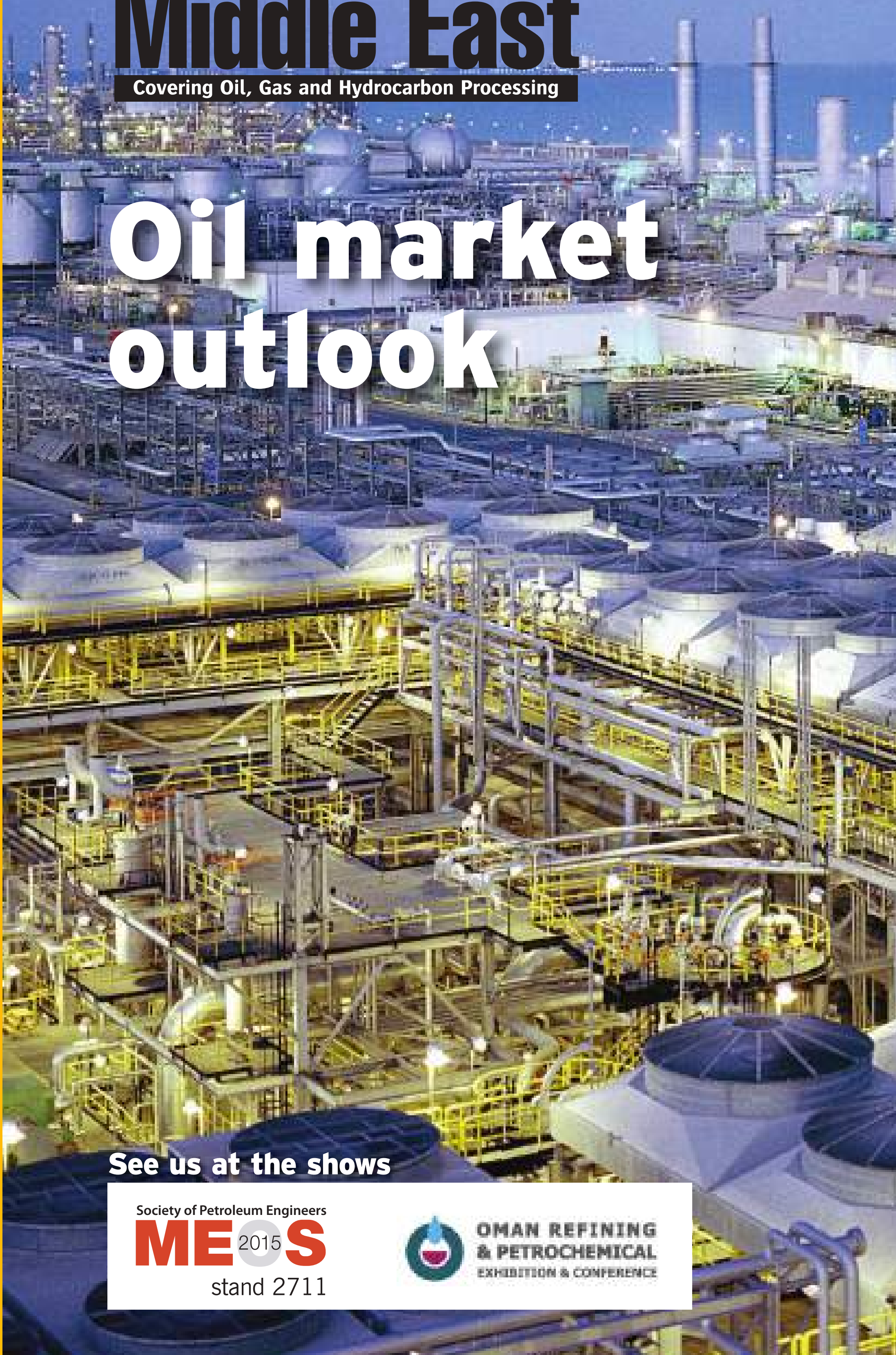
www.oilreview.me

Oil Review Middle East

Covering Oil, Gas and Hydrocarbon Processing

VOLUME 18 | ISSUE 1 2015



Oil market outlook

Covering Oil, Gas and Hydrocarbon Processing

UK £10, USA $16.50

- Bapco achieves operational excellence milestones
- The rise and rise of big data
- Playing it safe with compressed air
- Communications in hazardous environments
- Unconventionals suffer from low oil price
- Risk reduction through Safety Instrumented Systems

"There are several other countries where there is existing oil that is just waiting to be developed, and the question is how to find a way to do that." Stéphane Michel, Total's exploration and production president for the Middle East See page 12

See us at the shows

18 Years Serving the regional oil & gas sector since 1997

Oil Review Middle East - Volume 18 - Issue One 2015

www.oilreview.me


bernekon
b inspired b visible b essential
Essential services to Iraq.
Bernekon, one of the leading fourth party logistics (4PL) and supply chain solutions provider in the US and Middle Eastern region, operating in diverse industry sectors such as: defense, oil and gas, mining, energy, retail, consumer goods, and construction. Supporting customers at any and every stage of their development. Whether they are a small niche retailer, a growing brand, or a multinational corporation, we add value through our supply chain expertise and our innovative approach to logistic challenges.
b - Xclusive
b - Eco
b - Xpress
With GPS
Fastest yet
Individualized
b-VIP
Fast & Economic
Simplified
Attractive
Viable
Economic
Now with GPS
Empowered
Faster
Transparent
UAE
P.O. BOX 474003
JLT Tiffany Tower 701 , Dubai, UAE
Tel No. +9714 4201480 Fax No. +9714 4201481
info@bernekon.com
CHINA
Room 1208 Hejingruifeng Plaza,
No.12 Haile Road, Zhujiang New Town
Tianhe District, Guangzhou
China
www.bernekon.com

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, Rhonita Patnaik, Louise Quick, Prasad Shankarappa, Zsa Tebbit, Lee Telot and Ben Watts

Publisher: Nick Fordham

Publishing Director: Pallavi Pandey

Magazine Sales Manager: Camilla Capece
+971 4 448 9260 +971 4 448 9261
camilla.capece@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

South Africa **Annabel Marx**
(27) 218519017 (27) 46 624 5931
annabel.marx@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: Nikitha Jain, Nathanielle Kumar
Donatella Moranelli and Sophia White -
production@alaincharles.com

Subscriptions: circulation@alaincharles.com

Chairman: Derek Fordham

Printed by: Buxton Press

abc

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

Editor's note

IN RECENT WEEKS we have heard much depressing news about cuts to investment programmes and job losses in the oil industry. At the time of writing, the oil price has rallied somewhat, but the concensus seems to be that prices will remain volatile for the foreseeable future. In this issue we look at the outlook for the oil markets (p20-26) as well as the impact of the low oil price on companies working in the energy industry; our 'Talking Point' on p74 giving the views of industry practitioners makes interesting reading; clearly it is not all doom and gloom. A focus on increasing efficiency, prolonging the life of assets and promoting innovative cost-effective solutions could all lead to new business opportunities.
Finally, may I draw your attention to our revamped website at www.oilreviewmiddleeast.com, which will keep you abreast of all the latest news and developments.

Contents

Challenging times for MENA energy investment

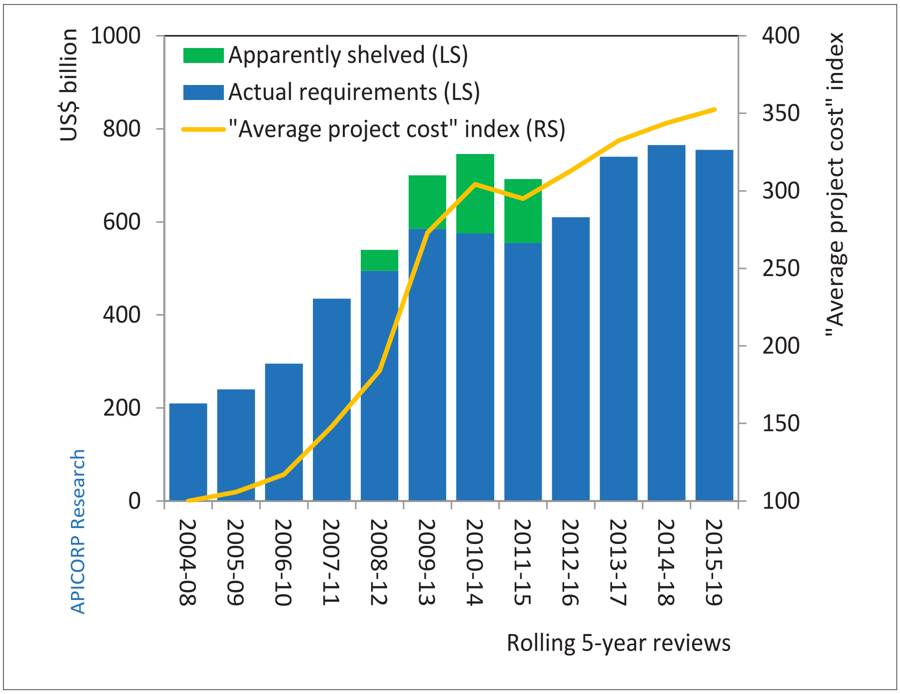
THE ARAB PETROLEUM Investments Corporation (APICORP) estimates cumulative MENA energy investment to reach US$755bn for the five year period 2015-19, which is slightly lower than that of last year, indicating a pause in its upward trend. The outlook would have been even weaker if not for investments being mostly driven by a catch-up effect and ever-increasing project costs.

APICORP's latest annual review of MENA Energy Investment says that it expects oil prices to return to higher and sustainable levels, though not in the three-digit realm. Therefore, MENA investment may experience a period of relative lull before picking up by the end of the current decade.

More than three-quarters of total capital investment projects are in eight countries among the region's biggest holders of oil and gas reserves, says the review. The resulting geographical pattern has favoured countries that have been relatively shielded from political turmoil.

Although Saudi Arabia continues to top the ranking, its investment, projected at US$127bn, is projected to fall due to achievement of the major upstream oil development phase, diminished opportunities for further downstream mega projects as well as Saudi Aramco's recent drive to reduce its capital cost by 20 per cent.

> "More than three-quarters of total capital investment projects are in eight countries"



Successive Five Year Assessments of Energy Investment

Second is the UAE, which has established itself as the region's second-largest investor after upholding capital expenditures at US$116 bn. The third is Algeria with capital requirements totalling US$84bn. This amount excludes uncertain investment for the development of shale gas resources in the Saharan provinces due to mounting anti-fracking protests.

In the other MENA countries, investment has fallen far below potential. This is particularly so for Iran, Iraq and Libya, where investment is expected to be at best towards the end of the assessment period. In Iran, the investment outlook depends very much on the outcome of ongoing talks on its nuclear program and the possibility of international sanctions being lifted. In Iraq, the government has yet to pass a long-awaited package of hydrocarbon legislation, but which is likely to depend on settlement of complex disputes beyond the current ad hoc agreement on oil exports with Kurdistan.

Under-investment, though less dramatic, is also the case in Kuwait and Qatar. In Kuwait, government policy has often been at odds with parliamentary politics, and efforts to align the two have been repeatedly frustrated, says the report. Only recently has investment in the long-delayed giant al-Zour refinery been finalised and is being implemented. The portfolio of major upstream projects has also been moved from the back burner; but the front-end engineering designs of key components require updating. In contrast, Qatar's stagnation stems from a long-standing moratorium on further development of the North Field gas deposits. As a result, and despite a shift in emphasis towards enhancing oil recovery and expanding the petrochemical industry, energy investment has lost momentum, says APICORP.

As already noted for Iraq and Libya, investment has been affected to different degrees in countries still facing political uncertainty or turmoil, as investors tend to adopt a cautious 'wait and see' attitude. In this respect, capacity expansion in Egypt may fall short of expectations unless the country continues to be supported during what is likely to be a protracted and difficult transition. In the case of Yemen, which is edging closer to civil war, investments are coming to a virtual standstill. Finally, in Syria, even if the civil war ends, future investments are expected to be mostly in repairs and rehabilitation. ■

APICORP is a multilateral development bank established to foster the development of the Arab world's oil and gas industries.

Next generation Epoxy Passive Fire Protection

Jotachar | JF750 mesh free

Saves time. Saves money.

- Reduces installation cost
- No cost of mesh
- No cost for installing mesh
- Reduced labour costs
- Faster project completion
- Potential single coat application
- Fewer installation days
- Less man hours

jotun.com

Executives' Calendar 2015

MARCH 2015			
8-11	**MEOS**	MANAMA	www.meos2015.com
16-18	**Oman Refining and Petrochemical Exhibition**	MUSCAT	www.downstream-oman.com
22-26	**SOGAT**	ABU DHABI	www.sogat.org
25-27	**OMC**	RAVENNA	www.omc2015.it
APRIL 2015			
13-14	**Tank World Expo**	DUBAI	www.tankstorageforum.com
19-21	**Big Data Analytics for Oil & Gas**	DUBAI	www.oilandgasbigdata.com
21-23	**Arab Oil & Gas**	DUBAI	www.ogsonline.com
22-25	**Erbil Oil & Gas**	ERBIL	www.erbiloilgas.com
MAY 2015			
17-19	**Managing Talent in Oil & Gas**	ABU DHABI	www.managing-talent.net
19-21	**CCPS-MEPSC**	ABU DHABI	www.mepsc.org
19-21	**EPC Contracts in Oil & Gas**	DUBAI	www.cwcschool.com/events
26-28	**WPC Leadership Conference**	TROMSO, NORWAY	www.wpcleadership.com
JUNE 2015			
1-3	**International Refining & Petrochems Conference**	ABU DHABI	www.cvent.com/events
1-5	**World Gas Conference**	PARIS	www.wgc2015.org
2-5	**Caspian Oil & Gas Exhibition**	BAKU, AZERBAIJAN	www.caspianoilgas.az/2015
8-10	**Iraq Petroleum 2015**	LONDON	www.cwciraqpetroleum.com

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

ORPEC to showcase opportunities in Oman's refining and petrochemicals sector

OMAN'S REFINING AND petrochemical sector is currently seeing rapid development and growth, following the government's move to allocate a substantial investment to downstream infrastructure to meet growing demand. This is evident in the number of ongoing and proposed major projects to meet rising demand, boost added value to the petrochemicals industry and strengthen Oman's position as an international energy transit centre. Sohar and Duqm are developing as major industrial hubs. Projects underway include a 230,000 b/d refinery at Duqm; the Sohar Refinery Improvement Project, which will add five new units to increase the production of fuel, naphtha and propylene by 70 per cent; and the US$3.6 bn Liwa Plastics Project which includes a steam cracker and associated units as well as a 300-km-long pipeline. This project will increase ORPIC's production capacity of polypropylene and polyethylene to 1.4 mn tonnes when it starts production in 2018, and is expected to boost the development of the downstream plastics industry.

Oman is expanding its refining and petrochemicals capacity

The continuous growth of the sector is creating various business opportunities, and the first Oman Refining & Petrochemical Exhibition & Conference (ORPEC) aims to leverage these opportunities and offer a comprehensive showcase of products, services, equipment technology and a knowledge platform.

Taking place from 16-18 March 2015 at the Oman International Exhibition Centre, the event is organised with the support of the Ministry of Oil and Gas and semi government organisations such as Oman Oil Company, Oman Refineries and Petroleum Industries Company (ORPIC), Duqm Refinery and Petrochemical Industries Company (DRPIC), and Oman Gas Company. Exhibitors will include the top EPC contractors, consultants and service providers from the local, regional and international arena.

The conference will deliver project updates from the Sohar Refinery Improvement Project, Duqm integrated complex, and Liwa Plastics Project as well as present midstream developments and investment opportunities within the Sultanate. It will also bring together leading technology providers to share the latest innovative solutions for reducing bottom line margins and maximising yields. Welcoming addresses will be given by Salim bin Nasser Al Oufi, Undersecretary, Ministry of Oil & Gas, and Musab Al Mahruqi, CEO, ORPIC.

Capitalising on big data

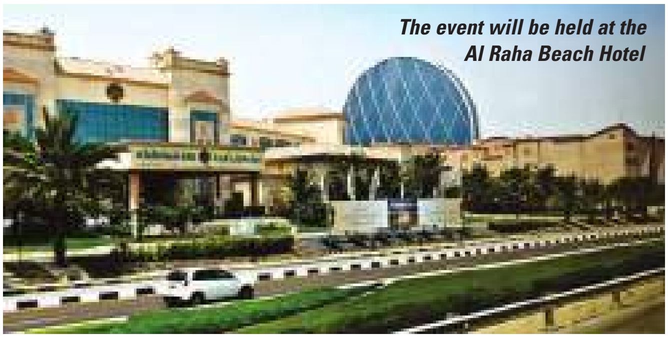
THE BIG DATA Analytics for Oil & Gas conference will be held from 19-21 April at the Al Raha Beach Hotel in Abu Dhabi.

Big data real-time analytics present opportunities to establish more efficient oil production, reduce costs and risks, improve safety, enhance regulatory compliance and improve decision-making.

Oil and gas companies need to understand what big data is, what applications are possible, what return on investment (ROI) they can expect and what technology upgrades will be needed.

This event will provide a platform for technology and business professionals in the oil and gas sector to come together and share best practice knowledge, gain insights from technology vendors and take away useful information to deliver their big data strategies.

For further information visit www.oilandgasbigdata.com.



The event will be held at the Al Raha Beach Hotel

Focus on sour oil and gas developments

THE 11TH EDITION of SOGAT (Sour Oil & Gas Advanced Technology) will be held at the Beach Rotana Hotel Abu Dhabi from 22-26 March 2015. It will focus on international technology developments in sour oil and gas conditioning that are appropriate to the ongoing field requirements in the Middle East.

The event in 2015 includes two days of intensive workshops on advanced technologies for sour gas processing, sulphur recovery, forming & handling; materials planning & management; process separation & filtration; CO2-EOR; sour gas treatment & effective management; and gas compression.

Abu Dhabi's Shah gas field contains sour gas

The workshops will be followed by the 11th International SOGAT Conference where topics will include the latest findings in sour oil and gas operational and development international and national plans; sour field operations and recovery improvements; HSE management; sour gas processing of ultra sour and low quality gas fields; sour gas reservoir characterisation and optimisation; sulphur recovery; sulphur degassing processes; catalyst evaluations and improvements; acid gas enrichment and tail gas treatment; contamination management; new equipment concepts; sulphur management and uses; and CO2 management.

For further information visit www.sogat.org.

Petrofac wins Kuwait heavy oil contract

PETROFAC, THE INTERNATIONAL oil and gas services provider, has received an award notification for the first phase of Kuwait Oil Company's (KOC) Lower Fars heavy oil development programme, which is located in the north of the country.

With a total project value of more than US$4 bn, Petrofac is leading a consortium with Greece based Consolidated Contractors Company (CCC) as its partner.

The scope of work covers greenfield and brownfield facilities and includes engineering, procurement, construction, pre-commissioning, commissioning (EPC), start-up and operations and maintenance work for the main central processing facility (CPF) and associated infrastructure as well as the production support complex. This includes a pipeline of almost 162 kms which will transport the heavy crude from the CPF to South Tank Farm located in Ahmadi, from where KOC has the option to send it to the proposed Al-Zour refinery in the south of Kuwait.

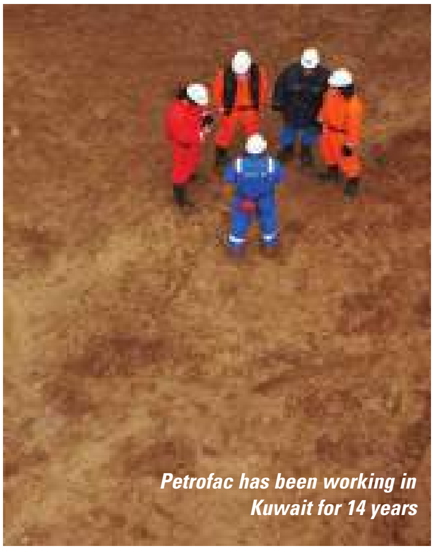
The EPC element of the project, which includes 10 months commissioning and ramp-up work, is anticipated to be completed in approximately 52 months following which the plant will be turned over to KOC. Petrofac and CCC will continue to provide an integrated team at the site for a further eight months to undertake operations and maintenance alongside KOC.

When fully operational it is expected that the initial phase of the Lower Fars heavy oil project will produce around 60,000 barrels of oil a day.

Kuwait's Minister of Oil and Minister of State for National Assembly Affairs, HE Dr. Ali Al-Omair, announced in February that Kuwait will produce its first batch of 60,000 barrels of heavy oil a day by 2018, according to Kuwait's state news agency KUNA.

This remark was made during a National Assembly session focusing on the country's development plans for the years 2015/2016 and 2019/2020 when the minister highlighted the priority being given to projects to increase heavy oil production.

The production of heavy oil will be ramped up to 270,000 barrels a day by 2030, the minister is reported to have said. This project will involve constructing four heavy oil reservoirs which will produce 300,000 barrels for transportation to the new Al-Zour plant.



Petrofac has been working in Kuwait for 14 years

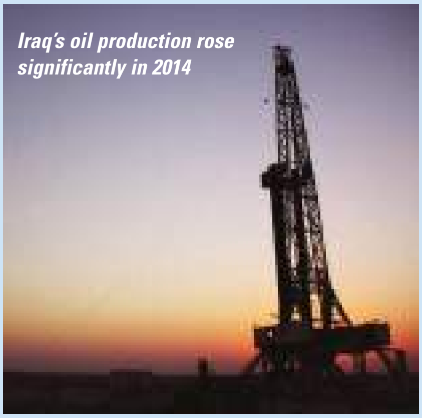
Iraq makes significant contribution to global oil supply growth

ACCORDING TO THE U.S. Energy Information Administration (EIA), Iraq was the second-leading contributor to global oil supply growth in 2014, behind only the USA. This was despite the heightened security threat from the Islamic State of Iraq and the Levant (ISIL) and disrupted production in northern Iraq.

Iraq accounted for almost 60 per cent of production growth among the Organization of the Petroleum Exporting Countries (OPEC), although this growth was more than offset by production declines in other OPEC countries. Iraq's crude oil production, which averaged almost 3.4 million barrels per day (bbl/d) in 2014, was 330,000 bbl/d above 2013 levels,

In December, Iraq's central government and the KRG reached a deal on oil exports and revenues, which could facilitate significant increases in production and exports from northern fields. Notwithstanding this agreement, the threat of ISIL on northern production and exports is still present. Barring any major supply disruption, the EIA expects that Iraq will continue to be the largest source of production growth within OPEC over the next two years.

However the latest figures show that Iraqi production fell in January 2015. This was due to technical issues in the south.



Iraq's oil production rose significantly in 2014

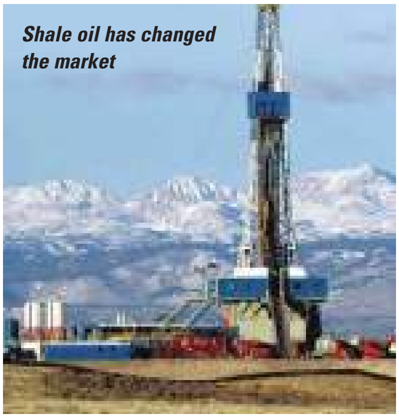
IEA sees transformed market

THE RECENT CRASH in oil prices will cause the oil market to rebalance in ways that challenge traditional thinking about the responsiveness of supply and demand, the International Energy Agency (IEA) said in its annual Medium-Term Oil Market Report (MTOMR) released on 10 February.

The US light, tight oil (LTO) revolution has made non-OPEC production more responsive to price swings than during previous market selloffs, the report said, adding that this would likely set the stage for a relatively swift recovery. At the same time, lower oil prices will not provide as strong a boon to oil demand growth as might be expected.

As producers cut spending, supply will grow far more slowly than previously projected, but global capacity is still forecast to expand by 5.2 mb/d by 2020, and the toll on production will vary by country, said the IEA. Growth in US LTO is expected to regain momentum in the latter part of the forecast period as prices recover, and North America remains a top source of supply growth for the remainder of the decade. In contrast, Russia faces a 'perfect storm' of lower prices, sanctions and currency swings, pushing its production into contraction. OPEC's share of global supply will inch up from recent lows but will not recover to the levels enjoyed before the surge in LTO supply, the IEA predicted.

"This unusual response to lower prices is just one more example of how shale oil has changed the market," said Maria van der Hoeven, then IEA Executive Director, who launched the report at the Energy Institute's International Petroleum Week in London. "OPEC's move to let the market rebalance itself is a reflection of that fact. It may have effectively turned LTO into the new swing producer, but it will not drive it out of the market. LTO might in fact come out stronger," she said.



Shale oil has changed the market

OPEC production falls in January

OIL PRODUCTION FROM the Organization of the Petroleum Exporting Countries (OPEC) totalled 29.94 million b/d in January from 30.03 million b/d in December, according to Platts' latest survey of OPEC and oil industry officials and analysts.

Combined output from OPEC fell 90,000 b/d month over month, dipping below 30 million b/d in January as steep falls in Iraqi and Libyan supply more than offset increases in Angola, Kuwait, Nigeria, Saudi Arabia and the United Arab Emirates.

"The slight drop in total OPEC volumes in January is due entirely to Iraq and Libya," said Margaret McQuaile, Platts senior correspondent. "However, Baghdad has scheduled record exports for February, so even if actual liftings don't quite match up, and barring any unforeseen disruption, we're still likely to see more out of Iraq. But Libya is a different kettle of fish. Given the political upheaval, production seems unlikely to stage any meaningful recovery any time soon."

Most of Libya's main producing fields are closed, but oil is still flowing from its offshore projects and other fields throughout the country.

Top producer Saudi Arabia, which drove OPEC's November 27 decision to maintain the group's official production ceiling at 30 million b/d despite falling oil prices, boosted output by 100,000 b/d to 9.7 million b/d, the survey found.

OPEC crude output in January (million b/d):

Country	Jan. '15	Difference	Dec. '14	Nov. '14	Oct. '14
Algeria	1.12	0.00	1.12	1.12	1.13
Angola	1.75	0.12	1.63	1.64	1.69
Ecuador	0.55	0.00	0.55	0.55	0.54
Iran	2.85	0.00	2.85	2.83	2.83
Iraq	3.10	-0.30	3.40	3.11	3.06
Kuwait	2.77	0.02	2.75	2.75	2.80
Libya	0.33	-0.13	0.46	0.65	0.86
Nigeria	1.98	0.05	1.93	1.98	1.95
Qatar	0.67	0.01	0.66	0.68	0.71
Saudi Arabia	9.70	0.10	9.60	9.60	9.63
UAE	2.80	0.04	2.76	2.78	2.78
Venezuela	2.32	0.00	2.32	2.32	2.32
Total	**29.94**	**-0.09**	**30.03**	**30.01**	**30.30**

** The estimate for Iraq now includes volumes exported by Kurdistan under the agreement between Baghdad and Erbil to bring 250,000 b/d of Kurdish exports under the umbrella of Iraqi state oil marketer SOMO.*

Total experience in Middle East E&P

Stéphane Michel, Total's exploration and production president for the Middle East, speaks to *Oil Review* about recent developments, the falling oil prices, and its future as a responsible energy producer.

Stéphane Michel, Total's exploration and production president for the Middle East

AS DOUBTS CONTINUE to rise and confidence continues to waver in light of the slump in oil prices, Total appears to be exerting all the certainty and determination of a company relativeily unshaken by recent fluctuations.

The oil and gas major has reason to celebrate after it gained a 10 per cent stake in fifteen principal onshore oil fields in Abu Dhabi, where it was awarded a 40-year onshore concession agreement which came into effect from 1 January 2015.

The concession, agreed with the Supreme Petroleum Council of the Emirate of Abu Dhabi and the Abu Dhabi National Oil Company (ADNOC), will be operated by the Abu Dhabi Company for Onshore Petroleum Operations Limited (ADCO), and has been described by the French energy company as a 'major milestone' for its business in the Middle East.

In 2015, ADCO's expected production is around 1.6mn barrels of oil per day, with the aim to increase this output to 1.8mn barrels per day from 2017.

In December last year, Total also announced a discovery on its Jisik-1 well on the Harir Block in the Kurdistan region of Iraq. The second discovery in the Block, located 60 km from the city of Erbil, Total explained that it found light oil of 43 API in a Jurassic carbonate reservoir and that the well was tested with flow rates of 6,100 barrels per day of anhydrous oil without stimulation.

> "We are today exploring in the Kurdistan Region of Iraq, Oman, Qatar, the UAE, Algeria and Morocco"

The discovery, and particularly the deal, mirror the confidence that Total has in the strength of its Middle East business – a confidence which is supported by more than 75 years of operating in the Gulf. The company's recent success also belies notions that opportunities in exploration and production (E&P) are declining in the region, whether that is a result of concerns over security, pricing, or availability of reserves.

Speaking with *Oil Review*, Stéphane Michel, Total's E&P president for the Middle East, said, "There is this feeling that everything has been discovered in the Middle East, so why bother to look for fuel? That's not true, we are today doing exploration in the Kurdistan Region of Iraq, Oman, Qatar, the UAE, Algeria and Morocco – in at least 10 of the 14 countries we are doing exploration [projects], because there is still a lot of oil and gas to find."

Having worked for Total for the last 10 years, Michel has worked across the Middle East, including Libya, where he was managing director of E&P, and Qatar, where he was responsible for a joint venture and business development, before being promoted to regional president of E&P in January 2014.

He is a strong advocate of the untapped value of the region. Speaking in November 2014 ahead of the aforementioned concession agreement, Michel commented, "There is potential new business here in Abu Dhabi, obviously there is the renewal of the ADCO concession, which is absolutely key and a top priority for Total .....we believe we can bring a lot to the new concession as we have done in the past."

"There are several other countries where there is oil that is just waiting to be


SUREBOND
How strong does our new pipe coating make your field joints?
Allow us to demonstrate.
A new era of superior bonding
Go ahead, just try to detach your field joint and line pipe coatings. With SureBond™, it won't happen. SureBond is the new generation of line pipe coating. At its core is a proprietary molecular structure that eliminates the adhesive layer and creates a virtually unbreakable bond with field joint coatings. It handles temperatures from -70°C to 100°C, delivers exceptional low-temp bending, won't delaminate during field joint installation even under an aggressive heating profile, and provides higher surface energy so your field joints stay tightly bonded long term. Plus, we've engineered a SureBond field joint to offer a fully integrated pipeline solution. How strong is that? Add more rhinos. Contact us today.
Interlocking Molecular Structure
ShawCor
Energy Services • Global Solutions
Bredero Shaw
A ShawCor Company
brederoshaw.com/SureBond

Total ABK's chemical EOR pilot project in Abu Dhabi was one of the first of its kind in the UAE

developed and the question is how to find a way to do that," he added.

Having fallen considerably since mid 2014 and currently sat at approximately US$60 a barrel, oil prices are a major concern in the energy industry. On this topic, however, Total appears equally as confident and unruffled.

Speaking in November, when oil prices were at an estimated US$80 a barrel, Michel rejected concerns saying, "We are a big company, we are used to the cycle because we have a long-term view and a long-term strategy. There is no reason to panic, and we plan to stick to what we know, which is a long term [approach]. We have to continue to invest and we have to continue to bring projects on stream."

It should be noted, however, that Total has embarked on cost-reduction programs in order to reduce both CAPEX and OPEX. Furthermore, outside of the Middle East, it was reported in January that Total plans to cut spending on the North Sea fields and on US shale production as a result of plunging oil prices. According to reports, Total is set to reduce capital spending by 10 per cent.

Pioneering role in EOR

As part of its long-term approach to E&P in the Middle East, Total was one of the first companies in the region to begin investing in enhanced oil recovery (EOR) projects. For example, Total Abu Al Bukhoosh (Total ABK), the company's wholly-owned subsidiary operating the Abu Al Bukhoosh field offshore Abu Dhabi, announced plans to implement a chemical EOR pilot project back in 2013, which was said to be the first of its kind in the UAE.

According to Total's Middle East E&P president, EOR is going to be a key subject in the region for at least the next 30 years. He adds that Total has developed a high level of expertise and experience in the oil recovery process, which he says it has achieved through applying the knowledge gained from research and pilot projects.

"We are in the unique position to be an operator in Abu Dhabi, working through Total Abu Al Bukhoosh (Total ABK), and we are currently doing pilot projects in co-operation with ADNOC on EOR."

He explains that EOR is one of the corner stones of the industry not only in the emirates, but also in Oman and Kuwait, with untapped potential in Qatar and Iran, (if it were to open up to business).

It is clear that Total is determined to take full advantage of the unlocked opportunities the Gulf. As Michel explains, however, this is not without taking into full consideration the security issues that arise from working in certain areas of the Middle East.

When asked about the major challenges of working in the region, Michel immediately responds, "The key challenges are security, security, and security." This is significant considering that Michel was working as managing director in Libya when Total staff were evacuated as a result of the unrest and uprising in 2011.

He adds, "We are in countries such as Yemen, Libya, Iraq, Kurdistan Region of Iraq, as well as Syria and Algeria. It's clear that my personal challenge is to be sure that wherever we operate the security of staff is guaranteed."

In regards to correctly reading a situation and ensuring its staff's safety, Total once again benefits from its established network and decades of experience working in the region.

As Michel explains, "The basis of ensuring security is a deep understanding of the country, a deep network, to be fully prepared and to have a plan A, B, C, and D in order to evacuate if bad things happen."

One example of a time when this experienced judgement was brought into play was in the Kurdistan Region of Iraq last year, when it chose not to halt operations.

> "My personal challenge is to be sure that wherever we operate security of staff is guaranteed"

Explaining the decision, Michel said, "A company is able to make those kind of decisions because it has done all the hard work before and that's a serious investment. While we decided to withdraw all our guys from Tripoli and they have not been back for the time being, we considered in July and August 2014 that it was safe to stay in Iraqi Kurdistan."

Committed to responsible energy

Looking forward, Total has recently invested heavily in a new global multimedia campaign with the tagline 'Committed to Better Energy'. According to the oil and gas major, the campaign is designed to present Total as a responsible energy producer, highlighting its operations not only in oil and gas upstream and downstream, but also the work it does with solar power, primarily through its subsidiary SunPower.

It has long been recognised that the time of 'easy oil' is over – or at least close to it – in the region. This campaign, its solar power subsidiary, its cost-reduction programmes as well as the investments into EOR all tie into the growing trend that calls for more sustainable fuel production.

Moreover, interestingly the International Renewable Energy Agency (IRENA) revealed in January that the cost of generating power from renewable energy sources has actually reached parity with, and, in some cases, has dropped below, the cost of fossil fuels for many technologies in much of the world. According to the report, Renewable Power Generation Costs in 2014, solar photovoltaic (PV) is leading the cost decline with the cost of electricity from utility-scale solar PV falling 50 per cent since 2010.

Michel asserts that the campaign is more a case of projecting the work that Total is already doing, saying, "There was a disconnection between what we are and the way the brand is perceived worldwide."

He adds, "Total was born in the Middle East, it is very well known in many countries in the Middle East, as we have been here for more than 70 years. But still, it's very important that we raise awareness beyond the usual stakeholders and beyond the oil and gas world."

Cynics could claim that Total's new campaign is, at least in part, an example of 'greenwashing' in that it is projecting an image of promoting environmentally-friendly initiatives without fully putting these goals into action. But Michel is quick to address these claims, explaining that Total is number two in the world for solar energy and has invested billions in renewable energy sources through its US-based company SunPower.

Whether or not it is a case of putting on a brave face in view of potential industry concerns, Total is doing a good job of appearing confident and continuing E&P operations, and looks set to build on its 75-year history in the region. ■

Towers advises on LNG agreement


Jordan is increasingly relying on LNG exports. Photo: Shell

TOGETHER WITH NAVIGANT, Mapstone and Tractebel Engineering, international law firm Trowers & Hamlins has advised the Ministry of Energy and Mineral Resources of Jordan on a liquefied natural gas (LNG) sale and purchase agreement with Royal Dutch Shell. The agreement, signed on 21 January, guarantees a five-year supply of LNG to the Kingdom and over the term has a value of several billion dollars.

This deal follows an agreement signed by the Jordanian government in July 2013 to lease a Floating Storage and Regasification Unit (FSRU) from Golar LNG Limited, which is moored in a purpose-built structure near the Red Sea port of Aqaba.

From July 2015, Royal Dutch Shell will supply 150 million cubic feet of LNG per day to the terminal in Aqaba. This LNG will cover around 25 per cent of the National Electric Power Company's daily needs for power generation.

Tom Wigley, International Energy and Natural Resources partner at Trowers & Hamlins, commented that Jordan imports about 96 per cent of its energy needs and has increasingly looked to LNG.

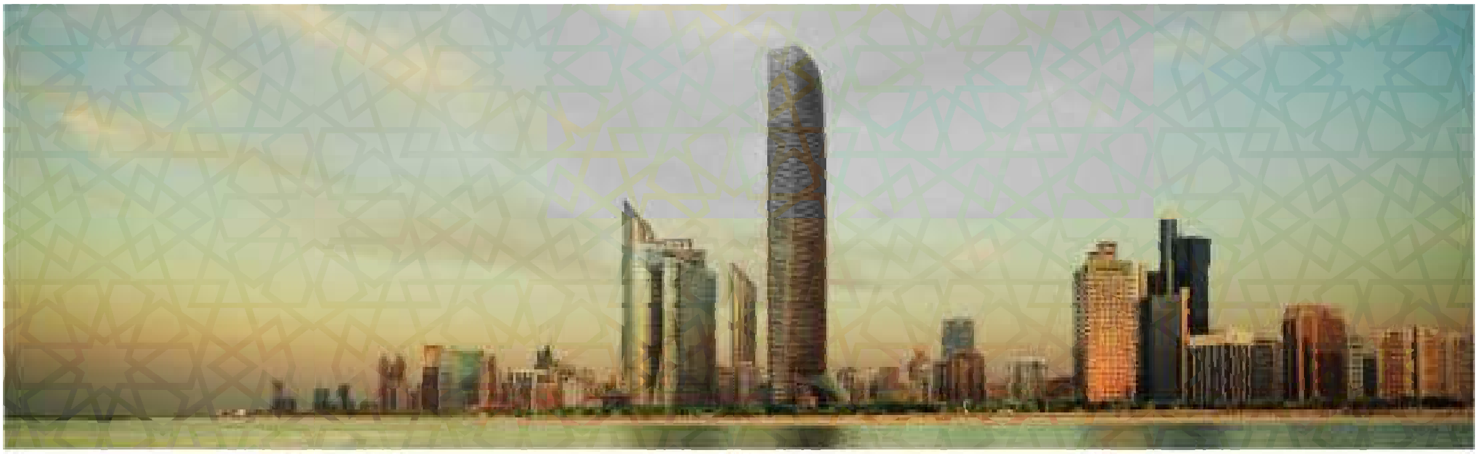
Fugro's Iraq contract extended

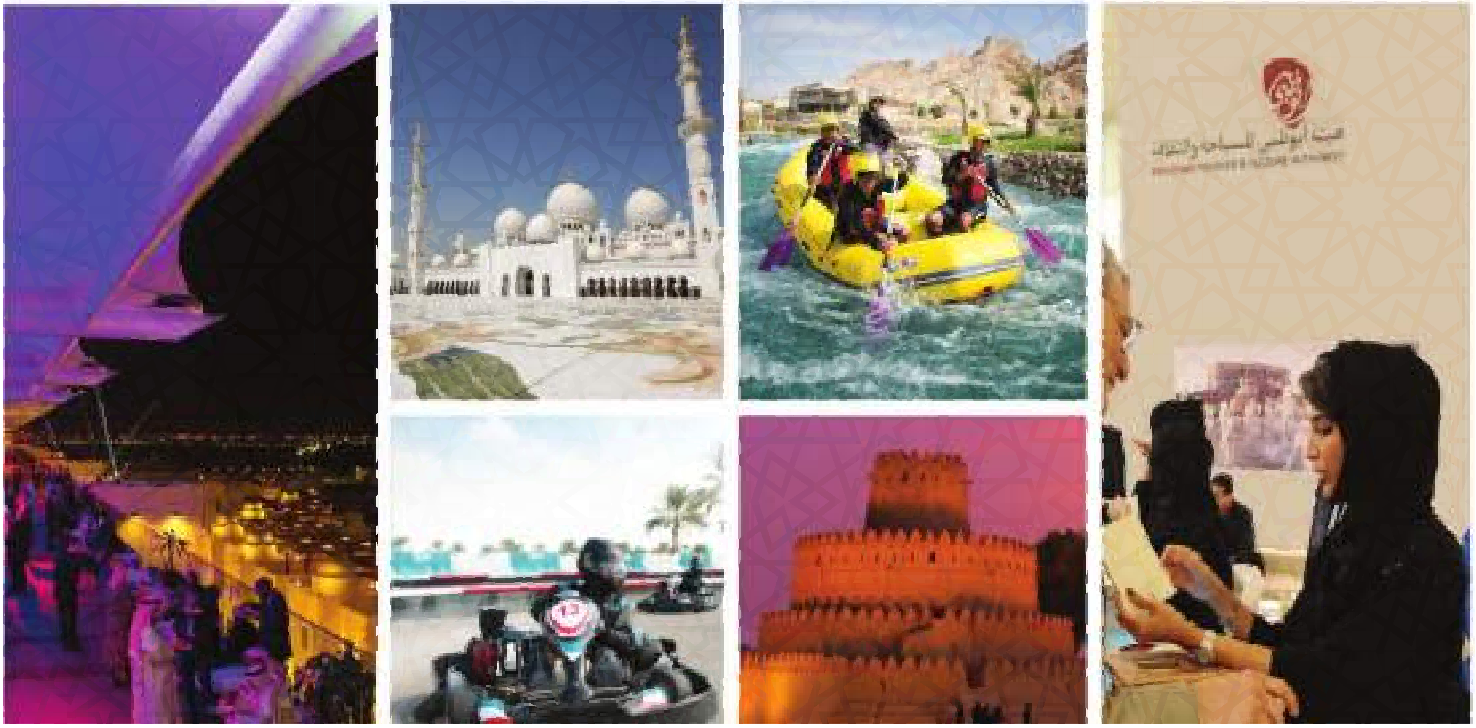
FUGRO HAS BEEN awarded a three year contract extension by Basrah Gas Company (BGC). The contract covers the provision of topographic and geotechnical services in the Basrah province of Southern Iraq, as well as bathymetric surveys and metocean services.

Since being awarded the contract in March 2014, Fugro has provided geotechnical and topographical survey investigation services to support engineering projects for an onshore NGL plant, new pipelines and anticipated expansion of gas compression facilities. Amongst the resources provided by Fugro are two geotechnical rigs and four survey teams on a permanent basis, supplemented by additional teams as required.

The extension of the contract provides continuity of quality enabling BGC to meet its current and future requirements.


Fugro has provided services for an NGL plant





Growing natural gas demand

As the era of 'easy oil' is over and the energy industry is adjusting to falling oil prices, gas production is on the rise worldwide. A recent report by the International Association for Natural Gas (CEDIGAZ) reveals that the Middle East is one of the regions leading on the growing demand for natural gas globally.

THE MIDDLE EAST will account for almost one quarter of the worldwide gas demand growth in the years 2013-2035, according to predictions from CEDIGAZ, the International Association for Natural Gas Information.

In its report, entitled 'Medium and Long Term Natural Gas Outlook' released in February 2015, CEDIGAZ analysed data collected from across the globe and predicted that natural gas will play a growing role in both OECD and emerging markets in meeting the economic, environmental and security challenges of the world energy system.

Table 1: Regional natural gas demand prospects

	2013	2020	2035	%/year 2013-35
NORTH AMERICA	889	953	1104	1.0%
of which :USA	724	757	850	0.7%
LATIN AMERICA	159	188	245	2.0%
EUROPE	512	532	585	0.6%
CIS	610	627	690	0.6%
AFRICA	128	142	212	2.3%
MIDDLE EAST	433	576	807	2.9%
ASIA-OCEANIA	664	912	1,334	3.2%
of which: China	169	355	615	6.1%
WORLD	3,394	3,930	4,977	1.8%

(Unit: bcm)

Demand

The global demand for natural gas is expected to grow by 1.8 per cent per year. Approximately 75 per cent of this growth is said to come from emerging markets which, according to CEDIGAZ, is due to the economic growth in these regions and the displacement of oil in the consuming sector.

Projected to grow 2.9 per cent each year, natural gas demand in the Middle East was 433 billion cubic metres (bcm) in 2013 and is set to almost double by 2035 when it will reach 807 bcm.

Perhaps unsurprisingly, the Gulf nations are expected to have the region's largest demand growth, particularly in Iran, Qatar, Saudi Arabia and the UAE.

As well as a promising economy – with a projected economic growth of 3.7 per cent per year – the Middle East is also seeing a two per cent annual increase in general energy demand and a push towards alternative fuel sources. All of these factors are driving the demand of natural gas.

> "The natural gas demand in the Middle East is set to almost double by 2035 when it will reach 807 bcm"

In terms of year-on-year growth, the region is only beaten by Asia-Oceania, which is reportedly experiencing a 3.2 per cent increase each year in its natural gas demand – rising from 664 bcm in 2013 to 1,334 bcm in 2035. Much of Asia-Oceania's growth boils down to China, which is undergoing a 6.1 per cent increase and is set to reach 615 bcm by 2035.

Production

Natural gas production is expected to grow significantly in the years leading up to 2035 in every region worldwide except for Europe. The figures follow a similar pattern to that of demand, as the largest production gains are predicted to come from Asia-Oceania, the Middle East as well as North America.

With natural gas production standing at 563 bcm in 2013, the Middle East is reportedly undergoing a 2.4 per cent growth each year and reaching 941 bcm by 2035. Whereas Asia-Oceania boasts a 2.9 per cent ongoing annual growth, but interestingly is only set to reach 928 bcm in natural gas production by 2035.

The demand for natural gas in the Middle East will remain driven by the power and industrial sectors, according to the report, which states that the two sectors today together account for 75 per cent of consumption.

While the Middle East and Asia-Oceania come out on top in terms of growth, it is North America that boasts the largest overall production figures. By 2035, North America will have natural gas production prospects of 1224 bcm.

Table 2: Regional natural gas production prospects

	2013	2020	2035	%/year 2013-35
AMERICA	874	993	1224	1.5%
Of which: USA	687	811	995	1.7%
LATIN AMERICA	168	190	258	2.0%
EUROPE	272	235	170	-2.1%
CIS	814	892	1,085	1.3%
AFRICA	206	240	370	2.7%
MIDDLE EAST	563	697	941	2.4%
ASIA-OCEANIA	497	683	928	2.9%
Of which: China	117	225	395	5.7%
WORLD	3,394	3,930	4,977	1.8%

(Unit: bcm)

Unconventional sources

Although the Middle East plays little part in the unconventional sources sector, it is worth noting that while gas-fired power generation will continue to be the largest contributor to the growth, the share of unconventional gas in global marketed production is expected to rise from 19 per cent in 2013 to 32 per cent in 2035.

With its well-established shale gas production industry, North America will dominate the progress of unconventional gas over the next 22 years and, as such, is predicted to account for approximately 60 per cent of the global incremental production between 2013-2035.

For comparison, while North America has a projected shale gas production rate of more than 600 bcm in 2035, its next biggest competitor Asia Oceania has a projected figure of 120 bcm, which is primarily thanks to China's large resources.

Despite the considerable estimated increase in natural gas production, it is unlikely that the Middle East will export its natural gas, particularly considering that many countries in the region either have or are currently planning to increase their LNG imports. It is far more likely that much of its produced gas will be used to fuel its own population leaving, as CEDIGAZ explains, more of its oil open to exports. ■

The end of the bull run for world energy markets?

Moin Siddiqui, economist, examines the factors contributing to the collapse in the oil price, and assesses the prospects for the global energy markets.

THE OIL PRICE has plunged some 60 per cent from last year's high of US$115 a barrel. Metal prices, which typically act as a barometer of global industrial activity, have also declined substantially, although less so than oil. This casual observation suggests that supply/demand factors specific to the petroleum market, especially supply ones, have played a key role in reducing the price during the fourth quarter of 2014. Despite ongoing geopolitical risks - Russia, Ukraine, Libya and the ISIS insurgency in Iraq and Syria - the price has collapsed. Hence, oil fundamentals, rather than the 'fear factor' are currently driving the market.

The futures market structure has shifted from 'backwardation' (a sign of tight physical supply) towards a 'contango' shape (signalling rampant supply) – where spot price is below future delivery. Commercial users and money managers hedging in both the Intercontinental Exchange (ICE) and New York Mercantile Exchange (NYMEX) have also continued to amplify the price drop. These declines followed a period (2011-13) during which global benchmark Brent fluctuated within a remarkably tight band of around US$110/barrel, which was also within OPEC's 'desired range'. In fact, 2011-13 was one of the least volatile three-year periods in the recent history of the petroleum market.

The slowdown in major energy consuming emerging economies (namely Brazil, Russia, India and China), as well as slack demand in the Eurozone and Japan, the U.S. shale boom and a strong U.S. dollar, are cited as underlying reasons behind cheap oil – the International Energy Agency (IEA) refers to a "new chapter" in the history of oil markets. Global oil inventories may rise by a further 297mn barrels in the first half of 2015 – that could increase OECD countries' stockpiles to 2.87bn barrels, equivalent to almost 60 days of consumption, the highest projected level on record – thus keeping the downward pressure on oil prices.

> "The IEA refers to a 'new chapter' in the history of oil markets"

Table 1: Hydrocarbons reserves of the Middle Eastern & North African producers, end-2013

	Proved Oil Reserves Bn barrels	R/P Ratio*	Proved Gas Reserves Trillion cf	R/P Ratio*
Algeria	12.2	21.2	159.1	57.3
Egypt	3.9	15.0	65.2	32.9
Iran	157.0	100+	**1,192.9	100+
Iraq	150.0	100+	126.7	100+
Kuwait	101.5	89.0	63.0	100+
Libya	48.5	100+	54.7	100+
Oman	5.5	16.0	33.5	30.7
Qatar	25.1	34.4	871.5	100+
Saudi Arabia	265.9	63.2	290.8	79.9
Syria	2.5	–	10.1	63.9
United Arab Emirates	97.8	73.5	215.1	100+
Yemen	3.0	51.2	16.9	46.3
Others	0.7	–	8.1	35.3
MENA Total	**873.8**	**78.1**	**3,114.4**	**100+**
World Total	**1,687.9**	**53.3**	**6,557.8**	**55.1**
MENA (%) of World	**51.7**		**47.5**	

* *Reserves-to-production ratio - If the reserves remaining at the end of any year are divided by the production in that year, the result is the length of time that those remaining reserves would last if production were to continue at that rate.*

** *Iran is now ranked as the world's largest holder of natural gas reserves, ahead of Russia whose total reserves are estimated at 1,103.6 trillion cubic feet.*

MENA in 2013 accounted for 36.5 and 21.2 percent, respectively, of the world's gas and oil output.

Source: BP Statistical Review of World Energy June 2014.

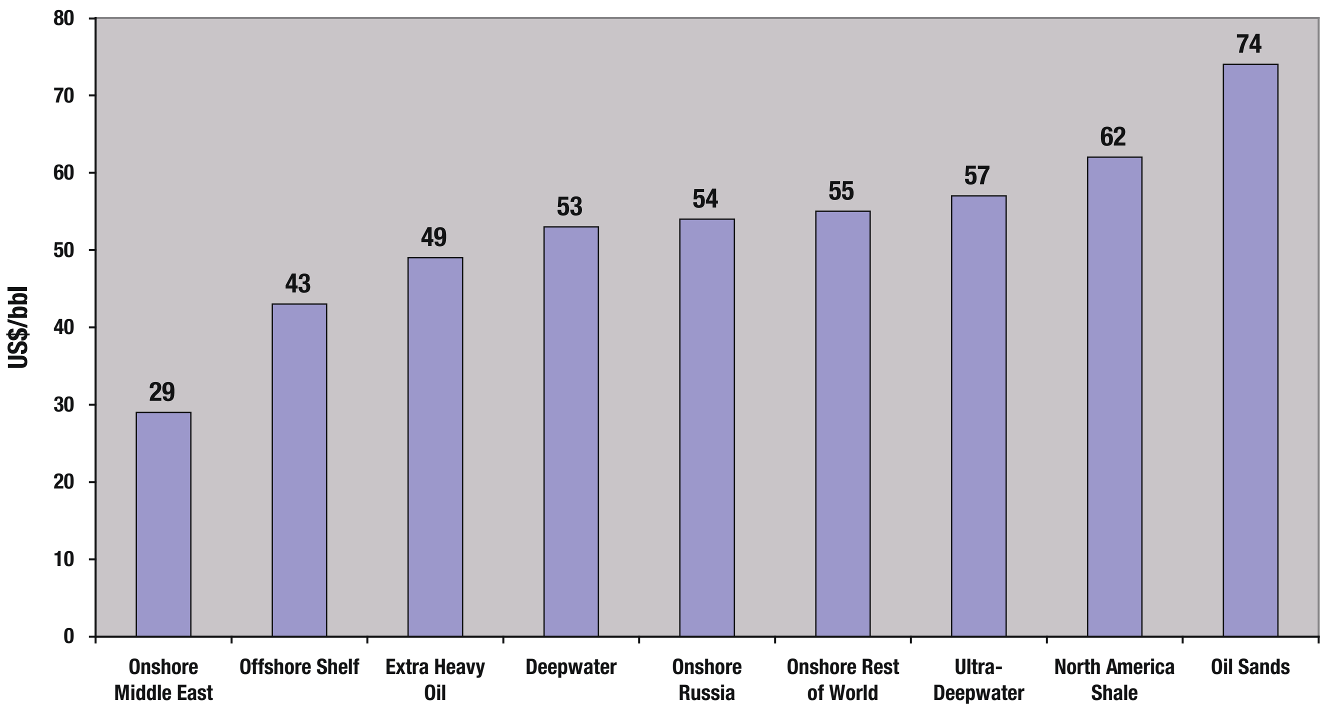
A strengthening dollar, in which oil is priced, also hits demand since it makes crudes more costly for buyers holding other currencies. The dollar is likely to continue appreciating versus the Euro and Yen in the near-term, given the likelihood of a further reduction of the U.S. monetary stimulus (i.e. a gradual lifting of quantitative easing by the Federal Reserve Board) and a more lax stance by the European Central Bank and the Bank of Japan to revive sluggish growth.

At the time of writing, 2015 forecasts for global oil demand growth vary, with the IEA forecasting 900,000 bpd, the USA's Energy Information Administration 1mn bpd, and OPEC 1.15mn bpd. Last year, total demand grew on average by 600,000 bpd, or only 0.6 per cent, to 92.4mn bpd – mainly due to falling consumption in OECD regions. While expectations for average crude price diverge from BP (US$50); the World Bank (US$53); the International Monetary Fund (US$56.7); EIA (US$57.5); and Citigroup (US$62.5). Brent averaged just under US$100/barrel in 2014. The increase in oil futures volatility contributes to a highly uncertain forecasting environment. Cheaper oil has also impacted natural gas and fertiliser prices.

New supply equation

North America's production has soared in the past decade, as firmer prices have prompted increased use of innovative exploration techniques (including deep-water

Fig. 1: Global liquid supply cost curve



Source: Rystad Energy Research & Analysis

offshore drilling and shale liquids) and the implementation of new enhanced oil recovery (EOR) technologies to increase the output from existing wells. This has had a powerful impact on markets and is likely to reduce the call on OPEC's oil this year – expected at 29.8mn bpd, just shy of OPEC's current official target of 30mn bpd, according to Paris-based IEA.

U.S. oil production jumped by 1.45mn bpd in 2014, the largest growth among all non-OPEC producers and the largest in the USA's history, to average 12.67mn bpd (including condensate), based on OPEC's data. The USA has added a cumulative three million bpd to global supplies since 2009. Fereidun Fesharaki, chairman of the Facts Global Energy consultancy, said: "We are entering a new world with plenty of hydrocarbons and a diversity of supply."

Weak prices may reduce investment in non-conventional technologies. The IEA expects investment in U.S. shale drilling to drop by one-tenth over 2015, but supplies will remain ample thanks to recent gains in shale productivity. Citigroup Commodities research notes: "We're going to start seeing some distress on the more marginal producers but the fact is you'll be cutting more marginal producers, less productive wells, you have a lot of inertia, and aggregate U.S. production growth doesn't look like it will slow down much."

Echoing the above remarks, Goldman Sachs said: "We have greater confidence in the scale and sustainability of U.S. shale oil production. This implies that the global cost curve has shifted lower and that cost deflation is sustainable. Accelerating non-OPEC production growth outside North America will outpace demand growth, leaving the global oil market oversupplied. If U.S. production were taken out of the mix, oil prices would be around US$150 to US$170/barrel."

Conspiracy theories

By sheer accident or deliberate plot, Saudi's failure to act as a swing producer (by suppressing output amid falling prices) is inflicting financial pain upon both OPEC and non-OPEC competitors, notably North American shale producers, who threaten the Kingdom's status as No.1 crude producer. Being low-cost producers and with sizeable net foreign assets, Saudi Arabia and close Gulf allies within OPEC can withstand dwindling revenues far better than 'highly leveraged' producers like Russia, Venezuela, Iran and Nigeria.

> "The Saudis have deeper pockets than the shale producers"

For high-cost producers, prices have now reached a level where exploration and development (E&D) costs are deemed economically unviable. "The best that all the other world producers from Russia through Canada, the USA, Mexico, Latin America, Africa and the rest of OPEC can hope for is that by mid-2015, enough oil has come off the market. And combined with a pick-up in demand, that the equation looks a bit better," said the IEA.

Saudi Arabia would rather keep prices at the mid-US$50-60 range to stifle U.S. shale producers. Once deemed a 'fair' price by Arab core producers, US$100/barrel crude has spurred a [non-OPEC] production boom – led by shale and tar sands drillers. The former believe that once the breakneck growth of high-cost producers patch slows and cheaper fuel stimulates demand, oil prices could find a new equilibrium – even without any production cuts by OPEC. London-based Saxo Bank remarked: "The Saudis have deeper pockets than the shale producers."

Middle Eastern onshore oil production still has the best economics with a US$29 breakeven price (see Fig.1). That means even at current low prices exploration is economically viable. By contrast, for unconventional oil (which now accounts for four million out of a world supply of 93mn bpd), the break-even prices - the oil price at which it becomes worthwhile to extract - of the main U.S. shale fields (Bakken, Eagle


GLOBAL MARITIME
blue sea thinking
WE ARE RAMPING UP
We are ramping up and investing in the future. Vryhof Anchors, Deep Sea Mooring, Deep Sea Installation, Marine Contracting and Global Maritime have joined forces to create one, unrivalled company – a new Global Maritime Group.
The combined Global Maritime Group is stronger, extends its geographical reach and can comprehensively offer a wider range of safe and cost efficient products and services to the offshore and maritime industry.
www.globalmaritime.com
GLOBAL MARITIME CONSULTANCY & ENGINEERING
GLOBAL MARITIME DEEP SEA MOORING
GLOBAL MARITIME MARINE CONTRACTING
GLOBAL MARITIME VRYHOF ANCHORS
GHOST - image by James P. Blair/National Geographic/Getty Images

Ford and Permian) are typically above US$60 per barrel – rendering them uneconomic.

It is no coincidence that plunging revenues could also destabilise Riyadh's rival Shia regimes in Iran and Iraq, the two resurgent rivals within OPEC, which need prices above US$100/barrel to balance their national budgets. By contrast, Gulf economies are budgeting for an assumed price of around US$60/barrel this year but insist that they can sustain higher spending, incurring a budget deficit if necessary and dipping into their sizeable official foreign reserves. The combined assets of the GCC's Sovereign Wealth Funds stood at an estimated US$2.4 trillion (as of July 2014), according to the Sovereign Wealth Fund Institute.

A significant share of OPEC's medium-term capacity growth is projected to come from Iraq, which aspires to triple production to nine million bpd by the end of the decade – assuming, however, elimination of internal strife. Similarly, 'sanction free' Iran, with renewed access to EOR technologies of oil majors, could boost sustained productive capacity to five million bpd within two to three years.

In fact, many oil exporters (including Algeria and Libya) are also finding that their 'fiscal breakeven price' is well above the current oil price – hence with serious implications for budgets and balance of payments. Fiscal breakeven prices of OPEC producers have risen due to swelling public spending by governments in recent years to buoy economic activity and preserve social order.

Clearly, a low fifties oil price will exaggerate the effects of Western sanctions on the Russian economy. Moscow claimed that the Saudis were being "manipulated" by Washington to punish Russia for its aggression in Ukraine. Russia requires an average oil price of US$105 over 2015 for a balanced budget (highly unlikely).

Long-term projects on hold

In contrast with the higher capital expenditure (capex) seen in the upstream sector over the past three years, reaching an estimated US$710bn in 2013 according to the IEA, sustained cheap oil will prompt energy companies to slash investments in new projects as firms try to keep cash flow positive and their debt in check. Energy consultants Wood Mackenzie expect the top 40 international oil companies (IOCs) to collectively cut capex by US170bn or 37 percent to keep net debt flat if global prices remain at US$60/barrel. That would be in addition to US$9bn of cuts announced in recent weeks by IOCs. In total, there are about $127bn of global industry Greenfield projects at risk of deferment, Wood Mackenzie said.

In 2015, IOCs are expected to make final investment decisions (FIDs) on a total of 800 oil and gas projects worth US$500bn and totalling nearly 60bn barrels of oil equivalent. But around one-third of the spending, or a fifth of the volume, is unlikely to be approved. At US$70/barrel, half of the overall volumes are at risk, according to Norwegian consultancy Rystad Energy. Around one-third of the projects scheduled for FIDs in 2015 are unconventional, where oil and gas are extracted using expensive horizontal drilling, in what is known as fracking. Any sustained cutbacks in capital budgets bode ill for IOCs that are already struggling to replace depleting reserves as exploration becomes harder and new discoveries smaller. That could prompt tighter supplies by the end of the decade.

> "The world's most traded commodity could partially recover in the second half of 2015 or early 2016"

Schlumberger Ltd, the world's largest oilfield services company, however, reckons capex would rise as global consumption is poised to increase, downplaying fears of an investment slowdown due to bearish sentiment. "The key to the overall market is that global oil demand is currently set to increase by 1.1mn bpd in 2015, which will require growth in exploration and production investments," explained Schlumberger CEO, Paal Kibsgaard.

Baker Hughes Inc, the world's No.3 oilfield services provider, also thinks shale drilling activity is unlikely to abate unless crude remained below US$75 for a longer period. Still, Schlumberger estimates exploration spending in 2014 fell by four to five per cent from a year ago, largely due to a 20 per cent drop in seismic expenditure. IOCs are now spending more on maximizing production from existing wells, than on searching for new reserves – partly because of growing investor pressures for higher shareholder returns.

Saudi Arabia has ruled out raising its sustainable capacity above 12.5mn bpd for the foreseeable future and Abu Dhabi has curtailed its target for raising output capacity to 3.5mn bpd from 2017 to 2020. Likewise, Kuwait is also not keen on making further investment in spare capacity, the cost of which is very high. In all the Gulf countries, upstream capex is largely aimed at replacing depleting production from mature fields, rather than adding new capacity.

It may take some time for supply/demand to adjust to new pricing levels; producers slashing capex will have a marginal impact on short-term supplies, while cheap fuel is unlikely to hike consumption immediately. China – the world's second largest oil consumer (after the USA) has entered a less energy-intensive stage of development, and innovative new technologies in North America mean that there are structural changes at work in the oil market.

Future trends

Collapsing prices tend to be 'self-correcting' over the long run, but a return to previous highs appears unlikely. Saudi Oil Minister Ali al-Naimi was blunt when asked if the world would ever again see triple-digit oil prices: "We may not." Falah al-Amiri, head of Iraq state oil marketing SOMO agreed by saying, "I don't think there is much optimism that the price will go to US$80 or above."

Looking ahead, real prices (inflation-adjusted) will probably fall, reflecting looming supplies of unconventional crudes, further substitution between oil and natural gas and efficiency improvements in vehicle transport induced by US$100-plus prices over 2011-13, as well as a switch to hybrid, gas and electrically powered transport vehicles. Oil intensity (i.e. the quantity of energy required per unit output or activity) has steadily declined in both developed and emerging markets so the 'correction' between cheap fuel and consumption growth is no longer that strong - as in the seventies and eighties.

In advanced economies, a switch to more efficient vehicles is slowing demand. On average, automobiles sold in the USA during August 2014 could travel 25.8 miles on a gallon of fuel, up 28 percent since 2007, according to the University of Michigan's Transportation Research Institute. "OPEC is paying the price for four years of US$100 oil in two ways; it spurred the shale boom here and led to tremendous efficiencies that have curbed demand," said one US analyst.

The world's most traded commodity – sliding further than fundamentals justify – could partially recover in the second half of 2015 or early 2016 as investment and future capacity growth in the industry respond to weak prices. It will also depend on whether OPEC resumes its role as the swing producer or whether prices will be more strongly influenced by the marginal cost of shale oil production, the IMF said.

If oil falls below the US$40 level in the near-term, Saudi Arabia, OPEC's kingpin, may have to sanction production cuts to the relief of most producers. ■

Looking ahead - global **energy trends**

While attention currently focuses on the immediate impact of the fall in the oil price, the IEA's latest *"World Energy Outlook"* offers some interesting long term forecasts to 2040.

OVERALL, THE VOLUME of global inter-regional trade in crude should increase by some 7 mn b/d, according to the IEA, to reach just over 44 mn b/d in 2040, of which two-thirds will be destined for Asian ports (compared with less than half today). This shift will result in more changes to the global pricing system, regional markers and trading 'hubs'.

Global product trade will grow by over 4 mn b/d to approach 18 mn b/d. Despite significant increases in Asian refinery runs, this region will still be short of products.

Both the Middle East and the USA will emerge as large exporters of oil products. Gasoline and diesel will be the most widely traded commodities by the end of the review period, with the USA expected to become a net exporter of the first of these as early as the 2020s.

By 2040 nearly three-quarters of global oil use is expected to be concentrated in the transportation and petrochemical sectors; these are the uses where substitution is most challenging. Global sales of oil for power generation will be the principal 'losers' in this trend.

Under the IEA's 'New Policies' scenario, global demand for petrochemical feedstocks in the form of oil products will increase from 9.7 mn b/d in 2013 to 15.0 mn b/d by 2040. Naphtha accounted for 51 per cent of this total recently, this share is expected to fall to 47 per cent by 2014 while LPG will become a consistently increasing source, e.g. from the USA. Large regional price differences for petrochem feeds are expected to lead to the expansion of international trade in these intermediaries. Significant ethane trade will develop, too. The Middle East will account for the largest increase in petrochemical oil demand, mainly because of its continuing strengths in ethane processing.

Back in November the IEA predicted that total OPEC production would increase increase from 36.8 mn b/d in 2013 to 49.5 mn b/d in 2040. By that year Middle Eastern members are expected to be supplying 74.3 per cent of the Organisation's total (72.5 per cent in 2013).

With US exports expected to start impacting on the LNG trade soon, the international gas market is clearly on the move too. With prices now at a 10-year low a key development in 2014 was the agreement finally signed between China and Russia on pipeline deliveries, which "unlocks" vast new supplies in East Siberia.

"Gas demand of 5.4 tcm in 2040 [NPs scenario] means that gas draws level with coal as the second-largest fuel in the global energy mix, after oil" the Agency predicts.

> "The international gas market is clearly on the move too"

Along with China the Middle East is expected to be the main region "pushing global gas demand higher" – releasing oil in the process. Exports from this region are expected to increase from 125 bcm in 2012 to 208 bcm in 2040. From North Africa the comparable totals are 61 and 81 bcm.

A "gas-thirsty Middle East" is the subject of a short highlighted feature in WEO. The IEA notes that gas overtook oil as a source of energy use in 2011, but low prices are continuing to deter investment in non-associated supplies. Local shale and other unconventional resources are largely unknown. Power generation is expected to remain the main outlet here, followed closely by industry (especially petrochemicals).

International gas pricing is a major uncertainty, too, and the capital intensity of the necessary infrastructure "still represents a barrier to the globalisation of gas markets," says the IEA.

World Oil Production by type in the New Policites Scenario (mn b/d

	2013	2020	2030	2040
Conventional	**81.1**	**82.6**	**84.1**	**84.6**
Crude oil	68.6	68.0	67.8	66.4
Existing fields	67.3	52.8	35.1	22.9
Yet to be developed	-	13.2	18.7	21.3
Yet to be found	-	0.5	10.3	16.4
EOR	1.4	1.6	3.6	5.8
NGLs	12.5	14.6	16.4	18.2
Unconventional	**6.1**	**10.8**	**14.3**	**16.2**
Tight oil	2.9	5.5	6.6	5.4
Total	**87.3**	**93.4**	**98.4**	**100.7**

BELZONA®
Repair • Protect • Improve

Latest innovations showcased exclusively at MEOS

Visit us at stand 827

Protective Linings | Specialist Coatings | Composite Repairs | Cold Bonding

Established in 1952, Belzona has pioneered innovative polymer technology that has revolutionised **Oil and Gas construction, fabrication and maintenance procedures.**

Today, Belzona is the world leader in the supply of **polymer composites and protective coatings** and is continuously developing solutions to meet the ever increasing market demand.

140 Distributors in more than 120 countries ensure the availability of Belzona materials, technical support, project management, application and supervision services.

REPAIR
metal, rubber and mortars

PROTECT
against erosion and corrosion

IMPROVE
asset design and operation

For more information please contact your local Belzona representative:

Advanced Oilfield Technology Co.
T: +968 2450 3744
E: yunus@aotcglobal.com
W: www.aotcglobal.com
Contact: Yunus Maniyar
Oman

Apollo Enterprises
T: +974 4442 6664
E: mlibor@belzona.org
W: www.apollo-chemicals.com
Contact: Mark Libor
Qatar

Hatcon
T: +966 3882 0323
E: iad@hatcon.com
W: www.hatcon.com
Contact: Iad Noueyhed
Saudi Arabia

Molecular Corrosion Technologies
T: +971 4811 2100
E: mct@mctuae.com
W: www.mctuae.com
Contact: Rob Dawson
Dubai

Global Presence – Local Support

www.belzona.com

Qatar remains resiliant

While many producers have been badly impacted by falling revenues, Qatar appears to be better cushioned than most.

OIL AND GAS have made Qatar the world's highest per-capita income country. It has proved oil reserves in excess of 25 bn barrels and natural gas over 25 trillion cubic metres, about 13 per cent of the world's total and the world's third-largest, according to the CIA World Factbook. Indeed, Qatar is the world's largest exporter of LNG, according to the US Energy Information Administration.

Oil and gas account for over 50 per cent of GDP, about 86 per cent of the government's revenues in 2013 and have been largely responsible for Qatar's fiscal surpluses, according to credit ratings agency Moody's.

A recent report by Oxford Business Group discussed how, despite falling oil prices, Qatar's economy maintained a steady rate of expansion in 2014: official December figures stated GDP was expected to grow at 7.7 per cent this year compared with the

Qatar has proved oil reserves in excess of 25 bn barrels projected 6.3 per cent in 2014. The Ministry of Development Planning and Statistics said the overall fiscal balance is expected to stay in surplus in 2015, though it is set to narrow as public spending gathers pace.

Weathering low prices

"Qatar's vast natural gas reserves and emphasis on gas exports, along with the decoupling of gas and oil prices in the aftermath of the Japanese earthquake of 2011, suggest that it is likely to be one of the best placed GCC nations to weather the current fall in oil prices," according to a study by Pricewaterhouse Coopers (PwC).

Also, with much of its LNG exports locked into long-term contracts, Qatar is less vulnerable to market fluctuations. Further supporting its revenue base is most of its gas exports go to Asia, which is still expected to post solid growth this year, thereby maintaining demand for energy.

The strength of Qatar's economy also helps offset lower energy prices. Moody's said, "A prolonged period of low oil prices would impact natural gas prices and erode the government's fiscal position, but Qatar's prudent budgeting and a relatively low debt burden somewhat mitigate these risks."

Despite the government's large step-up in spending, particularly on infrastructure, Qatar's breakeven oil price at around US$58 remains among the lowest in the Gulf Co-operation Council (GCC), while its budget this year is based on an assumed oil price of US$65.

However, the country isn't entirely immune from falling energy prices: for instance, increased gas supply in the medium term could create downward pressure on gas prices. Major downstream petrochemical projects in Qatar have been stalled or cancelled. This year, Qatar Petroleum and Shell shelved the US$6bn Al Karaana petrochemicals project due to high capital costs that rendered the project "commercially unfeasible, particularly in the current economic climate prevailing in the energy industry". It is the second project to be scrapped by Qatar Petroleum recently – last September it stopped work on the $6bn Al Sejeel petrochemicals project.

"For most oil producers, the number one source of revenue is crude oil. So the oil price drop will obviously impact these countries. But the strengthening dollar will provide some sort of cushion, especially to those countries, whose currencies have been pegged to the dollar," Abdulbasit A al-Shaibei, CEO of International Islamic Bank, said in an interview with the Gulf Times recently.

He added that Qatar's economy is very well diversified, with multiple revenue streams from both natural resources and investments.

Using revenues wisely

Over the past few years, Qatar has been using its hydrocarbons revenues to diversify its economy. According to the Qatar National Bank the non-oil sector expanded 12 per cent year on year, reaching 50.7 per cent of GDP, in the third quarter of 2014. It said the start of many large infrastructure projects should impact positively on growth in 2015. Some of these are related to hosting the 2022 World Cup, while others are on transport and logistics. Just under $27bn worth of large-scale infrastructure projects were awarded in 2014, according to Standard Chartered, and this is set to rise to around $34bn this year.

Stephen Anderson, author of the PwC report said, "We see the outlook for the coming years as moving to a more sustainable level of growth, tighter fiscal discipline and continued diversification of the economy." ■

Diversification eases impact of low oil prices

Bahrain's diversified economy stands it in good stead to weather the fall in the oil price, and major energy projects are set to go ahead.

DESPITE LOW OIL prices, Bahrain's economy maintained strong growth toward the end of 2014, with annualised GDP expansion of 5.1 per cent in the third quarter, according to the Oxford Business Group. Growth was boosted by a solid performance from sectors other than oil and gas, particularly construction, which registered growth of 12.3 per cent in Q3 2014 and was the fastest growing sector in 2014. The IMF has projected GDP growth of 3.9 per cent this year.

Bahrain's diversified economy puts the country in a strong position to weather the fall in the oil price. Other major activities after oil include aluminium production, finance and construction. The country's financial sector accounted for 16.7 per cent of its GDP in 2014, and Bahrain is a major hub for Islamic banking.

However Standard & Poor's lowered its sovereign credit rating on Bahrain two notches in February, citing the impact of low oil prices. The ratings agency noted Bahriain's vulnerability to oil prices since it derived around 65 per cent of its fiscal revenues last year from oil. Meanwhile, Moody's had earlier warned that Bahrain, along with Oman, will be harder hit by lower oil prices than other GCC countries because they have the highest fiscal breakeven oil prices and lowest reserve buffers, comments echoed by the IMF, which forecasts a fiscal deficit in 2015.

Oil and gas projects go ahead

In December, HE Dr AbdulHussain bin Ali Mirza, Bahrain's energy minister stated that falling oil prices would not affect the country's forthcoming energy projects. Among the projects given the go-ahead are a floating platform to import LNG, for which bidders include Petrofac, Marubeni, Daewoo and Samsung C&T Corp; a new crude pipeline between Bahrain and Saudi Arabia; and a US$6 bn upgrade and expansion of Bapco's refinery. This should eventually expand capacity to between 500,000 to 600,000 b/d from the current level of around 267,000 b/d. It is currently at the FEED phase, Technip having been awarded the FEED contract in 2014. The project calls for a revamp of the refinery's five crude distillation units by replacing some aging units and having only one or two large units.

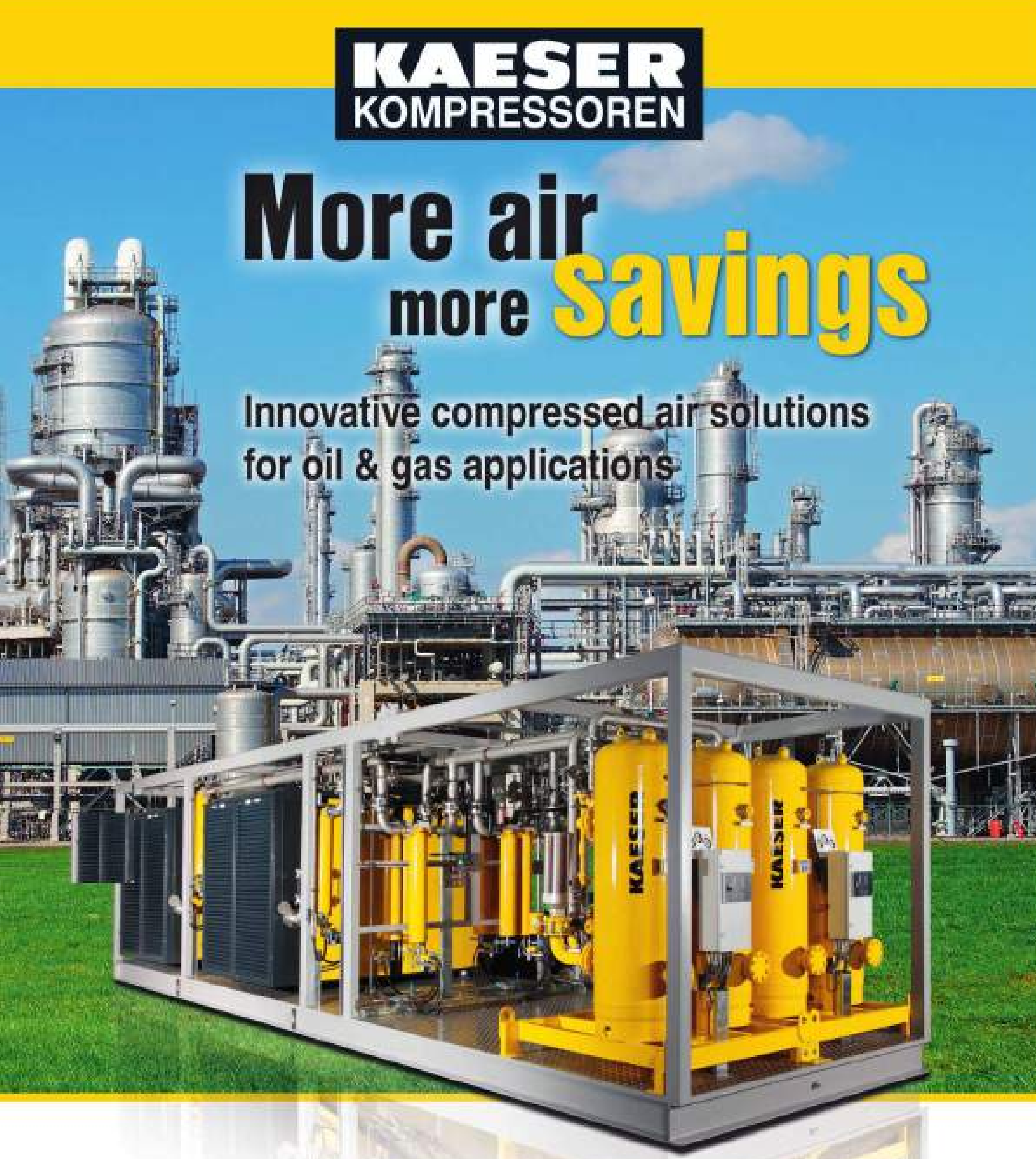
> “Bahrain's energy minister stated that falling oil prices would not affect the country's forthcoming oil projects

The expansion of Bapco's refinery and the construction of a new crude pipeline between Bahrain and Saudi Arabia are planned

Saudi Arabia and Bahrain share production of oil at the Abu Safah offshore field in Saudi Arabia, which is connected to Bahrain's Sitra refinery via pipeline. Bahrain intends to replace the aging pipeline system from Saudi Arabia with a new 71 mile pipeline by 2016. The planned pipeline will transport 350,000 b/d of crude oil from Saudi Arabia's Abqaiq plant to Bahrain's Sitra refinery, according to the U.S. Energy Information Administration (EIA).

The country is also looking to increase its production of natural gas. According to the BP Statistical Review, Bahrain produced 558bn bcf of natural gas in 2013. In order to meet growing natural gas needs, Bahrain plans to increase imports of natural gas through the construction of a 400 mn cf/d LNG import facility in the beginning of 2017.

Bahrain Petroleum Company (Bapco) and Bahrain National Gas Company (Banagas) lead the country's production of hydrocarbons. Production of hydrocarbons expanded in 2014, with a 4.7 per cent YoY gain in Q3. According to the EIA, Bahrain's oil production from the Bahrain Field is expected to rise to 100,000 bpd by 2018.■


KAESER
KOMPRESSOREN
More air
more savings
Innovative compressed air solutions
for oil & gas applications
KAESER
KAESER

Promoting social and economic development

Since the discovery of oil in the Arabian Peninsula in 1932, Bapco has been a key contributor to the economy and society of the Kingdom of Bahrain.

BAPCO IS WHOLLY owned by the Government of Bahrain and accounts for a large share of the Kingdom's energy-related activities including refining, distribution of petroleum products and natural gas, sales and export of crude oil and refined products.

The company owns a 260,000 b/d refinery, storage facilities for more than 14 million barrels, a marketing terminal and a marine terminal for petroleum products. Bapco supplies aviation fuel for Bahrain International Airport, and supplies natural gas to power generating plants in the Kingdom. A major portion of Bapco's customers are from the Middle East, India, Far East, South East Asia and Africa.

Bapco has entered the FEED (Front End Engineering Design) phase of the Bapco Modernization Program (BMP) to expand refinery capacity, which will continue throughout this year.

The company has also entered the finished lubricants market with a range of top quality automotive products, which were launched in December 2014. These products all carry written approvals from major Original Equipment Manufacturers and meet all major industry standards. The initial focus is the domestic market, with the possibility of expanding to regional markets in the future. Additionally, since the launch of the Sadeem smart fuel service in May 2012, over 67,000 Sadeem cards serving more than 10,000 customers are in circulation in the Kingdom.

Focus on HSE

Bapco continues with its focus on key health, safety and environment goals. The Operational Excellence Management System (OEMS) which aims at achieving world class performance in Environment, Health, Safety, Reliability and Efficiency has made major progress, according to the company, and is yielding benefits in enhancing Bapco's performance in a very competitive market.

In 2014, Bapco achieved a record safety figure in completing 5 million hours without a Lost Time Injury (LTI), which amounts to approximately 179 safe working days, and is the third major safety milestone recorded in the year. The next milestone is 8 million employee hours.

In 2015, Bapco will continue to focus on running safely, reliably and without incident by ensuring the capabilities of its staff, which the company describes as its most important asset.

Bapco employees follow best practice safety tools such as BOOST, OSOOL Bapco and 4-Keys to Safety, which are an integral part of the working culture in the company, and have contributed to the accomplishment of numerous milestones over the years.

Bapco employees follow best practice safety tools

CSR activities

Bapco's CSR activities include various success stories. Bapco's Green School Award, in association with the Ministry of Education, encourages secondary school students to participate in environmental conservation, in line with the company's emphasis on Environment, Health & Safety (EHS).

The company's support to Bahrain's educational sector involves hosting numerous schools and universities at Princess Sabeeka Park, the Oil Museum, and Bapco Refinery, which enhance students' educational experience. Several Bapco employees volunteer to deliver the Injaz programme at Bahrain's educational institutions, which aims at supporting the national calibre.

> "In 2014, Bapco achieved a record safety figure in completing 5 million hours without an LTI"

Bapco invites tourists and guests to visit its premises, and has participated in the inauguration of the Tree of Life Visitors' Centre. Placing further emphasis on its EHS philosophy, Bapco has kick-started the biennial EHS Family Week as well as the "Lighten Up" challenge, which encourages employees to pursue a healthy lifestyle.

Bapco is a regular sponsor of national sporting activities such as the Formula One Grand Prix, Bahrain International Air Show, Khaleeji-21 football tournament, ITF tennis tournament, Al Basta Fair and horse racing, as well as a number of charitable society events. ■

SAUDI STEEL PIPE COMPANY

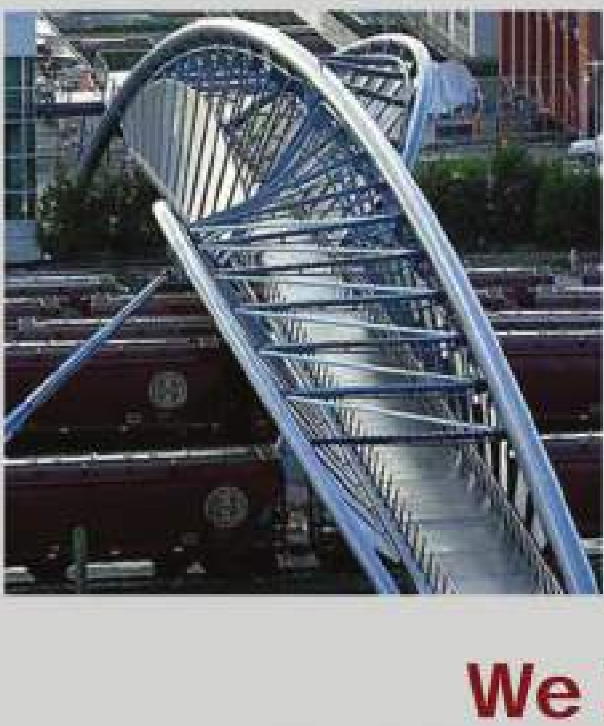
PIPES BENDING FACTORY

SSP

الأنابيب

السعودية

The Leader of BENDS



We BEND the Steel

OIL & GAS/POWER PLANT/REFINERIES/CONSTRUCTION

www.sspipe.com , Tel 00966 13 812 2222 , Fax 00966 13 812 1005 , info@sspipe.com

Growing value of supply chain solutions

A leading fourth party logistics and supply chain solutions provider, Bernekon operates across a range of industries in the Middle East and worldwide, such as oil and gas, construction, mining and defence.

Where is Bernekon based in the Middle East and which countries in the region offer the most business?

Bernekon has had a presence in Iraq for a long time, focussing on the oil and energy sector. After our presence was established, Bernekon quickly became known in Iraq while in the UAE, where we have a hub, Bernekon has developed into one of the top service providers for logistics.

The UAE, Saudi Arabia, and Iraq are our dominant markets in the Middle East, with the UAE and Saudi Arabia having a great demand for goods from all over the world. Without a doubt, Iraq has the biggest market share for the company. For Bernekon, the emerging markets promise a double-digit growth and this year we intend to increase our market share in Saudi Arabia.

How has business developed in recent years?

We have seen the energy and oil sector companies grow over the years with Iraq leading with new projects and infrastructure developments, such as in Zubair oil field, in southern Iraq, and the Halfaya oil field in the south-eastern part of the country. For Bernekon, the business has been growing steadily and the emerging market in Iraq has created more opportunities for the company to explore the market and develop new ways to uphold its presence in the country.

From the start when the first few boxes went into Iraq, we have experienced setbacks and hitches, which have helped us to create the superb concept of B-services. Furthermore, we have acquired contracts with the oil and gas companies, which have provided the opportunities that have helped Bernekon to further grow and expand.

What new services or recent projects can you tell me about?

This year Bernekon intends to increase its market share in Saudi Arabia with our b-Box mini service, which can bring worldwide shipments to anywhere in the Kingdom.

Haci Osman Tari, CEO of Bernekon

We have also acquired agency agreements in Iraq, a couple of projects with oil and gas companies, new projects in Halfaya oil field and drilling field distributions for 2015 of barite and bentonite. This is as well as further investments in Zubair Economic Freezone in Zubair, Iraq.

Another breakthrough for Bernekon is utilising a GPS tracking system to provide accurate shipping and tracking updates integrated in our existing services, such as with the b-Xpress and b-Xclusive. The GPS system has enabled Bernekon to locate and monitor the movement of the trucks from Dubai to Iraq, leading to shortened delivery time and accurate shipping status.

What effects has the recent fall in oil prices had on business?

We have not seen a sharp drop, only small declines on the projects, but we haven't seen any holds on the projects. There has been some slow down in operations, as our sectors especially depend on oil.

After the regional disturbances that started in 2008, we are now working at a pace similar to that of 2005. The pace of business goes up and down, but this is natural and we anticipate that it will recover in six to 12 months. The projects will keep a fast pace, but we predict that they will be in the gas sector rather than the oil sector.

How does Bernekon ensure that it offers customised services to all the oil and gas companies in the Middle East?

With branches in the US, China, Singapore and Hong Kong, the transportation of procured commodities for the various oil and gas companies in Iraq, the UAE and Saudi Arabia has been smooth sailing.

Furthermore, co-ordination between the suppliers and the agents has been easier with Bernekon acting as the intermediary. Setbacks and delays have been minimised and quality service has been maintained.

How significant is the regional energy industry to Bernekon?

The energy industry is the major driver for us in expanding wordlwide and maintaining our presence in Iraq. Though we have been looking into different industries, the energy industry has provided the company with the opportunities to establish and improve over the years.

What difficulties arise from working in remote areas of the Middle East and how does Bernekon overcome these?

Due to the remoteness of areas in Iraq we have experienced setbacks in the past. With the first few trucks, shipping to Iraq was difficult and seemed out of our control. Ingenuity, teamwork and a passion to improve, along with the desire to contribute to our customers' growth, led Bernekon to develop new strategies to overcome these problems. We gained full control of all shipments and beat time constraints.

How do you see business in the region developing over the next 10 years or so?

Business is already flourishing in Dubai, Abu Dhabi and Doha. These three cities are set to become major hubs for distribution in the region and dominate the logistics industry.

We also foresee that Saudi Arabia will keep up the pace and Iraq will become an indispensible region for logistics, transportation and oil. ■

Bunker supplier to extend operations

The Group will offer bunkers at Khor Fakkan

GULF PETROCHEM GROUP, the UAE based global bunker supplier, has announced that it is to begin offering bunkers at the port of Khor Fakkan for its global customers.

With Gulf Petrochem's existing storage terminals in Fujairah and bunker barges, this will allow the group to provide its customers with a wider portfolio of marine fuel products such as RMG 380, RME 180, MGO DMA and LSMGO.

Speaking about the new development Prerit Goel, Group Director said, "We know that the market situation is volatile, however it has always been a strategic objective of the group to be able to offer bunker supplies to our customers out of our terminal in Fujairah, which is one of the most important bunkering ports in the world. We remain largely unaffected by price volatility due to prudent risk management practices and our diverse presence across the oil supply chain. This expansion further compliments our strategy to enhance our standing as a global conglomerate operating in the oil space."

The group is growing its presence in bunker supply locations across the world, which include Gulf of Kutch, Indian ports of Kandla, Sikka and Vadinar. There are also plans to expand its bunkering ports in the Gulf of Khambat as part of the Pipavav Oil Terminal Project.

IHS predicts tighter market conditions long-term

THE RECENT DECLINE in global oil prices is causing some petrochemical supply chain destocking, but is also sowing the seeds for better economic conditions, lower petrochemical prices and improving global petrochemical demand, ultimately leading to tighter market conditions, according to IHS. "Since oil serves as the marginal production cost and price-setter for many chemicals, plastics and fibers, a decline in the oil price typically leads to lower product prices," said Dave Witte, senior vice president and general manager of IHS Chemical. "At the same time, the lower prices and broad macro-economic benefits of lower energy will ultimately lead to higher petrochemical derivative demand. Simultaneously, we see assets that derive margin from a wide gas-to-oil differential - such as those in North America and the Middle East - experiencing margin decline. Large, capital-intensive projects already under way will continue in these cost-advantaged regions. However, we expect a lull in future investment plans."

RSA-TALKE signs contract with Dow Chemical Company

DOW AND RSA-TALKE have signed a contract for the storage of petrochemical products that will be marketed by Dow from Sadara Chemical Company, a joint venture of Dow and Saudi Aramco in the Kingdom of Saudi Arabia. RSA-TALKE is constructing a 10,000 square metre warehouse for petrochemical products in Dubai, located on the same premises as the company's dangerous goods warehouse, which was opened in early 2014 in Dubai World Central (DWC).

With the new build of the warehouse, RSA-TALKE – a joint venture of Dubai-based RSA Logistics and the German TALKE Group – will serve the demand of customers from the chemical and petrochemical industries in the Gulf region.

"The strong demand from the up-and-coming chemical and petrochemical industry in the Gulf region has confirmed our strategy of expanding our portfolio of specialised logistics services," said Richard Heath, Director Middle East & Asia at TALKE and Director at RSA-TALKE.

The contract signing

Dubai is becoming an increasingly significant hub for the export of chemicals from the region to Africa, India and the Far East.

Dow's choice of Dubai as the location for the storage of its Saudi petrochemical products is an indication of the increasingly significant role played by Dubai as a hub for international chemical logistics.

GE wins Qatar contract

GE OIL & GAS has announced that its Downstream Technology Solutions (DTS) business has been awarded a long-term service contract with Qatar Fertiliser Company QSCC (QAFCO) to help optimise the performance of the company's fertiliser plant in Mesaieed, Qatar.

The long-term service agreement covers the standard maintenance and repairs of existing GE on-site power and compression equipment as well as training for QAFCO workers and site operators. QAFCO's Mesaieed facility produces ammonia and urea contributing to the total QAFCO annual production capacity of 3.8 mn MT of ammonia and 5.6 mn MT of urea.

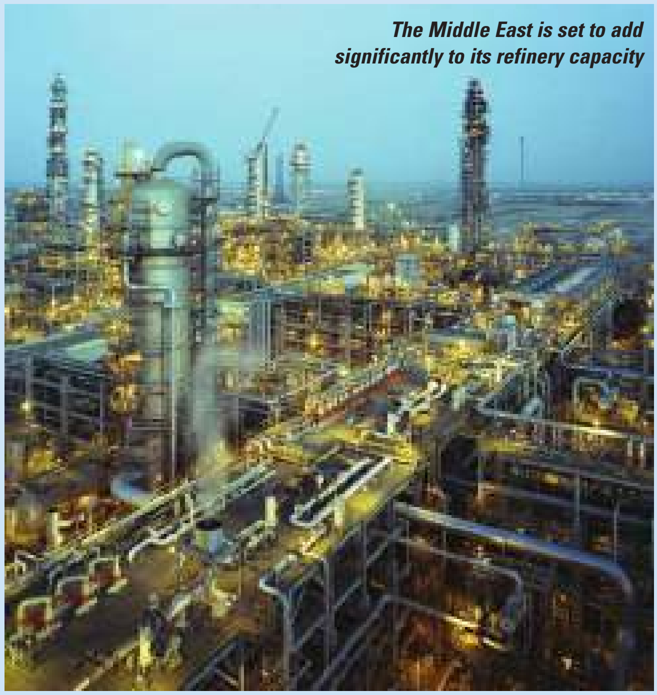
"A key priority for us is to optimise the long-term availability and efficiency of our Mesaieed plant's existing fertiliser production facilities," said Mr. Khalifa A Al Sowaidi, Chief Executive Officer, QAFCO. "Not only is GE Oil & Gas the original equipment manufacturer for the gas and steam turbines, centrifugal compressors and associated equipment, but it also has the proven local customer services capabilities we need to help us meet our production targets."

The agreement with QAFCO comes nearly a year after GE first launched its DTS business to more effectively serve the $10 bn refining, petrochemical, industrial and distributed gas segments. DTS provides integrated solutions, adding the value of a single equipment source with a key focus on applications for ethylene, low-density polyethylene, ammonia and urea as well as refinery processing.

Rami Qasem, President and CEO of GE Oil & Gas for the Middle East, North Africa and Turkey, said," This agreement with QAFCO further builds on our strong partnership with the organisation and our long-term presence in Qatar."

Qatar is one of the largest global fertiiser producers

Middle East becomes an increasingly significant downstream player



The Middle East is set to add significantly to its refinery capacity

THE MIDDLE EAST is set to add another 1.7 mn b/d refinery capacity by 2020, according to the IEA's latest medium-term Oil Market Report, raising regional crude processing capacity by nearly 40 per cent to 10.3 mn b/d in just a decade.

According to the IEA, the UAE is set to start up its new 420 kb/d Ruwais refinery in early 2015, and Saudi Aramco will complete its third 400 kb/d Greenfield refinery at Jizan before the end of the decade.

The IEA comments that, despite ambitious plans to increase downstream investments and build several grassroots plants in Iraq, it now looks unlikely that any project will be commissioned before 2020. In contrast, Kuwait's downstream plans are moving forward. These include the Clean Fuels project which aims at integrating the country's two largest refineries, the Mina Abdullah and Mina Al-Ahmadi plants, and raising their combined distillation capacity to 800 kb/d, from 735 kb/d currently. Several key contracts have been awarded and it is now expected to be completed by late 2018 and reach full capacity in early 2019. Kuwait National Petroleum Company (KNPC) is moving ahead with its 615 kb/d Al-Zour grass roots refinery although it is not expected to be completed before 2020.

In Iran, the 360 kb/d Persia Gulf Star refinery at Bandar Abbas is reportedly nearing completion, according to the IEA, and the first phase is expected to be commissioned in 2017, significantly increasing the country's gasoline and diesel output. Once the three phases of the project are completed, Iran could become a net gasoline exporter, comments the IEA, noting that Iran has significantly reduced its gasoline imports since 2006.

ENERGISING YOUR FUTURE
بابكو
Bapco
Hoisting high its credibility as a national energy spearhead, Bapco has consistently stepped up its endeavours in bolstering Bahrain's economy over the numerous decades of its existence. Addressing industrial and environmental affairs alike with awe-inspiring splendour, the national energiser constantly strives to add to its rich heritage with its day-to-day operations. Bapco also takes great pride in developing the nation, safeguarding our environment and recognising the prospective leaders of tomorrow with its year-round initiatives.
As a regional energy champion, Bapco believes in building the nation progressively whilst understanding the importance of giving back to the community. Because at the end of the day, our nation is our responsibility.
Bapco
شركة نفط البحرين ش.م.ب. (مقفلة)
THE BAHRAIN PETROLEUM COMPANY B.S.C. (CLOSED)
www.bapco.net
LXVII

Increased focus on **produced water**

E&P firms need strategic partners with the ability to provide proprietary technology, global project management and rapid response to address their specific produced water challenges and optimise operations and returns, writes ProSep's CTO, John B. Sabey.

AS THE PRODUCED water market continues to grow, the focus on produced water issues has grown in prominence not only because of the rising volumes of water generated by oil and gas operations, but because the industry is increasingly risk-averse and environmentally aware.

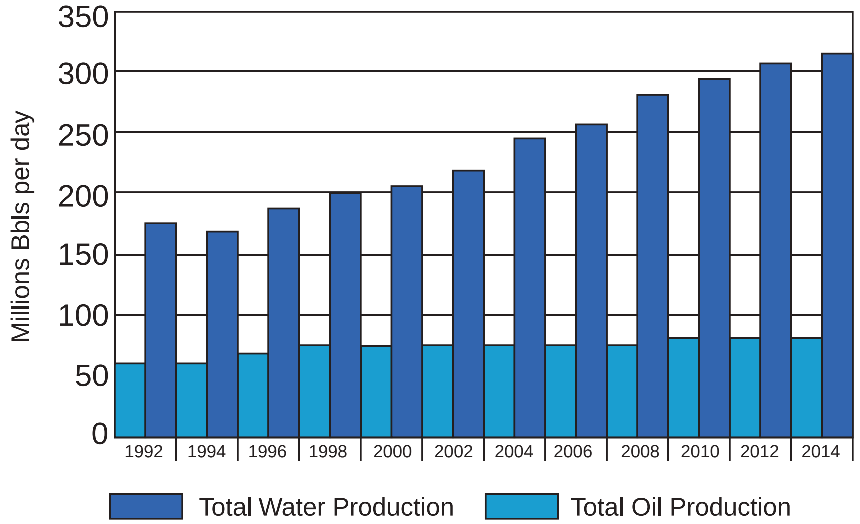
Produced water can come from both conventional and unconventional wells. Typically, it contains a combination of hydrocarbons and other constituents. These include salts, chemical additives and toxic compounds, as well as solid wastes with harmful substances such as boron, sulphates, radioactive elements and heavy metals.

The water already present in the reservoir (formation water) and the use of water injection techniques to aid the secondary recovery process (EOR – enhanced oil recovery) generates the largest volume by-product stream [see Figure 1], with some 21 bn barrels (bbl) of produced water generated each year in the USA alone. With 1 bbl equating to 42 gallons, this figure represents about 57 mn bbl – or 2.4 bn gallons – per day, according to the US National Energy Technology Laboratory (NETL).

The growing volumes of produced water have meant E&P firms have effectively become water management firms. They are spending an increasing amount of time, effort and resources treating water for re-use, reinjection or environmentally acceptable discharge.

NETL puts the water-to-oil ratio – i.e. the volume of water produced for every barrel of oil recovered – at between 5:1 and 8:1 in the US, and between 2:1 and 3:1 worldwide. Meanwhile, analysts at BCC Research believe that the water-to-oil ratio in North America will increase to 12:1 over the next 12 years – and 50:1 in the worst cases. With producers paying anywhere between \$3 and \$12 per barrel to dispose of produced water, the research firm expects the North American market for produced water treatment equipment to reach \$1.2 bn by 2017.

Figure 1



Global oil and water production history and forecast (source: TUV-NEL)

Case by case solution

The properties of produced water vary considerably depending on the geographic location of the field, the geologic formation, and the type of hydrocarbon product being produced. Produced water has a specific chemistry, dependent on the chemical characteristics of the formation and the hydrocarbon. It may also include water from the reservoir, water previously injected into the formation, and any chemicals added during the production processes.

> "The growing volumes of water have meant E&P firms have effectively become water management firms"

Therefore, produced water is unique to every asset, meaning the water treatment and filtration requirements of upstream installations are myriad and diverse. It is the composition of the produced water that dictates the types of treatment technologies necessary to meet mandated limits.

Technology evolution

Produced water can be treated through gravity separation, flotation, and filtration to physically or mechanically remove contaminants. Various proprietary technologies are employed, with their application dependent on the nature and volumes of the produced fluids, asset type and location, and environmental legislation.

The first stage of the separation process


Induced Gas Flotation & Hydrocyclone Produced Water Package

relies on the effects of gravity and density difference, whilst the fluids remain within the separator. Here, a long residence time relative to the differential specific gravity of the phases is essential. The simplest solution is to employ a large tank for storing the produced water where time facilitates the separation, rather than any advanced technology-driven process within the tank itself.

Offshore, the requirement for a long residence time must be balanced against the footprint (size and weight) limitations placed on the separation tank. Several technologies are employed to eliminate oil droplets at the primary separation (gravity) stage, including hydrocyclones and plate coalescers. This is followed by flotation and filtration, with adsorbents and absorbents typically used after the tertiary (filtration) stage.

Offshore technology evolution has been driven both by regulation and by project economics. There is huge benefit to reducing the weight of produced water solutions while ensuring high reliability to remove the need for redundancy, both of which translate to a smaller footprint.

Having met local mandates, there are producers in Norway that are now looking to exploit technology advancements to recover more crude. The CTour process is one of the only technologies in the world that can cost-effectively remove both dispersed and dissolved hydrocarbons from large volumes of produced water, while effectively increasing the crude that can be recovered.

Whereas the best available technology for de-oiling produced water is a hydrocyclone/degasser-float cell configuration that yields an average discharge concentration of less than 25 ppm oil and gas, the CTour process can yield a residual oil discharge as low as 2-3 ppm TPH while removing 90-95 per cent of hazardous dissolved hydrocarbons. The CTour process can treat large volumes of produced water at low weight, height, footprint, and capex and opex, while reducing overall chemical use. This represents a shift in produced water management, and future legislation based on this technology is anticipated.

A strategic concern

Certainly, there are several produced water technologies available today that offer drastic improvements on the technology currently employed on some platforms. However, with cost and compliance being primary decision factors, the adoption of innovative technologies is often gradual.

Yet technology choices made at the project outset influence long-term opex, and thus an asset's overall profitability. For new builds, where produced water volumes will not be significant in the first few years of operation, the experience of a produced water specialist can come to the fore in terms of reducing the potential cost of a retrofit later on versus installation from the start.

Likewise, if the operator intends to either decommission or divest an existing asset in the short-to-medium term, they may be unwilling to invest in a more expensive solution. However, selecting a lower cost solution purely because it does the job and meets the regulatory mandate can be risky and prove a false economy. Issues can be encountered as produced water volumes rise, or should the chemistry of the reservoir change over time.

> “Technology choices made at the project outset influence long-term opex”

Historically, some EPCs and producers have sought the lowest cost option whilst ensuring they are not exposed to long-term liability issues. However, analysts at IHS have warned that water management risks have increased rapidly in the past six years due to regulatory compliance requirements, costs, concerns over water scarcity and quality, and the industry's need to preserve its social license to produce the hydrocarbons. Without an effective water management strategy in place, operators risk lower production rates or damaged wells. Drilling and


Osorb Media - a revolutionary, regenerable, organically-modified silica adsorbent utilised for the treatment of oilfield water and gas streams


CTour produced water package, Offshore Norway

completion programmes can be compromised. Regulatory penalties also apply should damage to the environment occur, compromising stakeholder faith.

Produced water requirements must be addressed on a case by case basis. It is simply not possible for E&P companies to specify an optimum solution across their entire fleet. Often, EPCs must submit a solution tender based on the Front End Engineering Design (FEED), meaning the solution will be developed according to the specific properties of the oil and water. Ideally, the operator should conduct a pilot study on the specific produced fluids to ensure the proposed solution delivers the required results. Ultimately, the tactical goal is to build an optimum solution for the application in question, but the strategic aim is to develop a process solutions roadmap meeting the operator's long term goals. Operators in particular would benefit from a single solution supplier. Smaller providers tend to be more nimble and responsive, in building a competitive solution based on the best available conventional and proprietary technologies.

"Produced water requirements must be addressed on a case by case basis"

It used to be the case that operators would dedicate minimum time and resources to the treatment, handling, and disposal of produced water, but in today's risk-averse and environmentally-aware environment, produced water contains contaminants that require time, money and resources. ■

MEOS 2015
Date: 8-11 March 2015
Venue: Manama, Bahrain

Society of Petroleum Engineers
MEOS 2015

Shaping the future of the oil and gas industry

The busy exhibition floor at a previous edition of MEOS

THE 19TH MIDDLE East Oil & Gas Show and Conference (MEOS 2015) will take place from 8–11 March 2015 under the patronage of His Royal Highness the Prime Minister of Bahrain Prince Khalifa bin Salman Al Khalifa. Organised by the Society of Petroleum Engineers (SPE) and Arabian Exhibition Management (AEM), MEOS continues to be one of the largest and best attended technical events of its kind in the region.

Over 8,000 oil and gas professionals will converge at the Bahrain International Exhibition and Convention Centre to debate and shape the future of the oil and gas industry in the region over the course of the conference and parallel exhibition.

"MEOS is one of the most established oil and gas shows in the Middle East with a 36 year track record of success. Together, the conference and exhibition combine to form a comprehensive current overview of the oil and gas industry in the Middle East, offering real solutions to those operating in the sector whilst facilitating new business opportunities," said AbdulHameed Al-Rushaid, MEOS 2015 Conference Co-Chairman, Saudi Aramco.

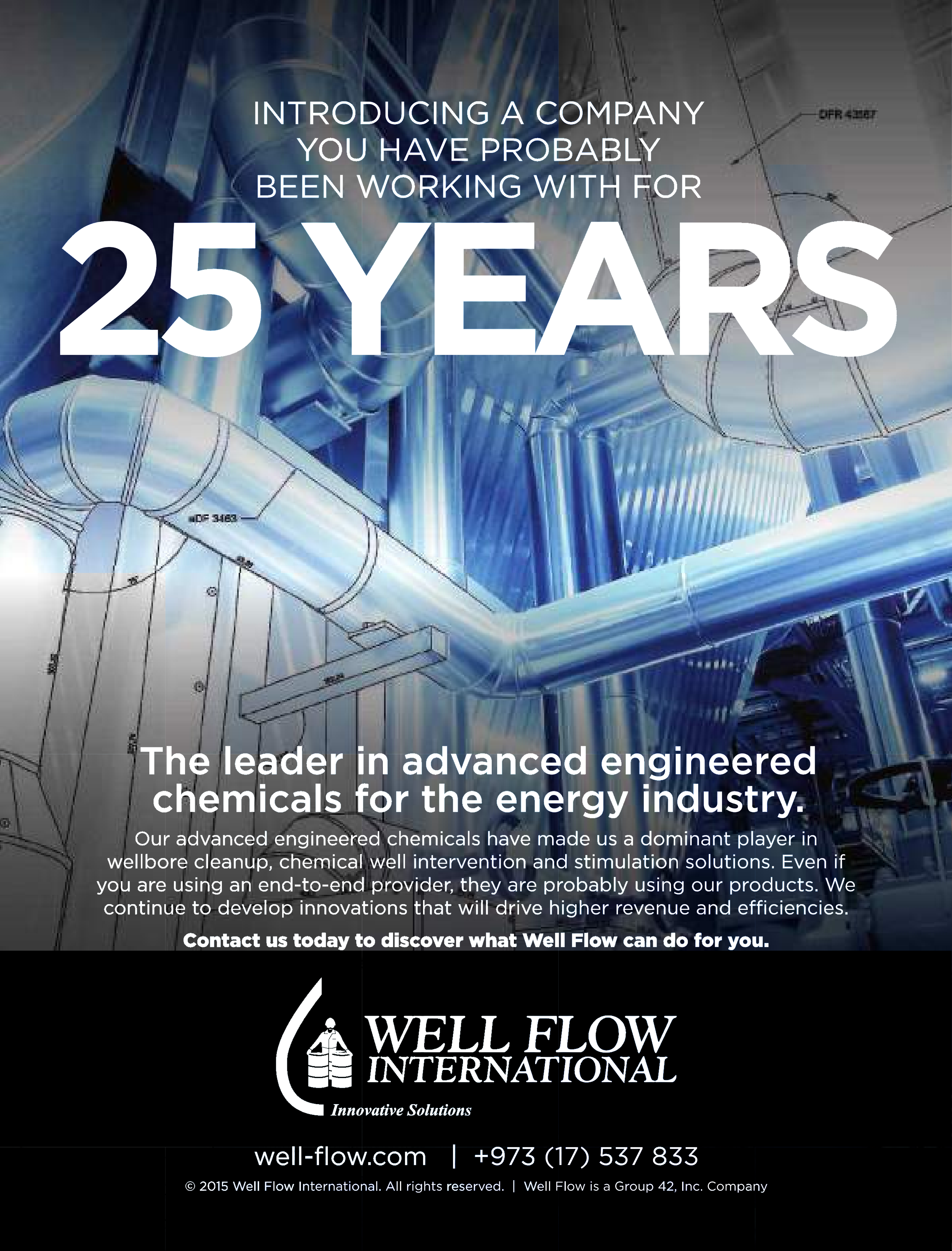
> "Over 8,000 oil and gas professionals will converge to debate and shape the future of the oil and gas industry"

This year's multidisciplinary conference programme includes a record-breaking 42 technical sessions with more than 300 papers on topics covering reservoir production and facilities, exploration and appraisal, drilling and completions, project management, human resources, business models, and HSSE.

Ministerial session

For the first time since the inception of MEOS in 1979, the agenda also includes a ministerial session on 8 March at the Ritz Carlton Hotel, with distinguished speakers including H.E. Dr. Abdul Hussain bin Ali Mirza, Minister of Energy, Kingdom of Bahrain; H.E. Eng. Sherif Ismail, Minister of Petroleum and Mineral Resources, Egypt; H.E. Eng. Suhail Mohamed Faraj Al Mazrouei, Minister of Energy, UAE; and H.E. Abdalla Salem El-Badri, Secretary General, OPEC.

MEOS will also offer a high level executive plenary session on 9 March, and 6 panel sessions from 9–11 March at the Bahrain International Exhibition and Convention Centre.


INTRODUCING A COMPANY YOU HAVE PROBABLY BEEN WORKING WITH FOR
25 YEARS
The leader in advanced engineered chemicals for the energy industry.
Our advanced engineered chemicals have made us a dominant player in wellbore cleanup, chemical well intervention and stimulation solutions. Even if you are using an end-to-end provider, they are probably using our products. We continue to develop innovations that will drive higher revenue and efficiencies.
Contact us today to discover what Well Flow can do for you.
WELL FLOW INTERNATIONAL
Innovative Solutions
well-flow.com | +973 (17) 537 833
© 2015 Well Flow International. All rights reserved. | Well Flow is a Group 42, Inc. Company

The executive plenary session will address this year's conference theme 'Energy Beyond Limits Through Innovation and Collaboration' and will look at how the exploration and production industry is transforming and pushing limits through innovation coupled with collaboration to provide world energy needs efficiently, responsibly, and with maximum value.

Plenary session speakers include Amin Nasser, senior vice president, upstream, Saudi Aramco; Edward Daniels, executive vice president, commercial and new business development, Shell; Hashem Hashem, chief executive officer, Kuwait Oil Company; Mark Albers, senior vice president, Exxon Mobil Corporation; Øyvind Eriksen, president and chief executive officer, Aker ASA and chairman, Aker Solutions ASA; and Paal Kibsgaard, chief executive officer, Schlumberger.

Discussion topics at the daily panel sessions include academic and industry collaboration to develop future talent; in country value; what makes unconventional resources an economic reality; environmental stewardship; innovative collaboration; and cyber security in the energy sector.

"The era of easy oil is over, but despite increasingly challenging environments and exacting producing horizons, the upstream industry continues to meet world energy demand. It is an ambitious undertaking we tackle head-on, safely and successfully, through innovative and collaborative efforts between energy suppliers, service companies and academia. It is an exciting time to be in our business, and MEOS 2015 is an important opportunity to connect," AbdulHameed Al-Rushaid continued.

Edward Daniels, executive vice president, commercial and new business development, Shell, will present another important session

A demonstration at a stand

entitled 'Energy Efficiency: Shaping the Future' on 10 March. This special breakfast session will address the need for energy efficiency programmes in the Middle East to reduce investment requirements, in light of forecasts that the region will require more than three per cent of GDP for energy infrastructure investment by 2030, versus one per cent for the rest of the world.

Also taking place will be a programme of contests, workshops and talks aimed at the next generation of oil and gas professionals, as well as two one-day training courses on forecasting production and estimating reserves in unconventional reservoirs, and hydraulic fracturing optimisation.

> "MEOS 2015 is an important opportunity to connect"

A three day exhibition of oil and gas products and services will run parallel to the conference from 9-11 March. Spanning 14,800 square metres, it features over 300 exhibitors from 30 countries and covers all areas of the upstream industry, showcasing the latest solutions, products and services. Principal exhibitors include GCC national oil and gas companies - Abu Dhabi National Oil Company, Bapco, Kuwait Oil Company, Qatar Petroleum, and Saudi Aramco – who will be exhibiting alongside international supermajors, service industry giants and independent specialist suppliers and distributors from across the globe.

The exhibition also features a large national group from North America, and for the first time in the history of the show, an official delegation of some of the largest oil and gas companies from Egypt.

"With a strong technical programme and comprehensive exhibition, companies and delegates alike can utilise MEOS 2015 to learn, forge business relationships, share expertise, and create new technologies in one of the most prolific hydrocarbon regions in the world," said Arabian Exhibition Management's Director of Sales and Marketing Fawzi Al Shehabi. ■

For further information see the website at www.meos2015.com or contact Joanne Blundell, tel: +973.17.550033, email: jo@aemallworld.com.

Playing it safe with **compressed air**

Phil Keating of IMI Precision Engineering, an international leader in pneumatic motion and fluid control technologies, examines some key products and devices designed to help manufacturers manage compressed air systems safety in accordance with the latest legislation.

MAINTAINING A SAFE working environment is vital for all manufacturers and is an area subject to increasingly stringent legislation such as the Machinery Directive, the Pressure Systems legislation and the Provision and Use of Work Equipment Regulations (PUWER). While these standards originate in the UK, they are often referred to worldwide due to their thorough approach.

All of these govern compressed air equipment to some degree and, in particular, focus on the need to address issues such as overpressure, sudden movement of parts, and treatment of exhaust air. A thorough risk analysis will identify all of the hazards in a pneumatic system.

Overpressure protection

Components in pneumatic systems often have a lower pressure rating than that generated at the compressor. To ensure systems run at safe and efficient levels, pressure regulators are used to reduce high generation pressures. When components in pneumatic systems are exposed to excessive pressures it often results in malfunction, or even extreme failure of the pressure-containing envelope should the upstream regulator fail or malfunction.

The relief valve is the most popular solution, and manufacturers should consider the criteria specific to individual systems when selecting a relief valve. All components and equipment within a pneumatic system should have a Safe Working Pressure (SWP) and an overpressure limit of 10 per cent - the maximum overpressure allowed for the system with the relief valve in operation.

Users should also avoid setting the valve too close to the system operating pressure, as the valve's operating characteristics can cause it to open and vent air during normal system operation - a costly waste of air.

There are several ways of ensuring a relief valve capable of maintaining pressure at the correct level is chosen. It should have a flow capacity in excess of the compressor's free air delivery capacity in systems where no receiver exists, or have a capacity in excess of the flow through the smallest flow passageway of the equipment being protected when exposed to the highest possible pressure (usually the generated pressure at the compressor). The smallest bore acts as a restriction to the flow downstream which is important because, even if the distribution system is a mains system consisting of very large volume with large bore pipes and high capacity compressors, the device being protected might be fed by 1/8" nominal bore tubing, and it is this that will limit the flow capacity. As long as the relief valve can match or exceed these flows, then a constant, acceptable overpressure level can be achieved.

Phil Keating, business development director, energy sector, IMI Precision Engineering

> "There are several ways of ensuring a relief valve capable of maintaining pressure at the correct level is chosen"

Types of relief valve

To achieve different levels of performance of flow capacity and overpressure limitations, a number of relief valve models are available. The one most commonly used is the pop type, followed by the diaphragm type, which is more accurate and repeatable. It is recommended that, for optimum performance, pilot operated valves are used. Of these, the integral pilot operated type is the most compact and cost effective.

An 'in-line' type is particularly popular with machine builders, where all the control equipment/protection devices are in one discreet position – aiding both installation and scheduled servicing. This device has a relief port at 90° to the direction of flow and, under normal operating conditions, flow passes through the device to the downstream system unaffected. Only when the set relief pressure is exceeded will the relief port operate. The 'in-line' device differs from pop or diaphragm types which are connected into the system on a teepiece. Flow through pop or diaphragm relief valves only occurs when venting air to atmosphere. In-line and diaphragm valve types can have the exhaust flow piped away to an area where the noise and flow will not cause disruption or harm to the environment or operators.

MSA
The Safety Company

Introducing the **Fas-Trac III Ratchet Suspension** from MSA. Designed for use with market-leading MSA helmets, the Fas-Trac III suspension improves the user's head protection experience .

G1 SCBA

ULTIMA X

V-Gard
Accessory System

ALTAIR 2X

EVOTECH

MSA Middle East • Phone: +971-4-299-6741 • Email: info.ae@MSAsafety.com • MSAsafety.com

Because every life has a ***purpose...***


IMI Precision Engineering's Olympian Plus FRL system in situ

Soft start/dump valves

Protection within the area of moving parts of the system is paramount, to protect the parts themselves against excessive wear and prevent danger to personnel from sudden movement of parts.

This is where the use of 'soft start' ('slow start') valves is desirable. During normal operation, air is gradually allowed to pass into a pneumatic system or device. The rate of pressure build-up into the system can be adjusted through a restricted passageway in the valve, which is generally an internal poppet spring-operated device. The poppet operates when the gradual pressure build-up produces a force in excess of that holding it closed. It then moves to the fully open position at the 'snap point', allowing full, unrestricted flow through the valve to rapidly fill the system to full line pressure. For most devices this snap point will be within the range of 40 to 70 per cent of full line pressure.

It is extremely common to couple the slow start with a dump or exhaust function valve within one body for compactness. The 'dump' valve is designed to quickly exhaust the pressure from the downstream system. Furthermore, a limit switch can be introduced to the device's valve spool. This can give an open or closed signal, thus providing a monitoring function which, in conjunction with other valves and relays – plus suitable system redundancy – can help make machines safer.

Protection device selection

Firstly, decide which parts of the system cannot withstand the maximum pressure which can be developed in the distribution system (or compressor). Then, determine which type of relief valve is required to control this air pressure most effectively, taking into account failure flow through that part of the system. Consider using a restrictor (orifice) without producing excessive pressure losses in the normal operation of that part of the system to enable a suitable size of relief valve to be used.

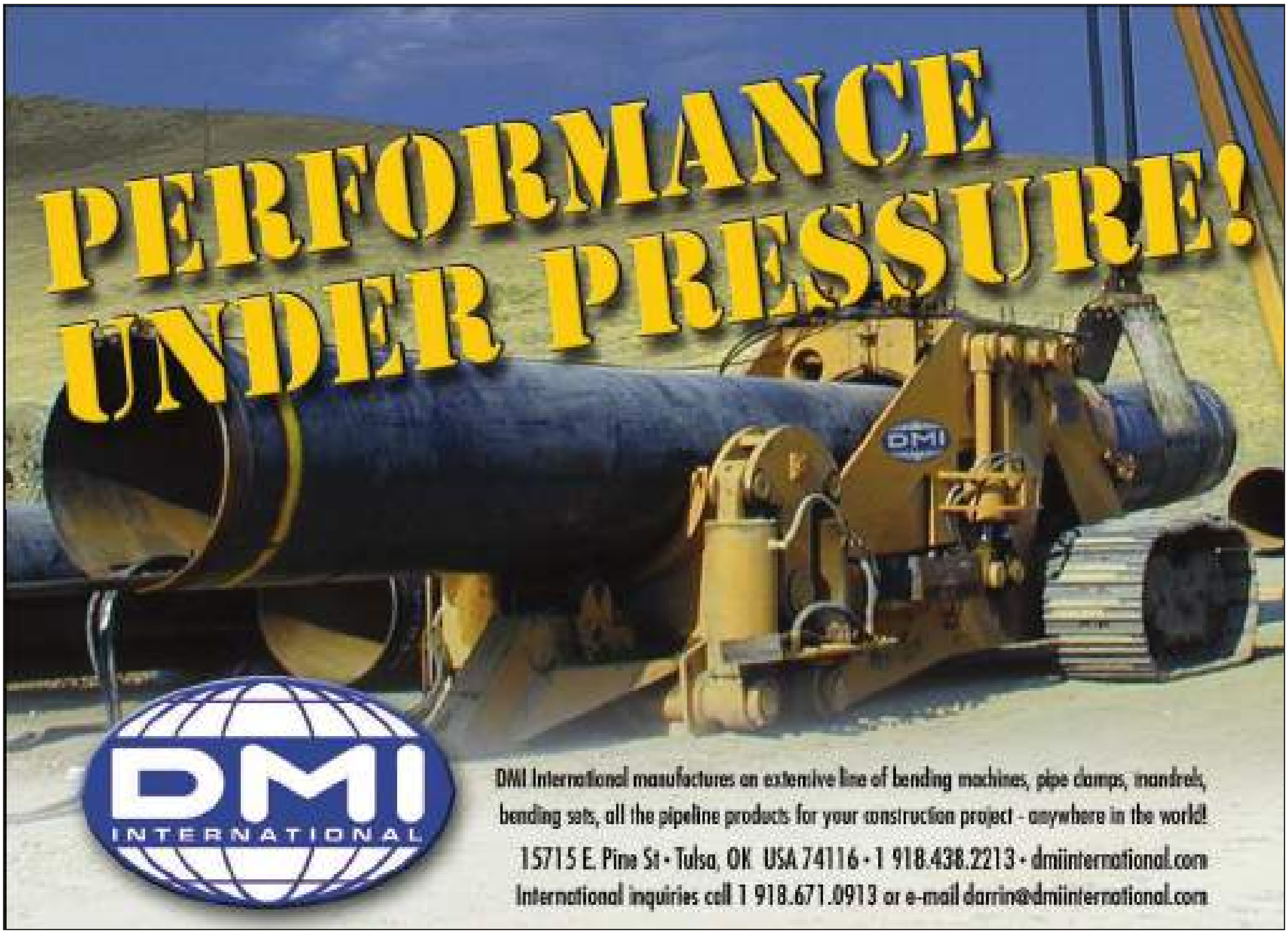
For very large flows consider a pilot operated regulator as a dump valve, with a diaphragm relief valve pilot.

For machines, consider an in-line device to build up one complete integral modular preparation assembly for ease of piping, location and servicing.

Decide which parts of the system can suffer from problems on initial start up or resetting where excessive initial speeds can lead to wear problems or entrapment, or where an emergency stop/dump function is required.

Employ one soft start/dump valve for each section of the system operated in this way. The larger the system, the longer the dump or emergency stop function will take to fully empty the system. If there is a high safety risk in this part of the machine consider monitored soft start/dump versions along with appropriate other circuitry to comply with the Machinery Directive. Locate soft start/dump valves in the FRL assembly closest to the downstream end to prevent high back flows through the lubricator.

Where large volumes of air are to be exhausted, consider fitting a silencer if the air cannot be piped away to a convenient position. Where rapid cycling of exhaust is present fit a heavy duty silencer. Where the exhaust air can be heavily laden with lubricant, usually from equipment requiring high levels of lubrication, fit a coalescing exhaust silencer. ■


PERFORMANCE
UNDER PRESSURE!
DMI
DMI
INTERNATIONAL
DMI International manufactures an extensive line of bending machines, pipe clamps, mandrels, bending sets, all the pipeline products for your construction project - anywhere in the world!
15715 E. Pine St • Tulsa, OK USA 74116 • 1 918.438.2213 • dmiinternational.com
International inquiries call 1 918.671.0913 or e-mail darrin@dmiinternational.com


TRANS ASIA
pipeline services
Experience
Excellence
Pipeline Pre-Commissioning Services
Valves Servicing & Testing Services
Chemical Cleaning Services
Decommissioning Services
Umbilical Testing Services
Equipment Rentals
Nitrogen Services
Process Services
Plot 4M-25, Hamriya Free Zone,
Phase II, PO Box 42181 Sharjah, UAE
T +971 6 526 9166 F +971 6 526 9167
Email: info@transasiapipelines.com
M-01, Lulu Bint Building,
PO Box 105310 Abu Dhabi, UAE
T +971 2 645 0006 F +971 2 645 8383
Email: info@transasiapipelines.com
CERT
CERT
www.transasiapipelines.com

High quality communications at low risk

Secure voice and data exchange has always been difficult in explosive atmospheres. Today's handheld equipment offers flexibility and can keep track of staff too.

ALL OIL AND gas (O&G) operators have to be ultra-efficient to remain competitive in today's difficult market. Enormous quantities of essential resource and plant data are now available – except on occasion where they matter most, at the well head or within processing facilities. This is due to the risk of explosion occurring as a result of electrical arcing or contact with very hot surfaces.

Niche developers within the equipment industry such as Guardian Telecom (Canada), Extronics and GAI-Tronics (both UK), can help solve this problem.

It is work in progress, but achievements so far can be seen at the various one-day Hazardex exhibitions in the region, being held this year in Dammam (25 May), Abu Dhabi (27 May) and Doha (25 June; details at www.hazardexonthenet.net).

For use in hazardous environments all electrical equipment, including ICT hardware, must be specially designed to avoid ignition; temperatures below 300 degrees celcius can lead to auto-ignition in the case of naphtha.

Various different standards developed overseas can be used for certification according to the class of risk involved. The types of protection that can be "designed in" can be flameproofing, oil filling, encapsulating etc. More than one is often built into the telecoms equipment which complies with Europe's ATEX Directives, or the international IECEx system.

Going wireless?

Many O&G facilities (especially petrochemical plant) pre-date the industry's 'smart handheld' revolution and do not incorporate adequate data cabling, which makes it very costly to retrofit wired networks. Going wireless is the obvious solution, but the industry's extreme operating environments – which usually include an abundance of heavy steel vessels and structures, hot pressurised pipework etc. - can restrict the functionality of these systems due to radio frequency multipathing. This is where signals "bounce off" different surfaces and arrive at the receivers asynchronously, which can either render the whole system inoperable, or just reduce the bandwidth and/or connectivity available. An excessive number of costly ICT access points will be needed to give the sort of coverage considered normal in a non-explosive environment.

> "Many O&G facilities pre-date the industry's ' smart handheld' revolution"

The industry's operating environments can restrict the functionality of wireless systems (Photo: BP plc)

And it is not always feasible to excavate cable trenches or install the overhead lines that are needed to support conventional wired networks offering fast data-exchange rates with high reliability.

These communications difficulties are exacerbated by the sheer size and range of hazards found on many O&G sites.

Traditional copper-based solutions usually raise operating costs and complications, so many existing sites compromise by combining wired/wireless technologies using different frequencies. Not enough equipment that is specifically designed for hazardous-area installation is available because the market in one country is small compared with that for general commercial data purposes.

So only some of the hardware such as routers available for "non-Ex" use can actually be installed within many O&G operational areas, including on production platforms. Certified high-performance ancillaries such as the omni-directional antennas available for non-Ex deployment to maximise coverage from each access point are frequently unavailable here so additional access points have to be installed instead.

The result is often that a hybrid

patchwork of communications technologies becomes by default the best achievable solution. Performance falls short of today's user expectations due to a combination of poor signal quality and available bandwidth.

Some suppliers say networks based on the IEEE's 802.11n multiple-antenna standards offer a solution. This is due to the commonality of WiFi outside O&G premises which has raised expectation levels, most workers being accustomed to high-speed internet, Bluetooth's cable freedom and the galaxy of apps now available.

Recent developments

Three specific recent developments have moved hazardous environment operators towards WiFi dependence:

- First, the introduction of multiple input/output (MIMO-) enabled access points based on IEEE multiple-antenna standards has improved wireless performance in all industrial areas due to reduction of multipath interference caused by metal structures such as storage tanks. MIMO antennas use multipath algorithms at both ends to capture/recompile signals that would otherwise be scattered.
- Second, the development of intrinsically-safe RF galvanic isolators can protect output from standard RF kit and simplify the installation of a modern wireless data network. So standard high-power antennas can be used in explosive areas if the equipment is protected by such an isolator instead of costly Ex-certificated equipment.
- And finally of course the latest low-power and low-cost handhelds such as readers, smartphones, tablets and their dedicated O&G apps, which have been developed to meet intrinsic safety standards in everyday use.

In conclusion, all hazardous areas need special measures to ensure total safety, which nowadays replace traditional physical systems such as personnel entry/exit logging and card reading. Today's effective wireless networks can improve the tracking of employees, just as they do with physical items via RFID, leading to accurate data on their whereabouts status in real time.

And the bottom line for the operator? This is improved return on investment as the network installed can be used simultaneously for all data transfer purposes. Low-cost applications designed for smartphone use such as StaySafe's Tracker Lone Worker have become common currency within the O&G industry. ■

Taking a measured approach

Chris Shennan, global head of oil and gas consulting, Hay Group, looks at people challenges in 2015, and how to tackle them.

IN AN ENVIRONMENT of low oil prices, what are the key people issues on the agenda of industry executives and how should they respond? The two areas that are rising up the priority list are whether and how to restructure, and whether mergers and acquisitions are on the horizon.

Too often, we see decisions made on gut instinct resulting in across the board reductions. The more rational approach is to assess where efficiencies and effectiveness gains are possible through precise surgery. Our efficiency models show that in an organisation of 200 frontline supervisors, increasing the average managerial reporting line from four to six reports per manager can remove a level of management and decrease management headcount from 68 to 41. Then there is the issue of who is reporting into whom. Having defined what the boss is accountable for, organisations have to assess the relative contribution of their direct reports. The key is to avoid replicating the same skills and experience that exist in the boss, in his/her subordinates. Finally, it is essential that decision making responsibilities are clearly defined and absolutely clear.

> "The more rational approach is to assess where efficiencies and effectiveness gains are possible"

Chris Shennan, global head of oil and gas consulting, Hay Group

The urge to merge

The collapse in oil prices in the early1980s and again in the late 1990s generated a wave of industry consolidation. The conditions are ripe for another round. The acquisition of Baker Hughes by Halliburton was an example, as was Technip's offer to purchase CGG.

Most 90-day deal implementation plans aim to achieve quick wins by integrating 'hardwiring' – the tangible assets such as IT, financial systems and property portfolios. Yet most of these acquisitions will fail to achieve their original objectives, often because parties tend to underplay or not fully understand the intangible assets of people, culture, structure and capability. Our research has identified two factors that really make the difference – aligning and integrating tangible and intangible assets; and putting in place a new top team quickly.

It is those who take a more measured, focused approach to the challenges who will not only survive the dip, but also be in a position to grasp opportunities with both hands when they emerge. ■

Hay Group are Gold Partners of the *Managing Talent In Oil & Gas* Conference, 17-19 May, Abu Dhabi. www.managing-talent.net.

Raccortubi acquires butt weld fittings manufacturer Petrol Raccord

ON 24 DECEMBER 2014, Raccortubi, leading stockholder, manufacturer and supplier of piping materials, completed the acquisition of Petrol Raccord S.p.A., manufacturer of butt weld fittings for the oil and gas, power generation, fertiliser and petrochemical industries, in a deal to expand Raccortubi Group's production.

Petrol Raccord will be working alongside Tecninox, the Group's other integrated manufacturer of butt weld fittings, in order to extend the whole production range from ½" to 56". Petrol Raccord will focus in particular on stainless steel, duplex, superduplex and special alloys, whilst maintaining its existing production of low and high carbon alloys for the power industries. The butt weld fittings manufactured by the Group's plants will be stocked and supplied by Raccortubi S.p.A., Raccortubi Middle East FZE, Raccortubi do Brasil Ltda. and Raccortubi Singapore Pte. Ltd., alongside pipes, tubes and flanges in stainless steel and special materials.

Established in 1969, Petrol Raccord manufactures butt weld fittings up to 56" almost without wall thickness limitations. Using the hot forming method, it has the capability to provide elbows, tees, reducers and caps in accordance with the most stringent market requirements, as well as a dedicated part of production for special/customised fittings such as flow or barred tees, "Y" pieces, laterals, manifolds and headers. It holds an impressive number of end-user approvals, including that of Saudi Aramco, in addition to quality certification for the nuclear industry.

The Petrol Raccord plant

The integration of a second butt weld fittings manufacturer within the Group is the latest in a number of recent investments by Raccortubi, all intended to enhance Group efficiency in the provision of project packages, thanks to a dynamic combination of stockholding and manufacturing activities. In 2013, the Group established three new subsidiaries in Dubai, São Paolo and Singapore, each with its own warehouse, to supply material directly from stock and support their local markets.

Unique Maritime Group expands oil and gas business

UAE-BASED UNIQUE Maritime Group (UMG), one of the world's leading integrated turnkey subsea and offshore solutions providers, has ambitious plans for the expansion of its oil and gas business, Unique Wellube. The company, which offers specialised engineering services and products focused on pipeline and plant integrity, will be investing US$2.5 mn to strengthen its regional presence and expand internationally.

Sahil Gandhi, managing director, Unique Wellube, said that around 60 per cent of this will be invested in the Middle East, with Saudi Arabia a key focus. "We have a strong presence in the GCC and are now are looking to step up our activity in Saudi Arabia, where we are aiming to set up an office by the end of the first quarter of 2015," explained Gandhi. "We are also expanding our international business through the UMG group locations; we are launching the same set of products and services in India, UK and West Africa through our branches there."

Highlighting United Wellube's strong customer focus, Gandhi went on, "our oil and gas division has developed in response to customer requirements and grown from there. Our objective has always been to provide a comprehensive, high quality service to satisfy our customers."

To complement its own pipeline and onsite machinery services, the company has entered into some new partnerships. "We are now joint venturing with OEG offshore to offer its range of cargo carrying units to the Gulf region," said Gandhi.

Sahil Gandhi, managing director, Unique Wellube

"We've also tied up with USA-based Mactech Offshore who provide subsea cutting solutions, and Citadel Technologies, manufacturers of carbon composite pipe repair systems; these are examples of the quality providers we are bringing in to support our hot-tapping and pipeline services. This ties in with our philosophy of providing the customer with a complete integrated package."

Gandhi expressed optimism about future prospects for Unique Wellube. "I see good opportunities in the maintenance side of things, given our focus on pipeline intervention and onsite services to reduce downtimes on pipelines and plant; a lot of platforms and pipelines are coming towards the end of their supposed lifecycle and there is a trend towards optimising pipeline efficiency. All the majors are focusing on maintenance, corrosion protection and extending lifetime as far as they can.

"The outlook is very positive," Gandhi concluded. "We are in a niche sector providing good quality services, and that is getting around. I expect our oil and gas vertical to be one of the major contributors to the Group's growth in 2015."

The rise and rise of big data

Riad Mannan looks at the challenges and benefits of big data, which has the potential to transform the oil and gas industry.

OIL AND GAS companies have traditionally generated data in all parts of the business, but are now routinely generating great volumes of it at an exponential rate.

In an era of falling oil prices, big data analytics present opportunities to establish more efficient oil production, reduce costs and risks, improve safety, enhance regulatory compliance and foster overall better decision making.

Exploiting big data analytics is becoming a high priority in the oil and gas sector, not just for technology experts, but business leaders too. However, many critical obstacles remain that need to be overcome when developing and implementing big data strategies.

Overcoming challenges

Oil and gas companies are increasingly finding that big data is not defined by how much data they have, but how they analyse and use it. According to Dr. Satyam Priyadarshy, chief data scientist, Halliburton, "In order to generate the highest value from big data, companies need to leverage emerging technologies and remove data silos." Oil and gas organisations have to follow other industry verticals which have "torn down their data silos, both at organisational levels and technology levels," he adds.

Ali Rebaie, Big Data and Analytics industry analyst and consultant at Rebaie Analytics Group agrees, saying, "Current platforms are mostly siloed with limited or restricted access to raw data across the business. That needs to change to enable new data modelling, integration and governance approaches."

The issues of security, data collection and data sharing are other areas of concern. Asfar Zaidi, principal consultant for Huawei Middle East, highlights the importance of data security but says, "Having an increased volume of collected data does not necessarily have to result in high levels of data vulnerability. If the right technology framework is in place, oil and gas organisations can stay protected regardless of how much data they collect."

Dr. Satyam Priyadarshy, chief data scientist, Halliburton

> "Exploiting big data analytics is becoming a high priority in the oil and gas sector"

With the oil price dropping in recent months, many organisations have made cutbacks to personnel and projects. However, it is interesting to note recent comments by Kimberly Ross, CFO of Baker Hughes, who is reported as saying, "We have tried to be surgical with our cuts. [However,] we are making sure we aren't cutting investment in technology."

The benefits of utilising big data technology seem to outweigh the cost of investing in it. The emerging opportunities to increase E&P output, reduce costs and make faster and better decisions are perhaps the more understood benefits. In particular the capability to analyse in real time and react to data coming in is one of the key advantages. As Zaidi remarks, "The ability to track, analyse and extract value from data allows companies to identify opportunities and highlight issues in real time, increasing productivity and efficiency."

Big data and analytics can also support the development of digital oilfields, integrating operational technologies with information technology to improve decision making and enhance operational and business performance. Looking at it holistically, adding empirical analytics to existing physical-based diagnostics can take the industry to a new level of business improvement.

"Big Data solutions are part of developing the digital oilfield, aligned to enhance business operations for operators to share real-time information, remain constantly connected, monitored and in-control, mitigating risks in a safer work environment," Zaidi adds.

Return on innovation

Dr. Priyadarshy points to other benefits. "Big data will expose the hidden inefficiencies across the board for oil and gas, including

drilling operations, equipment performance, supply chain, consumer spend on the downstream side, talent, productivity, etc."

Looking forward, he says, "Faster and better decisions can be made as big data and diagnostic services advance to the next level due to the implementation of machine learning and artificial intelligence. The new patterns that emerge from data could lead to new business strategies for improved operational efficiency."

Delivering and implementing big data strategies which capture the highest value may require a new mindset, suggests Dr. Priyadarshy. "Traditionally, ROI is defined as the return on investment, which is a great metric to measure in a traditional business model. However, with the proven case of big data analytics, the correct metric to measure is return on innovation. Understanding the difference in investment and innovation requires a futuristic mindset, a paradigm shift from current thinking processes for growing the business."

With the potential for big data analytics to transform the oil and gas industry, it is no wonder that technology and business leaders are seeking a new understanding of not only what big data is, but what

> "Faster and better decisions can be made as big data and diagnostic services advance to the next level"

Ali Rebaie, Big Data and Analytics industry analyst and consultant, Rebaie Analytics Group

applications are possible, what return on investment and innovation can be expected and what technology upgrades will be needed. Ultimately, the value in big data lies in gaining the insights from it – insights that can only come through analytics. Delivering the promise of big data analytics will come when companies proactively bring big data technologies into the mainstream of their business.

Leading oil companies are already using big data analytics to increase oil production at a reduced cost. It is only a matter of time

Asfar Zaidi, principal consultant, Huawei Middle East

before it is at the core of the oil and gas industry. ■

Dr. Satyam Priyadarshy and Ali Rebaie are speaking at the Big Data Analytics for Oil & Gas Conference to be held from 19 -21 April 2015 in Abu Dhabi. This timely event will provide a space for thought leadership, networking and engagement between buyers and sellers. Riad Mannan is conference director of the event. For more information on theconference see www.oilandgasbigdata.com.

Better analysis of drilling data called for

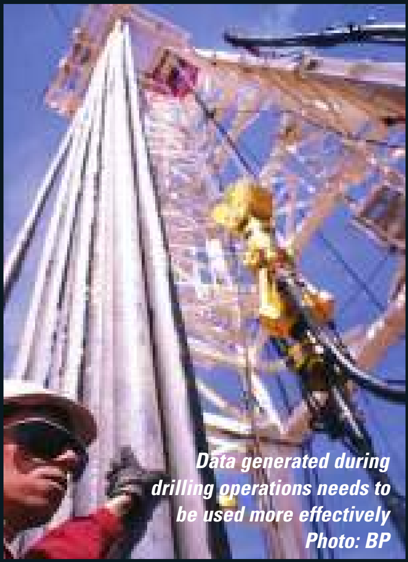
DR CARLOS DAMSKI, in his book 'Drilling Data Vortex – Where the bits meet the bits' suggests that one area where value can be added to reduce drilling costs is in better analysis of current data, looking for opportunities to reduce operational time.

Dr Damski argues that there is insufficient use of systematic data analysis, benchmarking and planning in the drilling of wells. "The oil industry is already investing a lot in producing and storing valuable information. To make sense, this investment should help us to understand our successes and flaws, extract lessons that are actively learned and act on that to improve our technical, operational and management processes," he argues.

"Data generated during drilling operations can certainly be effective as a tool to improve the decision-making process in any drilling operation.," Dr Damski remarks. "This is certainly one of the advantages of collecting real-time information. Additionally, the data collected is very useful in post-drilling analyses. However, a meaningful study of past operations is one of the most problematic tasks faced by any operations department. The process of analysing information with the goal of improving future operations must become more systematic and less time consuming, whatever the size, cost or geographical location of the operation.

"In the world of drilling there are many facets to be interpreted in the digital model," adds Dr Damski. "The gap between these worlds is narrowing as the industry gains computing power to run complete models with more sensors to collect data."

For further information see www.drillingdatavortex.com.



Data generated during drilling operations needs to be used more effectively Photo: BP

ArcelorMittal
Local presence, global strength

The future of unconventionals

Andy Gibbons, vice-president Middle East at Euro Petroleum Consultants (EPC) looks at the repercussions that falling oil prices have had on the progress of unconventionals in the region.

THERE ARE MANY theories explaining the significant fall in crude oil prices, which have plunged to less than US$50 per barrel, ranging from slowing global economic growth, to OPEC being unwilling or unable to reduce production, and hedge-fund managers dumping crude on the market to liquidate their positions.

Although recent days have seen some rebounds, which are thought to be investor driven, the fact remains that there is a global oversupply of some two million barrels per day. This will always have an impact no matter the sentiment of the markets.

Undoubtedly, a sustained oil price fall will have a major impact on unconventionals. The fact that unconventional plays require hydraulic fracturing and horizontal drilling mean that costs are inevitably higher. We have seen that companies involved in unconventional gas exploration are highly innovative and we can certainly expect that further innovations will occur and costs will fall, but we cannot expect a step change in production costs in the near term.

The economics of unconventional production vary from one location to another. Of course, most of the real production to date has taken place in the USA. In some cases, prices of over US$80 per barrel are required for projects to be economic, whereas in other locations prices of US$40 to US$50 per barrel are sufficient. This means that while new drilling is not going to stop, activity will certainly reduce and the rig count will fall. We already see clear indications that capital expenditure is being reduced by major US shale producers.

For the Middle East and the rest of the world, however, the picture is less clear. Looking at the Middle East, relative shortages of natural gas and the competing demands of the power sector and petrochemicals have generated increased levels of interest in unconventional gas. Without the allocations of natural gas liquids (NGLs) for new projects, we have seen a shift towards naphtha cracking, reducing some of the competitive advantage that the region had enjoyed, compared to other global producers. We also still see the use of crude oil for power generation, which is not the best option from both an economic and an environmental standpoint. Saudi Arabia expects domestic demand for natural gas – used mainly for power generation – to almost double by 2030 from 2011 levels of 3.5 trillion cubic feet per year.

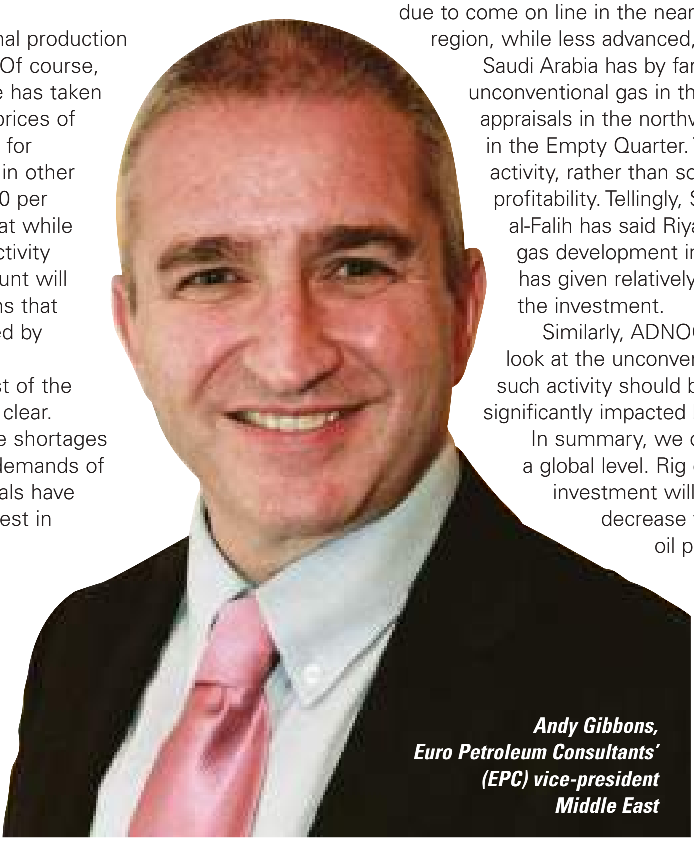
> “While new drilling is not going to stop, activity will certainly reduce and the rig count will fall”

So the Middle East has been taking the first steps towards exploiting its very significant unconventional resources. Some projects, such as the tight gas production from the Khazzan field in Oman, are well developed, with contracts awarded and production due to come on line in the near future. Other activities in the region, while less advanced, are progressing.

Saudi Arabia has by far the greatest potential for unconventional gas in the region and Saudi Aramco made appraisals in the northwest area, the Eastern Province and in the Empty Quarter. This should be seen as strategic activity, rather than something based on short term profitability. Tellingly, Saudi Aramco chief executive Khalid al-Falih has said Riyadh will spend US$3bn on shale gas development in the Kingdom, but the company has given relatively few details on the exact nature of the investment.

Similarly, ADNOC has taken some initial steps to look at the unconventionals potential in the UAE. Again, such activity should be considered as long term and not significantly impacted by short-term volatility.

In summary, we can expect a decrease in activity on a global level. Rig counts will certainly fall and capital investment will decrease. The extent of the decrease will depend on how far the crude oil price falls. For the Middle East, all companies in the oil and gas sector will be looking closely at budgets and we can expect to see pressure on discretionary expenditure. Development of unconventionals, however, is seen as long term and strategic and it is unlikely that activity will change, particularly in the short to medium term. ■



Andy Gibbons, Euro Petroleum Consultants' (EPC) vice-president Middle East

Ensuring safe operational processes

The idea of safety is deeply anchored in the philosophy of each and every oil company, writes Hai-Thuy Ngo, industry manager oil & gas, Endress+Hauser.

IT IS A matter of protecting people, environment, infrastructure and last, but not least, reputation.

Explosion safety (ATEX, FM, Ex d, Ex ia) has been practiced for many years within the oil and gas industry, as operators and shareholders have been striving to improve the functional safety of their processes.

The explosion of Piper Alpha in 1988 in the North Sea, was the starting point for stringent regulations in order to prevent such accidents happening again. Regulations on functional safety were formulated under IEC61508.

Each process on a plant poses a certain risk which is evaluated during hazard and operability (HAZOP) studies. Depending on the probability and severity of an incident, safety measures need to be implemented in order to bring the risk to a tolerable level. These measures can be addressed to different layers of protection and you can make the plant inherently safer by redesigning processes or implementing Safety Instrumented Systems (SIS) capable of bringing the process back to a safe state.

> “Each process on a plant poses a certain risk”

The level of risk reduction with SIS is rated in different levels - the so-called Safety Integrity Levels (SIL).

Offshore operations are prone to explosions and damage

There are recommendations and standards on how to properly apply safety measures in the process industry, the main two being IEC61508 and IEC61511. There are also specific oil and gas industry safety standards available, such as API2350, second edition, which addresses overfull protection for storage tanks in petroleum facilities.

Selecting the correct measuring principle for your application is crucial, and make sure that you partner with suppliers and / or safety consultants who can select the appropriate safety instrument. ■

Prevention and control of explosions

LLOYD’S REGISTER’S GUIDANCE Notes for the Calculation of Probabilistic Explosion Loads provide recommended practices to help engineers, operators and designers to define blast and explosion loads to control and mitigate risk measures in offshore operations.

To improve safety in offshore operations, structures and equipment that could be prone to damage or explosion pressures need to be designed for accidental blast loading. This approach by Lloyd’s Register enables a critical examination and assessment through a number of probabilistic risk assessment techniques, which help companies to forecast potential explosion hazards.

“By using these Guidance Notes with our Rules for Offshore Units, companies can simplify and streamline their design appraisal process to give them a fast and highly cost-effective solution,” said Joar Dalheim, VP Technology at Lloyd’s Register Energy.

A number of measures can be used by companies operating offshore to prevent, control and mitigate the effects of explosions. Although the focus should always be on explosion prevention (for example through prevention of leaks or elimination of ignition sources), there could be an accumulation and ignition of a flammable hydrocarbon-air mix.

The Lloyd’s Register methodology can be used on any hazardous offshore unit. Guidance is also offered on what approach to take in leak scenarios from Liquefied Natural Gas (LNG) plants.

OFG

57TH EDITION

Celebrating 5 years of OFG

26TH MAR 2015

from 12.30 to 3.30 PM

Bringing industry leaders together for 5 years. The leading Oil & Gas networking event. The Oilfield Get together is the leading Oil & Gas networking event in the UAE.

OFG delivers an unparalleled opportunity to mingle with like-minded senior level professionals while enjoying a relaxed and informal environment, where business is the focus of conversation. The award winning Ruth's Chris Steak House provides attendees with a hearty three-course menu, as well as beverages throughout the day.

Entry admission AED 300
Pre-Registration is advised as there are a limited number of places

RUTH'S CHRIS STEAK HOUSE

REGISTER NOW!

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

Middle East energy sector drives region's growing safety and security market

THE SECURITY MARKET in the Middle East is experiencing substantial growth, which is being driven by the region's oil and gas sector, according to the multi-solution security provider G4S.

Not only does the Middle East boast more than half of the world's proven oil reserves, but the security provider has said that the impact of falling oil prices has meant fuel producers are looking to security and safety services to help reduce production and operational costs.

Providing security solutions to the global oil and gas industry, G4S works throughout the oil and gas supply chain, from the provision of journey management services at the early exploration stages, to remote camp provision and protection of highly complex petrochemical sites.

Chris Fergus, regional managing director for G4S in the Middle East, said, "G4S assists producers in maintaining and building trust in the security of their assets, reducing operating costs and building stronger reputations by improving the overall business performance."

G4S exhibited at the safety and security show Intersec, held in Dubai in January 2015. The 17th edition of the show acts as proof of the growing security market, as it welcomed 27,455 visitors from more than 120 countries, representing a 10 per cent growth.

The increasing numbers and interest in the exhibition come as little surprise considering that the global security market is predicted to be growing by 5.5 per cent annually, with demand in the Middle East estimated to double that, according to Frost & Sullivan.

Ahmed Pauwels, CEO of Messe Frankfurt Middle East, the organisers behind Intersec, said, "The big shift this year is twofold; more visitors and now end-users across a variety of industries, which indicates they are increasingly more involved in the decision-making process when it comes to purchasing security-related products and services."

Intersec hosted more than 27,000 visitors this year

Furthermore, the UAE is evidently a growing market for safety and security solutions, as the security show has experienced a 27 per cent year-on-year increase of exhibitors from the emirates, with more than 220 locally-based companies present at this year's show.

According to Messe Frankfurt, by 2016 the global security equipment market is estimated to be worth US$116bn.

Sanjeev Walia, CEO of exhibitor Spire Solutions, stated, "There is a convergence between physical security and information security that is happening at a very rapid rate in this region [and] the GCC is already picking up on this."

Khalid Al Khatib, CEO of the show's founding sponsor NAFFCO, said, "Intersec is without a doubt the world's greatest trade show for our industry and, in terms of global presence, is unequalled."

100 per cent produced water fracturing fluids

FRACTURING PROJECTS AVERAGE more than 4.75 mn gallons (113,100 barrels) of fresh water per well. Once used downhole and returned to surface, that water requires treatment and injecting into an underground storage well. The Weatherford WaterSure fluid system - which enables fracturing with 100 per cent produced or flowback water from the well - is an environmentally friendly, cost-saving alternative to conventional methods.

This fluid system can end the dependence on the availability of fresh water and eliminate the downtime, costs, logistics, fuel consumption, and emissions associated with delivering fresh water to a wellsite or transporting produced water offsite for treatment.

The fluid system uses filtered or un-filtered water with minimal to no chemical treatment. The water is oxidized and treated with chloride dioxide (ClO_2) to kill well-souring bacteria, help decrease reservoir pressure, and help improve the permeability, wetness, and porosity of the formation. The prepped water is combined with an environmentally friendly gelling agent and crosslinked to create fluids with excellent proppant transport and conductivity. The resulting fluids can then maintain high, closely controlled viscosity levels sufficient to carry proppant during long periods of exposure to high temperatures and bottomhole pressures.

Industry collaboration to develop pipeline coating guidelines

WITH SUBMARINE PIPELINES increasing in diameter and extending into deeper waters and more challenging environments, design requirements for concrete weight coating often do not meet current needs.

DNV GL has kicked off the first phase of a joint industry project (JIP) to improve the understanding of pipeline concrete behaviour and to develop a design guideline that complements current pipeline codes and standards.

"Current participants include Petrobras, Saipem, Bredero Shaw, SVAP and Wasco Coatings, and we still welcome new participants," says Nguyen Thi Bich Ngoc, JIP Project Manager.

Concrete weight coating is widely used to protect submarine pipelines and ensure stability on the seabed. The current design approach is primarily based on simple and general design requirements. The method has proven reasonably reliable for most traditional pipelines, but does not capture all potential failure modes. Recently, there have been several cases of concrete coating damage during installation and operation phases.

Preliminary studies by DNV GL suggest in-depth knowledge about the contribution of and interaction among several factors is needed to understand pipeline concrete coating behaviour. It is important these factors are validated against recent test results and combined with knowledge gained from industry experience before being incorporated into pipeline codes and standards.

The first phase, due for completion by December 2015, aims to develop a design approach for pipeline concrete coating. The second phase is for an experimental validation of the design approach and development of a design guideline. The JIP is expected to be completed by the end of 2016.

Emerson updates basic prediction data to protect assets

The CSI 6500 protection system

EMERSON PROCESS MANAGEMENT has updated its AMS Suite for the CSI 6500 system to protect critical assets and include basic prediction capabilities with minimal time and wiring investments. This is now available in version 5.61 of AMS Suite: Machinery Health Manager. With the latest update, the CSI 6500 protection system communicates additional prediction data to allow users to make real-time decisions on operating their critical assets.

Using a simple Ethernet connection from the CSI 6500, users receive periodic parameter trends and spectrum/waveform data delivered at specific intervals, Emerson said. This data is useful for determining the health of sleeve bearings on turbo machinery. This automated process for acquiring prediction data eliminates the need to connect to buffered outputs on the protection system and reduces the risk of inadvertently causing a machine trip.

In addition, waveform data from the CSI 6500 is now incorporated onto the circular polar plots available in AMS Machinery Manager v5.61, facilitating diagnosis of developing valve faults in reciprocating compressors.

Nathan Pettus, vice president of Emerson's Reliability Solutions, said, "Expanding the capabilities in our technology is just one way Emerson offers additional value to our users.

"Emerson is committed to developing customer solutions that capture more of the right data, and delivering it in a way that allows users to make real-time, quality decisions on how to operate their assets."

Emerson's AMS Machinery Manager integrates data from route-based, online, and wireless vibration solutions as well as third-party oil and infrared analysis data to provide a complete picture of machinery health.

io oil & gas: GE and McDermott's new model in offshore consulting

GE OIL & GAS and McDermott International have launched io oil & gas consulting, a new independent venture to transform the development of front-end solutions for offshore fields. Headquartered in London, io aims to deliver greater certainty into the design and planning of the offshore oil and gas field and overhaul the current operator-contractor relationship. Its scope will range through portfolio evaluation, exploration and planning support, appraisal and feasibility, conceptual engineering and FEED to the final investment decision.

io is headed by CEO Dan Jackson along with Mark Dixon, chief technology officer; Tony McAloon, chief operating officer; and Oliver Dixon, chief financial officer.

Jackson said, "io combines industry expertise and powerful thinking to deliver greater certainty of costs and schedule to offshore field developments. The heritage and depth of experience from these two great parents allows the best talent in the market to come together and offer something new to operators during current challenging market conditions. The oil and gas industry is a vital component in the global energy mix, but increasing complexity of offshore field developments and the decline in oil price is challenging traditional ways of working. Now is the ideal time to launch io. The team's proven expertise and innovative approach will deliver more efficient and customised solutions to offshore developments around the world."

(From left to right) Oliver Dixon, CFO; Tony McAloon, COO; Dan Jackson, CEO; and Mark Dixon, CTO

Raytec's new website for safety lighting solutions

RAYTEC HAS LAUNCHED *www.raytecled.com*, a website dedicated to their comprehensive range of new hazardous area lighting products. The new website reflects Raytec's commitment to bring their experience, innovation and proven LED lighting technology to key hazardous area markets, the company said.

Following the launch of Raytec's Hazardous Area Division in 2013 and the development of their SPARTAN range of ATEX/ IECEx LED luminaires, the website provides quick and easy access to information on the full range of SPARTAN products including flood, linear, bulkhead and transportable. All product ranges are also available with emergency variants for increased flexibility, versatility and safety.

The website highlights the advantages of adopting LED technology and the features and benefits of each range, whilst a convenient product selector page with specification filters helps you to select the product best suited to your installation.

Barry Thompson, head of Raytec's Hazardous Area Division said, "Our new website really puts the user first and aims to provide the most useful tools needed to support someone from the very initial stages of exploring which products might be suitable for an installation, right through to specification and installation.

"We have designed our products based on our field proven LED technology and we recognised that reliability, modularity and easy maintenance are important to our customers, together with a range of emergency variants. The new website allows our customers to explore and understand all of those benefits quickly and easily."

The website provides access to a range of valuable services including a lighting design service providing 2D and 3D lighting plans for specific projects, custom built product design service for bespoke projects or challenging applications, demo product service for trialling Raytec products prior to installation, and a live online chat service to connect instantly with in-house lighting experts for quick information and answers to queries.

Thompson added, "Our philosophy is innovation+illumination; we always strive to lead lighting trends in the global market and our website is no different. Our customers' needs are at the heart of the new website and it uses the latest design techniques to provide the best user experience."

Belzona to unveil new polymer technology at MEOS 2015

BELZONA, A LEADING company in the supply of polymer composites and protective coatings, will be showcasing its new coating and composite materials at MEOS 2015, to be held from 8-11 March in Bahrain. These materials address the needs associated with urgent repairs as well as long-term corrosion mitigation and include:


Using Belzona technology

- Protective linings designed for high temperature immersion and erosion protection
- Composite repairs, including pressurized pipe wraps and bespoke cold bonding technology
- Splash zone repairs with the use of surface tolerant materials and elastomers.

Belzona will be represented at stand 827 by their authorised distributors in the Middle East – Hatcon, AOTC, Apollo and MCT, covering Saudi Arabia, Oman, Qatar and UAE respectively.

Belzona's Oil and Gas market development manager, Jeremie Maillard, said, "Belzona is now advancing further by developing high molecular weight polymer composites, providing significantly better erosion resistance whilst offering the possibility to be spray applied. In addition, next generation modified epoxy novolac systems have been developed that offer ease of application and improved performance. Reducing asset owners' capital expenditure whilst minimising their operational expenditure is our primary concern and the company's strategy is fully in line to achieve it."

Established in 1952, Belzona has pioneered innovative polymer technology that has revolutionised oil and gas construction, fabrication and maintenance procedures.

Collaborating in cybersecurity

YOKOGAWA ELECTRIC CORPORATION has announced a collaboration with Cisco Systems Inc. to deliver Shell's SecurePlant initiative at Shell. SecurePlant is a comprehensive security management solution for plant control systems that was jointly developed as an initiative between Cisco, Yokogawa, and Shell. The three companies have agreed to proceed over the next three years with the implementation of SecurePlant at around fifty Shell plants globally.

Yokogawa and Cisco collaborated on the design of the SecurePlant service and will jointly provide deployment and operational services.

The SecurePlant solution consists of the delivery of OS patches and anti-virus pattern files for control systems and the provision of real time and proactive monitoring of solution delivery, as well as a 24-hour help desk operation.

Supplier-certified Windows security patches and virus signature files are distributed from a SecureCenter to the SecureSite at each plant via Shell's existing global network. The real time and proactive monitoring capabilities enable the centralised management of plant security.

2H Offshore joins DNV GL JIP on thermoplastic composite pipe design guideline

2H OFFSHORE, AN Acteon company, has developed a new design guideline for thermoplastic composite pipes (TCP) to advance the understanding and use of composite materials in the offshore oil and gas industry. The Joint Industry Project (JIP) by DNV GL began in October 2014 and will take a year to complete.

The proposed JIP will develop guidelines applicable to laying of rigid and flexible pipelines, umbilicals and cables. The work will build on an established Statoil guideline for rigid pipe, explore improved acceptance criteria for rigid pipes, and establish a similar guideline for flexible pipes, umbilicals and subsea power cables.

Tim Eyles, managing director, 2H Offshore, said, "Our involvement in this JIP underlines our commitment to supporting the use of composite materials within the offshore industry. Composite pipes have many advantages.Their good fatigue performance and reduced cross-sectional weight may help to overcome technical challenges in the industry, especially in deeper water and harsh environments. 2H has experience in using composite materials in risers and is committed to using emerging technologies to find the best technical solutions to meet the needs of our clients."

2H Offshore is a global engineering contractor specialising in the design, structural analysis and integrity management of riser and conductor systems used in the drilling and production of offshore oil and gas reserves.

IWCF launches new enhanced standard in drilling and well intervention training

THE INTERNATIONAL WELL Control Forum (IWCF) has launched a new training standard in drilling and well intervention.

IWCF is the independent organisation that sets global training standards for well control.

The move is in direct response to the oil and gas producers (OGP) guidelines following the Macondo and Montara incidents and aims to drive up competency standards and improve safety for those working with wells. Thousands of contractors and workers have to pass exams in drilling and well intervention every two years to enable them to work at offshore and onshore well sites.

The Enhanced Standard is available to candidates who have achieved at least an 80 per cent marks in previous exams and have demonstrated significant experience of undertaking well control training in their past. The content is primarily based on real industry well control incidents involving simulated exercise, team work and peer-to-peer review and feedback.

It focuses on enhancing technical knowledge using case studies in a team-based environment. Candidates are assessed in a similar manner as on a standard course and can be expected to achieve higher results.

David Price, CEO of IWCF, noted that the training would encourage employees to strive for the best

David Price, CEO of IWCF, said, "Introducing the enhanced training will encourage candidates to strive to be the best and will challenge them in new ways in a replicated well site environment. After a successful pilot scheme, we are now looking for operators and training providers to sign up as ultimately it will help create a safer environment at offshore and onshore well sites. We are making strides to create a step change in well control competency to help the industry avoid another significant well-related tragedy, but we need operators and contracting companies to get behind these changes."

Founded by OGP in 1992, IWCF administers well control training, assessment and certification programmes. Since then, IWCF has certified over 160,000 people worldwide through more than 220 accredited training centres.

IWCF added that it is investing in new facilities at its headquarters in Montrose, the UK, to improve training for well control assessors and instructors who address drilling operations and well intervention activities.

The organisation is also introducing new levels to well control training including a new Level 1 introductory online course, which will be available free of cost.

To help enhance users' online experience, IWCF re-launched its website recently, which includes a fresh design, easier navigation, better functionality and will also be fully responsive to mobile devices so it can be viewed on the move.

Alderley FZE to supply equipment for refinery project in Saudi Arabia

UK-BASED OIL and gas engineering company Alderley FZE has secured a contract to supply nine oil metering systems for the Jazan Refinery Package 14, Marine Terminal Project in Saudi Arabia. According to Alderley FZE, the contract was awarded by South Korea's Hanwha Engineering and Construction and the oil metering systems are expected to be delivered by September 2015.

Adrian Phillips, MD of Alderley FZE, said, "We are pleased to be able to support the Saudi industrial infrastructure by providing vital equipment for the measurement of hydrocarbons."

The systems will be engineered, designed and manufactured at Alderley FZE's Dubai facilities with support from its local Saudi Arabian facility in Dammam, and the metering systems will utilise turbine metering technology to measure a specific liquid - HS diesel, vacuum gas oil, naphtha, MethylTert-Butyl Ether (MTBE), fuel oil, gasoline, ultra low sulphur diesel, benzene and paraxylene. Alderley FZE revealed that Jazan Refinery and Marine Terminal Project will support the future development of Jazan Economic City. The additional refined products from the new facility are expected to satisfy the growth in domestic demand within the country.

GENAVCO introduces German technology to UAE market

WEBER MT, WHICH manufactures state of the art, premium quality compaction equipment, has appointed GENAVCO their exclusive distributor for the UAE. The product range includes walk behind rollers, plate compactors, vibratory tampers, pavement saws and concrete compaction equipment.

An example of the Weber MT product range

GENAVCO, the leading road construction equipment supplier in the UAE, teamed up with Weber MT to complement its product range and fill the gap in light compaction equipment. "We put quality, service and the satisfaction of our customers as our top priority. Our partnership with Weber MT puts us in a position where we can offer to our customers a reliable product packed with innovation that will allow them to get the job done faster with high productivity," said Isam Abu Nabah, president of GENAVCO.

A good example of Weber MT's innovations is COMPATROL®, the first compaction control system for reversible soil compactors. The system developed by Weber MT provides uniform compaction of the soil and cuts the number of unnecessary, redundant compacting passes by up to 25 per cent. "This boost in efficiency helps construction companies to save time and money," explains Asif Sayeed Khan, general manager, GENAVCO's Equipment Business Unit. "Another aspect that won us over is the two-year warranty that Weber MT grants on COMPATROL® and on all other products in their range. The UAE market size for light compaction equipment is significant. With our loyal customer base in the road construction industry and construction industry in general, we are quite optimistic that we will secure a decent market share with the top quality Weber MT products," Khan continues.

Layher looks to develop Middle East business

GERMANY-BASED SCAFFOLDING and protective systems manufacturer Layher is looking to expand its operations in the Middle East region.

Serving the oil, gas and petrochemical industries and with more than 70 years of experience under its belt, Layher has been growing and developing both in terms of its product portfolio and facilities.

SpeedyScaf, the first frame scaffolding, is one example of the products the company offers as well as its bolt-free wedge-head connection technology, Allround Scaffolding.

Furthermore, the generation of system scaffolding called Allround Lightweight, launched in 2013, is said to consist of components that are considerably lighter yet stronger than standard components, and an innovative AutoLock function for wedge-head connection.

According to Layher, its products are setting high standards for faster while safer assembly, higher transport capacity, and structural strength advantages. It puts much of its high standard and quality down to its Germany-based production.

A Layher representative said, "Concentrating management, development, production and logistics at the Gueglingen-Eibensbach location ensures advantages that benefit customers all over the world: short distances, short reaction times and continuously checked quality and production."

Layher's Allround Scaffolding system for the oil, gas and petrochemical industries

In addition to its 250,000 sq m headquarters in Gueglingen-Eibensbach, southern Germany, where approximately 21,000 km of steel tubing are processed each year, in May 2014 Layher opened its Customer Centre of Wilhelm Layher. As well as seminar rooms and an exhibition hall, it also has a training hall.

With more than 1,500 employees, Layher has sales subsidiaries in more than 30 countries across the globe.

Intertek's cube-shaped sunshade lowers costs of field protection

INTERTEC HAS LAUNCHED a cube-shaped sunshade for process instrumentation that provides a cost-effective means of shielding equipment such as electronic monitoring systems, explosion-proof junction boxes or analyser installations from solar radiation. Dubbed CubeShade, the protective cover provides a massive 165-litre capacity shaded environment that protects large or multiple instruments, as well as simplifying maintenance access.

The CubeShade is claimed to be the largest SMC instrument sunshade on the market

The CubeShade is constructed entirely from glass fibre reinforced sheet moulding compound (SMC). This combines chopped glass fibres, fillers, polyester resin and a catalyst in the form of a ready-to-mould composite that is ideal for low cost, high volume manufacturing. The material has similar advantages to glass reinforced polyester (GRP) for this type of application, including a high resistance to UV and corrosion from salt and common petrochemicals, and a low thermal conductivity, which helps to prevent heat generated by solar radiation being transferred to the shaded area.

The new sunshade design is manufactured using an automated moulding process and offers a particularly economic solution for this common application. Most process instrument sunshades on the market are relatively small and are often targeted at single instruments or small-scale field equipment installations. If Intertec needs to provide solar protection for larger installations – such as two or three process transmitters – sunshades are usually created to suit the specific application by building up multiple layers of GRP in a custom mould to achieve the necessary thickness. This manually-intensive process can increase costs significantly. And if the number of sunshades required runs into hundreds – which is common for greenfield projects – the extra costs can be high.

CubeShade's single-part design and SMC-based construction facilitate production using automated moulding techniques. As standard, the body of the sunshade is five mm thick but incorporates eight mm thick reinforcing ribs around the rim and down the back of the unit. These ribs also help to channel rain and melt-water run-off. Intertec's design incorporates structural side walls that also shade low-angle sun, as well as providing partial protection against rain, snow, wind-chill, blown dust or sand and accidental impact.

The CubeShade is the largest SMC instrument sunshade on the market, says the company. The design is also suitable for use with equipment such as explosion-proof junction boxes or distribution units.

OMS's new SmartFit™ software optimises multiple sections of pipe

OIL AND GAS pipe measurement specialist Optical Metrology Services (OMS) has released a new version of its award-winning SmartFit™ pipe fit-up optimisation software.

In addition to the sequencing of single pipe ends, the new software is now capable of sequencing multiple pre-welded sections of pipe, i.e. doubles, triples and quads, while also providing improved visualisation of pipe fit-up and new, automated reporting features.

David Briscoe, senior software engineer at OMS, said, "The SmartFit™ software is now able to simulate, sequence and optimise batches of double, triple or quad pipe ends to suit individual customer requirements. For the contractor, this enables pipe ends to be part-welded into multiple sections onshore, which in turn means less time is spent welding individual pipe ends onboard the pipelaying vessel. This can significantly reduce vessel hiring costs and project risk."

In parallel, OMS has developed laser measuring equipment and methodologies with supporting software, for optimising pipe fit-up. The service reduces costs for customers through faster pipe laying and improves quality by eliminating mismatched pipe ends.

Each pipe end is measured, identified and entered into the SmartFit™ software, allowing the operator to mark the best rotational position on each pipe end. In the bead stall, these marks are aligned to immediately achieve the best rotational position so that misalignment is minimised and the project HiLo is easily achieved.

For a HiLo of around one mm to 1.2 mm, problems are likely to occur every 10 to 20 pipes for flowline/seamless pipe. However, for fatigue-sensitive pipes like in buckle zones, OMS can achieve a HiLo of 0.05. Using SmartFit™ enables the required HiLo to be achieved in the bead stall without trial and error.

Synectics launches high definition camera stations

SYNECTICS HAS LAUNCHED HD IP COEX C3000 camera stations with high definition image capture, and on-board compression technology which removes the need for separate encoder units.

Certified to ATEX, and IECEx international standards, the enhanced capabilities and rugged design make the C3000 ideal for protecting oil and gas, marine and CNI applications such as processing plants, production platforms, FPSOs, pipelines, power networks, and LNG carriers.

The enhanced capabilities and rugged design make the C3000 ideal for protecting oil and gas projects

Specifically engineered for hazardous areas and extreme environments, including the high temperatures of the Middle East, the enhanced C3000 camera station can stream high quality 1080p video signals in temperatures up to +70°C and as low as -55°C.

With in-built H.264 AVC high profile (MPEG4 part 10) compression technology, the C3000 HD IP delivers a native IP output directly from the station. The camera stations can be configured and maintained through the Synectics web interface, ideal for remote access to stations spread across disparate and often vast locations.

Darren Alder, Synectics engineering director, said, "Our camera stations and surveillance monitoring and control solutions have been protecting international high profile projects for over 25 years. This reflects our commitment to continuous product development and to delivering surveillance solutions that meet rapidly changing needs."

The corrosion resistant, enhanced COEX C3000 HD IP camera stations are available as a standard model (C3000-S), variable speed (C3000-V), continuous rotation (C3000-C) and fixed (C3000-F) model, for hazardous areas.

World Future Energy Summit (WFES)
Date: 19-22 January 2015
Venue: Abu Dhabi National Exhibitions Centre

Placing the future of energy under the spotlight

A HOST OF NEW technologies and energy solutions were on display during the eighth edition of the World Future Energy Summit (WFES), which took place alongside the co-located EcoWASTE and International Water Summit (IWS), in Abu Dhabi in January.

The global platform highlighted innovative technologies within the global energy arena and placed a strong focus on knowledge sharing throughout the exhibition and supporting conferences.

Hosted by Abu Dhabi's renewable energy company Masdar, the eighth edition of WFES, which took place over four days at Abu Dhabi National Exhibitions Centre (ADNEC), forms a major part of the now annual Abu Dhabi Sustainability Week (ADSW), which incorporates a number of energy, water and waste-focussed exhibitions, conferences and activities.

Among the major announcements made during this year's WFES were GE's decision to join the Sustainable Bioenergy Research Consortium (SBRC), Abengoa and AWT signing up to develop the world's first solar-powered desalination plant in Saudi Arabia, and a number of large deals and announcements from Masdar.

Egypt's President Abdel Fattah Al-Sisi was also in attendance on the first day marking his first official visit to the UAE, while the competitors racing in the inaugural Abu Dhabi Solar Challenge stopped by the event to show off their vehicles before finishing their three-day journey.

In regards to GE's decision to join the SBRC, Rania Rostom, chief innovation officer of GE, said, "One of the central pillars of our long-term commitment to the UAE and the region is our focus on promoting and collaborating on localised innovation and co-creation of advanced solutions to support sustainable development.

More than 32,000 visitors were expected to be in attendance during ADSW 2015

"Through our partnership with Mubadala, we opened our ecomagination Center last year in Masdar City to drive local research in energy. We now look forward to supporting the SBRC, and helping to launch the world's first bioenergy pilot project to use desert land – irrigated by seawater – to sustainably produce both bioenergy and food."

Founded by the Masdar Institute of Science and Technology (MI), together with Etihad Airways, the Boeing Company and Honeywell UOP, the SBRC aims to advance the commitment made by the aviation industry towards sustainable business practices by developing technology to produce a clean, alternative fuel supply.

Vision and ideas

The role of women in the sustainability field was also highlighted during the Women in Sustainability, Environment and Renewable Energy (WISER) forum, which underscored the growth in contributions to climate change solutions and green growth from women and highlighted the range of opportunities now available to female graduates and young professionals within the sector.

"The support of women leaders, who advocate sustainability, is a priority for the UAE and Expo 2020 Dubai. The WISER forum is a platform to discuss where and how women's empowerment can work to address viable sustainability initiatives," said H.E. Reem Al Hashimy, UAE Minister of State, Director General, Bureau Dubai Expo 2020 and board representative of the Dubai Expo 2020 Higher Committee, during her keynote address at the forum.

The Environment Agency – Abu Dhabi (EAD) announced during ADSW that it would introduce smart monitoring for more than 228,000 hectares of forestry it manages, while the completion of the International Renewable Energy Agency's (IRENA) global headquarters building in Masdar City, the first 4 Pearl-rated office building by the Urban Planning Council's Estidama Programme for sustainability, was also announced during WFES.

The Abu Dhabi Quality and Conformity Council (QCC) used its platform at the exhibition to announce a number of certification schemes that focus on energy efficiency and water conservation of the built environment.

Working in collaboration with the Building Code of Department of Municipal Affairs (DMA) and the Estidama Program of Abu Dhabi Urban Planning Council (UPC) to develop the schemes, the QCC plans include regulations on reflective paints and coatings, low volatile organic compounds (VOC), furniture, solar water heaters, glass, insulation and unitary air conditioners.

Total also had a big presence at the show, during which it reiterated its commitment towards reducing its carbon footprint and investing in renewable energy.

"When it comes to our environmental footprint, our operation main focus is to decrease greenhouse gas emissions, firstly by reducing flaring," said Stéphane Michel, Total's E&P president for the MENA region.

"We have achieved our objective of halving flaring emissions from 2007-2014 and are currently looking to fix the next objective. The second aspect is to work on energy efficiency in our plants, which makes sense both for environmental and economic reasons," Michel added.

The company highlighted its strategy to improve the efficiency of its products through the development of additives for gasoline and diesel to improve fuel.

Summarising the purpose of both WFES and ADSW, Masdar CEO Dr. Ahmad Belhoul told delegates at the summit's opening ceremony, "This region's appetite for renewable energy has quickly taken shape, with Abu Dhabi taking the first steps almost a decade ago. As our neighbours join us in the race to adopt renewable energy, Masdar's regional and global experience will reinforce efforts to address energy security through the deployment of renewable power."

The week's big winners

Former US Vice-President Al Gore received the 2015 Lifetime Achievement Award at the Zayed Future Energy Prize, one of the leading highlights of ADSW.

Gore, who received the award from His Highness General Sheikh Mohammad Bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the UAE Armed Forces, remarked, "I am grateful to receive this renowned award. Through the work of the Climate Reality Project, the organisation I founded in 2006, we have helped to change the cultural conversation about the climate crisis and, in doing so, created a new generation of determined activists who are working tirelessly for positive change.

Total were among a number of big players within the oil and gas industry to exhibit its services and products at this year's WFES

"Though we have made great progress, there is much work yet to be done."

Liter of Light, a project in partnership with PepsiCo that brings cost-effective solar lighting solutions to communities in need while recycling plastic bottles, was another big winner at the awards ceremony, winning in the Non-Profit Organization category, while other winners included Panasonic Corporation in the Large Corporation category and M-KOPA Solar in the SME category.

Exhibitor satisfaction

On the exhibition floor, exhibitors ranging from technology providers to service and maintenance firms from across the globe were on hand to demonstrate what they could offer to the region's energy sector.

Among them was Jinko Solar, whose director sales – emerging markets and Italy Alberto Cuter, said, "It's been quite a successful show for us. It's the second time we've been to this exhibition and the quality of our meetings has been even better than last year.

"We've been presenting a new model designed for this area, which we expect to sell in large quantities here in the Middle East. The most promising market in the short term for the solar market is Jordan, while in Egypt there are some interesting projects coming up. Also, there are projects coming up in Dubai from DEWA that we hope to be involved with."

Endress+Hauser sales director David Hewitt remarked, "From the event we have had a variety of people from different sectors visit our stand, including quite a few from the oil and gas industry.

"There's a lot of technical people trying to get updated with the latest information and there's been a lot of people who will have needs in the future. If you are focussing on renewables, this is an ideal forum."

The company was focussing on its products suitable for the water and power sector, including products focussed on water flow quality and measurement such as electronic flow meters.

"From an innovative perspective, the show is definitely up there. There are a lot of local people and young engineers who are trying to update their knowledge," he added. "If you look at it from a long-term perspective, we will always get benefits from attending this show, because young engineers are tomorrow's leaders."

WFES, along with the co-located IWS and EcoWASTE, will return to ADNEC for its ninth edition next year from 18-21 January 2016, while entries for the 2016 edition of the Zayed Future Energy Prize have already opened and can be submitted at *www.zayedfutureenergyprize.com*. ■

Views from the frontline

Everyone is talking about the fall in global oil prices. But what does it really mean for producers, operators and the service companies that support them? Industry practitioners give their views.

Participants:
Neil Poxon – CEO, ProSep
Mahesh Konduru – CFO, ProSep
Kristian Lier – Investment Director, Energy Ventures
Graeme Lewis – Group Commercial Director, Air Energi

What is your assessment of the current oil price and its impact on the energy industry?

Kristian Lier: I think we could be in for a bit of a bumpy ride for a while. The industry has to adapt to a new situation and become more efficient – not just in terms of production or squeezing suppliers, but in the way they run their organisation. One of my biggest concerns is access to capital. Oil majors should have a strong balance sheet after a lengthy good run, and as listed companies they will always find ways of attracting capital. Smaller companies don't have the same resources. It's a perfect climate for M&A so I expect to see consolidations in the next few years.

Neil Poxon: Interestingly, the share price for some oil majors is not far off their all-time high. And activity in key areas shows no sign of slowing down – so it's definitely not all doom and gloom. In recent months, both the Tubular Bells and Jack/St. Malo projects in the Mexican Gulf have started production – even while the oil price was falling. The oil majors have invested over decades and, of course, many have huge downstream operations that benefit from a lower oil price which helps balance things out. It's the smaller independents, particularly onshore, who may struggle.

> "The Middle East is proving to be better at buying innovative products than the rest of the world"

Mahesh Konduru: A lot of the oil and gas players are using this as an opportunity to become more efficient. One way they're doing that is

Neil Poxon

> "It's definitely not all gloom and doom"

Mahesh Konduru

> "A lot of the oil and gas players are using this as an opportunity to become more efficient"

reducing their cost base in the expectation that the oil price will remain low for some time. Any investment will focus far more on operations than long-term capital projects.

Graeme Lewis: It is a constantly moving situation. We're starting to see rates for contractors and permanent hires being cut. But when the cycle begins again, then the same problems will be there – notably an ageing workforce. If this hiatus in activity goes on for much longer than six months, then people will leave the industry for good. There will be a greater skills shortage and the price of labour will go up.

How do you think the Middle East will be affected?

NP: Given their vast resources, Middle East countries are best placed to emerge from this relatively unscathed. It is primarily Russia and some of the mature basin producers that are going to suffer.

MK: Producers with a higher break-even price are going to be much more affected. That means not just Russia, but places like Venezuela and Nigeria whose economies depend on a high oil price.

KL: I think it depends in part on how long this will last. We're seeing the impact in the US and the North Sea already, while the Middle East is less affected. But if prices remain at their current level then all markets will follow suit.

How important is the Middle East to your operations?

NP: On a personal level, I was very keen to invest in the Middle East. I lived there for 12 years and I know the environment well. It's a huge market irrespective of the oil price. With its commitment to continued production, it presents a significant opportunity for our technology, so it's key to our strategy.

MK: We expect the Middle East will account for a substantial portion of our revenue. It's a growth business, which is exciting. Although we predict modest returns this year – around 10 per cent of our revenue – we plan to get that two or three times higher in the next few years. The projects we are chasing have not been affected and our pipeline for this year is still in play. But we have to remain agile and able to adjust to whatever market conditions bring.

> "I think many in the industry should view the situation in a positive light"

KL: There's no doubt that the Middle East is a very important piece of what we're trying to accomplish. The willingness to blow through this and keep activity high means exposure to the Middle East is no bad thing.

GL: It is a vital part of our business mix. We've got a sizeable operation based in Doha with offices in the UAE, Iraq and in Bahrain. It counts for about 20 to 23 per cent of our revenues. The oil price hasn't affected our business in the region to the same extent as other parts of the world.

MK: Interestingly, the Middle East is proving to be better at buying innovative products than the rest of the world. Our solutions are being very well received by operators on the ground. They see that working with us will make their lives easier and deliver substantial opex savings.

GL: We have a similar view. There is an opportunity for us to bring

Kristian Lier

> "The Middle East is less affected"

innovation to staffing and people management, where the Middle East has tended to lag behind other countries. There's clearly a desire to be more efficient, there's greater transparency about how costs are calculated and the levels of service that are delivered. It's very positive.

Where else do you see the oil price having an impact?

MK: This is not really a regional issue. We're back to the idea that long-term thinkers with a low cost base are least affected – and that cost base is dependent on the source of oil, whether it's onshore, shallow or deep water, and the technology used.

NP: Exactly. Areas of deep water are likely to face minimal impact because they are huge investments costed over decades. That means operators in West Africa and the Gulf of Mexico are better placed than those in mature fields in the North Sea and onshore in the USA – although it's worth noting that a North Sea operating licence comes with obligations to maintain production. I think the pain will be greater for onshore operators. But there are so many different variables to consider. For example, production rates for new rigs in the USA's Permian basin have surged by more than 50 per cent in the past year. In Canada, operators are still planning to increase shale and tar sand production and capex through 2015 because they've factored in a lower price for heavy oil for years. So it's by no means clear cut.

In terms of the project life cycle, where do you think the biggest impact will be?

KL: Pretty much everywhere within production enhancement. Seismic will be affected, especially in the USA. Exploration will be affected. And probably decommissioning.

MK: I think E&P will be the first domino to fall – we're already seeing the signs. Then we'll see cut-backs cascading down through the midstream to oil services. Organisations will start to shelve projects early and then bring them back online when they become cost effective again.

NP: My experience in the North Sea tells me that decommissioning always suffers in environments like this – it's an expense that can be

put off. Generally, it's capital projects with budgets that are yet to be allocated that are the ones at risk. But major operators tell us that they are postponing not cancelling.

What solutions do you think are going to come to the fore as a result of the current market situation?
KL: The industry is not known for jumping on new products and solutions. It's also tempting to say that innovation is linked to access to capital – if the capital dries up there's going to be less money spent on innovation and research. But the flipside is that companies have to enhance production and bring cheaper, more streamlined products to market. That's probably going to happen quite a bit.

NP: Low oil-price environments always see a surge in innovation and technology, usually to solve here-and-now issues that have lower priority when prices are higher. Companies recognise that this is what can get them out of the slump. I think we'll see interesting solutions particularly in the drilling and production areas to increase efficiencies in top-side production.

KL: Solutions that swing capex to opex will be winners. Or those that can perform a key task better and cheaper – but only if they do not require a big capital commitment. They have to be solutions that can be phased seamlessly into current operations and give the customers cost savings from day one.

GL: in terms of people, it's going to be about finding cost-reduction solutions that aren't necessarily about rate reductions but improved efficiencies. I see technology being deployed that will dramatically improve the way people are managed – and actually bring the oil and gas industry in line with other comparable sectors.

Are there any specific areas where you expect more innovation?
MK: Really smart companies are born out of a crisis – that's true of oil and gas in particular. Taking care of produced water problems or clean-up for natural gas, for example, can make older wells viable again. So I think we'll see solutions that enable operators to really maximise revenue from existing infrastructure coming to the fore.

KL: I think we're going to see innovation in business models too. More functions will be outsourced. There could be a way of extending that idea to equipment, with operators being able to rent equipment or deploy it as a service with an associated fee. That could be a win-win for everyone.

What positives do you think can be garnered from the current situation?
NP: I think many in the industry should view the situation in a positive light. There are opportunities to create streamlined businesses, develop leaner and more efficient operations, reduce waste, and develop a more responsive service industry. That's got to be good for the industry as a whole.

KL: What we're seeing now is a natural consequence of a good run for the industry. There's been a rapid escalation in oil price over the past 10-15 years which has been tracked by an equally rapid cost escalation. That led to inefficiencies and it is almost inevitable that many of those inefficiencies will be eliminated. Arguably we'll see more better-run businesses in the longer term.

GL: The industry's cost structure had got out of control. Now we're seeing more measured costs which will help deliver more long-term, financially viable projects. That should create better career opportunities with more choice, more training and more development. There's actually been a more measured approach to retaining staff and skills this time round, which is encouraging.

What can companies do to mitigate their risk?
MK: Betting on a high oil price is never prudent! Organisations that have run their financial models based on more moderate numbers and have structured their capital accordingly will survive. Being efficient and conserving cash is the best way to mitigate risk.

KL: Suppliers probably have to spend more time with their customers to get a more in-depth understanding of what their needs are - it will take harder work and more patience to get a final purchase decision. More agile business models are also going to be important – for example hosted services, flexible contracts, or some degree of outsourcing. That's probably how to protect revenues in the future.

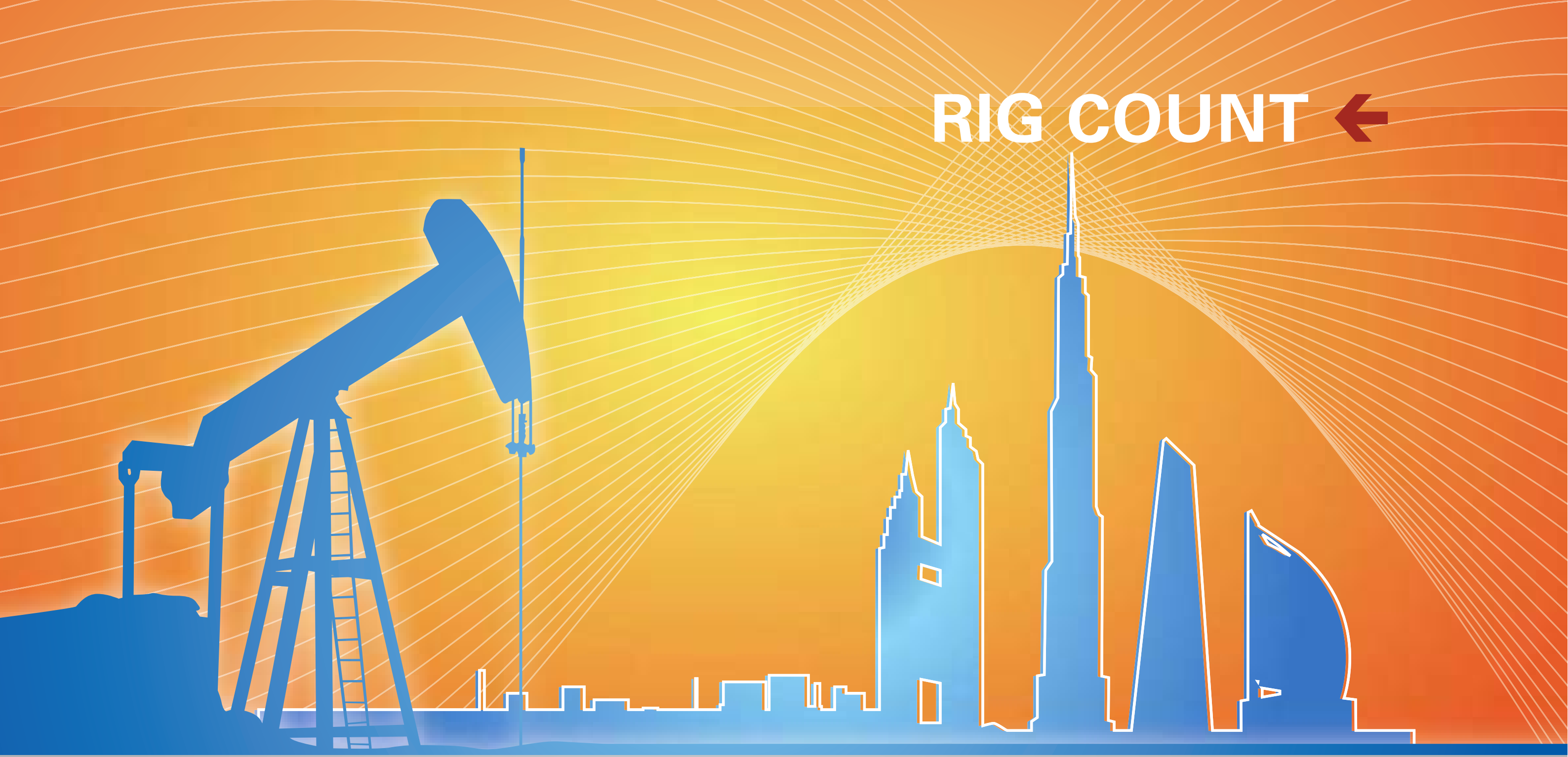
GL: One: hold on to good staff! There are many ways of ensuring that key personnel have a long-term interest in a project or the organisation, and businesses should focus on retaining skills and experience within their operations. Two: use technology to drive greater efficiencies in staffing and look at other industries who have led the way. Three: when outsourcing, avoid box-ticking exercises and a 'lower price wins' mentality, which only stores up problems for the future.

How can the industry protect itself from price shocks in the future?
KL: As a private equity guy I would say diversify! Have high gross margins on products, try to be lean on the cost side, make sure you're well capitalised. That comes with innovative products, innovative services, exemplary execution, and close relationships with the customer.

MK: It's always good to be planning your annual and two-, three- or five-year budgets around a modest oil price and a modest cost base.

NP: I agree. There are plenty of indications that the oil majors have taken that on board and budget long-term investments around the 40 to 60 dollar barrel range.

MK: It's easy to say from where I sit, but I would say modest aggressiveness is always better than being super aggressive. ■



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	21	9	30	0	23	7	30	19	8	27
DUBAI	0	2	2	1	0	1	1	0	0	0
IRAQ	94	0	94	5	89	0	89	80	0	80
JORDAN	0	0	0	0	0	0	0	0	0	0
KUWAIT	34	0	34	0	34	0	34	30	0	30
OMAN	59	0	59	1	58	0	58	45	1	46
PAKISTAN	20	0	20	-3	23	0	23	21	0	21
QATAR	2	5	7	1	2	4	6	2	7	9
SAUDI ARABIA	89	19	108	10	78	20	98	64	19	83
SUDAN	0	0	0	0	0	0	0	0	0	0
SYRIA	0	0	0	0	0	0	0	0	0	0
YEMEN	4	0	4	0	4	0	4	4	0	4
TOTAL	232	35	358	15	311	32	343	265	35	300
North Africa										
ALGERIA	47	0	47	-2	49	0	49	46	0	46
EGYPT	45	11	56	-9	45	10	65	47	11	58
LIBYA	11	1	11	3	8	0	8	15	0	15
TUNISIA	0	0	0	0	0	0	0	3	1	4
TOTAL	103	12	114	-8	102	10	122	111	12	123

Source: Baker Hughes

Project Databank

Compiled by Data Media Systems

OIL, GAS AND PETROCHEMICALS PROJECTS - BAHRAIN

Project	Facility	Budget ($ US	City	Status
Abahusain Fiberglass - Fiberglass Plant	Fiberglass	200,000,000	Hidd Industrial Area	EPC ITB
Alba - Aluminium Potline 6 Expansion	Aluminium Potline	2,500,000,000	Alba Industrial Area	Feasibility Study
Banagas - Central Gas plant	Gas Treatment Plant	120,000,000	Sitra	EPC ITB
Bapco - A-B Pipeline	Oil	350,000,000	Abqaiq - Sitra	EPC ITB
BAPCO - Bapco Modernization Program (BMP)	Refinery	6,000,000,000	Sitra	FEED
Bapco -No.3 Sulphur Recovery Unit Modification	Sulphur Recovery	18,000,000	Sitra	Construction
GPIC - Ammonia Plant Expansion	Ammonia	600,000,000	Sitra	Feasibility Study
GPIC - Urea Plant Expansion	Urea	900,000,000	Sitra	Feasibility Study
Gulf Biotech - Insulin Factory		93,000,000	Juffair	EPC ITB
Manara Development - Investment Gateway - Bahrain - Phase 1	Service Centres	130,000,000	Hidd	EPC ITB
Ministry of Finance - Waste-to-Energy Plant	Waste Recycling	500,000,000	Askar	EPC ITB
NOGA - Liquefied Natural Gas Import Terminal	Liquefied Natural Gas (LNG)	300,000,000	Sitra	EPC ITB
NOGA - Onshore Deep Gas Exploration	Gas Exploration	200,000,000	Various	Engineering & Procurement

Project Focus

Compiled by Data Media Systems

Project Summary

Project Name	Bapco - A-B Pipeline	**Status**	EPC ITB
Name of Client	BAPCO - Bahrain Petroleum Company, Aramco	**Start Date**	Q2-2006
Budget ($ US)	350 mn	**End Date**	Q3-2017
Facility Type	Oil pipeline	**Location**	Abqaiq - Sitra

Project Background

Saudi Aramco plans to build a new oil pipeline, which will be operated by Bapco, from Saudi Arabia to Bahrain to replace the existing AB-1 oil pipeline, which provides Bapco's Sitra Refinery with feedstock crude oil. Bahrain currently imports about 250,000 barrels per day (bpd) of oil from Saudi Arabia. The new pipeline is expected to have a capacity of 350,000 bpd. The 115-kilometer, 24-30-inch diameter pipeline will run from the Abqaiq processing facility in Saudi Arabia to Quarriyah and then offshore to Al-Jazayir beach and finally to Sitra in Bahrain.

Project Status

20 Jan 2015	The ITB for the EPC contract has been issued.
14 Apr 2014	The FEED has been completed. Bapco and Aramco are currently finalising all issues relating to the contracting strategy and implementation phase of the project

Contractors

Contract Type	Pre-Qualified	Bidders	Awarded
PMC			• BAPCO - Bahrain Petroleum Company • SAUDI ARAMCO - Saudi Arabian Oil Company
FEED	• Dar Al Riyadh • JP Kenny • WorleyParsons	• Dar Al Riyadh • WorleyParsons	• WorleyParsons

Project Schedules

3Q-2002	Feasibility Study
1Q-2011	FEED
4Q-2014	EPC ITB
3Q-2015	Engineering & Procurement
3Q-2017	Completed

Project Scope

The project, called the New Arabian Pipeline Project, will have a design capacity of 350,000 barrels per day (bpd), with a provision to increase output to 450,000 bpd at a later stage.

The total length of pipeline is as follows:
- Saudi Arabian onshore, 40 kilometers
- Bahrain onshore, 31 kilometers
- Saudi Arabian offshore, 40 kilometers

Project Finance

The project is a joint venture between Saudi Aramco and Bapco.

Project Focus

Compiled by Data Media Systems

DMS / The DNA for Success

Project Summary

Project Name	Bapco Modernization Program (BMP)
Name of Client	BAPCO - Bahrain Petroleum Company
Budget ($ US)	6,000,000,000
Facility Type	Refinery
Status	FEED
Start Date	Q1-2009
End Date	Q2-2020
Location	Sitra

Project Background

Bahrain plans to add 100,000 barrels per day (bpd) of new refinery capacity to its Bapco plant beyond 2016. The Bapco refinery currently has a capacity of around 260,000 bpd. The refinery expansion plan is contingent on boosting the capacity of a pipeline that brings 220,000 bpd of crude to the plant from Saudi Arabia.

Project Status

18 Jan 2015	The project is at the FEED stage. The FEED study will be completed by late 2015. Bapco will make a final decision on the expansion project by early 2016.
28 Dec 2014	Bapco has received one single proposal for the Engineering design package for integrated crude and vacuum distillation unit CDU/VDU. The bidder is Technip Italy ($1.385 mn).

Contractors

Contract Type	Pre-Qualified	Bidders	Awarded
FEED	• Bechtel Corporation • KBR (Kellogg Brown & Root) • JGC Corp. • WorleyParsons • Chicago Bridge & Iron Company (CB&I) • Technip • Foster Wheeler • Engineers India Ltd.	• Bechtel Corporation • KBR (Kellogg Brown & Root) • JGC Corp. • WorleyParsons • Chicago Bridge & Iron Company (CB&I) • Technip • Foster Wheeler • Engineers India Ltd.	• Technip
Sub-Contractors			• Chevron Lummus Global

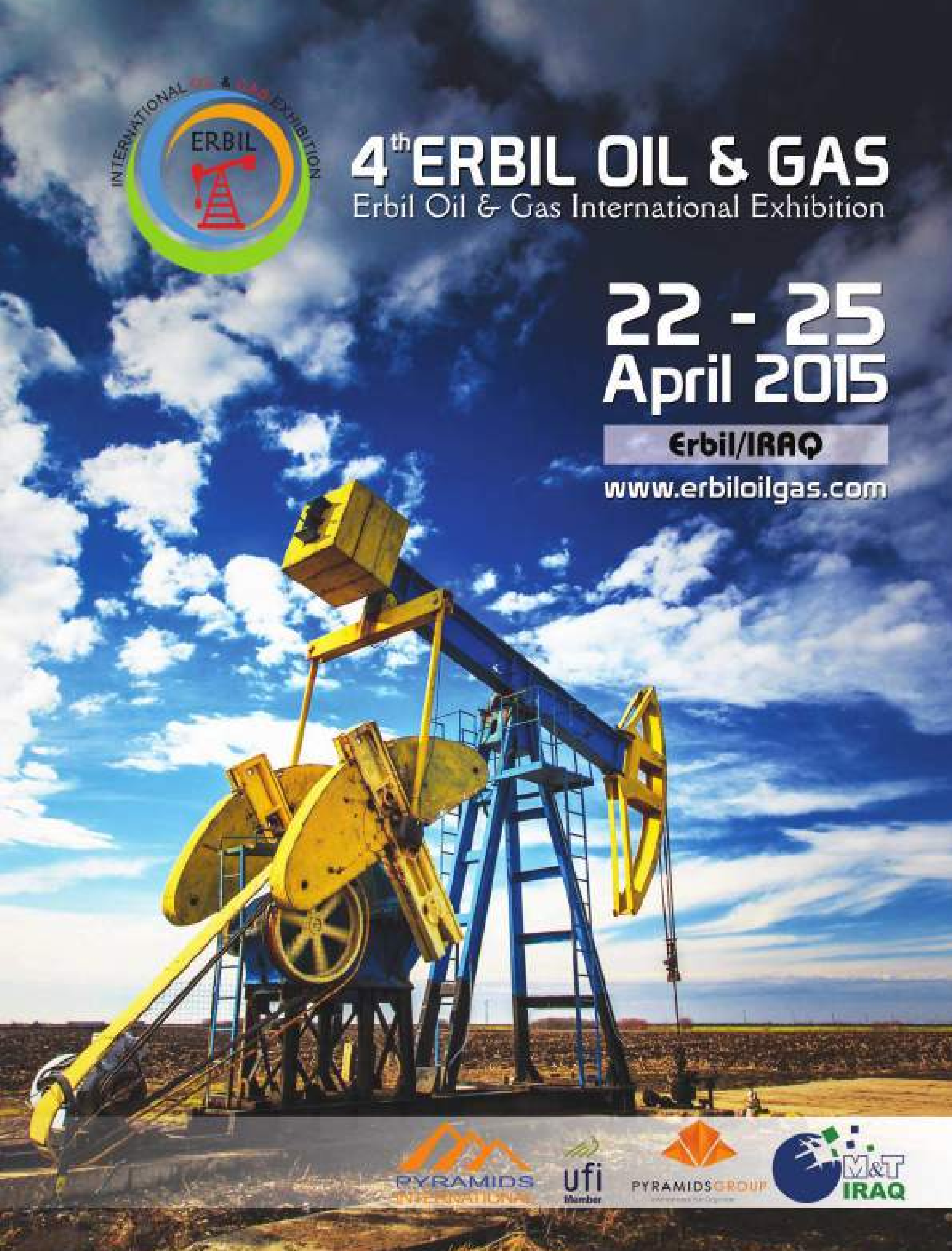
Project Schedules

1Q-2009	Feasibility Study	**2Q-2014**	EPC ITB
1Q-2013	FEED ITB	**2Q-2016**	Engineering & Procurement
3Q-2014	FEED	**2Q-2020**	Completed

Project Scope

Bahrain plans a US$6 bn expansion at its Sitra refinery, which would take capacity to between 500,000 and 600,000 barrels per day (bpd) up from around 267,000 bpd. The project calls for a revamp of the refinery's five crude distillation units by replacing some ageing units and having only one or two large units. Bapco would also like to build a unit to convert heavy fuel oil into lighter transport fuels. The scope of Technip's work involves converting bottom of the barrel components into higher-value products. Approximately 220,000 bpd of oil is currently provided by Saudi Aramco, while 40,000 bpd is coming from Bahrain's own reserves. The company will look to develop the residue conversion unit (RCU) first as it will process heavier crude types into lighter-grade products. A huge bulk of the additional capacity will be middle distillates or diesel fuel.
The scope of work includes:

- Hydrogenation unit
- Distillate hydrotreater
- Handling facilities
- Crude distillation units
- Sulphur recovery unit
- Offsites & utilities
- Splitter naptha hydrotreater
- Sour water stripper



ERBIL
4th ERBIL OIL & GAS
Erbil Oil & Gas International Exhibition
22 - 25
April 2015
Erbil/IRAQ
www.erbiloilgas.com
PYRAMIDS INTERNATIONAL
ufi
Member
PYRAMIDSGROUP
M&T IRAQ

بإجـراء الـدراسات وإسداء الـنصح وتقديم وجهات الـنـظـر للإدارة. كما يشارك مع الموظفين الشباب الآخرين في حركة التغييرات التي تتم في شركة أرامـكـو السعـوديـة. وفي تـعـلـيقه قال الرئيس التنفيذي لشركة أرامكو السعودية: «نحن الآن في دورة الانعقاد الثالثة للمجلس الاستشاري للقيادات الشابـة في أرامـكـو، وقد أصبح المجلس برنامجا مستقلا قائما بذاته يتمتع بقدرةٍ تنافسيةٍ عالية، واحترامٍ بالغٍ داخل الشركة في آن واحد».

وقد أدلى ليفريس بتعليق بشأن «صدارة»، وهي المنشأة الصناعية المتكاملة التي أقيمت كمشروع مشتـرك بـين شركة أرامكو السعودية وشركة داو لـلـكـيماويات باستثمارات تبلغ مليارات الدولارات. وأوضح لـيفريس أنه من المتوقع أن يكون مصنع صدارة الضخم للبتروكيماويات مركزا للتصنيع، إضافة إلى إجـراء البحوث والدراسات وتوفير فرص العمل. وقال: «سيتيح هذا المصنع، عند اكتماله في 2015، الـفـرصـة لأكـثـر من 4000 عـامـل وعـاملة، من السعـوديـيـن الـعـامـلـيـن في مـختلف المصانع والمنشآت الـتابعة لشركة داو حول العالم، للعودة إلى وطنهم».

ووفقا لطبعة 2013 من التقرير السنوي الذي يصدر بعنوان «حقائق وأرقام حول قطاع البتروكيماويات والـكـيماويات بمجلس التعاون الخليجي»، وصلت الـطاقـة الإنتاجية للقطاع في المنطقة إلى 140,5 مليون طن متري في عام 2013، بزيادة وصلت إلى 8,7 في المائـة، بـالمقارنة مع العام السابق 2012. وفي السياق ذاته فقد حققت إيرادات القطاع نموا بنسبة 7,3 في المائة عن عام 2012، حيث وصلت إلى 89,4 مـلـيـار دولار أمريكي خلال العام ذاته. وبشكل أكثر تحديدا، فوفقا لجبكا تشمل محفظة البتروكيماويات لقطر طاقة إنتاجية بحجم 19 مليون طن متري، وتحصل على إيرادات تصل إلى 11,5 مليار دولار أمريكي في شكل عوائد مالية ومنتجات مثل الأسمدة والمواد البلاستيكية والكيماويات النقية.

إعادة فحص مشروعات الصناعات التحويلية

قـام الدكتور محمد صالح عبد الله السادة، وزير الطاقة والصناعة بدولة قطر ورئيس مجلس إدارة شركة قطر للبترول، بافتتاح المنتدى السنوي التاسع لـلاتـحـاد الـخليجي للبتروكيماويات والكيماويات (جيبكا). وفي إطار الكلمة الافتتاحية للمنتدى، صرح السادة بأنـه مـن المرجـح أن تـخضع مشروعـات


تم تسليط الضوء في المنتدى على الأهمية الاستراتيجية لقطاع البتروكيماويات في مجلس التعاون الخليجي

الصنـاعات التحويلية، في منطقة الشرق الأوسط، لـعـمـلـية إعادة فحص في ضوء انخفاض أسعار النفط. وأعلن أن تراجع سعر برميل النفط له تأثيرٌ كـبـيـرٌ على الـتـوجـه الاسـتـراتـيـجي لصنـاعـة البتروكيماويات والكيماويات في المنطقة. وقال: «شهـدنـا جميعا، خلال الأسابيع القليلة الماضية، أسعـار النفط تصل إلى أدنى مستوياتها في أكثر من 4 سنوات، مما تسبب في مخاوف من أن أسعار الـكـيـماويات الحالية والمستقبلية يمكن أن تتأثر نـتـيـجـة لذلك». وأضاف السادة: «من المتوقع أن تـخضع الاقـتصادات، المعـتـمـدة على مشروعات الصنـاعات التحويلية، لعملية إعادة فحص وإعادة تـقييم، وبخاصة مع استمرار الأسعار في التراجع، ومع التنبؤات المستقبلية التي تتوقع فصلا جديدا في تـاريخ هذا القطاع». ومن بين العوامل المؤثرة الأخـرى الـتي أكـد عليها الوزير القطري، إنتاج غاز الصخر الزيتي في الولايات المتحدة، والضغط الذي يـمثله حاليا ومستقبليا على صناعة الكيماويات والبتروكيماويات في الشرق الأوسط، هذا بالإضافة إلى الانـعـكـاسات المحـتـملة لصناعة البلاستيك المتنامية في الصين. وفي كلمته الافتتاحية، تناول خـالـد الـفـالـح، الـرئيس التنفيذي لشركة أرامكو السعـوديـة، المسألـة الـخاصة بالولايات المتحدة بقوله: «سوف تتضاعف المنتجات الكيماوية لأمريكا الشمالية في العقد القادم، مما يمنحها القدرة على التواجد في أسواق كنا نرى أنها أسواقنا التقليدية». وأضاف الفالح: «كذلك بدأت صناعة البتروكيماويات الأوروبية في إغلاق المنشآت الصناعية الأقل كفاءة، مـع الـتـوجـه إلى دمج الأصول في شبـكات عبر إقـلـيمية، وتبديل الشركات لمحفظة منتجاتها». ومن الأمور المثيرة للاهتمام أن الفالح قد أوضح، في تـعـلـيـقه، أنه في حين تتجه الصين نحو فرص تحويل الفحم إلى كيماويات، فإنها تتعرض لعملية تـبـاطؤ اقـتصادي نسبيا، كما يزداد تأكيدها على مـراعـاة الاشـتـراطـات البيئية، مع سعيها الحثيث للتغلب على مسألة فائض الإنتاج في الوقت الراهن.

وفي النهاية أكد المتحدثون في المنتدى على أهـمـيـة الاسـتـثـمـار المستـمـر في صنـاعـة البتروكيماويات في منطقة الشرق الأوسط كوسيلة لمواصلة النمو الاقتصادي في المنطقة. وقال الوزير الـقـطـري: «إن الاسـتـثـمارات الخليجية في قطاع البتروكيماويات لها أهمية استراتيجية لأنها تساعد في تنمية الاقتصادات، وتلبية الطلب المتزايد على منتجات البتروكيماويات».

في الـوقت ذاته علـق ليفريس، رئيس مجلس الإدارة والـرئـيس والمدير الـتـنـفيذي لشركة داو للكيماويات بقوله «إننا نعلم أن هذه المنطقة لها قيمة محورية في العالم، كما أننا ـ جميعا ـ نعي ونفهم هذا الأمر جيدا. وهي أيضا منطقة محورية لـلاقـتـصاد العالمي ولضمان الأمن على المستوى الـجغرافي». وأضاف ليفريس: «تعد الطاقة واحدة مـن بين الحقائق القليلة المؤكدة في عالم اليوم، حـيث إنـها تمثل المكون الأساسي لتحقيق النمو والرخاء على المستوى العالمي».

من اليسار إلى اليمن: الدكتور محمد صالح عبد الله السادة، وزير الطاقة والصناعة بدولة قطر ورئيس مجلس إدارة شركة قطر للبترول ـ خالد الفالح، الرئيس التنفيذي لشركة أرامكو السعودية ـ أندرو ليفريس، رئيس مجلس الإدارة والرئيس والمدير التنفيذي لشركة داو للكيماويات.

إعادة تقييم الفرص المتاحة أمام صناعة البتروكيماويا كـ

شهـد المنـتدى السنوي التاسع للاتحاد الخليجي للبتروكيماويات والكيماويات (جيبكا)، الذي عقد في دبي، حضور آلاف المديرين التنفيذيين في قطاع الكيماويات من شتى أنحاء المعمورة، والذين التقوا للاستماع إلى قادة قطاع الصناعات الكيماوية وهم يناقشون الاتجاهات الراهنة للسوق الإقليمية، مع التركيز بشكل خاص على أهمية تطوير قدرات ومهارات الجيل الجديد من العاملين في هذا القطاع، والانعكاسات المترتبة على انخفاض أسعار النفط.

وحسبـمـا ذكـر كبار المديرين التنفيذيين في الـقطاع، ممن تحدثوا في هذا المنتدى الذي عقد في دبي خلال شهير نوفمبر/تشرين الثاني 2014، يـعد الاستثمار في شباب منطقة الشرق الأوسط أمـراً حـيـوياً لـتـطوير صناعة البتروكيماويات في المنطقة.

وقـد استمر المنتدى لمدة ثلاثة أيام، وحضره ما يزيد عن ألفين من المديرين التنفيذيين في مجال صنـاعـة الـكـيـمـاويات على المستويين العالمي والإقـلـيمي. وقد تضمن المنتدى السنوي للاتحاد كـلـمتين افتتاحيتين ألقاهما كل من خالد الفالح، الـرئيس التنفيذي لشركة أرامكو السعودية، وأندرو لـيـفـريس، رئيس مجلس الإدارة والرئيس والمدير التنفيذي لشركة داو للكيماويات.

تطوير وتنمية جيل الشباب

ركـزت الكلمتان على قيمة وأهمية تطوير جيل الشبـاب في المنطقة بطريقة سليمة وصحيحة. وألـقى خـالـد الـفـالح الضوء على ما يطلق عليه "الـفقاعة الشبابية" التي تشهدها المنطقة في السنـوات الأخيرة، حيث تشهد التركيبة السكانية في المـنـطقة ارتفاعا في نسبة شريحة الشباب. ووفـقـا لشركة أرامكو السعودية، فمع نهاية هذا الـعقد، سيصبح متوسط أعمار 60 في المائة من موظفي الشركة تقريبا 35 عاما أو أقل. وقال الفالح: (شباب اليوم يختلفون عن الأجيال السابقة. فهذا الجيل يمتلك أفراده ما يمكن أن أطلق عليه «التمرد الإيجابي» الذي يرتبط برؤيتهم الشاملة للعالم من حولهم. فطريقة تفكيرهم مختلفة عن جيل الآباء لأنهم لا يفكرون وفقا للأنماط التقليدية التي تقوم على المبـادئ الـروتـيـنـيـة، مثل الترتيب الهرمي والـتـدرج الـوظـيـفي، وإنما يفكرون كرواد أعمال مستقلين بدرجة أكبر). وأضاف الفالح: «لدى هؤلاء الشبـاب رغـبـة قـوية لخوض المخاطر، وعادة ما يحرزون نجاحاً كبيراً مع سيادة ثقافة الإيقاع السريع والحركة الدائبة للتغيير، وكثيرٌ منهم يراوده الشك والأمل في نفس الوقت بدرجة أكبر من أبناء جيلي عندما كنا في مثل عمرهم».

ويقوم التقدم التكنولوجي، والاتصال الفائق، بدور بـالـغ الأهـمـيـة في أسلـوب العمل الخاص بجيل الشبـاب. ووفقا لما ذكره الفالح، فإن شركة أرامكو السعـوديـة تتطلع لاستثمار هذه «الرؤية الشاملة المـخـتـلـفـة». وقال الفالح في تعليقه: «إننا نرى المساهمـات المحتملة لهؤلاء الشباب في شركتنا بمثابة الفرصة المستقبلية الأغلى والأثمن بالنسبة لنا. وهذا هو السبب في أننا نأخذ مأخذ الجد مسألة الـتـواصل مـع هذا الجيل الجديد وتوجيه طاقات أفـراده». وعلى نـفس المنوال ألقى ليفريس في كـلـمته الضوء على أهمية خلق وتطوير مسارات مهنية لهؤلاء الشباب، مع التركيز على موضوعات العلوم والتكنولوجيا والهندسة والرياضيات، وقال: «في كـل مـكـان حـول الـعالم تعد مسألة بطالة الشباب المحور الذي تقوم عليه مشكلات الحكومة. إن خـلـق هذه الـفـرص الـوظـيـفية الجديدة هو مسؤولـيـتنا نحن في الأساس، فهو التحدي الذي يواجه عصرنا الحاضر». وأضاف ليفريس: «يجب علينا أن نفعل كل ما في وسعنا للمساعدة في استخدام هذه المواهب الرائعة التي نملكها».

ومـن بـيـن الأمثلة على المبادرات ذات الصلة، والتي تقوم أرامكو بتنفيذها، المجلس الاستشاري لـلقيادات الشابة. ويتكون المجلس المذكور من 16 مـوظفا شابا، وتستمر مدة عمله 18 شهرا، ويقوم

تنبؤات بازدياد عمليات الاندماج والاستحواذ

تـنـبأت شركـة إيـه تي كـيرني، المتخصصة في الاستشارات الإداريـة العالمية، بأن قطاع النفط والغاز سوف يشهـد نـمواً كبيراً في عدد عمليات الاندماج والاستـحواذ في عام 2015، وذلك نـتيجة لانخفاض أسعـار النفط إلى ما دون 50 دولاراً أمريكياً للبرميل. ووفـقا لـلـتقرير، فقد شهد عام 2014 عودة قوية لـعمليات الاندماج والاستحواذ بعد حالة من التباطؤ اتسم بها العام الأسبق؛2013.

ومع هبوط أسعار النفط مؤخرا، وقرار منظمة الدول المصدرة لـلـنـفـط (الأوبك) بعدم خفض الإنتاج، من المتـوقـع أن يشهـد عام 2015 المزيـد من أنشطة الانـدمـاج والاستحواذ عبر سلاسل الأنشطة المولدة لـلـقـيـمـة. ومـن المتـوقـع أن تكون هذه الصفقات الاسـتـراتـيـجـيـة مـفـتـاحا لتنمية القيمة ومساعدة الشركـات على تجاوز اضطرابات السوق. في السياق ذاته، قال ريتشارد فورست، الشريك العالمي الرئيسي لممـارسات قطاع الطاقة لدى شركة إيه تي كيرني، الـذي شارك في تألـيـف الدراسة التي تحمل عنوان «الانـدمـاج والاستحواذ في قطاع النفط والغاز»: «إن الـنهج الاستراتيجي لعمليات الاندماج والاستحواذ له دور حـاسم في مـعـالـجة الضغوط العالية للتكاليف والتدفقات النقدية التي يتعرض لها جميع اللاعبين في قطاع النفط والغاز.

وقـد كشفت تـحـليلاتنا ومناقشاتنا مع المديرين التنفيذيين في القطاع أن هناك احتمالا لبداية موجة جديدة من عمليات الاندماج والاستحواذ عبر سلسلة القيمة خلال الفترة القادمة التي تتراوح ما بين ستة أشهر وإثني عشر شهراً».

وأضاف فورست: «قد تكون نافذة الفرص أصغر مما كان متوقعا، وستكون مدفوعة بتوقعات أسعار النفط. وستـتـمـكـن الشركـات ذات الـتدفق النقدي القوي، والميزانيات العمومية المتينة، من انتهاز الفرص، في حين ستحتاج الشركات الأخرى إلى وضع استراتيجيات لضمـان البقاء والاستمرار فحسب». وأضاف التقرير أنه يـمـكـن لـجميع اللاعبين في هذا القطاع الصناعي الاستفادة من تبني نهج استراتيجي لعمليات الاندماج والاستـحـواذ، بـمـا في ذلك شركات النفط العالمية وشركـات النفط الوطنية وشركات النفط المستقلة، وشركـات خدمات قطاع الأعمال، وكذلك المستثمرون الماليون.

من ناحيته قال خوسيه أبريتش، الشريك في إيه تي كـيرني الشرق الأوسط،: «بالنسبة للاعبين في مـنـطـقـة الشرق الأوسط، ولا سـيـما شركات النفط الـوطـنـية وشركات النفط العالمية وشركات النفط الـكبرى العاملة في المنطقة، قد تكون هناك فرصٌ لـتـعـزيـز مـواقـعها عبر صفقات الدمج والاستحواذ الاستراتيجية، حيث يمكن أن تتعرض الأصول الجذابة للضغوط والمعاناة في ظل انخفاض أسعار النفط، مما يجعلها أهدافاً عملية متاحة للاعبين الكبار. ومع ذلك فإن انـخـفـاض أسعـار الـنفط قد يعني أيضا نقص الأموال النقدية المتاحة لدى المشترين المحتملين، لذا فإن أي تحركات تتم سوف تكون انتقائية للغاية. كذلك سوف يتم النظر في جميع الأنشطة بعناية، مع قيام شركـات النفط الوطنية بإعادة تقييم استراتيجياتها لضمان أن تتوافق التحركات الاستباقية التي قد تقوم بـهـا مـع الصلاحـيـات المخـولـة لـهـا ومـع أهداف حكوماتها».

وقـالـت الـدراسة إنـه بـالـنسـبـة لشركـات النفط الـعـالمـيـة، فسـيـظـل تـركـيـزها الأكبر على تحسين مـحافظها. هذا إلى جانب أن الإسراع في التجرد من الصناعات التحويلية والأصول غير الرئيسية، سيمكنها مـن تـمـويـل أنشطة التنقيب والإنتاج المستهدفة، علاوة على تلبية احتياجات التدفق النقدي خلال عام 2015. كما أنه من المتوقع أن تتم الصفقات الضخمة، التي تهدف إلى تحقيق التآزر، في نطاق محدود.

كذلك سوف يستمر تأثر شركات الخدمات النفطية مع تقلص هوامش المشغل، ومن المتوقع أن يؤثر ذلك أيضا على مقدمي الخدمات. علما بأنه توجد إمكانية كـبيرة للاندماج، أيضا سيظل نشاط المستثمرين من ذوي الملاءة المالية مستمرا، هذا بالإضافة إلى اللاعبين الـجـدد، مـثـل الشركات الهندسية الكبرى، الذين قد يقومون بتحركات استراتيجية لدخول السوق.

تجديد حصة توتال في امتياز أدكو

قـامت شركة بترول أبوظبي الوطنية (أدنوك) وشركة النفط الفرنسية الكبرى توتال بتجديد اتفاقية امتياز شركة أبوظبي للعمليات البترولية البرية (أدكو) لحقول النفط البرية في الإمارة لمدة 40 عاما. وقالت أدنوك إن الاتفاقية تدخل حيز النفاذ بدءاً من 1 يناير/كانون الثاني 2015، وتشمل الحقول البرية الرئيسية لإمارة أبو ظبي وعددها 15 والتي تعد مسؤولة عن أكثر من نصف إنتاج الإمارة من النفط. وسوف تحصل توتال على حصة تقدر بعشرة في المائة من الامتياز بعد تجديد الاتفاقية.

وكانت الشركة الفرنسية تمتلك حصة تبلغ 9,5 في المائة في وقت سابق لإبرام الاتفاقية. ووفقا لما صرحت به الشركة المملوكة للدولة، فإن تسع شركات آسيوية وغـربـيـة قد تقدمت بعروض لشراء حصص في امتياز شركة أبوظبي للعمليات البترولية البرية (أدكو) بعد انتهاء مدة الاتفاقية المبرمة منذ عقد السبعينيات من القرن الماضي مع أربع شركات نفط كبرى شملت إكسون موبيل وشل وتوتال وبي بي في شهر يناير/كانون الثاني من عام 2014.

وحسبما صرحت مصادر الشركة لوكالة رويترز، قامت شركات شل وتوتال وبي بي بتجديد عروضها للحصول على الامتياز. كذلك تقدمت شركات أخرى أيضا بعروض لـلحصول على الصفقة الجديدة تضمنت شركة أوكسيدنتال بتروليوم الأمريكية، وشركـة إيـنـي الإيـطـالـيـة، وشركة النفط الوطنية الصينية، وشركة شتات أويل النرويجية، وشركة إنبكـ ه اليابانية، وشركة النفط الوطنية الكورية.

مفكرة رجال الأعمال:

مارس/آذار

8 ـ 11	معرض نفط الشرق الأوسط ـ ميوس 2015	المنامة
16 ـ 18	مؤتمر ومعرض عُمان للتكرير والبتروكيماويات	مسقط
22 ـ 26	معرض التقنية المتقدمة للنفط الحامض والغاز ـ سوجات	أبوظبي
25 ـ 27	مؤتمر أوفشور البحر المتوسط	رافينا ـ إيطاليا

أبريل/نيسان

13 ـ 14	المعرض والمؤتمر الدولي للخزانات ـ Tank World Expo 2015	دبي
19 ـ 21	مؤتمر البيانات الكبيرة ـ بيج داتا 2015	دبي
21 ـ 23	المعرض العربي للنفط والغاز	دبي
22 ـ 25	معرض إربيل للنفط والغاز	إربيل

العقد الجديد هو الحادي عشر لبتروفاك في الكويت

بتروفاك تفوز بعقد الكويت

فــازت بــتــروفــاك، الشركــة الــبريطانية المزودة لــخدمات النفط والغاز، بعقد قيمته أربعة مليارات دولار أمريكي من شركة نفط الكويت لإنجاز المرحلة الأولى من برنامج تطوير احتياطيات النفط الثقيل في حقل فارس السفلي الواقع شمال دولة الكويت. وبحسب تصريحات بتروفاك، سوف تعمل الشركة مع شركة (المقاولون المتحدون) اليونانية (CCC) في برنامج تطوير النفط. وقال سوبرامانيان شارما، مدير قسم الــهندسة والإنشاءات البرية بشركة بتروفاك، في تعليقه على الصفقة: «إن نطاق العمل يغطي المنشآت الــجــديــدة والمهــجــورة، ويشمــل أعمال الهندسة والتوريد والإنشاء، وأعمال ما قبل التجهيز، والــتــجــهــيز والإطلاق، إلى جانب أعمال التشغيل والصيــانة لمنشأة المعالجة المركزية الرئيسية وكل ما يتعلق بها من بنية تحتية، هذا إضافة إلى مجمع دعــم الإنــتــاج. وتتضمن الأعمال إنشاء خط أنابيب بطول 162 كم تقريبا يتولى نقل الخام الثقيل من مــنشأة المعــالــجــة المركــزية إلى حظيرة التخزين الــجنوبية الواقعة في ميناء الأحمدي، والتي منها يــتاح لشركة نفط الكويت إرساله إلى مصفاة الزور المقترحة في جنوب البلاد». وأضافت بتروفاك أنه مــن المتــوقــع أن تستــغــرق عــمــلــيــات الــتجهيز والتأسيس، التي تمثل أحد عناصر أعمال الهندسة والتوريد والإنشاء في المشروع، عشرة شهور، على أن تــكــتــمل جميع الأعمال في فترة تقدر بأربعة أعوام وأربعة شهور تقريبا، يعقبها تسليم المصنع لشركة نفط الكويت. وذكر شارما أن شركتي بتروفاك والمقــاولون المتحدون سوف تحرصان على توفير فــريــق مــتــكــامــل في الموقع لمدة ثمانية أشهر إضافــيــة، وذلك من أجل القيام بعمليات التشغيل والصيــانة، جنبا إلى جنب مع شركة نفط الكويت. وقال شارما: «إن إرساء هذا المشروع على بتروفاك أمرٌ بالغ الأهمية للشركة في أحد أسواقنا الرئيسية، وعــنــصرٌ مــكــملٌ لمشروعاتنا الحالية التي ننفذها بــالفعل لصالح كل من شركة نفط الكويت وشركة البترول الوطنية الكويتية. ومع تمتع شركتنا بسجل إنجازات يمتد على مدار الأربعة عشر عاما الأخيرة، يــحــتــل هذا المشروع المرتــبة الحادية عشرة في قــائــمــة مشروعــاتــنــا فــي الــبــلاد، ويعزز الأهمية الاســتــراتــيــجــيــة لدولة الكويت كجزء من محفظة شركتنا في مجال الهندسة والإنشاءات البرية. وإننا نتطلع إلى العمل بشكل وثيق مع شركة المقاولون المتــحدون وشركة نفط الكويت لتسليم المشروع بشكل آمن وفي الوقت المحدد». وكشف شارما عن أنــه عــنــدمــا يتم تشغيل المشروع بالكامل، فمن المتوقع أن تنتج المرحلة الأولى من مشروع تطوير النفط الثقيل في حقل فارس السفلي، ما يقرب من 60 ألف برميل يوميا.

«إس جي بي» تعود في مصر

أعــلــنــت «هارسكــو للبنية التحتية» أنها غيرت علامتها التجارية اعتباراً من 15 نوفمبر/تشرين الثاني عام 2014 وعــادت إلى «إس جي بي» في مصر. وكانت الشركة تعرف سابقاً بـ «هارسكو مصر للشدات والسقالات المعدنية إس.ايه. ئي»، وأصبح اسمها حالياً «إس جي بي مصر للشدات والسقالات المعدنية إس.ايه. ئي» مــجــدداً. ويأتي قرار العودة إلى اسم «إس جي بي» في مصر في أعقاب تغير هيكل الملكية في نوفمبر/ تشرين الثاني عام 2013. ومنذ ذلك الحين، أصبحت الشركة المعروفة سابقاً بـ «هارسكو للبنية التحتية» فرعاً تابعاً لـ براند لخدمات الــطاقة والبنية التحتية (بيس)، ومقرها في كينيساو، ولاية جورجيا، الولايات المتحدة الأمريكية. ومن جانبه صرح (كين نوريس)؛ مدير عام الشركة في مصر: في ظل هذه الخطوة، تعود الشركة إلى اسمها السابق «إس جي بي» الذي عرفت بــه منذ فترة طويلة تعود إلى عام 1919. وحصلت «إس جي بي» الــتي يرجع تاريخها إلى أكثر من 35 عاماً على اعتراف بالعلامة التجارية في المنطقة بوصفها اسماً موثوقاً به ويحظى باحترام كبير؛ إذ أصبح اسمها مرادفاً للخدمات الصناعية وحــلــول الوصول إلى منصات العمل. وتلقى قرار التغيير والعودة إلى اسم "إس جي بي" قــدراً هائــلاً من ردود الفعل الإيجابية في هذا القطاع، وخصوصاً من عملائنا ذوي الجنسيات المتعددة. تعد (بيس) المزود الأول للخدمات المتخصصة للأسواق العالمية في مجال الطاقة والصناعة والبنية التحتية. وتتضمن محفظة خــدمــاتها خدمات السقالات ومعدات الوصول إلى منصات العمل، والحماية من التآكل، والطلاء والدهان، والعزل، والعزل من النار، والصهر، والخدمات الميكانيكية، والــهندسية، والشدات ونظم سند وتدعيم جوانب الحفر. ويستفيد العملاء من شبــكة قوية تتكون من أكثر من 300 فرع منتشر في 32 بلداً في جميع أنحاء العالم وعمالة على مستوى عالمي تتكون من 24,000 موظف.

«إس جي بي» إسم مرادف للخدمات الصناعية وحلول الوصول إلى منصات العمل.

تظل هواتف الاتصال المتعارف عليها للشركاء والعلاقات التعاقدية دون تغيير.

لــلــحصول على مزيد من المعلومات يرجى الاتصال بـ: فيونا نيوزن سميث على fnewsonsmith@beis.com أو 4638949 50 971 +.

المحتويات

القسم العربي

أخبـــار

تحليلات

ملخص محتويات القسم الإنجليزي

abc

الشـرق الأوسـط

النشـــرة النفطيـة

تُعنى بالنفط والغاز ومعالجة الهيدروكربون

Oil Review www.oilreview.me

المحـــررة : لـــويـــز ووتـــرز

فريق التحرير والتصميم: بن واطس، بوب آدمز، هيريتي بايرو، أندرو كروفت، رانجانات جي إس، براشانت إيه بي، زا تيبت، لويز كويك، سندوجا بلاجي، رونيتا باتناك، فاليري هارت، توماس ديفيز، لي تيلوت.

الناشـــر: نـــك فـــوردهـــام

مديرة النشـــــــر: بـــلافي بـــانـــدي

مديرة مبيعات المجلة: كاميـلا كابيتشـي

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 Plance
London SW1 WOEX, UK
هاتف: ٧٦٧٦ ٧٨٣٤ (٠) ٤٤+
فاكس: ٠٠٧٦ ٧٩٧٣ (٠) ٤٤+

الإنتاج: دوناتيلا مورانيللي، ناتانييل كومار، نك سولت، صوفيا هوايت، نكتها جين.
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

الشـــرق الأوســـــط

النشرة النفطية

العدد الأول 2015 UK£10, USA $16.50

تُعنى بالنفط والغاز ومعالجة الهيدروكربون

إعادة تقييم الفرص المتاحة أمام صناعة البتروكيماويات

أحدث الاتجاهات في تطوير الصناعات البتروكيماوية. إضافة إلى أحدث أخبار قطاع النفط والغاز عبر منطقة الشرق الأوسط.

- بتروفاك تفوز بعقد الكويت
- «إس جي بي» تعود في مصر
- تنبؤات بازدياد عمليات الاندماج والاستحواذ
- تجديد حصة توتال في امتياز أدكو