bleackley. "The challenge comes when the system fails to meet those criteria; what are the operational decisions that need to be made to keep operating in a safe way and above a safe threshold, and how do you prioritise your work activity in light of those deviations from your own performance standards?

"The software identifies what those deviations are. It then allows you to understand the significance of those deviations, both individually and collectively, and based on that understanding of the level of risk created by those deviations, enables operators to prioritise a) how they continue to operate the plant and, b) what interventions they are going to make — both in the near term and in the medium term. There are a number of disparate business processes associated with that, because traditionally these individual risk control systems have been managed by different technical authorities or different functional groups within an operator; Proscient brings that collective view and collective impact of all those deviations occurring.

"So our technology allows people to make better decisions about how to continue to operate, as well as to prioritise what to do to rectify the situation. It is not immediately intuitive, because of the large number of people and the different business processes involved. We provide a common understanding of the challenge an operator is faced with."

The Middle East is a key growth area for Petrotechnics and the company sees huge potential in the region, says Bleackley. "Proscient is now a recognised solution within the global oil and gas sector, and we've seen strong growth in demand for our technology over the last few years worldwide. But there are some specific factors in the Middle East which are driving us to look at this region with increased focus. Firstly, there is a certain degree of cultural change occurring in the Middle East at the moment, related both to fundamental safety culture and to operational excellence culture — both aspects are sweet-spots for our platform, and we are well placed to capitalise on these cultural changes. And secondly there is the long-term, strategic outlook of the Middle East operators.

"We have several ongoing installations in the Middle East due soon to go live, and a couple of pending awards, as well as a number of installations in North Africa," adds Bleackley. "We see the need for a strong presence in the region and are building up our team in the Gulf states, where we currently have offices in the UAE and Saudi Arabia. This will strengthen our ability to service existing clients, while identifying and developing new opportunities in the region." ■

Expanding operations in the Middle East

Penspen, a leading global provider of engineering and management services to the energy industry, is strengthening its Middle East presence, recently opening a new office in Basra. *Oil Review* spoke to Michael Simm, its regional director for the Middle East.

What is the main focus of your business in the Middle East - are there any current projects you would like to highlight?

Our core services in the Middle East are engineering and project management, asset integrity and asset management. We also deliver significant amounts of training and education within these areas. We are currently managing large scopes of work on the Khafji and Hout oilfields in Saudi Arabia under a project management services contract. For this contract, now in its 10th year, we have been working for Al Khafji Joint Operations (KJO) to improve and enhance existing onshore and offshore facilities. This includes managing and supervising the front end engineering design and engineering, procurement and construction of a range of offshore field development, offshore and onshore brownfield modification and greenfield plant works.

We also have been active in Iraq from an engineering and project management perspective. We have successfully completed the provision of engineering and procurement services for the Al Fao power plant, and are currently completing the detailed design of the Al Fao pump station upgrade.

Much of our revenue is generated in the UAE and Qatar, as these are our key engineering hubs, from which we undertake a great deal of engineering, project management and asset integrity work for the oil majors, national oil companies and EPV contractors.

How do you view prospects for your business in the region?

As always when the oil price drops, there is an increase in brownfield modification and asset rehabilitation work, which plays to one of our strengths, as we have a proven track record in onshore and offshore brownfield rehabilitation - from water injection for enhanced oil recovery to providing professional integrity management systems to sustain asset life and reduce spend. We still see good opportunities in the upstream market - the UAE and Saudi Arabia are two specific countries where investment in new assets has continued in a much more resilient way than in some other geographies.

We are also a sector-diverse company so we see strong prospects in the midstream and downstream markets as well as in specialist work such as airport fuel systems.

Michael Simm, regional director Middle East, Penspen

> “This is an exciting time for us in the Middle East”

How are you looking to develop your business further in the Middle East, and what is your strategy going forward?

This is an exciting time for us in the Middle East. We are strengthening our 300-strong team in the region by growing our engineering, project management, field development and asset integrity businesses. As part of this process, we have two key appointments to the senior team. Ahmed Al-Dadah joins us from Amec Foster Wheeler, and Na’el Barghouthi joins us as director of asset integrity, Middle East and Asia Pacific. Na’el’s career spans over 15 years working in the oil and gas industry with experience in management, offshore engineering and integrity, and he has an in-depth knowledge of the full scope of asset integrity management. We dramatically expanded our oil and gas

The Abu Dhabi Crude Oil Pipeline (ADCOP) under construction

processing capabilities last year with the acquisition of DPS Engineering. We are traditionally known for our work in the upstream and midstream sectors on tank farms and onshore and subsea pipelines, but our range of capabilities has expanded following the acquisition to include design for FPSO topsides, fixed platform topsides and onshore upstream facilities.

To what extent has your Middle East business been affected by the drop in the oil price?

The low oil price is affecting everyone. The challenge is to help clients succeed in spite of this. It's about finding and using methods and technologies to lower risk and increase returns. Rehabilitating production and extending asset life are more important than ever. As costs rise and assets continue to age, enhanced oil and gas recovery is increasingly necessary. Technical solutions such as water and gas injection are increasingly called for. As the nature of production changes in this way, facilities require updating and sometimes even repurposing.

For example, we have been doing a lot of work deploying powered water injection technologies to increase yield in declining fields. We have also been helping clients rehabilitate and enhance oil and gas production facilities in the face of increasing water cut. We have even been involved in the repurposing and conversion of old crude wells producing under reservoir pressure by retrofitting electrical submersible pumps. In addition, we have been using gas capture and utilisation techniques to maximise and rehabilitate yield in order to increase efficiency and maximise returns for operators in the current market.

How is your Iraq business going?

We have been working in Iraq since 2005. While we provide a lot of engineering support from our Abu Dhabi office, our strategy over the past two years has been to move towards a greater presence in the country. In 2015, we opened an office in Basra and our intention is to have more engineers and technical staff in the south of the country to physically assess installations and understand interfaces. When you are modifying existing assets you need to know what they look like and what the issues are. There are obvious challenges to working in the country, which we put a lot of time and resource into managing responsibly, and we view the safety of our people as our prime responsibility.

How is Penspen contributing to the development of local skills, content and employment opportunities?

Training and education are core to our business and one of the things which differentiates us from some of our competitors. As approved training providers of the Energy Institute (EI) we are recognised for the quality of our training across the global energy sector and have trained over 5,000 people in over 30 countries, including the UAE and Saudi Arabia. Our training curriculum includes external and in-house courses, university lectures, and postgraduate academic programmes in pipeline integrity management. We work closely with local engineers in all parts of the world to build the knowledge base in local skills hubs. For example, we deliver a series of pro bono pipeline engineering diplomas with several universities across Mexico. For us, the ability to equip our clients with the skills to sustain and service their assets for the long-term is a key part of the project process.

> "Rehabilitating production and extending asset life are more important than ever"

What do you think is the secret of Penspen's success in the Middle East?

We differentiate ourselves through the technical excellence of service which we deliver to our clients and partners and our flexibility to provide exactly what they want, on time and within budget. Also, we have no ownership ties to operators, contractors or suppliers, and, as such, we are in a position to provide a truly independent service. We have been members of the Dar Group, which has a very significant and important presence in the Middle East, for over 20 years, meaning we are able to draw upon the resources, expertise and experience of over 13,000 engineering, project and infrastructure specialists in more than 100 countries.

We have been in the Middle East region for almost 40 years. With key engineering hubs in Abu Dhabi and Doha, and regional offices in Saudi Arabia and Basra, we have delivered many significant energy projects in the region, including the detailed design, engineering and project management of the 380 km Abu Dhabi Crude Oil Pipeline from Habshan to Fujairah. As a result, we have built a solid reputation for combining local project delivery and a deep technical knowledge of the region with global engineering experience. ■

POWER NIGERIA

EXHIBITION & CONFERENCE

3 - 5 NOVEMBER 2015

EKO HOTEL, LAGOS – NIGERIA

Are you a manufacturer/supplier of **power**, **lighting**, **water**, **renewable** or **nuclear** solutions?

If so, meet the buyers for Africa's largest economy at Power Nigeria.

BOOK YOUR STAND TODAY

www.power-nigeria.com

New technical and safety training centre receives IWCF accreditation

INTERTEK, A LEADING provider of quality solutions to industries worldwide, has announced that its first technical and safety training centre for oil and gas companies, located in Abu Dhabi, has received accreditation from the International Well Control Forum (IWCF). The centre will offer a variety of courses accredited by specialised global institutions such as IWCF, UK and the International Association of Drilling Controls (IADC), USA. Well Control certifications are mandatory for all drilling professionals and are renewable every two years.

The new centre will offer more than 30 different types of courses. The broad range of standard and tailor-made training solutions are delivered through instructor-led training, team-playing sessions, personal and group competence assurance schemes, as well as 'at site' coaching programmes, to prepare the trainees for drilling and safety procedures. The centre is equipped with two state-of-the art simulators that allow trainees to experience real-life well control situations. All course materials are specially developed by Intertek's technical team using advanced adult-learning methodologies, and are used across the company's international training network.

Hussain Al-Atrakchi, regional managing director for the Middle East, North Africa and Pakistan, Intertek

Hussain Al-Atrakchi, regional managing director for the Middle East, North Africa & Pakistan, said: "The new Abu Dhabi Training Centre represents a significant step for Intertek in delivering high quality training to meet the demands of both offshore and onshore operations across the Emirates and the region. It also creates a tremendous opportunity to leverage the overall skillsets and competencies of the industry's workforce, and allows them to keep their knowledge and certification up to date. The centre will bring the best quality training and instructors, offering advanced know-how and knowledge transfer for the oil & gas upstream and downstream professionals in the UAE and across the GCC region."

Stirling Group opens new training centre in Kurdistan Region of Iraq

STIRLING GROUP HAS opened a new training centre for oil and gas and construction workers in the Kurdistan Region of Iraq.

The group has expanded its facility in Erbil to offer a range of new courses, including fire team member and leader, working at height and rescue, confined space entry and rescue, lifting and hoisting, forklift, command and control, incident management, H2S and self-contained breathing apparatus. The move follows an increase in market demand for practical and advanced training, health, safety and environmental (HSE) services.

The new facility was unveiled at an event, which was attended by more than 40 industry figures and government officials, including Angus McKee, HM consul general for Kurdistan & Northern Iraq and Ian McIntosh, advisor to the minister of natural resources (MNR).

The Stirling Group Training Centre features a four-storey training rig with internal structures which mirror the environment that oil and construction workers face in day-to-day operations.

Combined with the latest training equipment, including Haagen virtual fire training technology, it would enable Stirling Group to offer training at a range and level not seen before in Iraq, says the company.

McKee said, "Stirling Group has demonstrated a stellar record in the Kurdistan Region of Iraq. As the region continues to focus on the development of its local workforce, oil and gas companies in partnership with the MNR are working to achieve the best possible development of local talent for the industry. Stirling Group plays an active role in this with the diversity of its workforce development offerings."

Stirling Group has delivered training in the Kurdistan Region of Iraq since 2013

Stirling Group has plans to establish similar training centres in Slemani and Duhok in the future, continuing its efforts to support competence development for the oil and gas and construction industry in the Kurdistan Region of Iraq and across the Middle East.

Angus Neil, managing director of Stirling Group, noted, "This is the latest step in the development of our training base in Kurdistan to ensure we continue to offer the very best training facilities in the region.

"The hands-on, simulated approach goes well beyond traditional classroom training. It allows oil and gas workers to practice real-life scenarios and experience first-hand what it's like to work in a facility."

Operating in the region since 2013, Stirling Group has delivered training programmes, competence development frameworks, HSE consultancy, safety products and maintenance services to over 25 oil and gas companies operating in the Kurdistan Region of Iraq.

Wild Well introduces new well control certification programme

WILD WELL CONTROL, Inc., a Superior Energy Services company and a global leader in firefighting and well control, has introduced its exclusive well control training certification programme designed to meet the ever-changing needs of the industry by offering a complete selection of action-oriented well control training curricula, which includes both team and individual well control simulator exercises.

The new programme will meet the ever-changing needs of the industry (photo: C. Jannou)

A first in the industry, Wild Well's well control training certification programme can provide a Competency Report providing detailed feedback from the individual simulator exercises, which can be forwarded to the student's company for its HR documentation and to identify additional training requirements if needed.

Wild Well clients will now have the option of taking well control certification training for driller and supervisor levels under the IADC WellCAP®, IADC WellSHARP™, IWCF or Wild Well programme, as determined by their specific well control training needs.

The Wild Well certification programme meets the standards of other well control certification programmes yet further enhances its offerings by focusing on job-specific tasks that provide skill-specific competencies through the use of individualised computer simulations, team-based solution development for well control scenarios and student-driven discussions. Moreover, the Wild Well programme offers instruction geared toward regional operations. When they successfully complete the programme, students earn a two-year well control certificate similar to other well control certification programmes.

In 2014, Wild Well trained more than 13,000 students at its well control training centres located throughout the USA, UK and Middle East. *For further information, visit www.wildwell.com.*

New on-line learning programme for next generation of subsea engineers

SUBSEA UK HAS launched its new on-line learning programme to support the development of new engineers and technicians entering the subsea sector.

The *Introduction to Subsea Engineering* course can be completed in around 60 hours, spread over eight weeks. Initially rolled out by Subsea UK a few years ago, the on-line programme of four modules, designed by the Robert Gordon University, has been significantly upgraded and updated to include recent developments and new practices in the fast-growing sector.

The course has been updated to encompass the latest subsea developments

Neil Gordon, chief executive of Subsea UK, said: "As our industry continues to evolve to meet the challenges of exploiting valuable reserves in water depths extending to some 3,000 metres in harsh and highly complex environments, so too has the content of this unique on-line learning programme. With updated course material, the programme now features progression and tracking options for learners, more interactive content and better designs which make it more intuitive and appealing for students."

Meanwhile, Subsea UK's one-day *Fundamentals of Subsea Systems* training courses have been positively received by the industry. The course is open to anyone who needs an overview of subsea systems and processes, how the technology and engineering have evolved over the years to meet the demands of oil producers as they move to harsher and more complex environments in order to recover the world's remaining reserves. It has been specially developed to provide a broad but in-depth overview of the sector both from a UK perspective but, as a global sector, also shares useful insights into the latest subsea engineering and technology, covering aspects of how subsea fields are developed, and how subsea systems are designed, installed, operated and decommissioned.
For further information see www.subseauk.com.

The need for data democratisation

The upstream oil and gas industry needs to focus on ' data democratisation' to gain return on innovation through big data, says Dr. Satyam Priyadarshy, chief data scientist, Halliburton.

THE RISE OF big data is featuraing strongly in the upstream oil and gas industry, and along with it comes the challenge of growth in 'dark data'. Gartner defines dark data as "the information assets organisations collect, process and store during regular business activities, but generally fail to use for other purposes". Dark data can provide many insights that have not been leveraged by the industry, because it has not been mined and analysed effectively.

Traditionally, the data collected during exploration phases is analysed until a decision is made to do exploration drilling of the oil well. Similarly, the data collected from various BHA (bottom hole assembly) sensors like LWD, MWD, etc. are analysed in real-time to take decisions on the drilling in progress. If there are problems or challenges during the drilling process, those are addressed by the subject matter experts, based on their experience and intuition. Rarely is a detailed data-driven approach used to make 'live' decisions. The typical decision-making process works reasonably well because the domain experts have significant tacit knowledge due to their experience. However, this tacit knowledge is on the decline in the industry due to a large number of workforce retirements predicted in the near future. Articles in industry journals are suggesting that the industry has not invested enough in preparing the future workforce. Often these decisions are made with an emphasis on controlling the short-term costs versus strategic cost savings for the enterprise. For building strategic cost saving, a big data-driven approach is needed.

A large number of papers have been written on data-driven approaches used to look at industry problems. However, many of these approaches have been tried on very limited data sets and in isolation of the big picture. The cost challenge of upstream oil and gas is not a silo problem; it is a holistic problem. Unfortunately, the data is locked in silos due to factors such as contractual agreements, storage policies of

Dr Satyam Priyadarshy, chief data scientist, Halliburton

yesterday, outdated storage technology, and lack of understanding of the value in interconnected data sets. For understanding and deriving insights for this holistic challenge, one needs to have access to data along the vertical, horizontal and time domain.

> "For building strategic cost saving, a big data-driven approach is needed"

While the E&P industry watches the growth of big data and its value creation for other industries such as e-commerce, social media, consumer goods and airlines, and appreciates their reliance on data-driven approaches, we fail to see the underlying phenomenon that these industries apply to create value for the stakeholders. This underlying phenomenon is called 'data democratisation'. I define data democratisation as the process of creating value from 'all' the data by opening data silos for enabling the creation of new patterns from the data, and thus gaining additional knowledge. This is possible by leveraging emerging technologies and a broader audience than typical business intelligence professionals.

In contrast to these industries, the oil and gas industry usually 'owns' the data, but fails to connect all the data for a holistic view. Significant value can be realised by exploring hidden inefficiencies during different phases of the life cycle of the oil well, if one connects the data from different wells in the same field, and further connects the insights from various fields through a data-driven approach. Insights created through big data-driven approaches become more valuable than the raw data. These insights can be called predictive models, for those who are mathematically inclined. The predictive models are by definition more anonymous then the raw data itself. The democratisation of these data-driven models can benefit the upstream oil and gas industry significantly. A properly crafted data-driven approach honours the company's or enterprise's data governance, privacy, and security, even when one is creating an open data culture. Today, when emerging technologies are providing real-time monitoring of massive amounts of logs, and the downturn in the price of hydrocarbons dictates the elimination of hidden inefficiencies, it is imperative to focus on data democratisation for the future good of the industry. ■

These and other issues will be addressed at the Data Driven Visualization Technical Workshop to be held from 11-13 October in Abu Dhabi. This highly interactive 3-day technical workshop will enable data and information managers to learn from industry experience and from each other. Case studies are drawn from a wide variety of oil and gas organisations and participants will create deliverables they can be apply directly to the challenges in their own companies. See the website at http://www.ppdm-course.com for further information.

تحت رعاية صاحب السمو الشيخ خليفة بن زايد آل نهيان رئيس دولة الإمارات العربية المتحدة

UNDER THE PATRONAGE OF H.H. SHEIKH KHALIFA BIN ZAYED AL NAHYAN, PRESIDENT OF THE UNITED ARAB EMIRATES

ADIPEC أديبك

المناطق البحرية

OFFSHORE & MARINE

9-12 November 2015, ADNEC, Abu Dhabi, UAE

SUPPORTED BY

الإمارات العربية المتحدة
وزارة الطاقة
UNITED ARAB EMIRATES
MINISTRY OF ENERGY

أدنوك
ADNOC
شركة بترول أبوظبي الوطنية

غرفة أبوظبي
ABU DHABI CHAMBER

هيئة أبوظبي للسياحة والثقافة
ABU DHABI TOURISM & CULTURE AUTHORITY

NEW FOR 2015

OFFSHORE, MARINE & HEAVY EQUIPMENT

ADIPEC will be extending the show floor to include an all new Hall 15 exhibition marquee and an outdoor heavy machinery dedicated zone, located on the marine front of the world class Abu Dhabi National Exhibition Centre (ADNEC). Offshore marine companies are now being offered the opportunity to exhibit within a specifically created area which provides water access, mooring and quayside exhibition space, a unique feature that is now a part of the world's 2nd largest oil and gas event.

BOOK YOUR STAND TODAY

www.adipec.com/bookastand, Email: adipec.sales@dmgeventsme.com
Tel.: +971 2 4444 909

6th floor, Office #612, Twofour54 Park Rotana Offices, Salam St. PO Box 769256 Abu Dhabi - UAE
Tel: +971 2 4444 909 Fax: +971 2 4444 383 E: adipec.sales@dmgeventsme.com

OFFICIAL PUBLICATION
Pipeline

VENUE PARTNER
ADNEC

ADIPEC ORGANISED BY
dmg::events

Leading the way in **solar EOR**

A new project has the potential to make Oman a centre of excellence for solar EOR, and paves the way for further large-scale solar EOR developments globally.

PETROLEUM DEVELOPMENT OMAN (PDO), and GlassPoint Solar, a leading provider of solar steam generators for the oil and gas industry, have announced plans to build one of the world's largest solar plants, to be used for thermal enhanced oil recovery (EOR) in Oman.

Miraah (meaning mirror in Arabic) will be a 1,021 megawatt solar thermal facility in South Oman, harnessing the sun's rays to produce steam. The steam will be used in thermal EOR to extract heavy and viscous oil at the Amal oilfield. Miraah will deliver the largest peak energy output of any solar plant in the world, according to a joint statement.

The plant will provide a sustainable solution for EOR steam, which is currently produced by burning natural gas. Once complete, Miraah will save 5.6 trillion British thermal units (BTUs) of natural gas each year, the amount of gas that could be used to provide residential electricity to 209,000 people in Oman.

The project will generate an average of 6,000 tons of solar steam daily for oil production, dwarfing other solar EOR installations. The system will deliver steam to Amal's existing thermal EOR operations, meeting a sizable portion of the field's steam demand. The full-scale project will comprise 36 glasshouse modules.

The project will break ground this year with steam generation from the first glasshouse module in 2017.

Strategic solution

At the contract signing ceremony in Muscat, Raoul Restucci, managing director of PDO, said, "The use of solar for oil recovery is a long-term strategic solution to develop PDO's viscous oil portfolio and reduce consumption of valuable natural gas, which is needed elsewhere to diversify Oman's economy and create economic growth. It will also displace diesel and higher carbon-intensive power generation and oil burning in future thermal projects.

> "The oil and gas industry is the next major market for solar energy"

HE Mohammed bin Hamad Al Rumhy, Oman's minister of oil & gas, with Daniel Palmer, VP of sales, Glasspoint

"PDO has been a pioneering force in EOR for a number of years, and it will play an increasingly important part in the company's portfolio, accounting for around a third of our production by 2023," added Restucci. The use of improved EOR techniques, including polymer, miscible and steam injection, have been critical in driving up Oman's oil production in recent years.

PDO has been working with GlassPoint since 2010 on a successful pilot scheme at Amal to test the commercial viability of solar steam, which produced 50 tons of steam a day. The seven megawatt solar steam pilot will continue to operate at Amal alongside the full-scale development.

Rod MacGregor, president and CEO of GlassPoint Solar, said: "The oil and gas industry is the next major market for solar energy. It takes a tremendous amount of energy to produce heavy and viscous oil, with a typical oil field consuming the same amount of energy as a small city. PDO is the global leader in oil and gas innovation and the first to realise the value of using solar to replace traditional fuel sources to generate steam for EOR."

To maintain production, oil companies are increasingly moving from primary and secondary methods to tertiary oil recovery processes as well as unconventional resources, which are more complex and expensive to produce. Recovering heavy oil, which represents the major proportion of the world's remaining reserves, is energy intensive. Typically, for every five barrels of heavy oil, the energy equivalent to one barrel is consumed in the production process.

The leading method of producing heavy oil is steam flooding, a thermal EOR process that injects steam into a reservoir to heat the oil and reduce viscosity, making it easier to extract and pump to the surface. Steam for thermal EOR is typically produced by burning large volumes of natural gas, so gas demand will continue

Raoul Restucci, managing director of PDO with Rod MacGregor, president and CEO of GlassPoint Solar, at the signing ceremony

to rise alongside EOR projects.

GlassPoint's solar EOR solution generates steam from solar energy, reducing an oilfield's gas consumption by up to 80 per cent.

GlassPoint designed a concentrating solar power (CSP) technology to meet the specific needs of the oil and gas industry. Unlike solar panels that generate electricity, its enclosed trough technology uses large, curved mirrors to focus sunlight on a boiler tube containing water. The concentrated energy boils the water to produce high-quality steam, which is fed to the oilfield's existing steam distribution network.

A self-cleaning glasshouse encloses and protects the solar collectors from wind, sand and dust storms common in Oman and throughout the Gulf region. The glasshouse structure creates a wind-free environment so the mirrors and other components inside can be very thin and lightweight. The enclosed trough mirrors are a small fraction of the weight of exposed solar thermal systems, resulting in significant material and cost savings.

Significant value

Miraah has the potential to generate significant value for Oman, creating new opportunities in supply chain development, manufacturing capability, and employment and training. Plans to localise the supply chain are currently under development, including establishing a local manufacturing factory in Oman.

The scope of this landmark project underscores the massive market for deploying solar in the oil and gas industry. According to GlassPoint, solar EOR is well-suited for any region that produces heavy oil, enjoys abundant sunshine and lacks an affordable fuel for thermal EOR. With oil becoming harder and more energy intensive to extract, technology and know-how practised in Oman will be transferred to neighbouring countries.

GlassPoint is also focused on Kuwait, which has plans to deploy some of the largest steam flood projects in the world. Unlike Oman, Kuwait does not produce a significant amount of gas and will have to import LNG to fuel its heavy oil operations; solar has the potential to provide the vast majority of these needs. There are also thermal EOR opportunities in Bahrain, says the company. ■

> "Plans to localise the supply chain are currently under development"

GeoGraphix 2015 facilitates optimised production and reduced costs

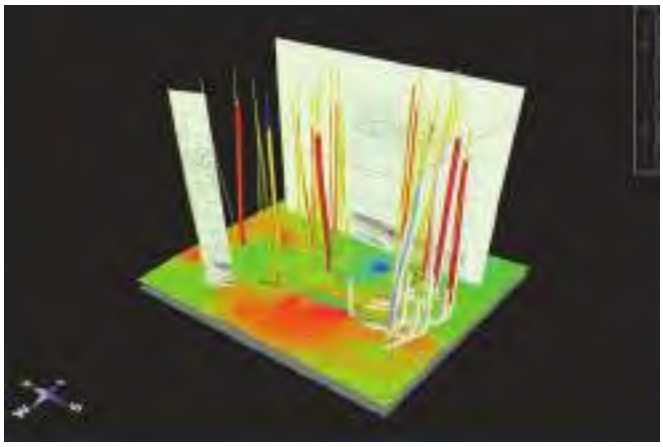
AS THE FOCUS moves from exploration to production optimisation, asset teams turn their attention to maximising recoveries while reducing cycle time and driving down production costs. Getting the most out of data across multiple domains, improved methods to interpret and integrate geological and seismic data critical to maximising reservoir understanding, and finding new, innovative ways of mapping and visualising assets are critical to achieving this.

Petroleum technology company LMKR addresses these key challenges with the latest release of its geoscience suite, GeoGraphix 2015, which unveils the big picture of the reservoir in 3D enabling a multi-domain, integrated workflow updated in 3D space in real time. According to the company, key benefits include:

- Speed: Reduce cycle time of prospecting-to-production through direct and seamless integration between domains;
- Accuracy: Increase the accuracy of reservoir interpretation through an extensive 3D geomodel bringing domains together in time or depth;
- Decision-making: See all the possibilities in one 3D scene to make the best economic decisions.

Users can benefit from working in a dynamically updated, geologically accurate, sealed earth model enabling them to initialise interpretations, create cross sections, and pick tops faster. Accuracy of interpretation can be improved by leveraging seismic to provide inter-well detail and improve directional drilling using easy-to-use, lightweight web geosteering from home, at the office or on site.

Time and depth domains are fully integrated, and velocity models can be created using average or interval methods to better accommodate lateral variation in velocities. These models can be utilised to create static depth volumes, or perform dynamic depth conversion using inter-well depth point integration to update and refresh the time-depth relationships.



Finding sweet spots using geology and seismic interpretation, in one integrated 3D scene

Advanced field planning capabilities are extended to encompass hazard avoidance for existing vertical wells, display of field plans in Google Earth or Bing, and updating of target points on maps to see the changes instantly in the integrated 3D view.

Myriad benefits from flare gas recovery system

MPR INDUSTRIES DESIGNS and manufactures flare gas recovery systems (FGRS) for the oil and gas industry. The company says, "Thanks to our 90 years history of manufacturing vacuum pumps and compressors, we have wide experience in FGRS and as a preferred partner for providing complete packaged solutions, including engineering, supplying, commissioning and after sales support."

A FGRS acts as a safety device for burning superfluous gases emitted from oil and gas fields, refining processes and/or system leakages.

The use of a FGRS to reduce gas flaring provides environmental and social benefits, as it can minimise the release of harmful hydrocarbons as well as noise and odour, helping companies to meet stringent standards and regulations.

The use of a FGRS to reduce gas flaring provides environmental and social benefits

The sliding vane compressor

Upgrading refineries with a FGRS has other benefits too, according to the company. By incorporating a FGRS, operators can generate additional revenues from recovering valuable gas that would otherwise be wasted. This recovered gas can be used in the plant fuel system to produce electricity and which, therefore, cuts the cost of purchasing natural gas. Moreover, flare tip life is likely to be extended, leading to a reduction of spare parts and longer time between maintenance.

A key piece of equipment of a FGRS is the compressor. A number of technologies in the compressor design is available, each with its own advantages and disadvantages. MPR Industries mainly designs and manufactures FGRS with a sliding vane compressor. This is a volumetric, positive displacement type of compressor.

According to MPR Industries, advantages of a sliding vane compressor include: efficiency (around 70 per cent) and low power consumption; flexibility and adaptability for dirty operations; and durable design (5,000 hours MTBF).


Under the Patronage of His Highness Sheikh Jaber Mubarak Al-Hamad Al-Sabah
Prime Minister of the State of Kuwait
Society of Petroleum Engineers
2015 KOGS
2nd Kuwait Oil & Gas Show and Conference
Conference: 11 – 14 October 2015
Exhibition: 12 – 14 October 2015
AN ALLWORLD EXHIBITIONS EVENT
REGISTER NOW AT
Kuwait International Fair | Mishref
www.kogs2015.com
SUPPORTED BY:
مؤسسة البترول الكويتية
وشركاتها
Kuwait Petroleum Corporation
and subsidiaries
EXHIBITION ORGANISERS
ادارة المعارض العربية
Arabian Exhibition Management
fawzi@aemallworld.com
BAHRAIN
WORLDWIDE CO-ORDINATORS
oes
Overseas Exhibition Services Ltd
oil@oesallworld.com
LONDON
FAR EAST CO-ORDINATORS
IEM
INTERNATIONAL EXHIBITION MANAGEMENT PTE LTD
gerald@iemallworld.com
SINGAPORE
CONFERENCE ORGANISERS
SPE International
Society of Petroleum Engineers
spedub@spe.org
DUBAI

Ferguson ME introduces new dual HVAC system

FERGUSON MIDDLE EAST has introduced a new dual HVAC system to its engineering workspace modules to protect offshore workers from the Gulf's punishing temperatures, which can reach more than 40°C in summer.

The company said the latest model is 30 per cent more efficient at managing temperature, thanks to the introduction of a two-speed fan, while the time it takes to purge the A60 workspace modules when they become depressurised, during which time they are unusable, has also been reduced by 25 per cent.

Ferguson Group has also appointed a new regional manager for the Middle East and North Africa (MENA) region, Emile Bado, who will be based in Dubai and has led engineering companies throughout the Middle East for the last 10 years.

"We are very excited by the prospects presented by the market in the Middle East," said Ferguson Group CEO Richard Smith. "Emile's skills will support our continued expansion of Ferguson Group here in the Gulf and beyond."

A Ferguson engineering workspace module

New depth domain inversion services launched

SCHLUMBERGER HAS ANNOUNCED the launch of its new Depth Domain Inversion Services, which it says allow petrotechnical experts to improve the reliability and consistency of seismic structural and quantitative interpretation in complex environments.

"Conventional seismic inversion in the time domain introduces inconsistency between the seismic images and the rock properties, especially where there's a significant overburden, such as subsalt," said Maurice Nessim, president of Schlumberger PetroTechnical Services. "With Depth Domain Inversion Services, customers receive more information derived from seismic data for reservoir characterisation. This helps reduce uncertainty in complex reservoir environments, and improve the confidence in prospect delineation, reservoir properties and volumetric calculations."

Performing seismic inversion in the depth domain fully integrates the inversion with the imaging products to improve the reliability of estimating rock properties for reservoir characterisation, the company said.
This is done by correcting for depth space and dip dependent illumination effects during seismic amplitude inversion directly in the depth domain.

New Touchpoint Plus gas detection from Honeywell

HONEYWELL RECENTLY REVEALED its new wall-mounted gas detection controller, with support for up to eight channels of gas detection

The Touchpoint Plus includes an improved user-friendly touchscreen interface, which the company said reduces set-up and operation time, and minimises the need for training; as well as a modular, plug-and-play board which allows for quick and easy maintenance, and accepts input from any detector with a milliamp (mA) or millivolt (mV) signal.

The Touchpoint Plus controller

"With everything at your fingertips, Touchpoint Plus allows you to take ownership of your system and operate it with confidence," said Steve Forrest, global marketing director, Fixed Gas Detection, Honeywell Analytics. "The simplicity and intuitive user interface gives you confidence the safety of your people and productivity of your site is maximised."

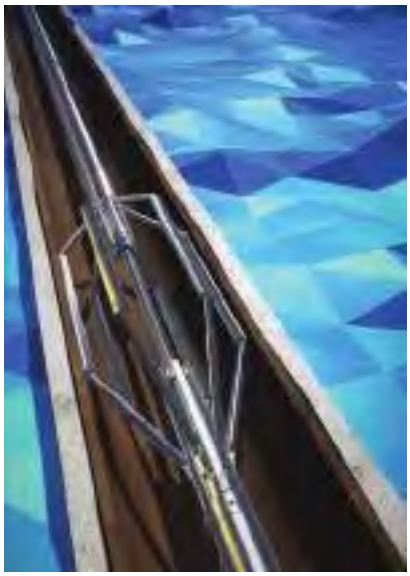
Housed within a high impact polymer plastic, Honeywell described the Touchpoint Plus as a "versatile and durable solution to controlling gas detectors across multiple sectors that is designed to stand up to the challenges of industrial environments, from chemical plants to manufacturing".

'Revolutionary' technology for cement evaluation integrity

BAKER HUGHES HAS announced the commercial release of its new Integrity eXplorer cement evaluation service.

Designed to assess the integrity of cement used in oil and gas wells, Integrity eXplorer is the first service of its kind to use electromagnetic-acoustic sensors, rather than the traditional acoustic-based techniques, says the company.

Baker Hughes said the new technology is more accurate, allowing operators to directly evaluate the integrity of cement bonds in any current wellbore environment or cement mixture.

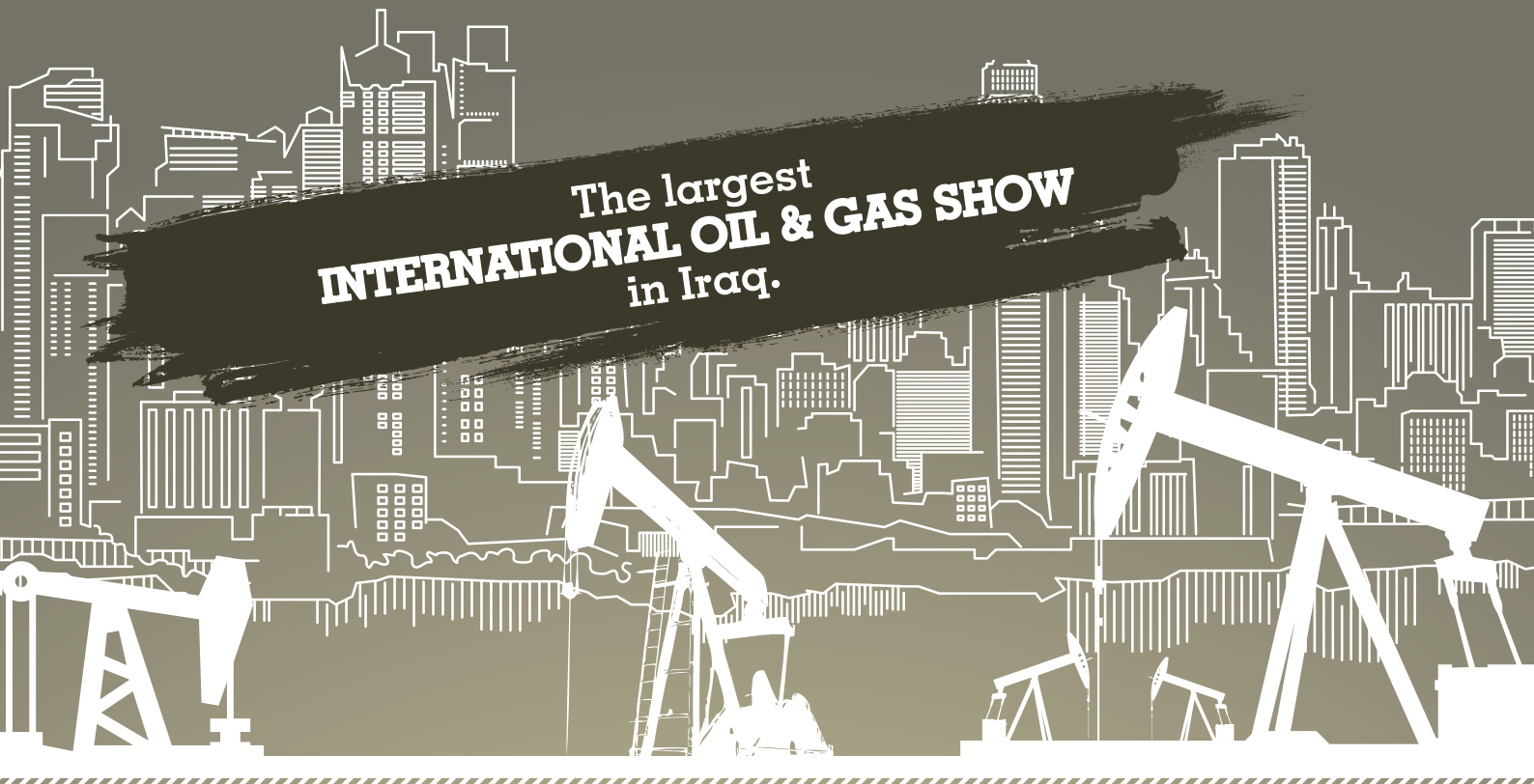


Integrity eXplorer utilises electromagnetic-acoustic sensors

"In our role as innovation leaders, we realise that applying yesterday's technology to today's challenges may not meet our customer's emerging needs" said Mariano Gargiulo, vice president of Baker Hughes' Wireline Services business. "This is especially true in today's demanding environments that can test the accuracies of traditional evaluation methods."

Cement compressive strength has typically been used as a key indicator of cement quality, but Baker Hughes claimed a more detailed assessment was now required, particularly given the importance of the reliability of cement-bond logs for upstream operators.

The new service provides users with comprehensive data on the properties of the respective cement, allowing them to make better-informed decisions, the company said.



Supported by

REPUBLIC of IRAQ
MINISTRY of OIL

INTERNATIONAL OIL & GAS
BASRA
CONFERENCE AND EXHIBITION

Book your space now!

6th BASRA OIL & GAS
INTERNATIONAL CONFERENCE AND EXHIBITION

ufi Approved Event

03 - 06 FEBRUARY 2016

For registration request and more information please contact us:
sales@basraoilgas.com | info@basraoilgas.com | +90 212 356 00 56

www.basraoilgas.com

ERGIL's integrated pressure vacuum relief valve

ERGIL STORAGETECH RECENTLY announced the launch of its new pressure vacuum relief valve with flame arrester.

Designed for the safe storage and transportation of flammable gas, the product minimises the risk of accidents by ensuring protection against damage through over-pressurisation, implosion due to vacuum conditions and preventing external flames from entering the tank.

The pressure vacuum relief valve also comes with a body surface that is self-draining and a drip design which the manufacturer says prevents condensate from settling on seating surfaces.

Riza Altunergil, ERGIL's vice president of commerce said, "Careful consideration has gone into the manufacturing of pressure vacuum relief valve with flame arrester; this new introduction is not only to add value to our business but to provide our customers with a reliable product from an established brand in the market."

The pressure vacuum relief valve with flame arrester

The company said the pressure full lift technology in the design minimises vapour loss, reducing wastage and environmental damage, as well as potential safety risks.

Emerson enhances reservoir modelling software

EMERSON PROCESS MANAGEMENT has launched the latest version of its Roxar RMS reservoir modelling software.

The new RMS 2013.1 includes improved structural modelling tools which the company said acknowledge realistic uncertainties in the data and enhance volumetric sensitivities, making it quicker and easier to build geological scenarios, investigate the full effects of structural uncertainty, and maximise the value of reservoir assets.

"With our new version of Roxar RMS and our tightly integrated structural modelling and gridding tools, users will be able to quantify uncertainty more effectively and increase confidence when it comes to crucial decisions on where to drill, what production strategies to adopt, and how to maximise recovery," said Kjetil Fagervik, managing director of Emerson's Roxar Software Solutions.

Emerson has also further integrated fault uncertainty tools in RMS 2013.1 with structural modeling and 3D gridding, enabling users to build fault uncertainty models in full and investigate a wide variety of scenarios corresponding to the uncertainty in the input data.

New enterprise pipeline management solution released

YOKOGAWA ELECTRIC CORPORATION has announced the release of its new modular software suite.

The company said the enterprise pipeline management solution (EPMS) supplements the basic pipeline management system with specific gas and liquid applications which enable pipeline operators to manage delivery contracts and associated logistics in a time- and energy-efficient manner.

Using a SCADA platform to cover monitoring, alarming, trending, and reporting, the EPMS handles metering; batch scheduling and tracking; leak detection; and energy management within the same unified user environment.

"The EPMS will significantly reduce the amount of effort required to implement and commission high quality pipeline management applications while guaranteeing easy upgradability, protecting investments across multiple SCADA platform versions," said Shuji Mori, Yokogawa vice president and head of Yokogawa Electric International.

The company said the software will primarily target gas and liquids transmission pipelines and grids, as well as upstream and midstream oil and gas production infrastructure.

Emergency intertidal support service from Marsol

DUBAI-BASED MARINE solutions provider Marsol International has launched an emergency pipeline repair service (EPRS) for the offshore oil and gas industry.

Developed over the last six years to service various types of environmental situations and geotechnical configurations, the purpose of the EPRS is to safeguard shallow water intertidal zones, addressing the challenge of accessing such areas, which are not normally serviced from sea or shore.

Pipeline in an intertidal zone

"We have identified a need to offer an emergency service to protect pipelines in shallow waters, and we have the skills and equipment to manage the challenges intertidal zones present, such as shifting sands and tides," said Marsol managing director Mike Young. "Marsol has worked to develop sophisticated support assets such as Rhino craft and Versadock – products that have been tried and tested in hostile and difficult environments."

Marsol said it will also utilise its experienced offshore terminal and marine workforce to locate damaged pipelines and stabilise the ground to access and repair them in emergencies scenarios such as pipeline ruptures, pin-hole leaks, dents and buckles, internal and external pipeline pitting and corrosion problems.

"Should a pipeline require repair, time is of the essence," Young added. "Safeguarding against environmental damage, minimising the impact on production and ultimately protecting company reputation is vital - EPRS offers an experienced team who can act fast."

Designed to protect

DR. PASCAL LE Gal wants to change the way people think about safety and risk assessment. "By employing advanced computational fluid dynamics simulation techniques and using the correct methodology, you can reduce the impact of a potential loss of containment," he says.

Dr. le Gal is responsible for Gexcon's software business in the Middle East and truly believes in the power of computational fluid dynamics (CFD) applied to process safety and design. FLACS software from Gexcon makes use of CFD, which represents the current state of the art in quantitative consequence and risk modelling. FLACS has also been used to help with accident investigations and optimisation of safety measures for hazards that involve fluid flows – typically flammable and toxic chemicals but also solid particles and dust, eg. looking at explosion effects.

Today many companies are utilising much simpler methods for risk assessment. This repeatedly leads to under - or over-predicting the consequences from process hazards. You ultimately end up either overspending of underspending on mitigation measures. In some cases, the assessment can even be a hurdle to the realisation of a project, but Dr. Le Gal is convinced that such decisions should be based on the best approach currently available.

Dr Pascal le Gal, divisional vice president Middle East, Africa, Caspian, India and Australia, Gexcon

"In my opinion, the use of less accurate methods needs to be discouraged as the results are calculated based on empirical correlations and extrapolations derived from a limited number of small controlled experiments," he says.

"The historical use of simpler methods, which provide a 'quick number' has not evolved and ignores 3D geometry. By conducting advanced simulations accounting for physical 3D objects, more accurate and realistic predictions can be obtained, helping operators to make informed decisions about how to protect their people and assets."

FLACS provides 3D advanced simulation and realistic release scenario modelling, a must-have to predict accurately the risks associated with oil and gas operations. FLACS can help to facilitate the understanding of those risks and increase knowledge throughout organisations in a visual and easy-to-grasp manner.

Gexcon Software opened for business in the Middle East in late 2014, giving its customers in the region and beyond better access to software training and support. Gexcon is a world leading company in explosions, dispersion and fire modelling for technical safety.

OFFSHORE EUROPE
Date: 8-11 September
Venue: Aberdeen, UK

New times, **new challenges**

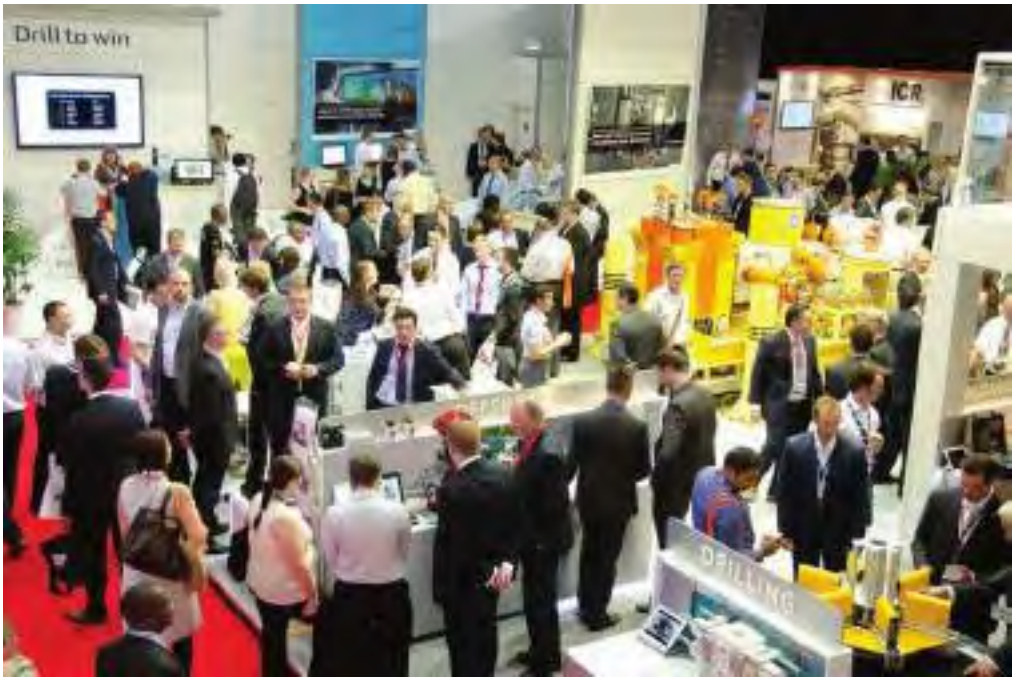
SPE Offshore Europe 2015 will welcome visitors from all over the globe to discuss and debate both the technical and people challenges facing the oil and gas industry today.

DESPITE THE CURRENT difficult market conditions, oil and gas will remain indispensable sources of fuel for many decades to come. According to the International Energy Agency's *World Energy Outlook 2014*, oil and gas will still supply around half of the world's energy by 2040. Sourcing skilled, innovative and motivated people and developing new technologies are essential for the industry to be successful in meeting this demand.

On the exhibition floor, around 1,500 global organisations will showcase their technologies, services and expertise. At least 300 companies, large and small, will be exhibiting for the first time. Exhibitors will represent the complete supply chain of companies including operators, drilling contractors and oilfield service companies, consolidating Aberdeen's established reputation as a supplier of services and products to projects worldwide.

Reflecting the global nature of the industry as a whole, there will be a large overseas exhibitor presence with participation from 44 countries and 33 international pavilions. The majority of registered UK visitors to date have overseas remits too – 35 per cent are involved in projects in Africa, 30 per cent in the Middle East and 25 per cent in Asia Pacific.

The keynote programme, chaired by Michael Engell-Jensen, executive director of the International Association of Oil & Gas Producers (IOGP), will open with a plenary session focusing on the basic challenge of meeting energy demand while balancing concerns over climate change, security of supply and consumer affordability. Topics to be addressed during the following 11 keynote sessions include: health; the safety and security of people and assets; well intervention; financing investments; oil spill response; and inspiring the next generation to join the industry.



A packed exhibition floor at a previous edition of the show

> "Around 1,500 global organisations will showcase their technologies, services and expertise"

Michael Engell-Jensen says: "Our licence to operate ultimately depends on addressing society's concerns about the industry's operations and the hydrocarbons on which the world relies. Our activities must be regarded as both acceptable and useful."

The technical programme, chaired by Charles Woodburn, chief executive officer, Expro, will present more than 75 papers, demonstrating that the industry's engineering, manufacturing and technology excellence is set to assure a long-term sustainable future. Speakers drawn from all over the world will discuss topics such as

asset and well integrity, maximising economic recovery, smarter field development, pipelines and risers, subsea processing, talent development, unconventional gas development, process safety and decommissioning.

Charles Woodburn adds: "Attending this key global conference is even more compelling given the current challenging industry backdrop. SPE Offshore Europe 2015 allows people from all parts of the industry to come together under one roof to discuss and debate the challenges we are facing today - and into the future."

In the Deepwater Zone, a dedicated theatre will host industry experts presenting topical case studies and participating in panel discussions. With content programmed by Subsea UK and the Society for Underwater Technology, these sessions will address deepwater developments; the future of inspection, repair and maintenance; new technologies for efficiency and effectiveness; and subsea challenges for enabling deepwater production. In the event's largest Deepwater Zone to date, some 30 companies from this rapidly evolving sector will display their latest products and services. These range from equipment such as valves, imaging systems and underwater vehicles to well control and intervention products, specialist material solutions and inspection services.

> "Attending this key global conference is even more compelling given the current challenging industry backdrop"

Entrepreneurs will have the chance to meet potential investors on Wednesday 9 September. After a morning of investment workshops presented by the operator, venture capitalist and entrepreneur perspectives, a limited number of companies will be invited to one-to-one meetings to discuss investment projects with some grant, early seed and direct industry funding providers.

Confirmed breakfast briefing speakers include Steve Varley, UK chairman and managing partner, EY; Lars Christian Bachar, executive vice president, Development & Production International, Statoil; and international oil and energy consultant, Manouchehr Takin.

BP's Bernard Looney, chief operating officer, Production, is the lunch speaker on Tuesday 8 September, and on Thursday 10 September, the lunch session will comprise a small operators' panel chaired by Neil McCulloch, president, North Sea, EnQuest.

With its emphasis on recognising the long-term need for a secure talent pipeline, SPE Offshore Europe 2015 will be running 'Inspire', its largest ever programme of activities for a younger audience. A wide range of events and workshops throughout the week will allow students to engage with the industry face-to-face.

With so many industry leaders and influencers under one roof, there will be ample opportunities to network with new contacts and catch up with colleagues from around the world. ■

Visit www.offshore-europe.co.uk for further information and to register for this free-to-attend global event.

Rockwell Automation to showcase solutions to maximise assets and reduce costs

WITH EXTENSIVE CONTROL, safety and process automation expertise in the oil and gas industry, Rockwell Automation will be showcasing the technology used to deliver results for customers looking to manage obsolescence; gain a performance advantage through modern safety solutions; perform technology and control system migrations without interrupting production; and bring together equipment from a variety of vendors into a single, efficient, modern processing solution.

Rockwell Automation's model of the oil and gas supply chain

Bringing to the fore its experience of the fast pace of technological evolution from industry beyond the oil and gas environment, Rockwell Automation will demonstrate how companies can benefit from being more connected between operational technology and information technology disciplines and having a higher level of information visibility.

Its stand, alongside strategic alliance partners and global leaders in measurement instrumentation and services, Endress+Hauser, will feature proof-points for reducing the risk associated with unsupported and obsolete technology. Rockwell Automation engineers will be on hand to talk through the best practice approach to extending the life cycle of existing assets while reducing the risk of expensive shutdowns associated with equipment failures.

A comprehensive portfolio of safety solutions will also be showcased, and the stand will offer solutions to critical questions regarding how to best plan, install, commission and integrate new control systems and electrical equipment with existing architecture without taking large sections of a plant into shutdown mode. Included in this best-practice approach is the introduction of 'Work Packs' which record instructions for installers and commissioning teams for how best to manage the materials, work actions and health and safety involved with a hot cut-over to more efficient modern solutions.

At the heart of each of these approaches is the ability for critical control and safety solutions to work seamlessly with existing equipment, regardless of the original vendor. Rockwell Automation staff will be on hand to talk through examples of projects from around the world which have benefitted from the multi-vendor support available with their process offering.

Rockwell Automation will be in Hall 1 on Stand 1E52.

Addressing current industry challenges

Reducing costs while maintaining safety and production efficiency, and decommissioning challenges, will be addressed by ABB at Offshore Europe.

WITH OIL PRICES remaining low, reducing operating costs is a clear priority in order to remain competitive and maximise economic recovery. However, the real challenge is to reduce these costs whilst maintaining safety and production efficiency. The other key challenge facing the industry is managing ageing assets safely and productively while preparing for decommissioning.

These are the key messages from Arlene Hutchinson at ABB, a leader in power and automation technologies, who will address these challenges at this year's Offshore Europe. ABB's stand will feature talks and demonstrations on subsea technologies, an innovative motor inspection service and 'integrated operations' (a collaborative environment including remote diagnostics and support).

Cost savings and production efficiency

The Oil & Gas UK production efficiency task force has set the objective of getting production efficiency up to 80 per cent by next year. Hutchinson says, "We have implemented solutions for many operators to help improve production efficiency in a number of the key categories of loss.

"Identifying and eliminating low value engineering activities is the least painful approach to cost reduction. When carried out properly, the cost savings can be accompanied by sustainable safety and integrity, as well as improved production efficiency."

The stand will feature some of ABB's advanced control solutions for flow assurance which, according to the company, have been very successful in increasing production rates and reducing process upsets.

Decommissioning

"With over 50 per cent of offshore installations in the North Sea operating beyond their design life, planning for their eventual end of service is a matter of urgency," says Hutchinson. Many of the structures will have been operating for almost 40 years, she says, and over the next couple of decades over 90 per cent of them will need to be completely removed from their sites and brought onshore for re-use, recycling or disposal.

> "Identifying and eliminating low value engineering activities is the least painful approach to cost reduction"

Hutchinson adds "ABB recently completed a report for Decom North Sea and Zero Waste Scotland, looking at the benefits of alternative methodologies in decommissioning."

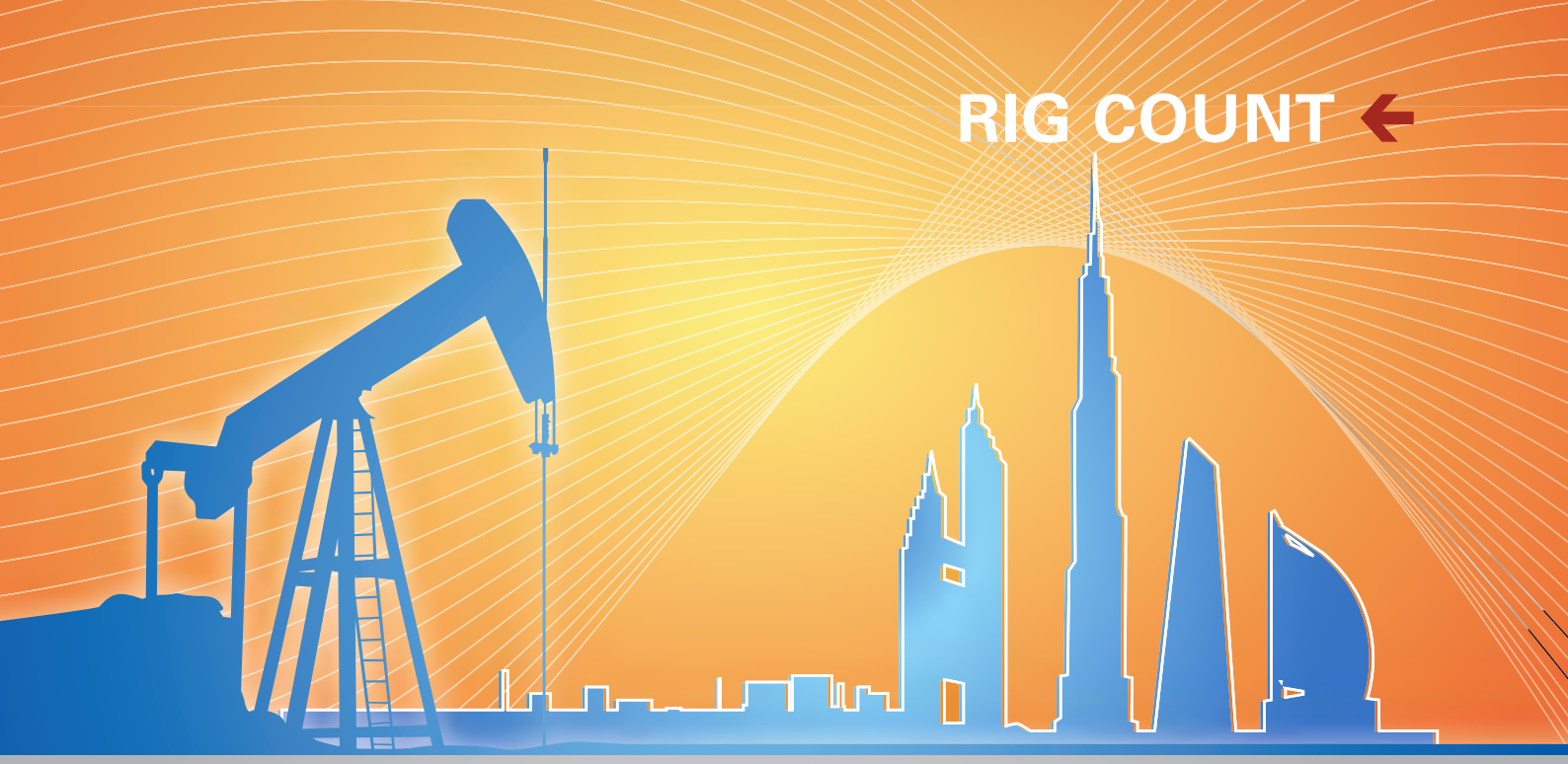
Sustainable safety

Hutchinson explains how in the current climate it is important not to become complacent about process safety hazards, but operators need to be as efficient as possible in carrying out process safety work. "Good process safety is also good business as in the UK offshore oil and gas industry, 40 per cent of production loss is related to preventable operator error, and if improved Process Safety Management (PSM) reduces this by even one incident, it is worth a significant increase in production efficiency."

ABB is presenting a paper at the conference on the development of a dashboard showing the status / health of the protective barriers on a platform in near real time. This system will also be demonstrated on the stand. ■

The ABB stand will feature technical talks and stand demonstrations

ABB will be presenting hourly technical talks on its stand throughout the exhibition. Places can be pre-booked via www.abb.co.uk/offshore-europe, or visit ABB on Stand 3E 160. Other stand attractions include demonstrations illustrating how technology can be fully exploited offshore, a 3D flythrough of ABB's offerings and the chance to meet many of ABB's global experts and leaders.



Middle East & North Africa

The Baker Hughes Rig Count tracks industry-wide rigs engaged in drilling and related operations, which include drilling, logging, cementing, coring, well testing, waiting on weather, running casing and blowout preventer (BOP) testing.

	THIS MONTH			VARIANCE	LAST MONTH			LAST YEAR		
Country	Land	OffShore	Total	From Last Month	Land	OffShore	Total	Land	OffShore	Total
Middle East										
ABU DHABI	22	16	38	0	25	14	39	25	11	36
DUBAI	0	2	2	1	0	2	2	0	2	2
IRAQ	44	0	44	5	53	0	53	61	0	61
JORDAN	0	0	0	0	0	0	0	0	0	0
KUWAIT	44	0	44	0	50	0	50	45	0	45
OMAN	67	0	67	1	71	0	71	57	0	57
PAKISTAN	23	0	23	-3	17	0	17	19	0	19
QATAR	1	6	7	1	2	4	6	2	7	9
SAUDI ARABIA	104	19	123	10	98	23	121	97	18	115
SUDAN	0	0	0	0	0	0	0	0	0	0
SYRIA	0	0	0	0	0	0	0	0	0	0
YEMEN	0	0	0	0	0	0	0	3	0	3
TOTAL	305	43	348	15	316	43	359	309	38	347
North Africa										
ALGERIA	50	0	50	49	51	0	51	49	0	49
EGYPT	36	6	42	-9	35	6	41	46	16	52
LIBYA	0	1	1	3	2	1	3	4	3	7
TUNISIA	2	0	2	0	2	0	2	3	0	3
TOTAL	88	7	95	-8	90	7	97	102	9	111

Source: Baker Hughes

Project Databank

Compiled by Data Media Systems

OIL, GAS AND PETROCHEMICAL PROJECTS - EGYPT

Project	City	Facility	Budget ($US)	Status
Abu Qir Fertilizers - Misr Phosphate Company - Egypt Kuwait Holding Company - El-Wady Complex for Phosphate and Compound Fertilizers	Abu Tartor	Ammonium Phosphate	1,200,000,000	Feasibility Study
Amreya Petroleum Refining Company (APRC) - Crude Oil Distillation Unit	Alexandria	Crude Oil Distillation Unit	250,000,000	Feasibility Study
Assiut Oil Refining Company (ASORC) - Continuous Catalyst Regeneration (CCR) Unit	Asyut	Continuous Catalytic Cracker (CCR)	250,000,000	Design
Assiut Oil Refining Company (ASORC) - Hydrocracking Diesel Complex	Asyut	Hydrocracker	2,500,000,000	Feasibility Study
Dana Gas - Block 1 (North El-Salhiya)	North El-Salhiya	Gas Exploration	70,000,000	Engineering & Procurement
Dana Gas - British Petroleum (BP) - Block 3 (El-Matariya)	El-Matariya	Gas Exploration	120,000,000	Engineering & Procurement
Egypt Hydrocarbon Corporation (EHC) - Tahrir Petrochemicals Complex	Suez	Petrochemical Complex	7,000,000,000	Engineering & Procurement
Egypt Hydrocarbon Corporation (EHC) - Tahrir Petrochemicals Complex - Utilities and Offsite Facilities	Suez	Offsites & Utilities	2,000,000,000	Engineering & Procurement
Egyptian Chemical Company (KIMA) - Aswan Fertilizer Complex (KIMA 2)	Aswan	Ammonia	592,000,000	Construction
Egyptian Company for Ethylene and Derivatives - Alexandria Ethylene Complex	Alexandria	Ethylene	730,000,000	Engineering & Procurement
Egyptian Natural Gas Holding Company (EGAS) - Egyptian General Petroleum Company (EGPC) - 37 New Wells	Nile Delta	Exploration	270,000,000	Engineering & Procurement
Egyptian Petrochemicals Holding Company (ECHEM) - Alexandria Propylene Derivatives Project	Alexandria	Propylene	2,500,000,000	Feasibility Study
Egyptian Petrochemicals Holding Company (ECHEM) - Aromatics & Fertilizers Complex (SUPSC Project)	Suez	Aromatics	2,044,000,000	Feasibility Study
Egyptian Petrochemicals Holding Company (ECHEM) - Bio-Ethanol from Beet Molasses Project	Kafr El Sheikh	Bio-Ethanol	135,000,000	Feasibility Study
Egyptian Petrochemicals Holding Company (ECHEM) - Bio-Ethanol from Rice Straw Project	Kafr El Sheikh	Bio-Ethanol	227,000,000	Feasibility Study
Egyptian Petrochemicals Holding Company (ECHEM) - Formaldehyde and Derivatives Project	Kafr El Sheikh	Formaldehyde	100,000,000	Feasibility Study
Egyptian Petrochemicals Holding Company (ECHEM) - Olefin and Polyolefin Complex	Kafr El Sheikh	Polyolefins	3,000,000,000	Feasibility Study
Egyptian Petrochemicals Holding Company (ECHEM) - Petro-refinery Complex (4th Generation)	Ain Soukhna	Naptha	9,000,000,000	Feasibility Study
Egyptian Refining Company (ERC) - Mostorod Refinery	Mostorod	Refinery	3,700,000,000	Construction
El Delta Company for Fertilizers & Chemical Industries - Dakahliya Complex - Fertilizer Complex	Talkha	Ammonia	408,000,000	Engineering & Procurement
El Nasr For Intermediate Chemicals - Nine Fertilizers Plants (Overview)	Ain Soukhna	Phosphoric Acid	600,000,000	EPC ITB
Eni - Block 9 (North Leil Offshore)	Mediterranean Sea	Exploration	300,000,000	Engineering & Procurement
Eni - British Petroleum (BP) - Block 8 (Karawan Offshore)	Mediterranean Sea	Exploration	140,000,000	Engineering & Procurement
ENI - Nooros Exploration Prospect (Abu Madi West)	Nile Delta	Gas Field	2,000,000,000	Engineering & Procurement
Eni - South-West Melehia Block license	South-West Melehia	Exploration	40,000,000	Engineering & Procurement
Mashreq Petroleum - Tank Terminal	Port Said	Export Terminal	350,000,000	Engineering & Procurement
Petromisr - Ain Al Sokhna Refinery	Ain Soukhna	Refinery	3,000,000,000	On Hold
RWE Dea - British Petroleum (BP) - West Nile Delta Gas Field	West Nile Delta	Gas Field	12,000,000,000	FEED
Suez Oil Processing Company (SOPC) - Oil Production Complex	Suez	Oil Production	500,000,000	Feasibility Study

Project Focus

Compiled by Data Media Systems

Project Summary

Project Name	Dana Gas / British Petroleum (BP) - Block 3 (El-Matariya)
Name of Client	BP - British Petroleum (UK) Dana Gas
Budget ($ US)	120,000,000
Facility Type	Gas Exploration
Status	Engineering & Procurement
Start Date	Q1-2013
End Date	Q4-2020
Award Date	Q3-2014

Project Background

The client is planning to develop the onshore Block 3 (El Matariya).

Project Status

Jun 2015	The drilling work is likely to be started in first quarter of 2016
Nov 2014	BP has awarded a gas exploration block. BP will operate the block with 50 per cent equity.
Sep 2014	Dana Gas has been awarded a 50 per cent license interest and operatorship of the block. Dana Gas will be in partnership with BP for implementing the project.

Contractors

Contract Type	Pre-Qualified	Bidders	Awarded
EPC	-	-	• BP - British Petroleum (UK)

Project Schedules

1Q-2013	Feasibility Study	**3Q-2014**	Engineering & Procurement
3Q-2013	EPC ITB	**4Q-2020**	Completed

Project Scope

The scope of the project covers an area of 960 square kilometres.

Project Finance

Dana Gas: 50 per cent
British Petroleum (BP): 50 per cent
BP will pay for up to US$39 mn of the cost of Dana Gas's drilling of a first natural gas exploration well.

مفتاح أنظمة الإدارة الفعالة

على الرغم من أن أنظمة الإدارة ليست ظاهرة كما الأصول، فإنها تلعب دوراً أساسياً في ضمان مراعاة الصحة والسلامة المهنية في جميع التوجهات المبنية على المخاطرة. فأنظمة الإدارة تركز على تطوير تقييم شامل للمخاطر، كما تركز أيضا على إجراءات التشغيل القياسية، الأمر الذي يساعد على ضمان التنفيذ الآمن للأنشطة ذات المخاطر المرتفعة. وفي استجابة لتسرب حفار «ديب ووتر هورايزون» النفطي الذي حدث في خليج المكسيك عام ٢٠١٠، والذي تسبب في أكبر تسرب نفطي بحري في التاريخ، قام مجلس الطاقة القومي الكندي بإطلاق «المراجعة القطبية الشمالية» (وهي عبارة عن تحليل شامل لعدة حوادث صناعية كبيرة) لدراسة الدور الذي لعبته أنظمة الإدارة في كبرى الحوادث، وتحديد ما إذا كانت هناك أية توجهات أو دروس ذات صلة لدرء الحدث. وخلصت نتيجة التقييم إلى أن معظم الشركات المتورطة في تلك الحوادث، قد طورت أنظمة إدارة، وأن هذه الأنظمة لم يتم تطبيقها أو مراجعتها بفعالية بصورة دورية لضمان الكفاءة والفعالية المستمرة لها. بل والأهم من ذلك أن عمليات تقييم المخاطر وتحديد أوجه الخطورة، لم يتم اتباعها في الغالب. ومن هذا يتبين أنه لم تكن هناك حوادث جديدة، بل مجرد أسباب مؤدية للحوادث تكرر نفسها مراراً وتكراراً. وقد أولى التقرير أهمية كبيرة لدور القيادة المؤسسية في منع وقوع الحوادث الكبيرة. فإدارة عملية السلامة بفعالية، والتأكد من كفاءة القوى العاملة على جميع مستويات الشركة، وتوفير المعلومات الدقيقة في الوقت المطلوب لاتخاذ القرارات الاستراتيجية، وخلق وعي بعواقب التغيير في بيئة العمل، كل هذه مقومات أساسية للقيادة الرئيسية تعمل على الارتقاء بمستوى الأداء، وتضمن إيلاء الصحة والسلامة المهنية الأولوية المماثلة مع أي أهداف إنتاج. كما أشار التقرير أيضا إلى توجه آخر، وهو أهمية دمج المعلومات المتعلقة بسلامة العمليات والثقافة المؤسسية أثناء تقديم التقارير بأداء الصحة والسلامة. وهذا الأمر يشجع على انتقال الصناعة بعيدا عن التركيز على بيانات الإصابات الشخصية كأداة قياس لمستوى السلامة. وتعتبر حادثة ديب ووتر هورايزون مثالاً جوهرياً على قدرة هذا الأمر على تضليل الإدارة. ففي خلال الأيام السابقة على الحادث أعطت البيانات المتدنية لمعدلات الإصابة الشخصية مؤشراً زائفاً عن مستوى سلامة عمليات الأصول، وعن إجمالي ثقافة الصحة والسلامة. وتتكون برامج الإدارة المعترف بها عالميا من برامج تم تصميمها خصيصا من أجل تحقيق عملية الوصول بالمخاطر على العامة والعاملين والمقاولين والأصول والإنتاج والبيئة إلى أدنى حد مقبول عمليا. وللحصول على صورة أكثر شمولية لمستوى أداء السلامة بشكل عام، يتم تشجيع المراقبين والشركات على حد سواء، على النظر إلى ما هو أبعد من مؤشرات «التباطؤ»، كمعدلات إصابات الوقت الفائت، والأخذ بعين الاعتبار مؤشرات الأحداث المتكررة بصورة كبيرة ، وذات العواقب المنخفضة (على سبيل المثال إصابات العمال) ومؤشرات الأحداث ذات معدل التكرار الضئيل ولكن عواقبها فادحة (مثل انفجار الآبار والخسائر في الأرواح). وهذا الأمر يضمن تحديد وإدارة التهديدات الظاهرة والخفية من قبل المشغلين (مثل سلامة الأصول والعوامل البشرية وأوجه القصور المؤسسية وثقافة السلامة) وذلك لضمان تحقيق أعلى هامش للسلامة.

تأكيد السلامة الهيكلية وسلامة المعدات

إن سلامة منشآت النفط والغاز وأصولها المساعدة تعمل على دعم سلامة جميع العاملين والبيئة المحيطة. فقد قام المراقبون والمساهمون في السنوات الأخيرة ببذل جهود أكبر من أجل غرس أفضل الممارسات في تشغيل وصيانة المنشآت. فإدارة الأصول في بيئة شديدة التعرية، حيث تتعرض الأصول إلى درجات حرارة ومستويات ضغط عالية وظروف جوية معاكسة، تحتاج إلى نظام فحص وتحليل وتأكيد وإصلاح صارم، وهذا إذا ما كان من الممكن السيطرة على مستوى المخاطر في حدود ما هو مقبول من الناحية العملية. ففي بريطانيا جاء تأسيس «هيئة رقابة حالات السلامة» و«هيئة الرقابة على التصاميم والإنشاءات» للتأكيد على كون استراتيجيات سلامة الأصول جزءاً لا يتجزأ من الإطار التشريعي الذي يحكم تشغيل المنشآت البحرية. وبين عامي ٢٠٠٤ و٢٠٠٧ قامت الهيئة التنفيذية لمعايير الصحة والسلامة (إحدى الهيئات الحكومية البريطانية) بإجراء برنامج فحوص مكثف لسلامة الأصول بعنوان البرنامج الرئيسي 3" (3KP). وجاء تعريف الهيئة التنفيذية لمعايير الصحة والسلامة لمصطلح سلامة الأصول كالتالي: «قدرة الأصول على تأدية غرضها المطلوب بكفاءة وفعالية مع حماية الصحة والسلامة والبيئة». كما عرّفت الهيئة التنفيذية لمعايير الصحة والسلامة إدارة سلامة الأصول كالآتي: «تلك الوسائل التي تعمل على ضمان وجود الأشخاص والأنظمة والعمليات والموارد القائمة على السلامة واستخدامها، وأنها ستعمل بناء على الطلب طوال عمر الأصول». وقد اكتشف «البرنامج الرئيسي ٣» أن العمليات البحرية لم تكن لديها مؤشرات أداء أساسية لتركيز الانتباه على مقياس سلامة الأصول، وتوفير مستويات معقولة من التأكيد على أن الاستراتيجيات الموضوعة لإدارة المخاطر الجوهرية مازالت فعالة في ظل تغيير الظروف المحيطة. وقد أطلق هذا الاكتشاف جهودا دولية لدمج استراتيجيات إدارة الأصول في أنظمة الإدارة الحالية، ومهام الصيانة المخطط لها. وصيانة المعدات بما يجعلها آمنة وفعالة ويمكن الاعتماد عليها، ليست بالأمر الضروري والجوهري فقط لإدارة مخاطر تهديدات الحوادث الخطيرة التي تواجهها صناعة النفط والغاز، بل وتعتبر أمراً حيوياً في خلق البيئة الفعلية التي يمكن للناس أن يفتخروا بالعمل فيها؛ تلك النقطة التي تعتبر مقوماً أساسياً لمكان عمل خال من الحوادث.

الفعالية والعوامل البشرية

على مدار العشرين عاماً الماضية، ظهرت تحسينات جوهرية في جودة الأصول وأنظمة الإدارة التي تدعم وتروج للجودة والسلامة، وكفاءة الطاقة، والحفاظ على البيئة. فقد أضحت الأصول أكثر أماناً من جانب التصميم. ومن المتفق عليه عادة بين أوساط خبراء السلامة الحاليين أن من ٨٠ ـ ٩٠ في المائة من الحوادث الكبيرة التي تقع في الصناعات الحساسة بموجب أصولها، سببُها العوامل البشرية أو الخطأ البشري. ومعظم ممارسي السلامة الآن متفقون على أن التقدم التالي الإضافي في مجال سلامة أماكن العمل، سوف يأتي من الفهم الأفضل لتأثير العمال على الكفاءة التشغيلية لأحد الأصول.

فإدارة العوامل البشرية في المنشآت تعتبر أمراً حيوياً لسلامة تشغيل أحد الأصول، إضافة إلى التأكد من تواجد البنية التحتية وأنظمة الإدارة الصحيحة. وثقافة السلامة الإيجابية أمرٌ ضروريٌّ، وبالأخص في بيئة تحتاج إلى مناوبات عمل طويلة وملحة، وظروف عمل صعبة، واحتمالٍ كبيرٍ لإصابة العمال بالإرهاق والإجهاد. كما أنه يجب على صناعة النفط والغاز أن تكون قادرة على إدارة تدفق متواصل لموظفين جدد ، بل وحديثي العهد بطبيعة العمل في بعض الأحيان. ومعظم المنشآت تقوم بإجراء برامج شاملة للغاية للتدريب وتقييم المهارات، للتأكد من أن جميع العاملين (بمن فيهم المقاولون) على كفاءة لأداء مهامهم المكلفين بها، وأنهم على دراية تامة بإجراءات سلامة العمل المتعلقة بأنشطتهم. كما تقوم معظم المنشآت بتطبيق سياسة «عدم التسامح القصوى» في حالات عدم المراعاة، وقد تصل الجزاءات إلى فصل العاملين نتيجة لخرقهم معايير السلامة. وما من شك أن فهم تأثير العنصر البشري أمرٌ معقد، ولقد بدأنا لتونا إدراك تأثير القوى العاملة على التشغيل الكفء (وبالتالي الآمن) للأصول البرية والبحرية. ولكن هناك توجهات واضحة بدأت في الظهور، ومنها انتقال التركيز بعيدا عن الاعتماد على إطلاق «سياسة السلامة» الخاصة بالشركة لصالح أدوات تكليف الموظفين، كالحوافز التي تعطي العمال دعما في العملية. كما أن هناك أيضا إدراكاً أقوى من ذي قبل بأهمية الأدوار والمسؤوليات المحددة بوضوح فيما يتعلق بالممارسات الآمنة. ومع ازدياد الطلب عالميا على العمالة، والذي يزود بدورة عدداً من المقاولين من الباطن الذين يعملون في أي منشأة ما، أضحى من الضروري والأساسي على جميع الأطراف فهم أدوارها ومسؤولياتها المتعلقة بالسلامة، وأن تتشارك معا الطرق المشتركة لقياس نسبة النجاح.

Under the Patronage of
His Royal Highness Prince Saud Bin Naif Bin Abdulaziz
Governor of the Eastern Province
Kingdom of Saudi Arabia

THE 7th SAUDI ARABIA INTERNATIONAL
OIL & GAS EXHIBITION

23-25 NOVEMBER 2015
Dammam, Kingdom of Saudi Arabia

SAOGE 2015

www.saoge.org

ORGANISERS

IES

Dhahran expo

Tel: +39 06 3088 3030
Email: exhibition@saoge.org

عقب تسرب حفار «ديب ووتر هورايزون» النفطي، تم إجراء تحليلات مقارنة للحوادث المهنية

اتجاه منهجي نحو الصحة والسلامة

يشير نك نورين، مدير عام محـور الشرق الأوسط والهند وأفريقيا لشركة لويدز ريجستر إنرجي، إلى كيفية تحميل الشركات، في بعض الدول، المسؤولية تجاه معايير السلامة الخاصة بها، في حين أن المراقب يتولى دوراً إشرافياً، عوضا عن أن يكون فقط مضطلعاً بتحديد السياسات.

نظرا لطبيعة المخاطر المهنية والمالية لصناعة النفط والغاز، لطالما تم تنظيم هذه الصناعة في إطار مجموعة متنوعة من الأطر التشريعية والمعايير الدولية، وخضعت لها بشكل مكثف. وقد تم فرض التشريعات التقادمية بشكل تقليدي (شاملة قائمة المتطلبات المرتبطة بها) على المشغلين لضمان تضمين وغرس أفضل الممارسات المهنية المراعية للصحة والسلامة في كافة عمليات الشركة، سواء في البر أو في البحر. كما يمكن لثقافة القناعة بالوضع الراهن، وقصور الشفافية التشغيلية، التوغل في قلب المؤسسة، الأمر الذي يستدعي إيلاء الأولوية لـ «إتمام المهام الناقصة طبقا للحد الأدنى المطلوب» من أجل مراعاة القوانين، والحد من التعرض للمساءلة القانونية، وهذا بدلًا من اتباع اتجاه منهجي في تحديد مخاطر الصحة والسلامة وخلق الحلول لإدارتها. وهناك بعض المناطق قاومت الانتقال إلى أنظمة رقابية مبنية على تحقيق الأهداف. وهذا لأن الأنظمة التقادمية تعتبر أكثر بساطة في تطبيقها ومراقبتها، علاوة على التأكد من اتباعها ومراعاتها في أروقة المحاكم. ولكن بما أن المشغلين باتوا يتوغلون في بيئات أكثر عدائية بحثا عن المخزون المتبقي من النفط والغاز، أضحت الأنظمة التقادمية أقل قدرة على التكيف مع التكنولوجيا الجديدة، والمستويات المتغيرة للمخاطر التشغيلية، هذا بالإضافة إلى أن هذه الأنظمة التقادمية بإمكانها قمع الابتكار المطلوب للتكيف. ففي بريطانيا، استدعى انفجار حفار البترول البحري «بايبر ألفا» في البحر الشمالي عام ١٩٨٨ الانتقال بعيدا عن هذا النوع من الإطار الرقابي إلى اتجاه أكثر اعتمادا على المخاطرة، حيث طُلب من المؤسسات تحديد واستيفاء أهداف أساسية متعلقة بالسلامة، والمراعاة التامة لما يقوم المراقبون بمراقبته. وقد أدى الانتقال إلى اتجاه «مبني على تحقيق الأهداف» إلى إلقاء المسؤولية الكبرى على المشغل أو المُرخص له في تولي القيام بعملية تقييم مخاطر شاملة لضمان الحد من المخاطر إلى «أقل مستوى معقول عمليا». وبإلقاء المسؤولية على الشركات، مع منحها الحرية في تنظيم ذاتها، وخلق حلول عملية مبنية على خبراتها، أدت الأنظمة الرقابية، المبنية على تحقيق الأهداف، إلى خلق بيئة أكثر تعاوناً، حيث يتولى المراقب دوراً إشرافياً، عوضا عن أن يكون فقط مضطلعاً بتحديد السياسات. ونرى اليوم هذا الاتجاه المبني على تحقيق الأهداف وقد تم اتباعه في دول أخرى. فالمراقبون يستمرون في تطوير السياسات والمعايير أثناء الانتقال بعيدا عن الإدارة التفصيلية لجوانب البيئة التشغيلية الخاصة بكل أصل من أصول الشركة، وهذا في سبيل تولي دور رقابي داعم يعمل على تقديم الإرشاد ومراقبة الأداء. وقد وضع هذا الاتجاه تأكيدا أقوى على أهمية تطبيق أنظمة إدارة الصحة والسلامة المهنية، مطوراً بذلك عملية السلامة، ومؤكداً على سلامة الأصول.

مفكرة رجال الاعمال

سبتمبر / أيلول

٦ - ٧ منتدى الشرق الأوسط للصحة والسلامة دبي
٨ - ١١ مؤتمر ومعرض حقول أوروبا البحرية أبردين/إسكتلندة
١٤ - ١٧ مؤتمر ومعرض الشرق الأوسط لهندسة المعالجة المنامة

أكتوبر / تشرين الأول

١١ - ١٤ مؤتمر ومعرض الكويت للنفط والغاز الكويت
١٨ - ٢٠ المعرض السعودي للطباعة والتغليف والبلاستك والبتروكيماويات الدمام
١٩ - ٢٢ معرض مشروع العراق إربيل
٢٧ - ٣٠ مؤتمر تقنية الغاز - Gastech سنغافورة

نوفمبر / تشرين الثاني

٩ - ١٢ معرض أبوظبي الدولي للنفط - أديبك أبوظبي

UNDER THE PATRONAGE OF
HIS HIGHNESS SHEIKH TAMIM BIN HAMAD AL THANI, EMIR OF THE STATE OF QATAR

Images courtesy of Qatar Petroleum

IPTC
International Petroleum Technology Conference

Conference: 6–9 December 2015
Exhibition: 7–9 December 2015
Qatar National Convention Centre
Doha, Qatar

REGISTER TODAY

- 2 CEO Plenary Sessions and 5 Panel Sessions
- 62 Technical Sessions with over 350 Presentations
- ***NEW at IPTC 2015*** 'Ask The Expert' Sessions, Society Presidents Session, Top Rated Papers from the IPTC Sponsoring Societies
- 5000 sq. m. Free-to-Attend Exhibition
- Training Courses, Non-Technical Seminars, Education activities for students and teachers, and more

www.iptcnet.org/2015/doha

Host Organisation: Qatar Petroleum

Co-Host Organisation: Shell

Sponsoring Societies: AAPG, EAGE, SEG, SPE

Principal Sponsors: ConocoPhillips Qatar, ExxonMobil, Maersk Oil, Occidental (OXY), RasGas, Saudi Aramco, Total

بتروفاك تفوز بعقد فني في الكويت

فازت شركة بتروفاك، وهي واحدة من شركات خدمات النفط والغاز العالمية، بعقد نظام خط أنابيب مجمع (MGT System Contract) للمرحلة الأولى من برنامج تنمية النفط الثقيل لحقل فارس السفلي التابع لشركة نفط الكويت والكائن في المنطقة الشمالية بالكويت. ويغطي إطار العمل مرافق الأماكن المأهولة وغير المأهولة، ويشمل ذلك أعمال الهندسة والشراء والتشييد، وتحضيرات التشغيل وما قبل التشغيل، وأعمال الشروع في العمل، وأعمال التشغيل، وأعمال الصيانة لمرفق الأعمال المركزي والبنية التحتية المرتبطة به، إضافة إلى مجمع دعم الإنتاج. ويشمل ذلك خط أنابيب يمتد لمسافة ١٦٢ كم لنقل النفط الخام الثقيل من مرفق الأعمال المركزي إلى مجمع الصهاريج الجنوبي الموجود في مدينة الأحمدي، حيث يكون لشركة نفط الكويت الخيار في إرساله إلى مصفاة الزور في جنوب الكويت. ومن المتوقع أن تكتمل عناصر أعمال الهندسة والشراء والتشييد للمشروع، والتي تشمل ١٠ أشهر من أعمال التشغيل المتزايدة، في حوالي ٥٢ شهرا حيث يتم تسليم المحطة بعدها إلى شركة نفط الكويت. وعندما تعمل هذه المحطة بكامل طاقتها، من المتوقع أن تنتج المرحلة الأولى من مشروع النفط الثقيل في حقل فارس السفلي ما يقرب من ٦٠ ألف برميل في اليوم الواحد. وقال سوبرامانيان سارما، العضو المنتدب لأعمال الهندسة والتشييد البرية: «ذلك يُعد منحة كبيرة لشركة بتروفاك في واحدة من أسواقها الرئيسية، وأن ذلك يعزز من المشروعات الجارية في يدها لشركة نفط الكويت وشركة البترول الوطنية الكويتية». وأضاف:«ومع سجلنا الحافل الذي يمتد ١٤ عاما، فإن هذا المشروع هو مشروعنا الحادي عشر في البلد، والذي يعزز من الأهمية الاستراتيجية للكويت باعتبارها جزءا من ملف أعمال الهندسة والتشييد البرية لشركتنا. ونحن نتطلع إلى العمل الوثيق مع شركة اتحاد المقاولين وشركة نفط الكويت للتسليم الآمن للمشروع في الموعد المحدد». ومشروع الهندسة والشراء والتشييد، المقدر بقرابة ٧٨٠ مليون دولار أمريكي، يُعد جزءا لا يتجزأ من مخططات الشركة لزيادة إنتاج النفط الخام، والحفاظ عليه على مدار السنوات الخمس القادمة.

بتروفاك تعمل في الكويت منذ زمن طويل

سابك توقع اتفاقية مشروع مشترك مع إس كي جلوبال كيميكال

وقعت الشركة السعودية للصناعات الأساسية (سابك)، وشركة البتروكيماويات الكورية (إس كي جلوبال كيميكال) اتفاقية شراء تقنية نيكسلين الفريدة، إضافة إلى مصنع ينتج باقة من مواد كوبوليمر الإيثيلين أوليفينات ألفا عالية الأداء، الواقع في أولسان بجمهورية كوريا الجنوبية، وذلك لصالح مشروعهما المشترك مناصفةً. حيث تبلغ القيمة الإجمالية التقريبية لشراء التقنية، والمصنع ٦٤٠ مليون دولار أمريكي. مثّل (سابك) في توقيع الاتفاقية المهندس عبد الرحمن بن صالح الفقيه نائب الرئيس التنفيذي للبوليمرات في (سابك)، بينما مثّل شركة (اس كي جلوبال كيميكال)؛ وهوا يوب تشا رئيسها التنفيذي، وذلك يوم الثالث من يوليو/تموز ٢٠١٥، في مدينة سيؤول بجمهورية كوريا الجنوبية.

هوا يوب تشا، الرئيس التنفيذي لـ إس كي جلوبال كيميكال، وعبد الرحمن الفقيه، نائب الرئيس التنفيذي للبوليمرات في سابك

يقع مقر الشركة القابضة المشتركة - شركة (سابك اس كي نيكسلين) - في سنغافورة. وهي تملك بالكامل شركة (كوريا نيكسلين)، التي تملك بدورها المصنع الواقع في أولسان، الذي تبلغ طاقته الإنتاجية السنوية ٢٣٠ ألف طن. وينوي الطرفان توسعة الطاقة الإنتاجية، من خلال إنشاء وتشغيل مصانع إضافية حول العالم. سينتج هذا المصنع البولي إيثيلين منخفض الكثافة الخطي المصنّع بتقنية الميتالوسين، وبلاستومرات البولي أوليفين، ومطاط البولي أوليفين؛ لتلبية الاحتياجات المتنامية لقطاعات صناعية متنوعة تشمل: التغليف المرن، والأفلام الصناعية والزراعية، وصناعة السيارات، والسلع الاستهلاكية (الأحذية)، والأجهزة الطبية، وقطاع البناء. وتعليقاً على المناسبة، قال يوسف بن عبد الله البنيان، نائب رئيس مجلس إدارة (سابك) الرئيس التنفيذي المكلّف: «نحن سعيدون جداً لتدشين هذه الشراكة مع (اس كي جلوبال كيميكال)، التي تعتبر الخطوة الأحدث في إطار توسع (سابك) عالمياً. فمن خلال تعزيز حضورنا في جمهورية كوريا نفتتح أسواقا عالمية جديدة، ونرسخ موقعنا الريادي العالمي، الأمر الذي يمثل أحد الأهداف الرئيسة لاستراتيجيتنا للعام ٢٠٢٥».

ومن المتوقع أن يساعد هذا المشروع المشترك الجديد كلا من الطرفين على النمو في سوق البولي إثيلين المتخصصة للغاية، وذلك بتوفير منتجات البوليمرز ذات الجودة العالية للعملاء حول العالم. علما بأن تعضيد الشراكة مع إس كي جلوبال كيميكال سيعمل على تعزيز محفظة (سابك) من البوليمرز، كما أنه سيمكن الطرفين من توفير منتجات أكثر تنوعاً، ومجدية الكلفة، علاوة على أنها ستلبي معظم احتياجات العملاء.

OFG SPONSORSHIP OPPORTUNITIES 2015

NEXT OFG LUNCHEON TO TAKE PLACE ON THURSDAY 27TH AUGUST, 2015

Oilfield Get-Together Sponsorship opportunities are still available for 2015.

Don't miss the opportunity to partner with the best Oil and Gas event in town. Now in its 6th year, don't miss the perfect platform to host your potential clients at this exclusive industry event.

For more information please contact marina@ruthschris.ae or call Robyn Sokol 052 900 1974 / Holly Murdoch 050 709 1522.

RUTH'S CHRIS STEAK HOUSE

Oil Review Middle East

THE ADDRESS DUBAI MARINA

TEL +971 4 454 9538, HOT LINE +971 56 170 5116, E marina@ruthschris.ae

RuthsChrisDubai, RuthsChrisDubai www.ruthschris.ae

محطة للطاقة الشمسية في عمان للاستخراج المعزز للنفط

أعلنت شركة تنمية نفط عمان وشركة جلاسبوينت سولار عن خططهما لإنشاء واحدة من أكبر محطات الطاقة الشمسية في العالم المخصصة للاستخراج المعزز للنفط. ستكون «المرآة» منشأة لإنتاج البخار في جنوب عمان وتعمل بالطاقة الحرارية الشمسية بقدرة ١٠٢١ ميجا واط. هذا البخار سيستخدم في عملية التعزيز الحراري لاستخراج النفط الثقيل اللزج في حقل أمل النفطي. وسيشكل الحد الأقصى للطاقة الناتجة من منشأة «المرآة»، على هذا النحو، القدر الأكبر من الطاقة الذي يمكن إنتاجه من أي محطة طاقة شمسية على مستوى العالم.

وقد صممت شركة جلاسبوينت تقنية لتركيز الطاقة الشمسية تتناسب مع المتطلبات الخاصة لصناعة النفط والغاز. وعلى نقيض الألواح الشمسية المولدة للطاقة الكهربية، فإن تقنية البيت الزجاجي المغلق لهذه المرآة تُستخدم فيها مرايا كبيرة ومحدبة لتركيز أشعة الشمس على أنبوب مرجل يحتوي على كمية معينة من الماء.

وهذه الطاقة الشمسية المركزة تصل بالماء إلى درجة الغليان لإنتاج البخار عالي الجودة لتغذية شبكة توزيع البخار الموجودة في حقل النفط.

وينغلق البيت الزجاجي، ذاتي التنظيف، على مجمعات الطاقة الشمسية ليحميها من الرياح والرمال والعواصف الترابية الشائعة في سلطنة عمان وفي أنحاء الخليج. كما يوفر تصميم هذا البيت الزجاجي بيئة خالية من الرياح، ولذا من الممكن أن تكون المرايا وغيرها من المحتويات الموجودة بداخله رقيقة للغاية وخفيفة الوزن. ولا يُشكل حجم مرايا البيت الزجاجي المغلق إلا مقدارا ضئيلًا بالنسبة لحجم نظم الطاقة الحرارية الشمسية الظاهر، مما يسفر بدوره عن توفير ملحوظ في المواد الخام والتكاليف.

وسوف توفر هذه المحطة الحل الدائم لمشكلة البخار اللازم للاستخراج المعزز للنفط، والذي يعتمد إنتاجه حاليا على حرق الغاز الطبيعي.

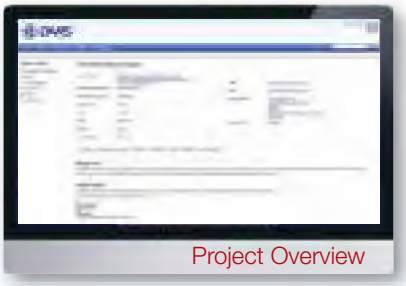
وبمجرد إتمام الإنشاء ستوفر هذه المرآة ٥,٦ تريليون وحدة حرارية بريطانية من الغاز الطبيعي كل عام، والتي يمكن استخدامها في توفير الكهرباء السكنية لـ ٢٠٩ آلاف شخص في سلطنة عمان. وقد صرح راؤول ريستوتشي المدير العام لشركة تنمية نفط عمان بأن «استخدام الطاقة الشمسية لاستخراج النفط هو حل استراتيجي طويل المدى لتطوير استثمارات النفط اللزج لشركة تنمية نفط عمان، وللحد من استهلاك الغاز الطبيعي الثمين والذي ستكون السلطنة في حاجة إليه في إطار آخر لتنويع اقتصادها، ولتحقيق النمو الاقتصادي. إضافة إلى أنه سيحل محل الديزل وتوليد الطاقة المكثف المعتمد على مركبات بترولية ذات نسب كربون أعلى وحرق النفط في المشروعات الحرارية المستقبلية».

علما بأن شركة تنمية نفط عمان كانت تعمل مع شركة جلاسبوينت منذ عام ٢٠١٠ في أحد المشروعات التجريبية في حقل أمل النفطي لاختبار مدى الصلاحية التجارية لتوليد البخار بالطاقة الشمسية، والذي كان ينتج ٥٠ طنا من البخار في اليوم الواحد. وسوف يستمر مشروع توليد البخار بالطاقة الشمسية بقدرة ٧ ميجا واط في العمل في حقل نفط أمل بالتزامن مع إجراء تطوير كامل، وسوف ينتج معدلًا متوسطا بمقدار ٦٠٠٠ طن من البخار في اليوم الواحد والتي سيتم تسليمها إلى عمليات تعزيز استخراج النفط الحرارية الحالية في حقل نفط أمل لسد جزء كبير من حاجات الحقل من البخار. وقد صرح رود ماكجريجور، الرئيس التنفيذي لشركة جلاسبوينت بأن: «صناعة النفط والغاز هي السوق الرئيسية التالية للطاقة الشمسية. فالأمر يتطلب مقدارا هائلا من الطاقة لإنتاج النفط الثقيل اللزج، حيث إن استهلاك أحد حقول النفط النمطية للطاقة يعادل استخدام مدينة صغيرة. ومن دواعي سرور شركة جلاسبوينت أن تشرع في إنشاء عهد جديد من الشراكة بين صناعة النفط والصناعات الشمسية. ولاشك أن الجهود التي نبذلها مع شركة تنمية نفط عمان سوف تمهد الطريق إلى تطورات واسعة النطاق في إطار الاستخراج المعزز للنفط عن طريق الطاقة الشمسية في حقول النفط على مستوى العالم». يجدر بالذكر أن منشأة «مرآة» سوف تبدأ في القيام بأعمالها لإنتاج البخار من أول بيت زجاجي في عام ٢٠١٧.

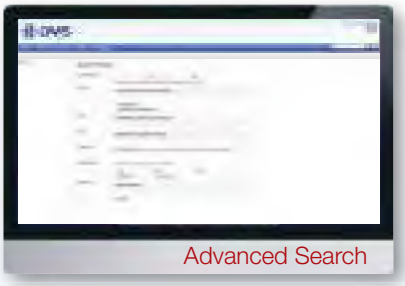
محمد بن حمد الرمحي، وزير النفط والغاز العماني، مع دانييل بالمر، نائب رئيس المبيعات في جلاس بوينت

Over 20,000 major projects tracked in over 100 countries across 13 major sectors

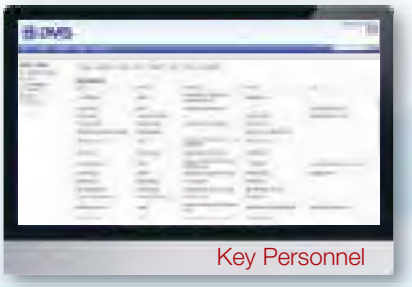
Customizable Dashboard



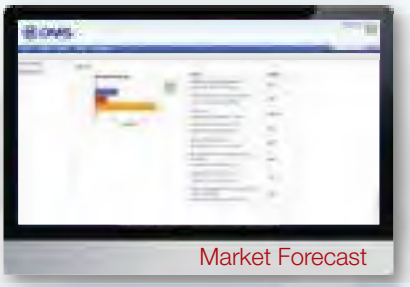
Project Overview



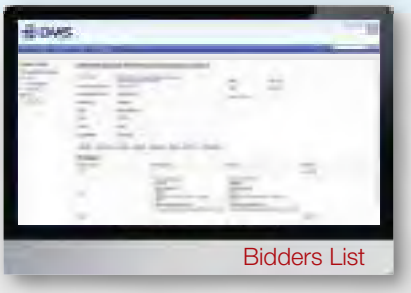
Advanced Search



Key Personnel



Market Forecast



Bidders List

Industry News

DMS PROJECTS

The DNA for Success

KEY FEATURES

- Project Scope and Background
- Track Project Schedules
- Key Personnel Details
- Track Entire Project Lifecycle
- Access Linked Projects
- Access Project Locations
- Advanced Search Features
- Favourites, Notes, Reminders
- Track Updates
- Customized Email Alerts
- Statistics, Analysis & Forecasting
- Data Download
- Project Values and Financing
- Global Network of Researchers
- Customized Research Modules
- Business Profile of Colleagues

NEW FEATURES

- Customizable Dashboard
- Messaging/Sharing Projects Amongst Your Members Group
- Stream Current Industry News Through Your Dashboard
- Forecast Models by Feasibility & EPC Award Dates
- Compare Contractor Workloads Against Each Other
- 65 Levels of Key Personnel
- Deeper Project Financing Data

CONTACT US

Tel: +973 1740 5590 • Fax: +973 1740 5591 • info@dmsglobal.net

www.dmsprojects.net

المحتويات

القسم العربي

ملخص محتويات القسم الإنجليزي:

تقارير خاصة: مصر.

استطلاعات: الحفر، تأجير المعدات، التدريب، تمويل المشروعات.

تقنيات: الطاقة في موقع العمل، التعامل مع الآبار، أتمتة العمليات.

الاتصالات وتكنولوجيا المعلومات: الاتصالات البحرية، البيانات الضخمة.

abc

الشرق الأوسط

النشرة النفطية

تصدر بالنفط والغاز ومصالحة الهيدروكربون

Oil Review www.oilreview.me

المحـــررة : لـويـز ووتـرز

فريق التحرير والتصميم: بن واطس، بوب آدمز، هيريتي بايرو، أندرو كروفت، رانجانات جي إس، براشانت إيه بي، زا تيبت، توم مايكل، سندوجا بلاجي، رونيتا باتناك، توماس ديفيز، هيمانشو جونكا، لي تيلوت.

الناشـــر: نـك فـوردهـــام

مديرة النشـــــر: بـلافي بـانـدي

مدير مبيعات المجلـة: جراهام براون

هاتف: ٩٢٦٠ ٤٤٨ (٤) ٩٧١+ ، فاكس: ٩٢٦١ ٤٤٨ (٤) ٩٧١+ ، بريد إلكتروني: graham.brown@alaincharles.com

Country	Representative	Telehone	Fax	Email
China	Ying Mathieson	(86)10 8472 1899	(86) 1084721900	ying.mathieson@alaincharles.com
India	Tanmay Mishra	(91) 80 65684483	(91) 8040600791	tanmay.mishra@alaincharles.com
Nigeria	Bola Olowo	(234) 8034349299	-	bola.olowo@alaincharles.com
South Africa	Annabel Marx	(27) 218519017	(27) 466245931	annabel.marx@alaincharles.com
UK	Steve Thomas	(44) 20 7834 7676	(44) 2079730076	stephen.thomas@alaincharles.com
USA	Michael Tomashefsky	(1) 203 226 2882	(1) 203 226 7447	michael.tomashefsky@alaincharles.com

مكتب الشرق الأوسط الإقليمي:
Alain Charles Middle East FZ-LLC
Office 215, Loft 2A
صندوق بريد: ٥٠٢٢٠٧
مدينة دبي للإعلام
دبي - الإمارات العربية المتحدة
هاتف: ٩٢٦٠ ٤٤٨ ٤ ٩٧١+
فاكس: ٩٢٦١ ٤٤٨ ٤ ٩٧١+

المكتـــب الرئيســي:
Alain Charles Publishing Ltd
University House, 11-13 Lower
Grosvenor Place
London SW1 WOEX, UK
هاتف: ٧٦٧٦ ٧٨٣٤ (٠) ٤٤+
فاكس: ٠٠٧٦ ٧٩٧٣ (٠) ٤٤+

الإنتاج: دوناتيللا مورانيللي، ناتانييل كومار، صوفيا هوايت، نيكيتا جين، بريناكا تشربوتري.
بريد إلكتروني: production@alaincharles.com
الإشتراكات: بريد إلكتروني: circulation@alaincharles.com

رئيس مجلس الإدارة: دريـــك فوردهـــام

المترجم: عزالدين م. علي ezzeddin@movistar.es
التصميم والإخراج الفني: محمد مسلم النجار alnajjar722@gmail.com
الطباعة: مطبعة الإمارات ـ دبي

Alain Charles Publishing
Serving the world of business

ISSN: 1464-9314

ADVERTISERS INDEX

الشـرق الأوسـط

الشرة النفطية

تُعنى بالنفط والغاز ومعالجة الهيدروكربون

العدد الخامس 2015 UK£10 USA $16.50

اتجاه منهجي نحو الصحة والسلامة

- محطة للطاقة الشمسية في عُمان للاستخراج المعزز للنفط
- بتروفاك تفوز بعقد فني في الكويت
- سابك توقع اتفاقة مشروع مشترك مع اس كي جلوبال كيميكال

زيادة الاهتمام بالعوامل البشرية من أجل تحقيق استراتيجية فعالة للصحة والسلامة. بالإضافة إلى أحدث أنباء قطاع النفط والغاز عبر منطقة الشرق الأوسط.