

Oil Review

Oil · Gas · Petrochemicals

Middle East

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Full steam ahead for Gulf transport & logistics

- 
- PDO's progressive plans
 - Tackling Iraq's security challenges
 - Optimising EOR efforts in the Middle East
 - Artificial lift goes digital
 - IoT for oil and gas
 - Safely managing ageing installations with drones
 - Building agile and efficient supply chains

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→ Editor's note

THE STRENGTH OF the oil and gas sector industry hinges on the efficiency of the transport and logistics networks that underpin it. Our feature on p18 looks at recent developments and some of the major players, as well as the growth of the region as a logistics hub.

Petroleum Development Oman (PDO) is a remarkable success story in the current times; Oman's leading oil and gas company has set a new production record while at the same time reducing capital and operating expenditure and recording continuous improvements in drilling, well and reservoir management and project delivery. We review developments on p14.

With the growing focus on digital, we discuss how IoT applications can benefit oil and gas producers (p38), and how a new service from Schlumberger provides real time data collection, analysis and interpretation to optimise the performance of artificial lift systems (p32).

→ Contents

Calendar

- 4 Executives' calendar and event news**
Event news and reports of StocExpo Middle East Africa and the GPCA Supply Chain Conference

Oil & Gas News

- 10 Developments**
A round-up of the latest news from around the region, including the commencement of gas production from BP's West Nile Delta development

Analysis

- 14 Pushing ahead with progressive plans**
With oil and gas production at record levels, major new discoveries and capital efficiency measures bearing fruit, the future looks bright for Petroleum Development Oman (PDO)
- 18 Full steam ahead for Gulf transport and logistics**
Gulf-based transport companies and service providers are competing for a greater share of the region's growing logistics market

Iraq

- 26 Operating in Iraq - challenges and rewards**
Industry leaders from three of the leading operators in Iraq share their experiences of working in the country
- 28 A strengthened security service offering**
Al Murabit Security Services has opened a new office in Basra

Technology

- 30 Addressing the Middle East's EOR challenges**
How Dow's solutions are helping to enhance EOR efforts in the Middle East
- 32 Artificial lift goes digital**
Schlumberger's new production life cycle management service, which optimises the performance of artificial lift systems, has helped Agiba Petroleum Company to increase production and reduce costs

Safety managing ageing installations with drones

Cyberhawk Innovations discusses the benefits of UAV inspections for asset integrity programmes in a cost conscious environment

IT

- 38 IoT for Oil & Gas**
A whitepaper by Bsquare describes a hybrid IoT architecture that addresses the unique challenges faced by upstream oil and gas operators and delivers important business benefits

Innovations

- 40 Industry developments**
A round-up of the latest product advances in oil and gas, including compressor products from Gardner Denver, a new wireless intelligent well completion technology from Tendeka and the latest release of Bentley's SACS design software for offshore structures

Arabic

- 5 News / Analysis**

Cover image: Port at Kuwait City, Kuwait, courtesy of MikeDotta/Shutterstock

→ Executives' Calendar 2017

MAY

22-23	Iraq Petroleum	LONDON	www.cwciraqpetroleum.com
23	EIC Connect Oil & Gas UAE 2017	ABU DHABI	www.the-eic.com/EICConnect
31-1 June	Caspian Oil & Gas	BAKU	www.caspianoilgas.az

JUNE

12-16	EAGE Conference & Exhibition	PARIS	www.eage.org
28-29	ICORSM	DUBAI	www.dubai/ICORSM

JULY

9-13	World Petroleum Congress	ISTANBUL	www.22wpc.com
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SEPTEMBER

5-8	SPE Offshore Europe	ABERDEEN	www.offshore-europe.co.uk
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OCTOBER

2-5	Kuwait Oil & Gas Show (KOGS)	KUWAIT	www.kogs2017.com
8-9	3rd Health, Safety & Security Forum 2017	DUBAI	www.hse-forum.com
16-17	Basra Oil, Gas & Infrastructure	BEIRUT	www.cwcbasraoilgas.com

NOVEMBER

13-16	ADIPEC	ABU DHABI	www.adipec.com
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DECEMBER

3-5	Solar-Tec	CAIRO	www.solartecegypt.com
4-5	Bottom of the Barrel Technology Conference	MANAMA	www.europetro.com
11-13	Kurdistan-Iraq Oil & Gas	LONDON	www.cwckiog.com

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

Caspian Oil & Gas to highlight Azerbaijan opportunities

CASPIAN OIL & GAS 2017, the 24th International Caspian Oil and Gas exhibition, will take place from 31 May-3 June 2017 at Baku Expo Center. As a key event in the region's oil and gas industry, this annual gathering of Caspian's oil and gas industry is the platform for reviewing the state of the industry, exchanging ideas on major opportunities for the future and gaining direct access to an audience of government officials, top executives and senior decision makers in the Caspian region.

Companies from countries including China, Georgia, Germany, Iran, Russia, The Netherlands, Turkey, Uzbekistan will take part in this year's exhibition. They will demonstrate innovative technologies in oil production and transportation of energy resources, provision of oil and gas storage systems, services, existing and oil and gas projects in the region.

The international Caspian Oil and Gas Conference, which will take place from 1-2 June



Azerbaijan is an important regional energy hub. (Photo: Lukasz Z/Shutterstock)

at the JW Marriott Absheron Baku, will cover issues including further development for Azerbaijan's oil and gas industry in today's realities, leading operators' plans, Azerbaijan's role in maintaining energy supplies to Europe, the country's role as a regional transport and

logistics hub, diversifying supply routes, environmental and industrial safety, increasing oil recovery and cost optimisation. The exhibition and conference will provide suppliers with the opportunity to talk to customers and colleagues, to present and discuss technologies and services in action, and to acquire useful business contacts, expanding the opportunities for international collaboration in the oil and gas sector.

Speakers include Rovnag Abdullayev, CEO SOCAR, Besim Sisman, CEO Turkish Petroleum, Andrea Cittaneo, CEO Zenith Energy and Gary Jones, BP's new regional president for Azerbaijan, Georgia and Turkey.

With Azerbaijan poised to become an important gas supplier to Europe and Turkey, the event will be a useful platform for growing business leads in Azerbaijan and the region.

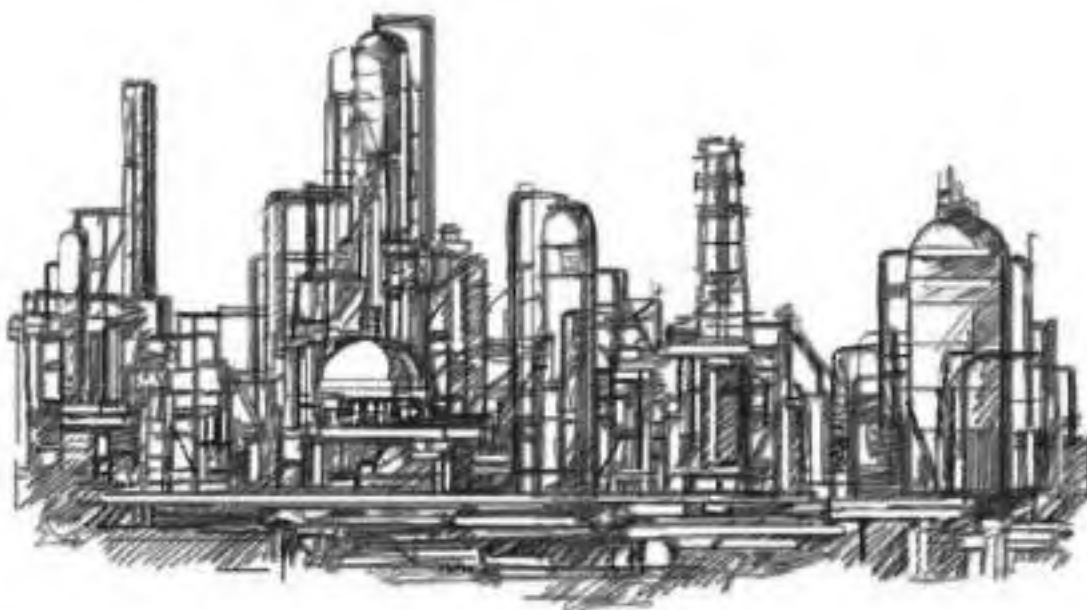
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Time to take stock

StocExpo Middle East Africa, held in April in Dubai, revealed a storage sector looking for some relief, says Stuart Matthews.

TERMINAL STORAGE COMPANIES may have to wait until the second half of the year before they start to see relief from current high inventory levels, sluggish global demand and suppressed storage leasing rates.

Speaking on the sidelines of StocExpo Middle East Africa – the region's leading bulk liquid storage event – Muthukrishnan Prabakaran, global head – Terminals for Gulf Petrochem, suggested that things were not going to be that busy this year for the storage business, reflecting the wait-and-see mood of exhibitors at the event, which took place in Dubai in April.

"Fresh demand will come on only when existing inventories start getting liquidated, which we expect to start around June," explained Prabakaran.

The challenging market climate may encourage innovation as terminal businesses look for new streams of revenue. Prabakaran suggests these may include blending, to help fuel oil meet the International Maritime Organization's new sulphur emission limits, or facilitating access for smaller traders who may take off small volumes of product via trucks. "When the going is tough you need to see how to keep your head above water," he said.

While supporting businesses in the sector have been impacted by the constraints felt in the storage industry, they too have found some strength in diversity by being able to reach into other fields to find opportunity. "In the last five years we've seen incredible growth but in the last six months it has quietened down," explained Alec Keeler, managing director of Loadtec Engineered Systems. "Storage companies are concerned about profit levels and are cutting back on expenditure. But I'm still staggered by the amount of opportunity there is."

Loadtec provides methods of accessing tankers, including fall prevention systems and equipment to enhance operator safety during fluid transfer. While such systems are key for the oil and gas sector,



they also play a huge role in other areas where bulk liquid transfers happen via tanker, such as the food and beverage industry.

"The primary risk for loading tankers, not necessarily just in oil and gas, is accessing the top of the tanker to fill or empty," said Keeler. "Actually the risks that face the oil and gas sector are much same as in all the others, but are heightened by the risk of explosion."

Applying its know-how to multiple industries has meant Loadtec has been able to find applications in a wider share of the regional market, bolstering revenue opportunities. "We're not constrained into selling into a tiny market, because the Middle East is diversifying incredibly," said Keeler.

This economic diversity, especially prevalent in the UAE, is a major factor in attracting the investment that could underpin the region's future potential. In StocExpo's opening address Patrick Kulsén, managing director of PJK International, sounded a note of confidence on this theme, pointing to the Middle East's continuing importance as a "global hotspot for investment, not only by the tank storage industry ... but other downstream sectors too". AT Kearney's FDI Confidence Index, published in April, drove the point home, ranking the UAE among the top 25 countries in the world as a preferred target for foreign direct investment, while bond sales from Saudi Arabia and Qatar have attracted global investor attention measured in billions of dollars.

StocExpo Middle East Africa was supported by the UAE Ministry of Energy, alongside many oil majors, ports, terminals and institutions including ENOC, Fujairah Oil Terminal, GPS Chemoil, Gulf Refining Co., Gulf Petrochem, Horizon Terminals, Siddco, Socar Aurora and Hamriyah Free Zone Authority. Industry professionals from over 40 countries attended the event, of which 87 per cent were from the UAE or other GCC countries. ■



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GPCA Supply Chain Conference highlights importance of logistical efficiency

SUPPLY CHAIN OPTIMISATION took centre stage at the ninth GPCA Supply Chain Conference, which took place between 2-4 May 2017 in Abu Dhabi.

Speakers highlighted logistical efficiency as a top industry priority in the GCC as traditional supply chains across the globe are evolving towards a connected, smarter, and increasingly more efficient ecosystem. Held under the theme 'Agile and Efficient GCC Supply Chains – The Role of Technology', the conference brought together industry experts who discussed the benefits of supply chain digitisation in a complex and changing marketplace.

In addition to logistical efficiency, other challenges such as nascent infrastructure, complicated protocols and mounting geopolitical risks were highlighted. Within digitisation, the role of technology in enabling petrochemical companies in the region to become leading global players, and distinct opportunities to leverage technology to improve agility and efficiency of a supply chain were also discussed.

The GCC is the second fastest growing region in terms of petrochemical production globally after China, growing by nine per cent per annum between 2005-2015. Going forward, expansions are set to continue, driven primarily by Saudi Arabia, Oman and the UAE, which collectively plan to add around 14 Mtpa of petrochemical capacity by 2025.

To address these factors, companies are working on several programmes, including streamlining documentation and attestation. The role of digitisation in enabling this shift was highlighted, with technology making supply chain operations more efficient from the point of view of petrochemical producers as well as logistics providers.

The conference was officially opened by Mohammad Husain, president and CEO, EQUATE, with Ziad Labban, CEO, Sadara Chemical Company, delivering the keynote session on building an agile and efficient GCC chemicals supply chain. The session outlined challenges facing new petrochemical companies in the GCC, focusing on the importance of robust supply chains in enabling growth.

Hosnia Hashim, deputy chief executive officer – Olefins and Aromatics, PIC and Board chairperson, EQUATE, touched upon the role of organisational structure in driving efficiencies. She also stressed the importance of business team connectivity, citing that supply chains are the sum of several cross-functional collaborations and emphasising how streamlining the shipping industry can result in a reduced surplus of empty containers at GCC ports.

A workshop on procurement discussed procurement transformation and the prerequisites to embark upon a transformation programme alongside key success factors for the implementation of e-procurement platforms.

Dr. Abdulwahab Al-Sadoun, secretary general, GPCA, commented, "Through close collaboration with industry partners, including logistics service providers, GPCA has been advancing service standards that enable

The conference discussed how to make supply chain operations more efficient for petrochemical companies and logistics providers. (Photo: Shutterstock)



more sustainable and transparent operations. These are furthering national visions of regional governments and reinforcing the GCC's position as a distinctive logistical gateway. To remain a competitive global player, a collective focus on investment, innovation, policy and human capital will be needed. GPCA will continue to champion its key initiatives such as Responsible Care® and Gulf SQAS to encourage collaboration across the industry and contribute to the creation of a sustainable regional world-class supply chain network."

The conference also hosted the third edition of Leaders of Tomorrow, the GPCA's initiative designed for GCC students who wish to pursue a career in the supply chain field. Leaders of Tomorrow facilitates the collaboration of industry stakeholders in preparing future industry leaders with the requisite skillsets to succeed.

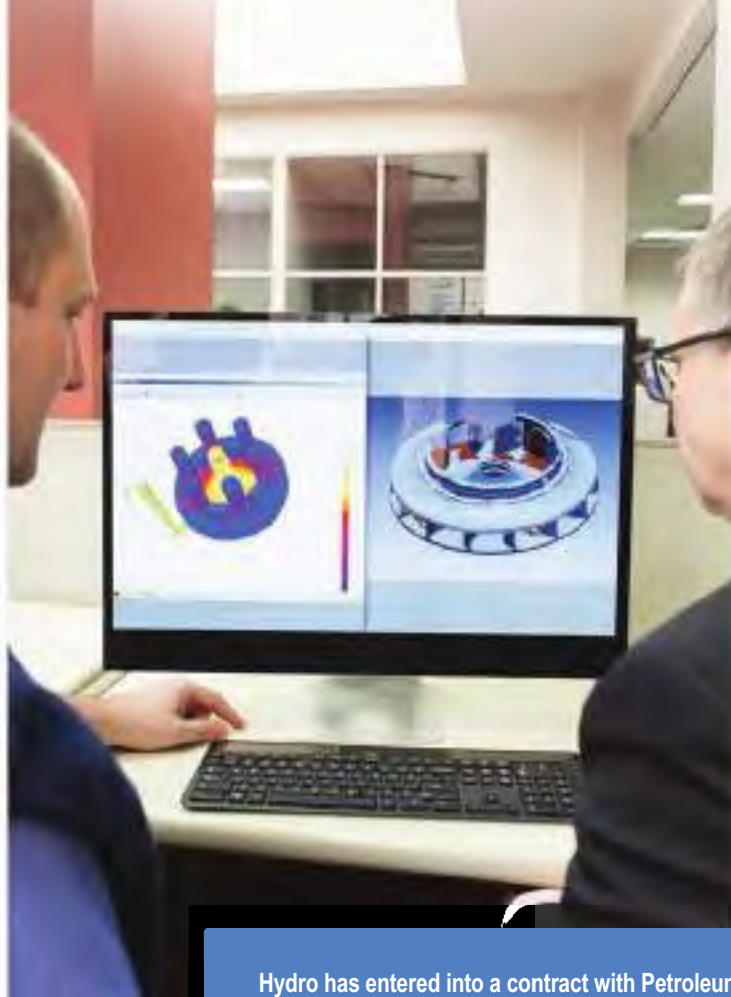
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BP starts production from West Nile Delta development

BP HAS ANNOUNCED the commencement of gas production from the first two fields, Taurus and Libra, of the West Nile Delta development in Egypt. First gas was exported to Egypt's national grid on 24 March 2017 and the commissioning of all nine wells of the development's first two fields, and ramp up to stable operations, has now been completed. The project was delivered eight months ahead of start-up schedule and under budget.

The West Nile Delta development, which includes five gas fields across the North Alexandria and West Mediterranean Deepwater offshore concession blocks, is being developed as two separate projects to enable BP and its partners to accelerate gas production commitments to Egypt.

When fully onstream in 2019, combined production from both projects is expected to reach up to almost 1.5 bcf/d, equivalent to about 30 per cent of Egypt's current gas production. All the gas produced will be fed into the national gas grid.

Following final approval in 2015, development of the first project, involving the Taurus and Libra fields, was fast-tracked to enable delivery of an annual average of more than 600 mcf/d to the Egyptian national gas grid. The fields are currently producing more than 700 mcf/d sales gas and 1,000 bpd condensate, which is 20 per cent higher than the planned sales gas plateau.

BP group chief executive Bob Dudley said, "West Nile Delta is a strategic national project that will add significant gas production to the Egyptian market and is another example of BP's commitment to Egypt. Our continuing investments in the country, including West Nile Delta, Atoll and our recent investment in Zohr, are laying the foundations for growth for BP in Egypt well into the future."

The Taurus and Libra project is a subsea greenfield development including nine wells (six in Taurus and three in Libra) and a 42 km tie-back to the existing onshore processing facility where gas enters the Egyptian national



West Nile Delta is a key part of BP's growth strategy in Egypt. (Photo: JuliusKielaitis/Shutterstock.com)

gas grid via a nearby export pipeline.

This is the second of seven major upstream projects that BP expects to come into production during 2017. Together with the projects that began production in 2016, these new start-ups are expected to provide BP with 500,000 boe/d of new production capacity by the end of this year. With further new projects starting up beyond this, by the end of the decade BP's new projects are expected to have added 800,000 boe/d of new production.

"It is also another important step in BP's growing production from high-quality new projects - in total, the West Nile Delta project will account for around a quarter of the new production we expect by 2020. Coupled with the series of important agreements that BP has recently made around the world, the continuing start-ups of these projects demonstrate momentum and a return to growth across BP," Dudley added.

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Chicago Pneumatic to provide LED light towers for oilfield construction project

CHICAGO PNEUMATIC HAS secured a breakthrough sale of its LED light towers in Kuwait after its authorised distributor General Transportation & Equipment Company (GTE) placed an order for 25 CPLT V15 LED models. The light towers will provide crucial illumination for a time-sensitive oilfield construction project being carried out by local contractor M/s Al-Yousifi Engineering & Construction Co WLL.

CPLT V15 LED enhances safety on site via its four heavy-duty stabilisers and level indicator. (Photo: Chicago Pneumatic)



GTE's LED models will provide greater efficiencies than metal halide light towers and are equipped to handle the time and cost-sensitive nature of the development. As Ejazul Hassan, equipment sales manager for GTE, explains "The CPLT V15 LED is highly efficient, making it ideal for projects requiring a large number of light towers. With this model, users can save on both fuel and maintenance costs. For instance, the LED's lifespan is 30,000 hours, compared to 6,000 hours provided by a metal halide bulb. This means the CPLT V15 LED's bulbs don't need to be replaced for approximately three years."

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OPEC participates in Iran Oil Show

THE ORGANISATION OF the Petroleum Exporting Countries (OPEC) took part in Iran's International Oil, Gas, Refining and Petrochemical Exhibition 2017, in Tehran. The four-day event brought together industry leaders from across the international oil and gas industry. Around 2,500 domestic companies along with 1,500 foreign firms from 37 countries, including China, Germany, South Korea, Austria, Australia, Italy, the Netherlands, France, Britain, the US and Canada participated in the event that was spread out over 25 halls and covered 80,000 sq m.

The 22nd edition of the event was opened by Iran's petroleum minister Bijan Namdar Zanganeh, who welcomed participants and commended the recent successes of IR Iran in the international oil industry, including the doubling of capacity of South Pars fields and the switch from being a gas importer to becoming a gas exporter.

Speaking at the opening, parliamentary speaker Ali Larijani praised the Ministry for its recent successes in increasing production. He spoke about the role of geopolitics, saying that although regional security is a serious issue, Iran is very safe. He stressed that the parliament is going to do its part to ensure policies are favourable for exploration and investment.

The exhibition played host to several document signings among participating companies and between the Iranian government and firms, tackling future cooperation in various fields.

Kuwait Energy files for IPO on London Exchange

OIL AND GAS explorer, Kuwait Energy Plc has announced plans for an initial public offering (IPO) that would make it the first company from the Organisation of Petroleum Exporting Countries (OPEC) nations to have its stock traded on the London Stock Exchange.

Kuwait Energy expects the admission to take place in June 2017, and that following the admission, the company will be eligible for inclusion in the FTSE UK Indices.

The company is working with the Bank of America on the IPO in London and expects to raise about US\$150mn. Most of the proceeds will be used to continue developing its assets, especially those in Iraq that are seen as contributing significantly to growth.

CEO Sara Akbar said that the listing would offer the company a stable platform from which to take the company to the next level of growth. The company is opting for a London listing even as authorities in its home country introduce changes to attract more foreign investors to the local equity market. A successful IPO would be the first in London by a business domiciled in the Middle East since June 2016, when Israeli technology company Adgorithms Ltd sold stock.

Kuwait Energy was founded in 2005 and has 10 exploration, development and production assets in Egypt, Iraq, Oman and Yemen, seven of which it operates, it said in the filing. It produced 24,432 barrels of oil equivalent a day last year compared with 24,988 barrels a day in 2015.



UAE's NPCC wins Saudi Aramco contract

SAUDI ARABIAN OIL Company, Saudi Aramco, has awarded a new contract to National Petroleum Construction Company, NPCC, for four offshore platforms and associated submarine pipelines, cables and tie-ins for Al Safaniya, Zuluf and Berri Oilfields.

"These contracts include engineering, procurement, fabrication, load-out, transportation, installation, hook-up and pre-commissioning work of four offshore platforms, SSS wellhead decks, with the associated four subsea pipelines, three submarine cables and downstream tie-ins," said Aqeel A Madhi, CEO of NPCC.

This contract comes under the scope of the long-term agreement (LTA) signed between Saudi Aramco and NPCC in October 2016 to help with offshore oil and gas producing platforms and related facilities in the Arabian Gulf.

Saudi Aramco has signed a six-year agreement with NPCC and other contractors. Under the agreement, contractors will be responsible for delivering a number of offshore oil and gas producing platforms, tie-in platforms, pipelines, power cables, and all the related facilities, as required under the current master plan for Saudi Aramco's offshore fields.

Madhi said that entering into such a strategic agreement with a global major, Saudi Aramco, is an endorsement of NPCC's state-of-the-art expertise and that carrying out these two new contracts will take 23 months and expressed his full confidence and trust in NPCC staff and their ability to deliver these projects on budget and schedule.

Saudi Arabia, Russia agree on need to extend oil output cuts

SAUDI ARABIA AND Russia have agreed on the need to extend oil output cuts for a further nine months until March 2018 to rein in a global crude glut, pushing up prices.

The announcement was made ahead of OPEC's next official meeting on 25 May 2017, and the move is expected to go a long way to ensure that other OPEC members and producers who participated in the initial round of cuts fall into line.

In a joint statement that followed an earlier meeting, Saudi energy minister Khalid al-Falih and his Russian counterpart Alexander Novak said they had agreed to prolong an existing deal until March next year.

The ministers pledged to do whatever it takes to reduce global inventories to their five-year average and expressed optimism they will secure support from producers beyond those in the current deal, the statement said.

"There has been a marked reduction to the inventories, but we're not where we want to be in reaching the five-year average. We've come to conclusion that the agreement needs to be extended," Falih told a briefing in Beijing alongside Novak.

While it was broadly expected that OPEC and Russia would agree to extend the cut, the timing and wording of the statement sent crude prices up more than 1.5 per cent in Asian trading.



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Pushing ahead with progressive plans

With oil and gas production at record levels, major new discoveries and capital efficiency measures bearing fruit, the future looks bright for Oman's leading oil and gas company.

PETROLEUM DEVELOPMENT OMAN (PDO) has reacted in typical style to some of the pressing challenges facing the oil and gas industry in recent years.

For a long time now, the company – a joint venture between the Omani government, Shell, Total and Partex – has embraced rather than avoided the technical complexities it has faced upstream, namely in the extraction of hydrocarbons from difficult or unconventional reservoirs.

In this area, PDO, together with its upstream partners, has pioneered tight oil and gas development in the Gulf region, ahead of bigger producers like Saudi Arabia.

In part, this has been out of necessity, with the Sultanate looking to maximise the benefits of reserves far below those of the kingdom and indeed most of its neighbours.

Yet PDO continues to press ahead, most recently announcing record upstream production figures once again, part of a long-term strategy to elevate output.

The company accounts for around 70 per cent of the country's crude oil production and nearly all of its natural gas supply.

In March, PDO announced at the Ministry of Oil & Gas that it had set a new combined oil, gas and condensate production record of 1.293 million barrels of oil equivalent per day (boepd) during 2016. Roughly half of all output was oil. Not only that, the achievement, it said, was secured whilst reducing capital and operating expenditure and thanks to continuous improvements in drilling, well and reservoir management and project delivery.

To put those figures in context, last year's average daily oil production – 600,197 bpd – was the highest level recorded since 2005, and more than 15,000 bpd above its original planned target, reflecting over a decade of growth.

Annual condensate production also reached 81,325 bpd against a yearly target of 76,800 bpd, helped by a strong performance from wells at Kauthar, Rabab and Khoulood.



PDO is targeting an 88-90 per cent Omanisation rate in its workforce by 2020. (Photo: PDO)

Average gas production was marginally down, however, at 80.24 million cubic metres per day.

This strong performance – while impressive in its own right – also gives PDO a bit of breathing space for the year ahead. The company is to cut planned 2017 expenditure by almost US\$1.5bn as a result, and to improve cost efficiencies across the board.

“PDO announced that it had set a new oil, gas and condensate production record.”

That does not mean it is shirking from its commitment to boosting local jobs and skills, however – another key strategic priority for PDO and Oman officials generally. PDO also said that it increased its investment in its In-

Country Value (ICV) programme to boost Omani businesses and generate almost 7,800 jobs for young people, in the oil and gas industry as well as in other sectors of the economy. This initiative has created almost 30,000 jobs since 2011. PDO is targeting an 88-90 per cent Omanisation rate in its workforce by 2020. Last year, it also awarded contracts worth more than US\$5bn to nationally registered firms, the highest sum in its history.

PDO's managing director Raoul Restucci said the 2016 results were all the more impressive given another year dominated by the low global oil price, which has been a feature plaguing all Gulf oil states.

“The recessionary climate has meant established ways of working have required a paradigm shift in mindset to significantly improve capital efficiency and deliver competitive projects,” he said.

He also pointed out more to come, despite cutting back on spending. “With our partners at Shell, we have identified 46 opportunities

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for incremental development that could yield in excess of 700mn bbl of recoverable reserves and raise our production plateau."

This was supported by a huge 2016 drilling effort, with 644 oil and gas production and exploration wells drilled, around 12 per cent up on the previous year. It has resulted in some major oil discoveries too, including the Shammar play opening, which unlocked 40mn bbl of new volumes from the shallow, high-permeability reservoir in the Lekhwair field.

Major new projects, like the Rabab Harweel integrated project – PDO's largest capital project with a reserve add of more than 500 million boe – are also on schedule. This is to develop 240mn bbl of oil and 100mn bbl of condensate while exporting 1 trillion cubic feet of non-associated gas when production starts in 2019.

“ PDO continues to move actively into new energy areas as well.”

New technical challenges are being embraced in a similar manner as before, such as the Yibal Khuff project, which involves the simultaneous development of a number of sour oil and gas reservoirs – this project is ahead of schedule, PDO advised, with construction beginning last year.

Separately, the Miraah project, the world's largest ever solar thermal project at peak production, moved forward with phases 1 and 2 now at the construction stage. The first steam from the project, which PDO is developing with partner GlassPoint Solar, is expected around the middle of this year. The deployment of solar thermal technology in the field is another area in which PDO has pioneered in the Gulf during the past few years.

Raoul Restucci, PDO's managing director, speaking at a Ministry of Oil & Gas briefing. (Photo: PDO)



Longer term, the company is also making moves to secure its future ahead on a number of fronts. Last year, it successfully accessed the international finance markets to bankroll this development, with a US\$4bn loan from a consortium of banks, part of a rush of foreign borrowing by Oman generally as low oil prices strain state finances. At the time, Restucci said that it would help PDO to reduce its reliance on government funding, a move which also explains why it is so keen to trim capital spending this year. It forms part of a bigger picture to invest more than US\$20bn over the next five years.

A tangible sign of this five-year commitment came when PDO secured a landmark pipeline deal in January with Japanese supplier Sumitomo. Pipe and materials will be stored at the Duqm Special Economic Zone to be routed through the port for PDO's oil fields and upstream projects. It means all the piping for its 600 yearly wells will come through the new logistics hub.

For a company that remains the central engine of Oman's economy, it is also an

important vote of confidence in Duqm, one of the nation's flagship infrastructure projects, also the future site of a proposed new oil refinery.

PDO continues to move actively into new energy areas, to improve the nation's environmental footprint and free up more oil and gas for export. One innovative development includes installing thousands of solar panels in its car parks at Mina Al Fahal to provide power for the company's Muscat headquarters. This programme alone is expected to save more than 3.1mn cubic metres of gas a year, enough to provide electricity for almost 1,000 homes. It will also cut carbon dioxide emissions by 6,662 tonnes annually, the equivalent of taking more than 1,400 cars off the road or planting almost 173,000 trees.

It has been a dynamic 12 months or so for this progressive Gulf oil champion, with rising production and the promise of more to come. The challenge now is to continue in the same way, but to do so with spending down and expectation levels up. ■

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Full steam ahead for Gulf transport & logistics

Gulf-based transport companies and service providers are competing for greater share of the region's growing logistics market. Martin Clark reports.



*Shipping and transport is big business in the Gulf.
(Photo: Oleksandr Kalinichenko/Shutterstock)*

LIKE MOST OTHER sectors, the strength of the oil and gas industry hinges on the competence and efficiency of the transport and logistics network that underpins it. In the energy sector, however, the enormous scale of infrastructure and equipment poses additional challenges and risks for operators and suppliers – from mighty offshore rigs and jackets to giant petrochemical plants, pipelines and equipment.

Moving this high value but bulky and sensitive machinery presents great technical challenges. And yet this is an area in which Gulf-based oil companies, their contractors and support firms have become highly adept, after putting together some of the biggest, most complex and costly energy projects anywhere in the world. These range from vast upstream production infrastructure stretching across miles of land, like Saudi Arabia's Ghawar field – the world's largest oilfield – to state-of-the-art downstream facilities such as Qatar's pioneering Pearl gas-to-liquids (GTL) plant. Collectively, these and other similar projects are worth many hundreds of billions of dollars. The role of transport and logistics companies in bringing the many pieces of this complex jigsaw together is therefore critical.

And it is a highly competitive space too. Most of the region's big national oil champions have developed offshoots to help them in the delivery of projects, or even with the transportation of final products and fuels through vast tanker fleets.

Nakilat, for instance, is Qatar's tanker fleet for sending its liquefied natural gas (LNG) exports around the world. Its fleet of 67 wholly and jointly owned LNG and four LPG (liquefied petroleum gas) vessels comprises the world's newest and largest gas fleets. It also has a joint venture, Nakilat-Keppel Offshore & Marine (N-KOM), with Keppel Offshore & Marine to operate a shipyard repair facility to service the whole fleet.

In the world's biggest oil producer, Saudi Arabia, there is an equally massive tanker fleet controlled by The National Shipping Company of Saudi Arabia (or Bahri). The company, founded in 1978, is partly owned by state oil giant Saudi Aramco and also boasts various logistics and transportation offshoots.

Private competitors

But many others are also looking to contribute to the Gulf's huge energy market and growing logistics needs, which has stirred up a great deal of private sector activity too.

Earlier this year, UAE-based conglomerate Transworld Group joined Japan's Suzue Corporation to set up a joint venture to explore logistics business opportunities in the Gulf and beyond. The two sides are to establish a new company at the Jebel Ali Free Zone in Dubai to focus on the region, as well as the Indian sub-continent and Japan. Services to be offered include supply chain management, freight forwarding,

“The role of transport and logistics companies in bringing the many pieces of this complex jigsaw together is critical.”

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customs clearance, warehousing and distribution, land transport and other related logistics services.

Transworld's logistics arm, Transworld Logistics FZE, will handle operations in the UAE and across the Gulf region. Ramesh S Ramakrishnan, Transworld's chairman, said the intention is to leverage strategic relations between the UAE, India and Japan.

"The UAE...has established a joint working committee to coordinate policies in a wide range of areas from defence, nuclear energy, oil, security, health and trade with Japan," he said.

The UAE currently accounts for almost a third of all Japan's business with the Gulf region, much of it oil-based trade.

Overseas footprint

However, just as the regional oil and gas market is forever shifting, with prolonged subdued pricing wreaking havoc across the energy sector generally, major players are continually looking to refine their positions in order to secure long-term business success. This includes the major Gulf-based firms seeking to expand their footprint overseas, in part, to mitigate the effects of any slowdowns closer to home.

Saudi Arabia's Bahri, for instance, recently opened new offices in Houston and Mumbai to grow its international breakbulk cargo operations, another part of its general service offer to the industry. This means typically larger items that require careful individual transportation, instead of in containers, an area that has fallen back somewhat since the fall in oil prices. Bahri is already a major service provider from multiple US ports to Jeddah, Dubai and Dammam.

It continues to grow its fleet at the same time, recently acquiring its 27th Very Large Crude Carrier (VLCC) – adding to its fleet of 84 mixed purpose vessels – making it one of the world's top tanker firms.

“Saudi Arabia's Bahri recently opened new offices in Houston and Mumbai to grow its international breakbulk cargo operations.”

Infrastructure and ports

The move into infrastructure and ports is another strong theme for the major transport and logistics players as they seek to control a greater slice of the market.

Saudi Aramco signed a joint development agreement in 2016 with UAE-based rig builder Lamprell Energy Ltd for a new industry maritime complex in the kingdom. Shipper Bahri and South Korea's Hyundai Heavy Industries are also part of the development group. The plan is to build a US\$5bn maritime shipyard within the King Salman Global Maritime Industries Complex in Saudi Arabia which will provide engineering, manufacturing and repair services for offshore rigs, commercial vessels and offshore service vessels. The facility is expected to be fully operational by the end of 2022. In an update in March, Lamprell announced in its full year 2016 results, that talks with Riyadh “continued to progress” since the signing of the agreement and are now “nearing final stages”.

The investment in the new maritime complex is a clear attempt by the Saudi government and Saudi Aramco – set to be publicly listed and traded later this year – to draw more work and investment into the kingdom, create new jobs and further boost industry skills and training.

Diversification

Qatar's GWC, another regional logistics provider, also hinted at a change of direction recently as the country “transitions from oil dependency to a stable economic contributor to global wealth and trade,” according to its chairman Sheikh Abdulla bin Fahad bin Jassem bin Jabor Al Thani, presenting the group's first quarter results for 2017.

Its most recent contribution towards economic diversification has been the GWC Bu Sulba Warehousing Park, a public-private partnership, completed at the beginning of the year. The warehousing park is dedicated to serving the needs of the country's growing SME sector by providing them with the best possible logistics infrastructure and the benefit of the company's experience in delivering world-class supply chain solutions.

Downstream hub

Indeed, there is a view that competition among ports in the region is intensifying, as operators chase a greater share of the growing logistics market, although this applies across all industry areas – such as container traffic and dry bulk – not just the energy sector. Specialist providers are also finding that they can gain advantage ahead of general players.

Schmidt Middle East logistics, a part of Schmidt Heilbronn, recently launched operations at a new logistics hub in Abu Dhabi's Khalifa Port Free Trade Zone, within the Khalifa Industrial Zone Abu Dhabi (KIZAD).

The dedicated chemical and petrochemicals hub will service clients within the UAE and the rest of the Gulf to store, handle and distribute materials like polyethylene, polypropylene, catalysts and additives for the chemical and petrochemicals industry. The AED 20mn (US\$5.5mn) facility allows Schmidt to open the gates for highly specialised logistics in the region, with the UAE playing an important role as a distribution hub for the wider GCC.

Dr Wolfgang Hoppmann, chief executive of Schmidt Middle East, said the hub in KIZAD represents a key part of expansion plans in the GCC to better serve customers.

“We have also recently launched our facility in Bahrain, in addition to serving our existing customers for their onsite projects in Kuwait, Saudi, Qatar, and Oman. We continue to develop our infrastructure and facilities in the region.” ■

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How to save millions on primary distribution

HOW CAN OIL and gas companies cut costs and boost efficiency fast, with minimal capital investment?

The answer is simple and consists of three parts: seeing, analysing, optimising, says Dennis Ostendorf, solutions director, Quintiq Oil & Gas.

"Take the case of a major European oil refiner and Fortune Global 500 company. It distributes base fuel products to depots by pipeline and rail, and it delivers petrochemical products to customers by rail and truck. The range of transport modes, each with its own costs and constraints, makes it a challenge for the company to create a viable plan, let alone an optimal one.

"What's more, every planning decision is amplified due to the expensive nature of the products and the immense resources required to manage, store and transport them. To boost cost efficiency, companies need to address a fundamental, but often overlooked, challenge: supply chain complexity. Here's how.

"First, establish operational visibility. Your priority should be to equip everyone with accurate, up-to-date information and the right KPIs. It's important that this visibility is forward-looking, rather than backward. Instead of discussing yesterday's problems, focus on

Companies can realise significant savings in primary distribution by seeing, analysing and optimising.



inventory issues that are projected to occur tomorrow while you still can react and adjust your plans.

"Second, model and analyse. Now that you can see everything, start asking questions. Identify weak points and bottlenecks with advanced analytics. Simulate possible scenarios to see the impact of each decision and prevent costly mistakes. Predict and schedule maintenance for your fleet. The possibilities are endless.

"Third, optimise constantly. Before, planning

and executing every detail was the goal. Now, it's about how fast you can adapt your plans when disruptions happen. This means you should be optimising at least once a day, or even continuously, as changes are happening all the time. After all, a delayed trip or suboptimal load could mean thousands down the drain.

"With these three capabilities, you'll be in a position to realise significant savings in primary distribution and be ready for anything the market can throw at you."

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International companies and delegations have flocked to Iran following the revocation of sanctions. (Photo: Piotr D/Shutterstock)

Iran's energy market after the JCPOA

Now is the time for international companies to invest in Iran, says Seyed Hossein Tabatabaei.

IRAN RANKS FOURTH globally in terms of crude oil reserves and second in terms of natural gas reserves, according to the CIA World Factbook. While Iran's global role suffered as a result of sanctions, several factors have intensified the growth of Iran's influence in energy geopolitics. These include the conclusion of the nuclear accord with the 5+1, Iran's position as a regional political and military power in the strategic and turbulent region of the Middle East, the rise of conservative technocrats in Iran, and the increasing demand of countries such as China and Japan for oil and gas (especially after 2011 with Japan deciding to decrease the use of nuclear energy).

“The speed of Iran's return to the global oil market after the revocation of sanctions surprised the experts.”

After the signature of the nuclear accord and the JCPOA (Joint Comprehensive Plan of Action), American, Asian and European countries sent official delegations to Tehran. The Germans arrived in Tehran headed by Sigmar Gabriel, Vice Chancellor of Germany, accompanied by managers and agents of BASF, Linde and Siemens around a week after Iran's accord with the 5+1. Italy's foreign minister Paolo Gentiloni brought a top economic party including representatives

of Italian oil companies such as Eni to Iran in August 2015. And Laurent Fabius, the late French foreign minister, also had negotiations with Iranian officials. In a short while other delegations from Spain, Mexico, Japan, South Korea, Austria and other countries entered Tehran, putting Iran's oil industry at the top of their agendas.

According to reports, between April to August 2013 and before the nuclear accord, the country's oil exports averaged 970,000 bpd (excluding gas condensates). In June 2015 this had doubled to two million bpd, rising to three million bpd by March 2017. The speed of Iran's return to the oil global market after the revocation of sanctions surprised the experts.

The speed of Iran's return to Europe's energy market has also been significant. Greece's Hellenic Petroleum, France's Total, Spain's Cepsa, Italy's Saras and Poland's Lotos are amongst those who have started to purchase oil from Iran in recent months, with Hellenic Petroleum, Greece's largest refiner, announcing its intention to import the bulk of its oil from Iran. Iran's exports to Europe now stand at around 500-600,000 bpd. The oil imports of Asian countries, the main purchasers of Iran's oil following the JCPOA, have grown significantly, with China, Japan, Korea and India looking to gradually increase their oil imports from the country.

We should also consider the return of Iran's petrochemical production to the European and American markets. In recent months many foreign companies have come to Tehran to cooperate with Iran in the petrochemical industry, and have had negotiations with the private

sector and government representatives. In the international petrochemical industry fair which was held in Tehran this spring, 500 companies from 25 countries came to Tehran to discuss fields of mutual cooperation. Foreign companies, welcoming the revocation of the sanctions, have announced their intention to make financial investments and transfer technology to Iran, and purchase its products.

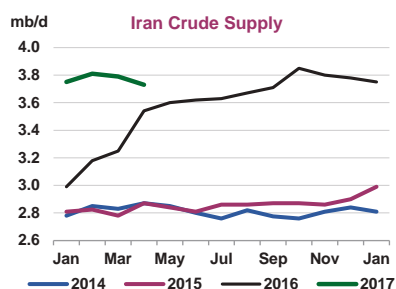
While the outcome of the presidential elections may have some impact on energy developments, the long-term policies adopted by parliament in relation to its 2025 targets are likely to remain unchanged. The polls indicate that the moderate technocrats will remain in executive powers and the legislature, which will allow the oil ministry to develop its programmes including transfer of technology, interaction with foreign investors and the internationalisation of the oil industry.

Thus, despite the anti-Iranian propaganda from some quarters, it is time for investment in Iran, as the presence of many foreign official delegations and international companies in Iran shows. ■

Seyed Hossein Tabatabaei is Doctor of International Law at the University of Nice-Sophia Antipolis, Faculty of Law and Political Science, Institute for the Law of Peace and Development (IDPD). He has written extensively on Iran's oil industry, upstream oil and gas contracts and the geopolitics of energy.

Iran sees increased oil revenues - IEA

THE IEA'S MONTHLY Oil Market Report for May states that Iran saw a substantial rise in oil revenues in the first quarter of 2017, thanks to the boost in oil prices following supply cuts. The country earned an extra US\$15.2mn a day during the first quarter of 2017 compared with the last quarter of 2016.



Source: IEA

Iranian supply in April fell by 40,000 bpd to 3.75 mn bpd, but was up 200,000 bpd on a year ago, according to the report. Iran was given a slight production increase to 3.8mn bpd under the OPEC agreement, and flows during the first four months of the year ran just under that level. Crude oil exports, on the other hand, have fallen from a strong fourth quarter rate of nearly 2.4mn bpd to an average 2.1mn bpd this year, with sharply reduced demand from Korea and India. Nevertheless average Iranian crude sales from January through April were 120,000 bpd higher than the average for 2016.

The low oil price environment has outweighed much of the positive economic impact from the 2015 nuclear deal that eased sanctions, comments the IEA. Rouhani wants to attract foreign capital and technology to rehabilitate the energy sector, which has suffered from years of chronic underinvestment. However, international oil companies (IOCs) are proceeding with caution, partly to see if there is any change in US policy towards the nuclear agreement.

Deputy Oil Minister Rokneddin Javadi said at the end of April that Iran expected to sign its first deal under the new Iran Petroleum Contract (IPC) within a month. NIOC has selected 29 firms, including Total, Royal Dutch Shell, Eni, China National Petroleum Corp and Lukoil, to qualify for bidding. Total was the first international company to sign an initial deal to develop a field, Phase 11 of the South Pars gas field, under the new IPC. Development of the vast reservoirs of South Azadegan, North Azadegan and Yadavaran, which straddle the border with Iraq, is a top priority and will require the help of western oil companies to achieve production targets, the IEA comments.

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Operating in Iraq - challenges and rewards

In advance of CWC's *Iraq Petroleum* conference, taking place from 22-23 May in London, industry leaders from three of the leading operators in Iraq share their experiences of working in the country.

Gati Saadi Al-Jebouri, LUKOIL vice president, head of Middle East Upstream

I would summarise our experience in Iraq as "big challenges and incredible results". Both of our projects in Iraq are "greenfield". Moreover, while West Qurna-2 was already explored in the 1970s, the large discovery at Block 10 was made by SOC (South Oil Company), LUKOIL and Inpex just several months ago.

Currently, West Qurna-2 is leading all "greenfield" projects in Iraq in terms of production volume. To achieve these results, we have established good working relationships with the local population at the contract area, conducted demining and built modern production facilities. We can definitely state that the projects which we are implementing in Iraq are unique not only for the company but for the international oil industry as a whole.

LUKOIL pays special attention to the front-end engineering, including assessment and interpretation of geological data, preparation and updating of the field development feasibility studies, and selection of asset development options depending on the external conditions. Thus, we ensure that all the decisions made are optimal for the development of a particular asset. Besides, we work very closely with the local population, as we believe that mutual understanding and cooperation with people on the contract area has an immediate effect on the efficient implementation of our projects.

Zaid Elyaseri, country manager, BP Iraq

The joint venture between BP, SOC and PetroChina was a new way of operating for each partner; of course, it has been a challenging journey for all of us, not least exacerbated by the fall in oil price, but Rumaila has increased production by over a third (above base decline) since the establishment of the Rumaila Operating Organisation in 2010.

Personally speaking, it has been a rewarding seven years. We are working with our partners to overcome challenges – from logistical and structural difficulties (which have significantly improved in south Iraq in recent years), to developing a workforce comprised of different cultures that has been able to pull together and work as one team to deliver for Iraq. Yes, there are always challenges, which can make long-term planning difficult, but this is not unique to Iraq.

“That also means transferring our knowledge of transferring super-giant oilfields to the next generation of Iraq industry leaders.”

As an Iraqi, being able to work to help make Rumaila a success – Iraq's most valuable economic asset – is something that gives me great pride.

At Rumaila, successfully increasing oil production has been achieved through introducing new technologies, renovating the field and by deploying modern engineering solutions.

Fundamentally, BP is here to improve Rumaila – both now and for the long-term – and that also means transferring our knowledge of managing super-giant oilfields to the next generation of Iraqi industry leaders, so that they can continue to deliver for Iraq.

Rumaila managed to increase production in 2016 to 1.411 million bpd, despite a significant cut in budget. How did we do this? By building on investment made in previous years, by reshaping the business and by looking how we could 'do more with less' – a mantra now prevalent across BP operations across the world.

Loris Tealdi, managing director, ENI Iraq b.v.

After two years in this role, I can say that working in Iraq has been a very exciting but extremely challenging professional experience. The relationships and personal trust built by Eni and the SOC/MOO (Ministry of Oil) personnel based upon transparency, integrity and technical competence have been the drivers that have allowed us to grow significantly over recent years. The involvement of Iraqis and expatriates as one unique team for the successful development of the Zubair field has been key. The results have been extremely positive, from both an operations and a project development perspective. Project cost recovery has been positive thanks to the cooperation of SOC following their entry in the Zubair JV.

Over the last two years Eni has increased its output in Zubair by around 70 per cent to the current level above 430,000 boed. In addition, water injection rose to around 450,000 bwpd, ensuring the maximum recovery of reserves. Zubair can grow further in the near future if the cooperation with the local authorities remains as positive as it has been in the recent past.

Thanks to its distinctive expertise and the training of local resources, Eni's operational efficiency has improved dramatically, both in terms of productivity of wells and in terms of drilling and plant management capabilities and reduced downtime.

Eni has been very attentive to the development of local resources through relevant training opportunities for the Iraqi workforce, and has achieved also very positive performances on one of our priorities, HSE. Eni Iraq confirms its commitment to increased investment towards sustainability in Iraq in the coming years, with a focus on the education sector and the renovation of schools in Basra, in which Eni operates, as well as maintaining a high level of technical and operational performance of the Zubair field. ■

*With acknowledgements to Nawal Abdulhadi, director. CWC Group.
<http://www.cwciraqpetroleum.com>.*

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A strengthened security service offering

Al Murabit Security Services (Al Murabit) has opened a new office in Burjessia, Basra, demonstrating its commitment to deliver its full security service offering to customers in southern Iraq, as well as through its headquarters in Baghdad.

AL MURABIT SECURITY Services (AMS-91) was established under Harlow International in 2010. It specialises in security for oil and gas companies and has had years of experience in this field with the likes of BP and Shell. The company has operational bases in Basra and Baghdad, and is strategically located with easy access to the oil and gas companies near the southern oilfields and the IZ (international zone) in the capital.

Al Murabit is managed by expatriate security specialists from the UK, complimented by English speaking Iraqi locals, ensuring there is a fusion of security knowledge and country know-how, giving clients that comfort and safety and allowing them to focus on their core business in Iraq.

With locals accounting for 97 per cent of its staff, the company is also responding to the drive to increase the participation of locals and provide employment, creating buy-in from the local community against the background of Basra's fragile social infrastructure and budgetary pressures, which have been exacerbated by the low oil price.



Al Murabit provides a fusion of security knowledge and country know-how

“Al Murabit's new office provides access to all the major oilfields around Basra.”

Another factor setting Al Murabit apart from the competition is its emphasis on quality; it was the first Iraqi security company to achieve both the PSC.1 and ISO 18788 international standards.

Closer to customers

Situated in the southern oilfields, which account for 80-90 per cent of Iraq's income, the new office relocates the team closer to their customers and enables them to better serve their requirements in Basra. A full team is now

in situ and immediately available to deliver operational support to current and proposed projects.

The regional director, business development manager and a full commercial PSD team supported by an operations control room and local compliance team are already up and running and supporting the company's current contracts, providing a full spectrum of security services and risk management. For clients who require country-wide support, the company's Basra team will work in synergy with the team in the Baghdad headquarters, enabling smooth operations and closer cooperation.

Strategically located in Burjessia, Al Murabit's new office in Al Majal business park provides access to all the major oilfields around Basra; key transportation and logistics

hubs are within easy reach, including road, air and shipping ports.

Al Murabit has strengthened its position in the market over the last year with key employee positions bolstered with skilled and experienced security experts and a focus on internal staff development programmes. Developing and growing the critical infrastructure has reinforced Al Murabit's offering in the south of Iraq.

Simon Barry, head of Al Murabit Security Services, said, “I am extremely proud of our achievements over the last year and the relocation of our office to a larger, better located space highlights our steady growth and our continued commitment to our clients.

“This strengthens our capabilities on the ground to extend a diversified service offering at key locations.” ■

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Dow has been active in the oilfield in the region for decades

Addressing the Middle East's EOR challenges

Adriano Gentilucci, commercial director – IMEA, Dow Oil, Gas & Mining, discusses how Dow's solutions are helping to optimise EOR efforts in the Middle East.

What is Dow's expertise in the field of Enhanced Oil Recovery (EOR)?

Over the years, Dow has introduced innovative technologies that help reach and recover more oil in tertiary recovery operations.

Dow, as a leading global manufacturer of surfactants, can develop customised surfactant formulations for specific reservoir conditions depending on the field characteristics. For example, the ELEVATE™ line of CO₂ foaming surfactants help to improve CO₂ conformance in heterogeneous reservoirs or those with mobility control or gravity override issues. Also, reservoir conditions – such as natural fractures in the reservoir rock or resistance from heavier or more viscous oils – can cause traditional water flooding to be less effective in injection operations. The addition of a surfactant from Dow's ELEVATE™ lines can further increase oil recovery by lower surface tension between oil and the reservoir rock. To effectively apply this solution in an oilfield, our technical service and support team offers reservoir evaluations and modeling, customised product selection and validation, economic evaluations and field implementation.

Dow has also delivered state-of-the-art water treatment technologies such as DOW FILMTEC™ reverse osmosis membranes and nanofiltration elements that are being used worldwide. From the North Sea to Asia Pacific, oil operators are able to customise the water salinity for maximum efficiency of water floods using Dow membranes. The use of customised water salinity, sometimes referred to as Smart Water, has been proven to be one of the most efficient ways of extracting oil, especially in the Middle East.

What is Dow's EOR footprint in the Middle East?

Dow has been active in the oilfield in the region for decades. Dow is among a few companies worldwide with the capability to provide unparalleled expertise in both surfactant formulations and water treatment applications that work in synergy to deliver maximum efficiency out of EOR efforts.

Dow's approach in the Middle East is to work very closely with operators and research institutes, leveraging the expertise and local knowledge of its Oil and Gas, Water Treatment and Microbial Control

teams, to provide a multi-disciplinary approach to addressing the region's challenging conditions. We have recently entered into a marketing alliance with a global oilfield services leader that integrates Dow's chemistry expertise and water separation technologies with our alliance partner's reservoir modeling and field implementation expertise. The aim is to offer customers a comprehensive EOR/IOR package of solutions that will include reservoir evaluation, EOR/IOR technology selection, laboratory screening and selection, pilot phase implementation, and full field implementation.

“Dow can develop customised surfactant formulations for specific reservoir conditions.”

Many of Dow's products and solutions for EOR enhance already existing EOR operations. For example, our CO₂ conformance control solution is often implemented several years after initial CO₂ injection. Due to the relatively young miscible CO₂ EOR projects in region, the solution is awaiting implementation. Dow is also conducting a trial for the improvement of water flooding in the region via the use of novel surfactants for wettability alteration of carbonate reservoirs. Results of the trial's first stage are very encouraging and have prompted the operator to take this to the next stage.

In the low oil price environment, how pronounced a place is EOR going to take?

Enhanced Oil Recovery techniques that have low capital costs can thrive in low oil price environments, when operators look to extend lives of existing assets rather than investing in high cost exploration activities. Nonetheless, the incremental cost of additional oil recovered is an important factor in the implementation of EOR projects. Our R&D experience, backed by the support of our global technical service team, delivers cost-effective and environmentally sensitive solutions to enhance

all phases of an asset's performance.

There has been a growing interest from regional oil and gas players to implement secondary and tertiary schemes during the production planning process, as less than 30 per cent of the original oil in place is recovered through primary production methods. In Middle East oilfields, injection of seawater as an EOR technique is widely used and is critical in maintaining the production of crude (on an average 10-15 per cent extra oil).

How is Dow addressing EOR challenges, if any, in the Middle East region?

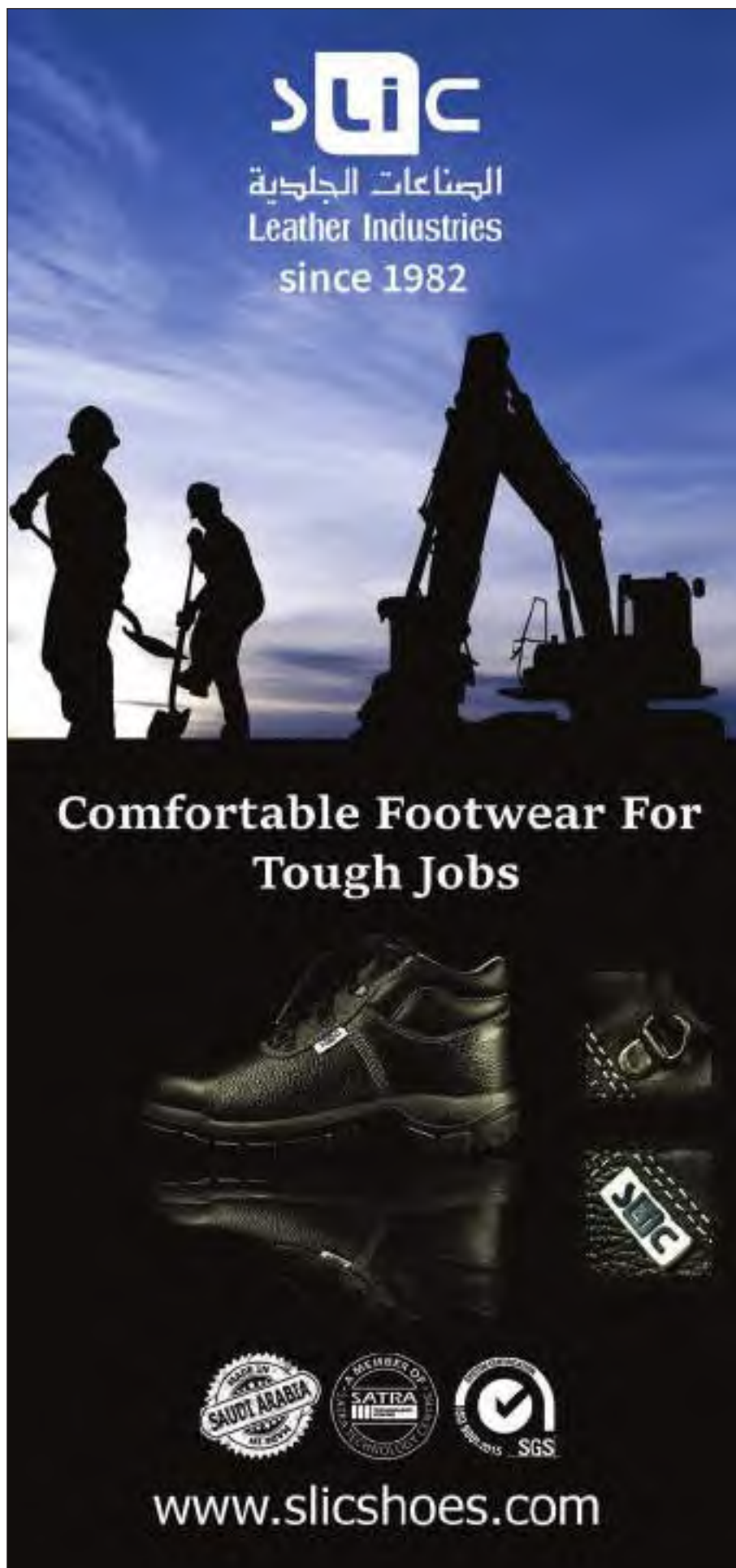
The key challenges to implementing EOR in this region are mainly technical in nature – the region has significant reserves in tight carbonate formations that have made it difficult to implement polymer based EOR. Much of the region has fresh water scarcity and projects must incorporate water treatment for injection and produced water treatment.

“Another trend in the region is an increased effort to capture CO₂ for use in EOR operations.”

Dow is a world leader in providing solutions for the treatment of seawater and produced water prior to injection by using physical separation systems such as ion exchange, ultrafiltration and reverse osmosis. Dow is also developing surfactant formulations that can be used in carbonate formations, which prove to be an obstacle to using a variety of traditional surfactants.

Another trend that we are witnessing in the region, especially in the UAE and Oman, is an increased effort to capture CO₂ for use in EOR operations. However, we know that tertiary oil recovery using CO₂ is an inefficient process if the CO₂ is in supercritical form, since its lower viscosity to water and oil can lead to a number of conformance issues. Dow's ELEVATE CO₂ EOR Conformance Solution addresses exactly this problem. ELEVATE™ uses “foams” of supercritical CO₂ fluid and water in the formation to alter the mobility and improve vertical conformance. These changes can lead to decreased CO₂ utilisation rates and, ultimately, help move more oil up the pipe.

Dow is also focused on helping preserve the asset integrity and control of microbial growth in the oil by offering solutions that can remove sulphates from the injected seawater, such as DOW FILMTEC™ SR90 elements and also highly efficient and environmentally-friendly biocides. ■



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Artificial lift goes digital

Schlumberger's new production life cycle management service, which provides real-time data collection, monitoring, analysis and interpretation to optimise the performance of artificial lift systems, has helped Agiba Petroleum Company to increase production and reduce costs.

AS THE INDUSTRY pushes to extend the economic life of once-productive brownfields, artificial lift is keeping pace, with improved equipment functionality and digital enhancements that are setting new standards for well performance. Far beyond the implementation of sensors and measurements, this shift marks an important step-change by expanding the technological envelope to quickly and accurately analyse and interpret data. For operators, the ability to pair advanced equipment with surveillance, data collection and precise, real-time interpretation is critical to maximising production while reducing costs and risks in increasingly challenging wells.

Once reserved for high-value offshore wells, monitoring and surveillance is now being recognised for its value in declining, remote and widely dispersed wells by boosting the performance of artificial lift systems, including that long-proven oilfield workhorse, the electric submersible pump (ESP). Historically, operating data of ESPs have been collected at the wellsite and sent to a remote surveillance and monitoring site where they are analysed by multiple systems to determine a course of action.

“This step-change in artificial lift capability extends equipment run life, maximises production and reduces operating costs and downtime.”

New, integrated, web-based approach

That time-consuming and cumbersome process has been replaced with a new, integrated web-based approach that provides



Figure 1: The Lift IQ service provides access to critical data, detects events, and offers quick and easy monitoring and troubleshooting. (Courtesy of Schlumberger)

monitoring, secure data collection and transmission and data evaluation and interpretation to optimise the performance of artificial lift systems in real time, helping operators avoid shutdowns and prevent failures. This step-change in artificial lift capability extends equipment run life, maximises production and reduces operating costs and downtime by providing access to all critical wellsite data in a single cohesive, solutions-based software platform, merging data for quick and seamless management of well and field performance indicators, alarm and event management and diagnostics and optimisation.

The single platform enables operators to proactively monitor and improve pump performance, from monitoring hardware in a single well to optimising equipment across an

entire field. The service has been implemented in more than 30 countries worldwide, including a declining field in Egypt, where it was integral to the success of an ESP water injection project.

Officially launched in March 2017, the Lift IQ* production life cycle management service was uniquely designed with embedded analytic tools that give engineers the ability to conduct real-time well system diagnostics and, importantly, optimise data to understand the causes of every event in order to take the appropriate corrective action. The new service monitors the important commissioning phase of an artificial lift system and also provides long-term monitoring and analysis while managing pump operations for the life of the well. (Figure 1)

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“Agiba Petroleum collaborated with Schlumberger to engineer a new artificial lift system.”

Hundreds of data signatures that trigger alarms are monitored and analysed by experts to identify gas locking, production declines, solids production and other issues that impair pump performance. Engineers can immediately adjust parameters to avoid shutdowns and return pumps to normal operating conditions. Well data are gathered via satellite or cellular connections and stored onsite, in-country or globally. Data are then transmitted to one of six strategically located artificial lift surveillance centers (ALSC): The Middle East, North America, South America, Europe, Russia and Asia.

ALSC engineers review alarms for all measurements at the wellsite, and analyse summaries and poll data to identify likely causes of the events and quickly recommend remediation options via text message or email to the onsite crew for implementation. Critical events requiring immediate action can be communicated directly by phone.

In a move to provide both flexibility and for-purpose solutions to meet operators' unique requirements, the service encompasses four tiers -- visualisation, real-time surveillance and diagnostics, well optimisation and field optimisation.

Novel solution for depleted field

Agiba Petroleum implemented the production life cycle management service in conjunction with a unique artificial lift system in the Emry Deep field in the Egyptian Western Desert. Production in the field began in June 2012 with a startup rate of 4,300 bpd. Nine wells were then drilled, producing a total of 24,000 bpd from a sandstone reservoir primarily located in the Alam El Bueib formation.

During the development phase, average reservoir pressure began declining, from 4,070 psi to 2,450 psi. In an attempt to maintain reservoir pressure to improve recovery, Agiba Petroleum drilled a new water injection well, ED-16 ST, using two water source wells in the northern sector of the field. However, because the 16,500 bpd (2,623-m³/day) capacity of the available water source wells was insufficient to feed the new injector well, the operator needed to find an additional source of compatible water.

Two possible solutions were considered. The first was to simply drill another water source well, but the costs of drilling, completion and installation of flow lines encouraged the operator to seek a second alternative. This option involved use of a natural dump flood, giving the injector well

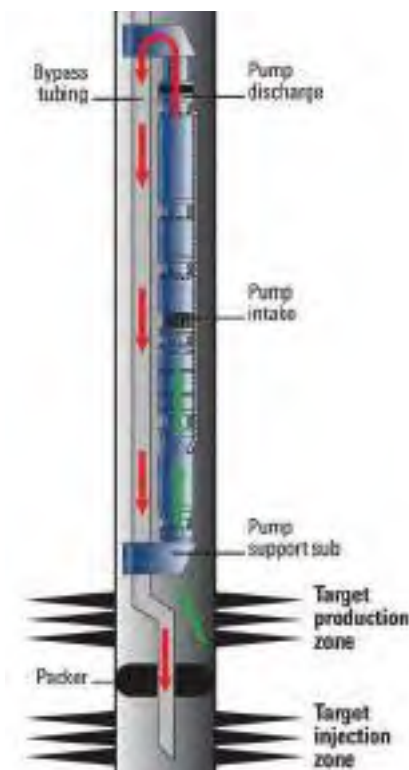


Figure 2: Water flows from the low-pressure water-producing zone to the pump intake; after the ESP boosts the pressure, the high-pressure water flows through the reversed Y-Tool and bypass system tubing to the target injection zone. (Courtesy of Schlumberger)

access to both the injection and the higher-pressure, water-producing, zones of the field. By perforating both zones, a natural crossflow would occur, providing additional pressure.

Even in this scenario, however, the pressure difference between the two zones was not adequate to provide the necessary flow rate. Furthermore, an intelligent completion would need to be incorporated to

control the flow rate between the two zones. Frequent production logging runs also would be required to determine the flow rate unless an expensive downhole flowmeter was installed.

To address these limitations, Agiba Petroleum collaborated with Schlumberger to engineer a new artificial lift system that would solve both the water supply and pressure issues. The end result involved installation of an ESP to produce the water from the higher-pressure upper zone and divert water back to the lower, injection zone through a bypass system, or reversed Y-tool. (Figure 2)

A packer between the upper and lower zones served as a pressure barrier, allowing the ESP to pressurise the flow to achieve the required flow rate. After the ESP boosted the pressure, the high-pressure water flowed through the reversed Y-tool and bypass tubing to the target injection zone. The pressure management system was implemented for the new injection well and two target wells, ED-9 and ED-12, which were closest to ED-16 ST.

To evaluate the effectiveness of the configuration, the operator implemented real-time monitoring and surveillance. The Phoenix xt150* high-temperature downhole ESP monitoring system, which utilises high-temperature microelectronics and reliable digital telemetry, provided comprehensive pressure, temperature, current leakage and vibration data to protect the ESP system's integrity and optimise well performance.

Additionally, the Lift IQ service, which had previously been used to monitor performance of offset wells in the region, was implemented to optimise pump performance and enhance observation of changes in downhole pressure across the field.

After installing the ESP, the operator saw an immediate increase in reservoir pressure, with downhole pressure readings of the offset wells confirming that injection was occurring. The two target wells also demonstrated an immediate effect of the ESP dump flood.

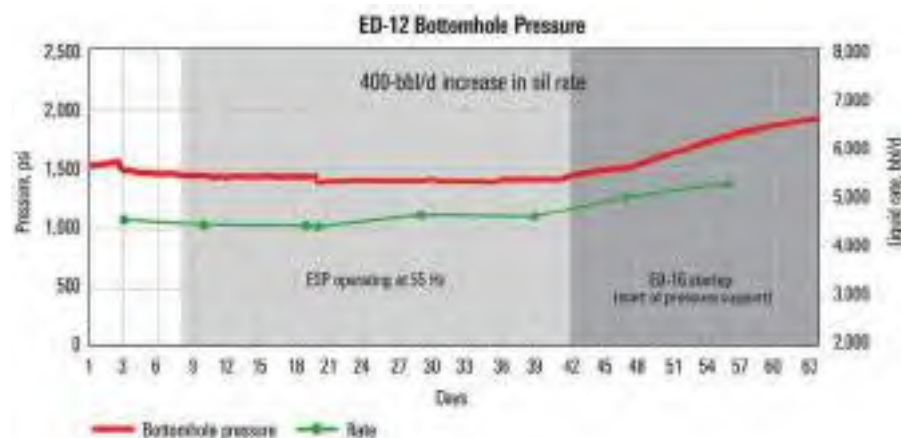


Figure 3: Downhole pressure increases in the ED-12 offset well after starting the ESP in the ED-16 well. (Courtesy of Schlumberger)

“Overall production from the target wells improved by nearly 5,650 bpd, saving the operator US\$3.6mn.”

In well ED-12, the ESP had initially operated at a speed of 49 Hz, but was increased to 55 HZ to compensate for a production decline. After the injection, downhole pressure increased by more than 500 psi, resulting in an increase in daily production of more than 400 bpd. The well also maintained a consistent water cut before and after the injection. Pressure did decline after well ED-9 was put back on production. (Figure 3)

Severe depletion and reduction in production in ED-9 resulted in the ESP experiencing low-flow events, a sign the pump was operating at a very low flow rate. Poor cooling conditions, caused by less fluid passing by the housing, and excessive starts and stops required a workover, including acid stimulation. The ESP was replaced and set at a deeper setting depth to enhance the flow rate. The injector well was then able to enhance performance of E-9, increasing and maintaining production at 4,900 bpd.

Other wells in the field also were impacted by pressure maintenance provided by the injector well, showing a combined production increase of 350 bpd.

All monitoring, analysis and diagnostics regarding the ESPs were managed in real time from the 24/7 Schlumberger ALSC located in Cairo.

The combination of a unique artificial lift design and a production life cycle management service that provided real-time data collection, monitoring, analysis and interpretation resulted in a successful outcome for Agiba Petroleum. Overall production from the target wells improved by nearly 5,650 bpd (898 m³/d), saving the operator US\$3.6mn compared to the cost of drilling a new source well. ■

**Mark of Schlumberger*

By Mohamed Al-Kady, Ishak Attia, and Ahmed Selim, Agiba Petroleum Company; Hatem Abdelmotaal, Ahmed Omr Nabih, Isam Ginawi, Amr Bahgat El-Agozua, and Kareem Botros, Schlumberger.



Dedicated Schlumberger surveillance engineers monitor alarms to prevent or mitigate adverse events, diagnose probable causes, and recommend remediation measures – all in real time. (Image courtesy of Schlumberger)

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UAVs can be used to inspect tall, inaccessible and live structures. (Photo: Cyberhawk Innovations)

Safely managing ageing installations with drones

Cyberhawk Innovations discusses the benefits of UAV inspections for asset integrity programmes at a time of cost constraints.

ASSET INTEGRITY IS becoming ever more important in the oil and gas sector. In an industry where, globally, OPEX is being driven down and assets are being pushed to the max, it is critical that operations must remain efficient as well as safe.

Many assets are reaching the end of their design life and, in more and more cases, operating beyond their expected lifespan. As these assets age, increasingly stringent inspection, maintenance and repair programmes have become crucial.

However, oil and gas operators face increasing pressure to manage this at a lower cost. Part of this comes through more frequent inspection, to monitor condition and ensure repair and maintenance takes place at the most appropriate time. Most inspection techniques are not only expensive, however, but also time-consuming and often high-risk, with personnel being sent into confined spaces or working at height. Many inspections also require operational shutdowns, which can potentially result in lost production costing operators millions of dollars.

Unmanned aerial vehicles (UAV) – also known as drones – have already proven their worth as an innovative inspection method which dramatically reduces safety risks and maximises uptime, hence increasing production efficiency.

UAVs are fitted with high definition video, still and thermal cameras to inspect tall, inaccessible and live structures. The data collected is then converted into valuable information by qualified oil and gas inspection engineers who compile full inspection reports.

“UAVs have already proven their worth as an innovative inspection method.”

The ability to also conduct multiple workscope inspections in a matter of days, including splash zone, risers, elevations, internal tanks, overboard structures, flare and derrick, while they are online, allows the

operator to better plan maintenance and turnarounds and results in increased facility uptime and reduced deferment.

Asset integrity in the Middle East

In 2015, DNV GL - Oil & Gas reported that more than 70 per cent of offshore oil and gas structures in the Middle East were older than 25 years, with some exceeding 40 years.

Older assets have the potential to cause an increased financial strain and safety risk, and require essential asset integrity to mitigate these risks. Cyberhawk Innovations, a world leader in drone inspection and survey, has proven these benefits in a working environment time and time again.

Headquartered in Scotland, UK and with international offices in the Middle East, Southeast Asia and Houston, Cyberhawk carried out the very first UAV industrial inspection in 2009, and has since safely completed more than 18,000 commercial flights. In the oil and gas sector, Cyberhawk has worked for all six super-majors, many national oil companies and a growing list of major service companies. Recent highlights

including the world's first internal cargo tank inspection and the first ever commercial oil and gas inspection in Qatar. This builds upon the company undertaking the Middle East's very first oil and gas UAV inspection in 2012.

“Alternative methods would have required months for completion.”

Qatar's first live flare inspection

A natural gas producing company based in Qatar called upon Cyberhawk to conduct the first ever commercial flare inspection in the country. The workscope involved the inspection of 136m high flares at an onshore oil and gas refinery.

The commercial use of UAVs in Qatar had previously been heavily regulated by the Qatari government due to concerns over security of airspace and privacy of citizens. However, Cyberhawk embarked on an extensive campaign lobbying the government to explain the vast benefits of utilising UAVs. After a thorough assessment of the

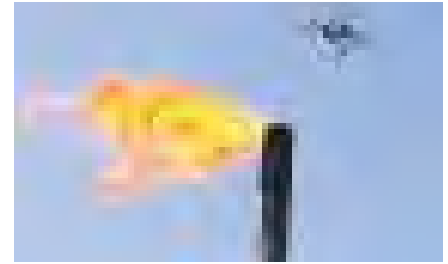
company's previous Middle East projects, a panel of authorities granted an exclusive permit for Cyberhawk to conduct the workscope.

An experienced team of two from Cyberhawk, including an industry qualified inspection engineer and oil and gas qualified inspection pilot, was mobilised to undertake the work and took just two days to conduct the full inspection. Alternative methods such as rope access or scaffolding would have required months for completion, shutdown of the facility and would also have increased risks to personnel, such as working at height.

The direct impact of UAV inspection

It is important to remember that safety should not be sacrificed for low costs. Aside from the financial savings and efficiencies to be made, the use of UAVs also ensures reduced working at height and in hazardous spaces, as well as reduced requirement for offshore bed space, reduced use of standby boats and less helicopter usage.

In a recent analysis carried out by a leading international E&P company, it was noted that Cyberhawk's UAV inspection



The use of drones for inspections has cost and safety benefits. (Photo: Cyberhawk Innovations)

technique proved 20 times faster and half the cost of traditional inspection methods, such as rope access.

In the Middle East, where smarter solutions for asset lifetime extension are being sought, awareness of these benefits is increasing and UAVs for inspection have emerged as an important piece of the puzzle.

As more and more assets are pushed to their limits, ensuring integrity translates into more reliable operations, improved efficiency, safer working and the delivery of production targets. The innovation offered by UAVs will continue to be central to the growth and sustainability of asset integrity programmes. ■



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Don't get left behind - IoT for oil and gas

A whitepaper by Bsquare describes a hybrid IoT architecture that addresses the unique challenges faced by upstream oil and gas operators and delivers important business benefits.

THE DIGITALISATION OF oil and gas production facilities has been gaining momentum, but requires a somewhat different approach than other industries in order to cost effectively achieve critical business objectives. This is the result of two unique characteristics associated with these environments – first, the extraordinarily large volume of data that can potentially be generated at upstream production sites and, second, the relatively high cost of network transport to remote and widely distributed sites. These challenges can be addressed but rely heavily on edge analytics that are shaped and informed by broader cloud-based analytics covering massive data sets.

Traditional approaches sacrifice different pools of available data in order to keep costs down, but they do this at the expense of accuracy. And, again, lower accuracy adversely impacts the value of predictions, diagnostic routines, and maintenance cycles in addition to failing to improve site efficiency to the fullest extent.

A hybrid solution

A better approach for oil and gas operators is a hybrid IoT architecture in which both edge and cloud processing are employed in order to optimise cost and accuracy. This addresses the unique challenges faced by upstream oil and gas operators and delivers the benefits of near-zero unplanned production downtime; lower overall support and maintenance costs; and improved production efficiency.

Taken together, these benefits can contribute to efforts to drive down overall production costs and further lower the breakeven point for profitable oil and gas extraction operations.

Figure 1 illustrates a hybrid IoT architecture. As can be seen, data generated by on-board sensors is processed by a “collect” function. In addition to data filtering and normalisation, the collect function determines whether generated data should be processed locally or forwarded to cloud database(s). In normal operating conditions, the vast majority of data can be handled



Figure 1: Elements of an IoT system

locally by on-board “reason” (data analytics and rule processing) and “orchestrate” (automated actions) functions.

“A better approach is a hybrid IoT architecture in which both edge and cloud processing are employed.”

In a typical deployment, initial data sets are forwarded to cloud databases. This allows machine learning software working with extremely large data sets to develop accurate device models (“digital twins”) that include not only status information but also behavioural characteristics. Using these digital twins, rules can be generated that embody business logic. Rules are exceedingly complex “if-this-then-that” statements that detect certain conditions and orchestrate required actions.

These rules can be generated automatically by the IoT system or they can be authored manually by subject matter experts.

Once digital twins and business rule sets have been generated, rules can be pushed down to individual sites for local processing, thereby offloading expensive network resources without sacrificing system accuracy. From that point forward, substantially all processing is performed locally. Cloud-based analytics functions periodically sample results in order to detect “rule drift” (i.e., rules for which accuracy is declining) and take corrective steps.

IoT for upstream oil and gas production

There are a number of IoT use cases with direct applicability to oil and gas operations, which can increase facility uptime, reduce operating costs and/or improve production yield:

Predictive failure — Many oil and gas operators employ “run-to-fail” strategies with regard to production equipment. This is because, historically, the cost of periodically

testing and maintaining equipment at widely distributed sites exceeded the cost of simply replacing the equipment when it finally failed. But with IoT, this is no longer the case.

The ability to automatically predict equipment failure with sufficient advance warning to allow smooth remediation without entailing unplanned downtime changes that cost equation considerably. Run-to-fail may have, in the past, been the most cost effective strategy but it still resulted in unplanned production downtime. With IoT, not only is the cost of monitoring and predicting equipment failure substantially reduced, unplanned downtime can be eliminated.

Adaptive diagnostics – Even with the ability to accurately predict equipment malfunctions, failures will still occur, albeit less frequently. Another critical aspect of IoT is the ability to assist in the diagnostic process and bring equipment back online more quickly, thereby further reducing production downtime.

In a typical adaptive diagnostics scenario, equipment remediation steps have been predetermined before repair technicians are even dispatched. Predetermined diagnostic steps are based on real-time and historical operating information from large populations

of similar equipment and can pinpoint likely repair steps with greater accuracy than traditional troubleshooting methods. Additionally, repair technicians can be outfitted with the right replacement equipment so as to avoid the need for multiple site visits.

Condition-based maintenance – As described above, maintaining equipment across geographically distributed production sites can be expensive and time consuming. In almost all circumstances where maintenance schedules are followed, they are based on elapsed time or hours of operation, not on actual equipment condition or other environmental factors. In addition to being expensive, this invariably leads to under- or over-servicing of equipment. This, in turn, can adversely impact equipment performance and longevity, which is why run-to-fail strategies are often employed.

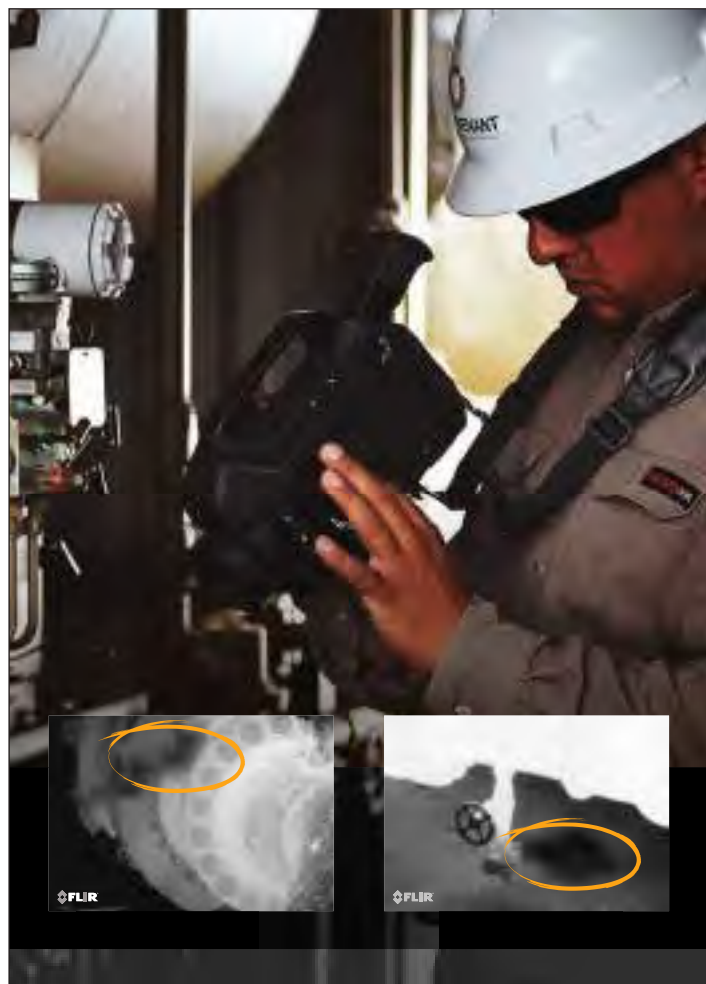
With condition-based maintenance, equipment is only serviced when actual conditions warrant. As with adaptive diagnostics, the determination of whether or not equipment requires servicing is based on real-time and historical data sets gathered from entire populations of similar devices as well as contextual data. Taken together, this extends

equipment life and reduces service expenses.

Asset optimisation – One of the most important operational metrics for oil and gas operators is site yield. Yield is based on a multitude of factors, many of which can be improved upon through the use of IoT.

Using data gathered from dispersed production sites, IoT machine learning and data analytics create models (again, digital twins) for various equipment types. These models can be compared in order to identify equipment that is performing more poorly than like equipment at other sites. Robust digital models can not only determine which equipment is underperforming, they can provide insight into why. With a better understanding of factors contributing to equipment underperformance, remediation steps can be automatically generated to improve overall performance and, consequently, site yield. ■

This is an edited version of a whitepaper by Bsquare entitled 'IoT in Oil & Gas: Don't Get Left Behind'. Bsquare couples innovative software with advanced professional services that can help organisations of all types make IoT a business reality. www.bsquare.com.



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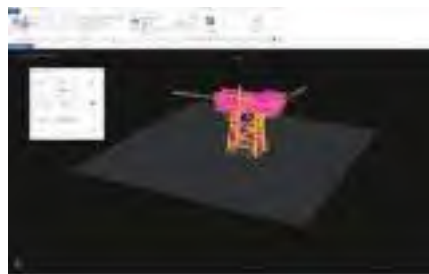
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New release of SACS software automates cutting plans for offshore structures

BENTLEY'S SACS SOFTWARE now includes an integrated analysis and design solution for the complete lifecycle of offshore structures, including construction, transportation, in-place, and decommissioning. This new capability enables engineers to reduce heavy offshore structures into manageable pieces when removing them from complex working environments.

Phil Christensen, SVP, analytical modeling at Bentley Systems said, "When the price of oil dropped by more than 50 per cent, engineering companies in the oil and gas industry had to rapidly adapt to sustain their businesses. This disruption has created a very challenging market in which technology plays a key role in adjusting to the changed circumstances."

This latest advancement in SACS reinforces Bentley's commitment to adapt its offerings to meet the changing requirements of the offshore energy industry. According to a recent report by IHS Markit, there has been a significant rise in the number of planned decommissioning projects, which is attributed to global economic conditions and assets in mature fields reaching their end of life. As decommissioning carries similar risks and challenges to marine construction, consideration



SACS decommissioning tool facilitates optimal cutting plans to meet project requirements with automated processes

must be applied to the safety, environmental, economic, and social aspects of any project.

The SACS decommissioning capabilities automate the process and allow engineers to determine optimal cutting plans to meet decommissioning project requirements, such as structure weight for lift and transport. Users fully control the structural weight through change in elevation and can apply automatic cutting of the structure at user-defined elevations. The sum of forces for any elevation can be reviewed graphically or in tabular reports.

The new SACS release also includes improved intraoperability with AutoPIPE, an enhanced GUI for joint meshing, and other key advancements such as rectangular hollow section (RHS) joint design; full-iterative solution for P-Delta analysis; wind loading based on API 4F functionality; SACS-FAST non-integrated interface for wind turbine analysis; and enhanced collapse analysis.

With integrated workflows spanning AutoPIPE and SACS, piping design for offshore structures can be completed in hours instead of weeks. Workflows to add pipe loads to offshore structures improve efficiency and provide accurate analysis results. Importing piping geometry from AutoPIPE into SACS enables the design of secondary steel and piping connection supports on the primary offshore structure.

Users can perform combined stress, and pipe and stress analysis after they have imported piping connections and the structure from SACS into AutoPIPE. Moreover, importing support reaction results from AutoPIPE to SACS for structural analysis can save hours of manual data entry. Lastly, completing the design and analysis with realistic models results in potential costs savings and improved risk mitigation.



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MESC sees partnership as key ingredient for survival and success

MIDDLE EAST SPECIALIZED Cables Co (MESC) is expanding into new markets and sectors, placing the MESC brand “at the heart of every project.”

MESC provides the oil, gas and petrochemical sector with instrumentation, telecommunication and control cable products that meet the highest international standards and quality at the optimum cost. Catering to, and customised – if required – to contractors’ needs or project specific requirements, MESC products have been used in mega projects in the region for the past 24 years.

One of the key success factors for MESC is that it continuously adopts, improves and adjusts its strategy to meet industry challenges and market requirements.

MESC continues to improve its facilities in Riyadh, Saudi Arabia and Ras Al Khaimah, UAE, upgrading manufacturing and testing facilities and designs, with a focus on cost and product optimisation.

While the GCC oil and gas market has undoubtedly been affected by the drop in oil prices, the challenge posed by oil price fluctuations is not new. These fluctuations are reflected in the direction of projects. Recently, certain sectors such as refining and downstream projects have gained momentum, taking advantage of lower oil prices which have driven the cost of construction down. Some projects are being awarded at a 50 per cent less cost than five years ago, with some clients awarding projects at a much lower cost than originally budgeted over the past nine months.

MESC believes that the market will pick up in the coming six to nine months, and expects that the Saudi and GCC market will return to its normal active pace, in terms of project execution, by the fourth quarter of 2017 or the first quarter of 2018.

In the current environment, companies are looking for partnership-oriented



MESC products have been used in mega projects in the region for the past 24 years

vendors and suppliers who are responsive to the current market situation and supportive of their clients, understanding the need for lowering costs without compromising on quality or performance. MESC strives continually to do so, cooperating with the major international EPC contractors in providing cost-effective technical consultations and solutions to cut costs on instrumentation, communication and control cables in mega oil, gas and petrochemical projects. MESC offers different contract types to suit its clients, where it can form a win-win partnership that will ensure survival and success in the current economic phase. This emphasis on partnership is a core MESC philosophy and key success factor.

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Gardner Denver introduces new compressor products

GARDNER DENVER HAS launched iConn, a cloud-based, air management platform from its CompAir brand that enables operators to manage, optimise and improve compressed air-based services. iConn provides historic, real-time, predictive and cognitive analytics, enabling users to rectify potential issues before they happen.

The iConn cloud platform is particularly beneficial for businesses with multiple, remote sites or unmanned installations. It enables users to monitor compressor performance from a single location, via their mobile device, tablet or PC. iConn helps minimise fault incidences for increased uptime, and also provides detailed machine parameters and over-time trend analysis to enable plant managers to optimise system performance.

Compressor or ancillary asset data can be transferred securely via GSM, Ethernet or Wi-Fi to a wide range of connected devices. iConn's secure cloud-based services allow users to view real-time analytics or access data via open APIs.

iConn is available as standard on all new CompAir machines and can be retrofitted to existing compressor installations. The system will also support ancillary and non-Gardner Denver based products.

New oil-free compressor

Gardner Denver has also launched Ultima, a revolutionary new, water-cooled oil-free compressor from its CompAir brand, offering up to 12 per cent improved energy efficiency compared to a conventional two-stage machine, with a 37 per cent smaller footprint.



The CompAir Ultima U160 oil-free compressor

Launched as part of the company's CompAir PureAir range, Ultima is available in models from 75 kW to 160 kW and is designed for best in class performance, for applications that demand the highest levels of air quality and purity.

Ultima uses the U-Drive concept - two, high-efficiency, permanent magnetic motors which replace the gearbox and single motor. These variable-speed motors, powered by an inverter, can achieve speeds of up to 22,000 rpm and deliver

efficiencies greater than IE4. Each airend stage is now driven directly and independently, for even greater performance. An intelligent digital gearbox design then monitors and adjusts the speeds of each airend continuously, ensuring maximum efficiency and pressure ratios at all times.

The design of the compressor results in hugely reduced friction, resulting in the highest levels of efficiency.

Ulrich Thomes, senior technical engineer from Gardner Denver, said, "From the outset we had clear requirements for the specification of Ultima's drive unit and found that no current-generation motor was able to deliver the efficiencies required. U-Drive is a true, next-generation motor and the result of three years' development. We believe that this is one of the most advanced compressor drive technologies available to customers today and ideal for a pioneering product such as Ultima."

Ultima's bespoke, closed loop water cooling system results in up to 12 per cent better overall heat recovery than a standard two-stage oil-free compressor. Ultima also acts as a high-efficiency water heater.

Warm air is cooled using a heat exchanger, and then recirculated via the base frame around the compressor. As a result, no heat is wasted, no dust or particulate matter enters the compressor and the inlet air stays cool. With a noise level of only 69 dB(A), Ultima is also extremely quiet.

Ultima uses 45 per cent less energy than a conventional two-stage compressor, and uses approximately 20 per cent less parts than a standard oil-free compressor, helping to reduce maintenance requirements and improving reliability.

PulseEight: wireless intelligent completion for the digital oilfield

THE PULSEEIGHT RANGE from Tendeka is the latest advance in wireless intelligent well completion technology. The solution uses pressure pulse telemetry to communicate bi-directionally along the wellbore between a well's downhole monitoring and control system and the wellhead.

The device reacts to changing downhole conditions to selectively open, close or choke zones or laterals within reservoirs, whilst sending critical pressure and temperature data to surface, without intervention. Removing the need for traditional hydraulic or electric control lines, PulseEight technology simplifies operations, eliminates downhole connections and significantly reduces overall system costs.

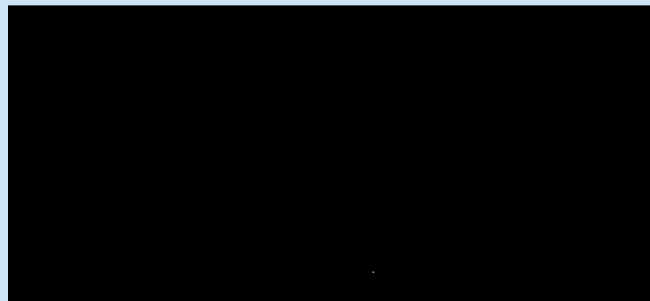
PulseEight can be installed during the completion phase or retrofitted allowing existing wells to maximise production. Each device functions independently providing modular flexibility to meet a range of requirements from low cost single zone monitoring to full multi-zone, multi-lateral measurement and control.

Remote management of PulseEight through advanced software provides data management and evaluation for enhanced production optimisation, delivering a truly intelligent completion for the digital oilfield.

PulseEight has recently been deployed in Norway and the USA, and additional geographic markets to be targeted as part of Tendeka's strategy include the North Sea, Asia, Middle East and Australia. Based on PulseEight's capabilities, there is scope for the device to be transferred to areas such as hydraulic fracturing, artificial lift, remote barrier and hydrate prevention.

As its name suggests, the tool can be used for eight applications:

- Pressure/temperature profiling
- Interval control
- Multilateral well control
- Water and gas shut-off
- Remote barrier for multi-stage frac applications
- Autonomous gas-lift optimisation
- Gas hydrate prevention
- Cross-flow prevention.



The new device offers a number of features and benefits that can save time and reduce costs

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Oilfield Get Together celebrates industry veteran

MIDDLE EAST NETWORKING event the Oilfield Get Together celebrated Edwin Abernathy and his service to the energy industry for over 60 years at its monthly gathering in April.

Originally from Oklahoma USA, Ed has spent most of his working career in the Middle East working in Tehran, Beirut, Bahrain and UAE as well as managing his interests in Aberdeen, Texas and Athens.

He started his long career in various roustabout positions moving his way up the corporate ladder one step at a time, culminating in successfully running businesses in the Middle East and Europe. He later went on to sell those enterprises to some of the largest oil and gas companies in the industry.

His previous three attempts to retire had failed, he clearly thrived being amongst the hustle and bustle of the industry and the challenges it has to offer. Described by his peers as genuine, honest, noble and one of the funniest people you are likely to ever meet, his well liked character was reflected

Edwin Abernathy



by attendance at the event, with many old friends and work colleagues travelling from Bahrain and the UK to join the "tribute to Ed" luncheon. Those who were not able to make it sent through video messages of thanks for the inspiration he gave professionally and the personal friendships he had

cemented over many years.

Ed's generosity, mentioned often in the series of speeches, extends to assisting various individuals to benefit from opportunities that would not otherwise have been open to them. He has a keen eye for honest talent and used his influence on several occasions to ensure that less fortunate unskilled employees had a chance to thrive. Some of Ed's early apprentices are now in very senior positions in the market.

Due to Ed's (almost) celebrity status in the industry, he is often approached by complete strangers who have heard of him, inevitably wanting Ed to share a story or joke. Never one to resist an audience, Ed can entertain for hours, to the bemusement of close friends.

Robyn Sokol, organiser of the Oilfield Get Together and managing director of Emerald Events and Exhibitions who host the event said, "It's overwhelming to see the respect and love for one person in a room; he has certainly left his mark in this part of the world. A legend in his own time."

Landmark contract signed between Oman's PDO and Hydro Inc.

HYDRO MIDDLE EAST Inc. will provide aftermarket support for maintenance, rebuilds, retrofits, upgrades, re-rates, provide engineering support, conduct field service, and manufacture spare parts for PDO's entire centrifugal pump portfolio.

Last year, Hydro Middle East and its agent Global Pavilion LLC were awarded a 10-year contract by PDO, a leading exploration and production company in Oman majorly owned by the government of Oman with Royal Dutch Shell, Total and Parlex being the minority shareholders.

Hydro Middle East, the Dubai branch of Hydro Inc. group of companies having worldwide operations and headquartered in Chicago USA, has entered into a contract with Petroleum Development of Oman (PDO). With this contract, Hydro Middle East and its local partner Global Pavilion LLC will be responsible for a complete range of pump aftermarket services for both PDO's high and low energy centrifugal pumps. In addition to the vital expertise that Hydro Middle East will provide to PDO, this contract also serves and supports the government's initiatives to train young Omani engineers and utilise local resources within PDO local facilities.

Thomas Arakal, managing director of Hydro Middle East, noted that prior to Hydro's arrival in the region, a need for high-level niche aftermarket engineering was not being served to industry here. "Hydro's considerable engineering capabilities, ready and affordable access to our pool of experienced aftermarket engineers from our worldwide locations allow us to offer quick turnaround."

George Harris, CEO of Hydro, Inc., added, "With this new contract, Hydro looks forward to serving PDO's needs while making an impact on young engineers in the region and helping to



Hydro has the capability to analyse and understand various OEM designs. (Photo: Hydro)



Hydro Middle East has a state-of-the-art manufacturing and service facility for comprehensive pump maintenance and building needs

spread cutting-edge pump engineering technology to this crucial region of the world."

Hydro Middle East was established in Dubai's 'National Industries Park' with a state-of-the-art manufacturing and service facility for comprehensive pump maintenance and rebuilding needs. They are also licensed by American Petroleum Institute (API) for drilling services

(manufacture, service, testing, inspection of well control, pressure control and rig and drilling equipment, onshore and offshore).

Hydro has carved out a niche as the premier engineering and solutions based company for the oil and gas, power utility, nuclear, desalination, mining and petrochemical industries in the region.



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A personalised response to local needs for pipes and fittings

IN ITS TWO Italy-based manufacturing plants Tecninox and Petrol Raccord, Raccortubi Group produces seamless and welded fittings from ½" to 56" using both cold- and hot-forming methods. The availability of raw material is extensive, ranging from stainless steel to duplex, superduplex, 6MO, nickel alloys, and the latest introduction of titanium. Thanks to its high level of expertise, an increasing part of production is dedicated to special / customised fittings including flow and barred tees, Y pieces, laterals, manifolds and headers, with welded elbows in two halves being recently introduced in the regular manufacturing schedule, aiming at further developing the offer Raccortubi can guarantee to its customers.

Raccortubi Middle East's stock in Dubai is constantly replenished according to the specific requests of the local market, enabling the company to efficiently personalise its offer in a sensitive and responsive way, both from production and from stock. The Group, in fact, is also an important stockholder of pipes, tubes, flanges, forgings and bars, in any stainless steel and special alloys including titanium Gr 2.

Nickel alloys 625 UNS N06625 and 825 UNS N08825 constitute an important part of Raccortubi's warehouse, with the following technical specifications:

- ASTM B444 for 625 pipes
- ASTM B423 for 825 pipes
- ASTM B366 for fittings and flanges

With such material availability, Raccortubi is able to provide the most complete packages for extremely critical applications, where quality means performance and reliability even under extreme conditions.



Ex-stock material is already fully tested and certified in accordance with the major industry requirements and NORSOK specifications, meaning that customers can receive high-quality piping solutions to short timescales.

To ensure its strong commitment to quality, Raccortubi Group is also a representative of the Fight Fake Products initiative by SAAC (Steel Alliance Against Counterfeiting), to combat the illegal practice of branding uncertified goods with approved manufacturers' names.

EnerMech and Khudairi Group come together to revitalise Iraq's oil and gas industry

ENERMECH HAS LAUNCHED a joint venture with the Khudairi Group in Iraq to target both the re-emerging oil and gas and large infrastructure sectors. The JV is expected to generate US\$20mn-plus turnover within a short period.

The downstream energy and infrastructure rejuvenation along with new investment in capital projects makes Iraq a key target market for the international engineering services specialist, which plans to roll out all of its services and to invest in new equipment in both Basra and Erbil.

EnerMech's Middle East general manager Chris Barker will lead the new enterprise, reporting to John Guy, regional director for EnerMech Middle East, Asia and Caspian, and Mohammed Khudairi, director for the Khudairi Group.

Guy said, "There are a large number of opportunities in Iraq's oil and gas sector as well as in large capital projects in the infrastructure sector, and working with Khudairi Group, which has long-established relationships with the major operators, will leverage benefits for both

companies.

"We share the same ethics and business values and believe that the joint venture can evolve in to a US\$20mn plus per annum enterprise within three to five years. We are in the process of tendering for a significant number of work scopes and are already seeing substantial traction."

Headquartered in Aberdeen, EnerMech employs more than 2,500 people across the UK, Europe, the Caspian and Middle East, Asia, Australia and the Americas.

Germany's AS-Schneider partners with Saudi Arabia's Binzagr

INDUSTRIAL VALVES SPECIALIST AS-Schneider has signed a cooperation agreement with the Saudi Arabian production and sales company Binzagr. According to the Germany-based company, the joint venture is a crucial step for the manufacturer to tap into Saudi Arabia as a new market. Through this cooperation, local customers can now access the high-quality products and competent service of AS-Schneider even faster and more extensively.

The Binzagr factory is an internationally operating production and sales company, founded originally as a trade partner of the Saudi Arabian Oil Company (Saudi Aramco). Today, Binzagr is the kingdom's leading provider of technical insulation for industrial plants and operates in collaboration with various companies – including several from Germany. Together with local experts, AS-Schneider now manufactures industrial valve and manifold technology specifically for use in the oil and gas industry. "We are the first provider of instrumentation in Saudi Arabia," said managing director Rolf Kummer. "I am pleased that we were able to gain such

an experienced and renowned partner as Binzagr for our market launch."

However, the Saudi market is not completely new to AS-Schneider: the company has already supplied approximately 15,000 measuring assemblies and valves to the Sadara chemical plant of the Dow Chemical Company and Saudi Aramco in the industrial city of Jubail. With a total value of approximately US\$10.98mn, it was the largest order in the company's history. Through the cooperation with Binzagr, AS-Schneider can now serve customers in Saudi Arabia even faster and more extensively. "We produce high-quality solutions on-site which even exceed the required standards," described Kummer. "For example, our valves comply with the strict requirements of the ISO FE and thus have the highest tightness class."

The cooperation with the local partner also ensures short delivery times, as well as flexible and competent technical support. "If necessary, our experts and all spare parts can be delivered to the customer in the shortest time," Kummer explained.

2G Robotics, Sonardyne collaborate on underwater dynamic laser mapping

SUBSEA TECHNOLOGY COMPANIES, 2G Robotics Inc. and Sonardyne International Ltd, UK, have entered into a formal collaboration agreement. The two organisations are working together on the development and promotion of a dynamic underwater laser mapping solution which significantly reduces the time needed to survey seafloor sites and offshore structures.

The new agreement centres on the integration of Sonardyne's acoustically-aided inertial navigation system for underwater vehicles, SPRINT-Mapper, with 2G Robotics' ULS-500 PRO dynamic underwater laser scanner.

Until now, attempts at mapping from dynamic platforms have largely involved multi-beam imaging sonars being fitted to ROVs, AUVs and manned submersibles equipped with inertial, Doppler, acoustic positioning and depth instrumentation. As a result of their mobility, large areas can be quickly surveyed but this approach typically only achieves up to 10cm relative accuracy – effectively ruling out applications like metrology which require centimetre or better accuracy.

The new technique uses the 2G Robotics ULS-500 PRO laser scanner fitted to an underwater vehicle to capture high density point clouds of subsea assets and environments. As the vehicle moves around the site, the SPRINT-Mapper hardware, also fitted to the vehicle, simultaneously collects raw acoustic and inertial navigation data. On completion of the survey, the raw navigational data is post-processed and merged with the laser data to produce a geo-referenced 3D point cloud.

By adopting a dynamic platform such as an ROV navigated using SPRINT-Mapper, the high-resolution laser data is no longer constrained by a stationary deployment location – this breakthrough in underwater mapping means an entire site can now be surveyed quickly and with the flexibility to overcome adverse conditions such as visibility. As the underwater vehicle does not have



2G Robotics provides underwater 3D images with unparalleled detail in record time. (Photo: 2G Robotics)

to come into contact with the seabed at the survey site, it can move to scan any target of interest from a variety of perspectives.


Chris Gilson, product development manager at 2G Robotics said, "This new partnership eliminates the complexities most subsea customers face when integrating multiple systems. The detail afforded by the integration of our technologies allows clients to not only capture superior data but also more effectively compete for projects."

DNV GL takes dynamic risk assessment to the next level


DNV GL HAS launched a position paper showing how risk assessments can be made more dynamic, to provide improved and real-time decision support during operations.

Static quantitative risk assessment (QRA) reports are used in the oil and gas industry to evaluate the safety of activities and systems. However, in operation, the risk picture will change, based on degradation of safety-critical barriers, changing production conditions, modifications to assets, etc. Effective operational support requires easy access to updated risk results and the ability to obtain quick real-time answers to new questions that arise. Further, digitalisation is on a rise in the oil and gas sector, enabling efficiencies and cost reductions, and operators are increasingly focusing on harvesting insights from big data from sensors. The challenge is to make sense of the data to improve risk management. The latter requires that condition monitoring data is put into context with a risk model, to provide insights on how changes impact the risk. The position paper by researchers in DNV GL demonstrates concepts on how to develop dynamic and real-time risk assessment methods and tools for the future.


Dynamic risk assessment implemented in real-time tools can provide an updated risk picture and enhance the ability to learn and adapt to new conditions. However, to make risk assessments dynamic, it is not enough to merely re-compute risk measures based on current conditions. In this respect, DNV GL has developed MyQRA, a new online tool that harnesses risk information. It unlocks the information from QRA studies in ways not possible in a typical, static QRA report. Through filtering, drill-down functionalities and 3D visualisations, MyQRA can help gain a better understanding of hazards and to make day-to-day decisions more effectively.



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Weatherford introduces production optimisation platform

WEATHERFORD INTERNATIONAL PLC has commercially made available its ForeSite production optimisation platform. The ForeSite platform combines physics-based models with advanced data analytics to improve performance across wells, reservoirs and surface facilities.

This release is the first in a series of integrated software offerings that will combine proven Weatherford production optimisation technologies with the Internet of Things (IoT), cloud computing and advanced analytics to enable complete asset management. The ForeSite platform is initially focused on improving the management of wells with rod-lift systems and will later extend to all forms of lift, as well as management and optimisation at the reservoir and surface-facility levels.

"We are entering a new era of automation and digitisation in the oil and gas industry," said Oscar Rivera, vice-president of Reservoir Solutions at Weatherford. "By harnessing data from every corner of the asset, the ForeSite platform enhances visibility and predictability – empowering operators to make better asset-management decisions that maximise production while reducing cost per barrel."

The ForeSite platform leverages real-time data, historical trending, and physics-based models to keep you producing well into the future. Combining decades of Weatherford production experience with advanced data analytics, cloud computing, and the Internet of Things (IoT), this platform connects your entire production ecosystem to help you maximise asset performance.

The system monitors sensors across your field and generates



The ForeSite platform from Weatherford
(Photo: Weatherford)

intelligent alerts when it detects significant changes in set-points or trends. Alerts can go to your mobile device, so one will know immediately when parameters pass critical limits. With Weatherford's real-time monitoring, intelligent alarms, intuitive user interface, and analytical tools, clients can identify underperforming wells, respond to changing field conditions, and capitalise on opportunities.

KBR and IBM partner for digital solutions for hydrocarbons industry

KBR, INC. AND IBM have entered into an agreement to collaborate on the development of digital products and services to help oil and gas and petrochemical customers reduce costs and increase profit, reliability and safety.

Falling crude prices, volatile socio-economic and political environments and ever-increasing demands for sustainability and safety are disrupting the industry. Chemical and petroleum organisations require new levels of innovation and digital solutions to improve and enhance exploration and production, promote project capital and execution efficiency, and optimise operations, maintenance and safety.

"As chemical and petroleum companies strive to remain competitive, implementing a digital strategy will help optimize capital expenditures,

reduce operating costs and help maximise the potential of the knowledge and skills of their people," says Luq Niazi, IBM global managing director, Chemical & Petroleum Industries.

"Working with KBR, we will deliver analytics and cognitive solutions that diagnose, compare and enhance the production and operational activities of chemicals and petroleum assets."

The agreement joins KBR's deep understanding of the hydrocarbons market – upstream, midstream and downstream – and large-scale capital projects, with IBM's solutions including cloud computing, advanced analytics, Internet of Things (IoT), and cognitive business solutions. Customers' historical and real-time data along with KBR's technical and engineering expertise coupled with IBM's technology platform will support better

decision-making and more effective monitoring and maintenance of operations.

This next generation of digital solutions will empower customers worldwide by helping them in lowering Capex and Opex costs, enhancing operational efficiency, reducing delivery schedules, boosting facility uptime and improving plant safety.

"We are proud to team with IBM to provide digital solutions that address the industry's biggest challenges and needs, allowing us to add value for our customers," said Graham Hill, KBR executive V-P, Global Business Development & Strategy. "This alliance combines the complementary skillsets, know-how and intellectual properties of two leading hydrocarbons and technology companies."

GASKET INSULATION KITS

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Starts with a Gasket Kit (Gasket, Bolts, Nuts, Washers, Spacers, etc.)



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Benefits:

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- Protection for electrical corrosion in dissimilar metal connection.
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48 oilreview.me Issue 4 2017

Two hundred milliseconds to recognise a threat

New technology can help bring about an improvement in the understanding of criminal identity and behaviour, says Andrea Sorri, director Business Development, Government, City Surveillance and Critical Infrastructure, Axis Communications.

AS HUMANS, WE have pretty good antennas that help us sense when a situation becomes dangerous, or that alert us when people behave suspiciously.

A recent study conducted by the French Institute of Health and Medical Research (INSERM) and the Ecole Normale Supérieure in Paris discovered that there is in fact a region of our brain which can perceive dangerous situations or threatening faces in just 200 milliseconds, a sort of “sixth sense” originating from a legacy of our primordial survival instinct when facing fear or panic.

The study shows that such an ‘alarm signal’ is processed by the brain circuits that are responsible for facial recognition. It is very similar to an eyewitness’s ability to accurately describe weapons involved in a crime, while they struggle to remember details about the appearance of the perpetrator.

Cameras can learn

When the image quality is good, who knows, that sixth sense might even be triggered in a security operator watching live video footage on a monitor. In some cities, real-time control centre operators are already trained to understand crowd dynamics and behaviour.

And, if an operator can learn, then could a software algorithm learn as well?

What if network cameras, thanks to an intelligent memory storage system that records recurrent and frequent everyday actions in the monitored area, could automatically recognise suspicious, unusual or atypical attitudes and detect possible perpetrations before they even happen? It might sound futuristic, but it is a possibility that is being discussed.

Meanwhile, the human ability to memorise faces is subject to many variables and not always reliable, so the support of a camera can be crucial.

Investigating and understanding incidents

Reading about the research study also made me look at video surveillance, facial recognition and perimeter protection from a different perspective. Perhaps we humans only need 200 milliseconds for that “sixth sense” to alert us, but if we want to verify, stop and investigate incidents properly then we need more time, more tools and more memory. This is where technology takes over, with cameras helping verify a possible intruder’s identity, and lights or loudspeakers



Early detection of a potential threat is possible with the Axis perimeter defender solution

acting as deterrents.

When it comes to investigation, it's important to consider that there are different profiles of perpetrators, with their own skills, tools and techniques. With security solutions adapted to the task, the combination of thermal and optical network cameras, horn speakers and video intercoms can bring a significant improvement in the understanding of criminal identity and behaviour, rather than just detecting the crime itself. ■



RIG COUNT ←



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			LASTYEAR		
Country	Land	OffShore	Total	From Last Month	Land	OffShore	Total	Land	OffShore	Total
Middle East										
ABU DHABI	35	14	49	-1	32	16	48	25	11	36
DUBAI	0	2	2	0	0	2	2	0	2	2
IRAQ	46	0	46	-3	43	0	43	61	0	61
JORDAN	0	0	0	0	0	0	0	0	0	0
KUWAIT	53	0	53	1	54	0	54	45	0	45
OMAN	54	2	56	1	55	2	57	57	0	57
PAKISTAN	23	0	23	-3	20	0	20	19	0	19
QATAR	5	7	12	-1	5	6	11	2	7	9
SAUDI ARABIA	103	16	119	0	106	13	119	97	18	115
SUDAN	0	0	0	0	0	0	0	0	0	0
SYRIA	0	0	0	0	0	0	0	0	0	0
YEMEN	0	0	0	0	0	0	0	3	0	3
TOTAL	319	41	360	-6	315	39	354	309	38	347

North Africa

ALGERIA	57	0	57	-6	51	0	51	49	0	49
EGYPT	23	4	27	3	24	6	30	46	16	52
LIBYA	0	1	1	0	0	1	1	4	3	7
TUNISIA	0	0	0	1	1	0	1	0	3	3
TOTAL	89	6	85	-2	76	7	83	102	9	111

Source: Baker Hughes



من المنتظر أن يبدأ مجمع نجي سون للتكرير والبتروكيماويات، في شمال فيتنام، العمل مع نهاية العام

نوفرها على الصعيد الدولي لتوفير احتياجات شركات النقل البري، وعملاء البيع بالتجزئة من الوقود. أما فيما يتعلق برفع طاقة التكرير، فنحن نهدف إلى أن تبلغ طاقة التكرير على المستوى الدولي ٨٠٠ ألف برميل بحلول ٢٠٣٠، ونضع أعيننا نصب آسيا لتحقيق هذه التوسعة. وإننا نحفز تقدماً لا بأس به بصدد إنشاء مشروعنا المشترك برأس مال ٩ مليارات دولار أمريكي في شمال فيتنام. كما أوشكنا على الانتهاء من مشروع مجمع نجي سون للتكرير والبتروكيماويات (المعروف اختصاراً باسم NSRP، <http://www.nsrp.vn/home>)، ونتوقع بدء تشغيل مصفاة التكرير بحلول نهاية العام. وهناك ثلاثة عناصر تسهم في الوقت الحالي في نجاح أعمال التكرير: ١. طاقة التكرير العالية التي من شأنها منافسة وفورات الحجم.

٢. الشكل المُعد والمُتطور لعملية التكرير.

٣. التواجد الجغرافي في منطقة تشهد نمواً متزايداً.

وفي آسيا، تتوفر هذه العناصر الأساسية الثلاثة جميعها، ولهذا السبب نسعى لتعزيز قدرات التكرير لدينا هناك. ويعد أحدث مشروعنا المشترك مع شركة النفط العمانية، وهي الذراع الاستثماري للسلطنة في قطاع الطاقة، لتطوير مصفاة الدقم ومُجمع البتروكيماويات، مثلاً رائعاً على التناسب الاستراتيجي.

هذا المشروع يقع في المنطقة الاقتصادية الخاصة في الدقم بالمنطقة الوسطى. وهو أحد أهم المشروعات العمانية في مجال الطاقة. ومن المتوقع أن تبلغ طاقة المعالجة له ما يقرب من ٢٣٠ ألف برميل يومياً. وسوف يوفر المشروع سوقاً مهمة على المدى البعيد لمنتجات الهيدروكربون الكويتية والعمانية، هذا إلى جانب دعم الاقتصاد عبر تطوير المنطقة.

من المتوقع أن يزداد الطلب المستقبلي في الشرق، لا سيما على المنتجات البترولية والخدمات الأخرى ذات الصلة. ففي فيتنام، يتزايد عدد السيارات بسرعة كبيرة تصل إلى ثمانية في المائة سنوياً. ومن المنتظر أن يستمر نمو الطلب في فيتنام والهند ومنطقة شرق آسيا، وخاصة في مجال النقل والطيران، ونهدف إلى تعزيز تواجدنا هناك لتلبية احتياجات عملائنا.

أما بالنسبة لعملياتنا في أوروبا، فنحن نسعى إلى الوصول بعمليات البيع بالتجزئة إلى مستوى الصدارة لضمان قدرتنا على المنافسة المستدامة، وتعزيز أداء مجموعة استثمارنا الحالية. وعلى مدى العقود الثلاثة الماضية، اضطلعت علامتنا التجارية Q8 بدور مهم في تأصيل سمعتنا كلاعب حيوي في الأسواق الأوروبية. فشبكة التي تزيد على ٤ آلاف محطة وقود، تمتد في مختلف أنحاء أوروبا. ونستفيد من قوة عروض البيع بالتجزئة التي نقدمها في عقد الشراكات مع أبرز الشركات الرائدة في السوق، مثل سلسلة سوبرماركت ديلهايز.

كما قطعنا أيضاً شوطاً كبيراً في توفير الوقود النظيف لتحقيق التنافسية، والعمل مع المجتمعات التي نمارس

المؤسسين للاتحاد الخليجي للتكرير (GDA). وتسعى هذه المنظمة غير الربحية للتشارك في أفضل الممارسات في مجال الصناعات التحويلية. وبصفتي رئيس مجلس إدارة الاتحاد الخليجي للتكرير، أنتوي التركيز على دعم الشركات العاملة في مجال التكرير وتسويق المنتجات المكررة والصناعات ذات الصلة مثل معالجة الغاز، وبهذا نوفر لأعضائنا نقطة انطلاق قوية للتعامل مع المشكلات المرتبطة بشركات الصناعات التحويلية.

• هلا حدثنا عن المصفاة الجديدة في شمال فيتنام، والتي على وشك بدء التشغيل، وكيف تعزز استراتيجية شركة البترول الكويتية العالمية التي تهدف لتوسعة نطاق التسويق لمنتجاتكم؟

• • • يعد مشروع مجمع نجي سون للتكرير والبتروكيماويات في شمال فيتنام واحداً من أكبر المشروعات وأكثرها إثارة في تاريخ شركة Q8. وهو مشروع مشترك بين الأخيرة وشركات بتروفيتنام وادميتسو كوسان وميتسوي كيميكالز الشريكة لإنشاء أكبر مصفاة في فيتنام بطاقة تكرير تبلغ ٢٠٠ ألف برميل يومياً، وقد صُممت لرفع قدرة الشركة الكويتية على التكرير بنسبة ١٠٠ في المائة.

وأبرمنا أيضاً مشروعاً مشتركاً مع شركة التكرير ادميتسو كوسان، تحت اسم شركة Q8 Petroleum Idemitsu ذات المسؤولية المحدودة (IQ8 اختصاراً) بهدف توزيع المنتجات البترولية في فيتنام، عبر إنشاء وإدارة شبكة من محطات الخدمة في عموم فيتنام بشكل رئيسي.

هاتان الشريكتان تنسجمان - من الناحية الاستراتيجية - مع هدفنا المتمثل في توفير منافذ لتصدير النفط الخام والمنتجات المكررة الكويتية. وسوف نعمل على توفير منتجاتنا بشكل مستمر وآمن للسوق الفيتنامية الآخذة في النمو، ومن ثم المشاركة بشكل إيجابي في تحقيق التنمية الاجتماعية والاقتصادية في فيتنام.

عملياتنا بها من أجل تخفيف الآثار الضارة على البيئة. وتتميز محطات الخدمة التابعة لنا بلمسة إبداعية، كما تراعي البيئة المحيطة.

• كيف تشاركون مع آسيا في أفضل الممارسات؟

• • • توفر شركة البترول الكويتية خبرات عميقة على مستوى الصناعة لإحداث التكامل بين عمليات التكرير وإنتاج البتروكيماويات. ولم نعد نتشارك خبراتنا فقط على الصعيد المحلي، بل تجاوزنا ذلك لتصبح هذه الخبرات واحدة من أفضل الممارسات التي نتقاسمها مع شركائنا. وتتجلى مشاركة أفضل الممارسات بأوضح صورة في مشروع مصفاة التكرير المشترك في فيتنام. فقد سعيينا إلى تعزيز التعاون مع شركائنا في هذا المشروع، وباتوا يعولون على قدراتنا المتطورة في مجال التكرير والصيانة، ومن جانبنا نُحول على قدراتهم في صناعة البتروكيماويات والتكنولوجيا. وتوفر شركة Q8 Aviation (www.q8aviation.com) لوقود الطيران أيضاً الخدمات الفنية والاستشارات حول التعامل مع وقود الطائرات وتخزينه لكبرى الشركات في فيتنام وتايلاند وسنغافورة والفلبين.

هذا وتحتل بحوث النفط جزءاً مهماً من أعمالنا، ويعتبر مركز البحوث والتطوير الخاص بنا Q8Research (www.q8research.com) رائداً في توفير أفضل الممارسات لتطوير المنتجات ومواصفاتها ومراقبة الجودة. لا سيما في مجال الشحوم ووقود الطائرات ووقود وسائل النقل والمواصلات. وبينما توجد قاعدة عملائه بشكل رئيسي في أوروبا، فإننا نبحت سُبُل توسعة نطاق خدماتنا ليشمل دول منطقة التعاون الخليجي.

على الصعيد الإقليمي، تضافرت حديثاً جهود شركة البترول الكويتية العالمية والشركة الشقيقة لها إلى جانب شركة البترول الوطنية الكويتية مع شركة أرامكو السعودية وشركة نفط البحرين، لتصبح هذه الشركات الأعضاء



بخيت الرشيدى، الرئيس التنفيذي لشركة البترول الكويتية العالمية

خطّ طموحٍ للتوسع

في حوار أجرته معه «النشرة النفطية»، قال بخيت الرشيدى، الرئيس التنفيذي لشركة البترول الكويتية العالمية، إن شركته تعمل على زيادة حصتها في السوق الأوروبية. كما أنها تتشارك مع الدول العربية والآسيوية في أفضل الممارسات في قطاع الصناعات التحويلية؛ مثل مشروعها المشترك مع عمان، ومشروع مصفاة التكرير المشترك في فيتنام. هذا إلى جانب خطط أخرى طموح للتوسع في الأسواق الأوروبية والآسيوية على حد سواء. وإلى نص الحوار:

تراجع الطلب الأوروبي على المنتجات الأوروبية بنسبة ١١ في المائة، وفي ٢٠١٦، تزايد التراجع ليبلغ ١٦ في المائة. ومع ذلك تمكنا من زيادة حصتنا السوقية لأننا ركزنا على الدول التي نعمل بها بشكل رئيسي، وهي إيطاليا وبلجيكا وهولندا ولكسمبرج والسويد والدنمارك وأسبانيا. كما نسعى، في هذه الدول أيضا، إلى تطوير أدواتنا وخدمات القيمة المضافة التي

الصناعات التحويلية المُعقدة بالأسواق الآسيوية الآخذة في التوسع. وقد ظلت أوروبا سوقا رئيسية لنا لأكثر من ثلاثة عقود، وتهدف خطتنا إلى تعزيز مكانتنا هناك عبر تحسين كفاءة عملياتنا الحالية. وبلغ معدل النمو الذي حققته الشركة في أوروبا ١٥ في المائة، وهي نسبة عالية جدا إذا ما أخذنا في الاعتبار تراجع الطلب في المنطقة. وفي ٢٠١٥،

• كيف تضيف شركة البترول الكويتية العالمية القيمة إلى موارد النفط والغاز الكويتية؟

• • شركة البترول الكويتية العالمية هي شركة دولية تعمل بقطاع الصناعات التحويلية وهي تابعة للشركة الأم مؤسسة البترول الكويتية، ونضيف القيمة عبر توفير منافذ بيع النفط الخام الكويتي وتعزيز قدرات التكرير في

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الكويت للطاقة تسعى إلى طرح أسهمها في بورصة لندن



سارة أكبر، الرئيس التنفيذي للكويت للطاقة

تسعى شركة الكويت للطاقة، وهي شركة مستقلة لإنتاج النفط والغاز تشارك في أعمال التنقيب والتطوير والإنتاج لمشتقات الهيدروكربون في الشرق الأوسط وشمال أفريقيا، إلى الإندراج في القائمة الممتازة لبورصة لندن في محاولة منها لتمويل نموها في المنطقة. وقالت الشركة، التي تمتلك أصولاً في عمان ومصر والعراق واليمن، إن الطرح العام الأولي من المنتظر أن يجمع حصيلة أولية إجمالية تبلغ نحو ١٥٠ مليون دولار من إصدار أسهم جديدة عادية. وستتقدم الشركة بطلب الانضمام في يونيو/حزيران، على أمل أن تحقق تعويها حراً كافياً للوفاء بمتطلبات الإندراج في القائمة الممتازة.

من جانبها، قالت سارة أكبر، الرئيس التنفيذي لشركة الكويت للطاقة: «إننا سعداء للإعلان عن نيتنا إدراج الشركة في بورصة لندن، البيت الطبيعي للكويت للطاقة. فالشركة تحظى بمميزات تنافسية تتمثل في علاقاتها الداخلية الوثيقة، وسجلها الحافل بالنجاح التشغيلي في منطقة الشرق الأوسط وشمال أفريقيا، والذي من المتوقع أن يوفر منصة مستقرة تنطلق منها الشركة إلى المستوى التالي من النمو. وقد أنتجنا بالفعل ما يقرب من ٢٧ ألف برميل يوميا خلال الربع الأول من ٢٠١٧، وقد وضعنا إستراتيجية تهدف إلى زيادة هذا الإنتاج بمعدل سريع، لا سيما في أصول «البلوك ٩» التابعة لنا في العراق».

العراق تدعو للاستثمار بمصفاة نفط جديدة

دعت وزارة النفط العراقية الشركات والمستثمرين الأجانب إلى التقدم بعروض لإنشاء وتشغيل مصفاة مخصصة للتصدير بطاقة ٣٠٠ ألف برميل في الفاو قرب مدينة البصرة. وقالت الوزارة في بيان لها إن وثائق التقدم بالعروض توفر نموذجين استثماريين، وهما نظام التملك والبناء والتشغيل، ونظام البناء والتشغيل والتحويل، بحسب رويترز. وأضافت أن الوثائق ستكون متاحة حتى ٣١ مايو/أيار، وأن الأول من أغسطس/آب هو آخر موعد لتلقيها. وكانت طاقة التكرير في العراق، التي تعد ثاني أكبر منتج للنفط في منظمة الدول المصدرة للنفط (أوبك) بعد المملكة العربية السعودية، قد تقلصت إثر اجتياح داعش أكبر مصفاة نفط في بيجي شمال بغداد في ٢٠١٤. وقد استعادت القوات العراقية السيطرة عليها في ٢٠١٥، غير أنها تضررت كثيراً خلال المعارك. وتعتمد البلاد في الوقت الحالي على مصفاة الدورة في بغداد والشعبية في البصرة. وق شهدت صادرات العراق من النفط زيادة كبيرة منذ يناير/كانون الثاني على الرغم من انخفاض إنتاج النفط الخام في البلاد بما يتماشى مع قرارات أوبك لخفض الإنتاج، حسبما ذكرت مصادر صناعية، في محاولة لتعزيز إنتاج المنتجات المكررة والمحافظة على عوائد النفط. وقد أظهرت البيانات، التي جمعتها طومسون رويترز للبحوث النفطية، أن متوسط صادرات العراق من النفط الوقود قد تراوح بين ٨٠ ألفاً و١٦٠ ألف طن شهرياً خلال ٢٠١٦. غير أن الكميات المباعة لآسيا شهدت ارتفاعاً كبيراً هذا العام. فقد تجاوزت الصادرات العراقية من النفط الوقود ٥٠٠ ألف طن في مارس/آذار فقط، بحسب بيانات رويترز.



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رجال الأعمال
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مايو/أيار

23 - 22 ... مؤتمر بترول العراق 2017 .. لندن

23 - 26 ... معرض مجلس صناعات الطاقة

النفط والغاز دبي

31 - 6/1 ... معرض بحر قزوين للنفط

والغاز باكو

يونيو/حزيران

12 - 15 ... مؤتمر ومعرض الجمعية

الأوروبية لعلماء ومهندسي الأرض .. باريس

28 - 29 ... المؤتمر الدولي لأنظمة وإدارة

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«هانيويل يو أو بي» توقع اتفاقية لتوسعة مصفاة النفط الأردنية



مراسم توقيع الاتفاقية

أعلنت شركة «هانيويل يو أو بي» عن توقيع اتفاقية مع الشركة الأردنية لتكرير النفط تتم بموجبها توسعة مصفاة الزرقاء الأردنية بقيمة ١,٦ مليار دولار أمريكي. ومن المنتظر أن تؤدي هذه التوسعة إلى زيادة إنتاجية المنشأة إلى ١٢٠ ألف برميل يوميًا، كما ستتيح للشركة الأردنية لتكرير النفط تحسين جودة منتجها بما يتوافق مع معايير الانبعاثات الأوروبية يورو ٥.

حضر حفل التوقيع على الاتفاقية كلٌّ من رئيس مجلس الوزراء الأردني، هاني الملقي، ووزير الطاقة والثروة المعدنية، الدكتور إبراهيم سيف، ورئيس مجلس إدارة الشركة الأردنية لتكرير النفط، وليد عصفور، ونائب رئيس مجلس الإدارة عمر الكرد، والرئيس التنفيذي للشركة عبد الكريم علاوين، والرئيس والمدير التنفيذي لشركة «هونيويل يو أو بي»، ربيكا ليرت. وفي معرض حديثه عن الاتفاقية، قال عبد الكريم علاوين، الرئيس التنفيذي للشركة الأردنية لتكرير النفط: «تعتبر توسعة مصفاة الزرقاء مشروعًا بالغ الأهمية، لأنه إلى جانب تحسين جودة المنتجات يرفع طاقتها الإنتاجية إلى ١٢٠ ألف برميل يوميًا، وبذلك يسهم هذا المشروع في مساعدتنا لتلبية الطلب المتزايد على الوقود الذي ينمو بمعدل متوسط ٣ في المائة سنويًا». وفي إطار هذا المشروع، الذي يعد التوسعة الرابعة لمصفاة الشركة الأردنية لتكرير النفط،

سيفيسيز» ومقرها هيوستن، والتي تساعد في تكرير النفط الخام لإنتاج عدة مشتقات. كما ستوفر «هانيويل يو أو بي» وحدات «Unicracking» ووحدات معالجة مائية لإنشاء مشتقات نظيفة، إلى جانب وحدات «CCR» و«Platforming» و«Penex» و«MinAlk» و«Merox» و«Selectfining» لإنتاج وقود محركات عالي الأوكتان يحقق احتراقًا أكثر نظافة، ووحدة «PSA» و«Polybed» لتنقية الهيدروجين.

توفر شركة «هانيويل يو أو بي» إدارة خدمات الترخيص وخدمات تراخيص التكنولوجيا والخدمات الاستشارية للتصميم الهندسي للواجهة الأمامية، هذا إلى جانب التصميم الهندسي الأساسي. كما ستوفر أيضًا المحفزات ومعدات المعالجة وخدمات التدريب وبدء التشغيل. وتتضمن مجموعة التقنيات التي توفرها «هانيويل يو أو بي» وحدات تكرير النفط الخام، ووحدات التكرير بالضغط المُصممة من قبل شركة «بروسيس كونسالتينج

إنشاء أول شبكة لأنابيب الهيدروجين في الشرق الأوسط بالسعودية

أعلنت شركة «اير ليكيد العربية»، وهي مشروع مشترك بين شركة «اير ليكيد» وشركة التصنيع وخدمات الطاقة السعودية (طاقة)، عن بدء تنفيذ أول شبكة أنابيب لنقل الهيدروجين في الشرق الأوسط في مدينة الجبيل الصناعية على الساحل الشرقي للمملكة العربية السعودية. وقد صُممت الشبكة لتزويد عملائها، في المرحلتين الأولى والثانية من مدينة الجبيل، بكميات كبيرة من الهيدروجين، وبذلك تسهم في تطوير الصناعات التحويلية، وتحسين الموارد الطبيعية، وترشيد استهلاك الطاقة في المملكة. ويعمل خط أنابيب الهيدروجين لشركة اير ليكيد العربية، والذي يبلغ طوله الإجمالي ٢١ كيلومترًا، على تزويد الشركات الكبرى، وكذلك الشركات الصغيرة والمتوسطة العاملة في مجالات التكرير والبتروكيماويات والبولي سيليكون والزجاج والفولاذ، ببدائل موثوقة ومُجدد من حيث التكلفة عن حلول التزويد المتوفرة حاليًا، مما يسهم في تعزيز التنافسية الصناعية لهذه الشركات، إلى جانب تحسين الأداء البيئي لمدينة الجبيل الصناعية.

يجدر بالذكر أن مشروع شبكة أنابيب الهيدروجين، الذي تحقق بفضل دعم الجهات السعودية المعنية، ينسجم مع رؤية المملكة ٢٠٣٠. إذ يمنح مدينة الجبيل قدرات عالمية في مجال الهيدروجين، ويعمل على زيادة جاذبية مدينة الجبيل لدى الصناعات ذات القيمة المضافة، ومن ثم يخلق فرص عمل للمواطنين السعوديين.



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المحتويات

القسم العربي

أخبار

- ٥ «هانيويل يو بي أو» توقع اتفاقية لتوسيع مصفاة النفط الأردنية
- ٥ إنشاء أول شبكة لأنابيب الهيدروجين في الشرق الأوسط في السعودية
- ٧ الكويت للطاقة تسعى إلى طرح أسهمها في بورصة لندن
- ٧ العراق تدعو للاستثمار بمصفاة نفط جديدة

مقابلة

- ٩ خطط طموح للتوسع

ملخص محتويات القسم الإنجليزي:

تقارير خاصة: شركة تنمية نفط عمان.

استطلاعات: النقل واللوجيستيات.

تقنيات: التحكم في التدفق، الرفع الصناعي، الاستخراج المعزز للنفط.

تكنولوجيا المعلومات: حقول النفط الرقمية.

ADVERTISERS INDEX

Company	Page
ALAA Industrial Equipment Factory Co.	22
All World Exhibitions (KOGS 2017)	53
Axis Communications FZE	17
Bell Energy	40
BORSIG GmbH	10
CompAir	16
DMG World Media Abu Dhabi Ltd (ADIPEC 2017)	33
Eilbeck Cranes	8
Expotim International Fair Org. Inc (Iraq Oil & Gas Show 2017)	55
Faccin srl	19
Finepac Structures Pvt Ltd	41
Flir Systems ME FZE	39
Golden Mountain Enterprise Co. Ltd.	25
Harlow DMCC - Dubai	27
Hi-Force Ltd	12
Hydro Middle East Incorporated	9
Hytera Communications Co. Ltd	29
IIR Exhibitions (Power Nigeria 2017)	43

Company	Page
Inmarco FZC	48
Jotun Paints UAE Ltd (LLC)	5
Kaesar Kompressoren FZE	59
M.A. Qaiser Industrietechnik GmbH	20
MABI AG	49
Quintiq Applications B.V.	35
Raccortubi Middle East FZE	11
Reflex Marine Ltd.	21
Ruths Chris Steak House (Fine Dining Ltd)	57
Sabin Metal Corporation	2
Saudi Leather Industries Company Ltd	31
Shree Steel Overseas FZCO	6
Suraj Limited	47
Swissphone Wireless AG	37
Topline Pipeline & Process Engineers	23
Trans Asia Pipeline Services FZC	13
Volant Products Inc.	15
Yantai Jereh Petroleum Equip. & Tech. Co. Ltd	7

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