

Oil Review

Middle East

Covering Oil, Gas and Hydrocarbon Processing

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Ali Khalifa Al Shamsi, strategy & coordination director, ADNOC and ADIPEC 2015 chairman, discusses the role of ADIPEC in promoting a sustainable energy future.

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18
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→ Editor's note

HOW TIMES HAVE changed since last year's ADIPEC, when the oil price hovered at around US\$80 a barrel. The past year has seen a slew of job losses and spending cuts, with cost optimisation and efficiency becoming the watchwords for the oil and gas industry.

As ADIPEC 2015 chairman Ali Khalifa Al Shamsi points out, innovation is key in helping to reduce costs and keep companies competitive in this challenging environment. Furthermore, the industry's commitment to innovation and research will ultimately determine its capacity to sustainably meet the ever-growing global demand for energy.

This year's ADIPEC will provide a forum to address current challenges, as well as a showcase for all the latest technologies and innovations. With Middle Eastern operators continuing to invest heavily in increasing capacity, the show shows little sign of being hit by the downturn. We hope to see you there!

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Front cover image: am70 / Shutterstock

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Oil and gas CEOs declare action on climate change

THE CEOs OF 10 of the world's largest oil and gas companies – which together provide almost a fifth of all oil and gas production and supply nearly 10 per cent of the world's energy – have declared their collective support for an effective climate change agreement to be reached at the 21 November session of the United Nations (UN) Conference of Parties to the UN Framework on Climate Change (COP21).

In their milestone declaration, the CEOs of the 10 companies that currently make up the Oil and Gas Climate Initiative (OGCI) – BG Group, BP, Eni, Pemex, Reliance Industries, Repsol, Saudi Aramco, Shell, Statoil and Total – confirmed that they recognise the general ambition to limit the global average temperature rise to 2 degrees centigrade and that the existing trend of the world's net global greenhouse gas (GHG) emissions is not consistent with this ambition.

The OGCI member companies have taken significant actions to reduce their GHG footprint, with combined GHG emissions from their operations reducing by around 20 per cent over the past 10 years.

In their declaration, the 10 CEOs said:

"Our shared ambition is for a 2°C future. It is a challenge for the whole of society. We are committed to playing our part. Over the coming years we will collectively strengthen our actions and investments to contribute to reducing the GHG intensity of the global energy mix. Our companies will collaborate in a number of areas, with the aim of going beyond the sum of our individual efforts."

The OGCI also launched its collaborative report – *More energy, lower emissions* – highlighting practical actions taken by member companies to improve GHG emissions management and work towards improving climate change impacts in the longer term. These actions include



significant investments in natural gas, carbon capture and storage, and renewable energy, as well as low-GHG research and development.

Together, the declaration and report set out key areas where the OGCI companies will focus their collaboration, including:

- Efficiency: optimising efficiency of their own operations; improving the end-use efficiency of their fuels and other products; and working with manufacturers and consumers to improve the efficiency of road vehicles.
- Natural gas: contributing to increasing the share of gas in the global energy mix, ensuring it results in significantly lower lifecycle emissions than other fossil fuels for power generation; eliminating 'routine' flaring and reducing methane emissions from their operations.
- Long-term solutions: investing in R&D and innovation to reduce GHG

emissions; participating in partnerships to progress carbon capture and storage; contributing to increasing the share of renewables in the global energy mix.

- Energy access: developing projects to provide people with access to energy in partnership with local and national authorities and other stakeholders.
- Partnerships and multi-stakeholder initiatives: seeking opportunities to accelerate climate change solutions by working collectively or individually in industry and other initiatives.

The OGCI is a CEO-led, voluntary, oil and gas industry initiative that aims to catalyse practical action on climate change through best practice sharing and collaboration. It was established following discussions held during the January 2014 World Economic Forum Annual Meeting and was officially launched at the September 2014 UN Climate Summit.

Qatar's former Minister of Energy launches energy think tank

QATAR'S FORMER MINISTER of Energy and Deputy Prime Minister, HE Abdullah Bin Hamad Al-Attiyah, has launched the Middle East's first think tank committed to the creation of knowledge and solutions critical to the future of the regional and international energy system.

The mission of the Abdullah Bin Hamad Al-Attiyah Foundation for Energy and Sustainable Development will be to build on the legacy of the former minister and promote his ongoing work, providing information, programmes, research and publications for the benefit of future generations in Qatar and for a global audience of stakeholders. The Foundation will aim to give advice and share knowledge by providing

information, research and analysis on energy and sustainable development, primarily related to the Arabian Gulf region; running joint educational programmes with Qatar-based educational establishments; providing relevant publications, papers and special reports to its members; and participating in and organising events.

Energy efficiency will be a key focus of the not-for-profit Foundation. As the rest of the world grows more energy efficient in economic terms, most of the GCC is using ever more energy to produce a unit of economic growth.

"I would like to see the Foundation become the leading think tank in the region and one of the world's leading institutions in the areas of

energy and sustainable development," HE Al-Attiyah said.

The Board of the Al-Attiyah Foundation will consist of a group of distinguished individuals from the past and present leadership of Qatar Petroleum, including Saad Al Kaabi, president & CEO of Qatar Petroleum, and HE Dr. Ibrahim Ibrahim, economic advisor to HH the Emir of Qatar.

"We will advise governments and companies on how to build their own projects; how to cut the fat in their expenses; how to avoid market shocks; how to make the right calculations, and how to plan ahead both in the short term and the long term," said HE Al-Attiyah.



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Kuwait Oil & Gas Show and Conference

Date: 11-14 October 2015

Venue: Kuwait



KOGS 2015 a prelude to better oil and gas future?

THE LARGEST GATHERING in the oil and gas industry in Kuwait – the 2nd Kuwait Oil & Gas Show (KOGS) – took place under the patronage of HH Sheikh Jaber Mubarak Al-Hamad Al-Sabah from 11-14 October 2015 and was officially supported by the Kuwait Ministry of Oil and Kuwait Petroleum Corporation and subsidiaries.

At the opening ceremony held in Kuwait City, Kuwait's oil minister Ali Al-Omair said that current lower oil prices have led to the innovation of new marketing techniques and the event and conferences held at KOGS attempt to address some of the challenges faced by the O&G sector. He added that there were currently no calls from within OPEC to change the oil-producing group's output policy and that a market exit by high-cost producers could help buoy oil prices in 2016.

Under the theme 'Future hydrocarbon resources', KOGS 2015 included the participation of 212 companies from 19 countries. The four-day event addressed topics like reservoir management, production operations, sustainable development, drilling and completion technologies, innovation, refining as well as the petrochemical industry.

Talking about Kuwait's strategy for 2020 and 2030, Kuwait Petroleum Corporation (KPC) CEO Nizar M Al-Adsani said the country has started executing important projects in order to increase domestic production to four million bpd from the current three million bpd; increase rig counts; develop heavy oilfields and free gas fields; build new and upgrade existing refineries, among many others.

Also speaking at the opening ceremony, OPEC secretary general Abdullah el-Badri OPEC said the organisation was confident the oil market will be "more balanced" next year as non-OPEC production has contracted and global demand is increasing. "OPEC is confident that it will see a more balanced market in 2016. In recent months, there has been a contraction in production from non-OPEC producers and an increase in global demand," he added. However, el-Badri also admitted that the "market remains oversupplied" and insisted that stability is paramount to the crude market which faced "extremely challenging times." He predicted that global demand for oil is forecast to rise to 110mn bpd by 2040 from 93mn bpd currently.

Bob Dudley, BP's Group chief executive noted that strong partnerships between international and national oil companies are the key to future success in helping to meet people's growing energy needs for decades to come.

According to Amec Foster Wheeler chief executive Samir Brikho, immediate opportunities for oilfield service providers lie with innovation and innovative approaches if not with entirely new technologies, and the industry must be transformed to deliver capital efficiency beyond cost cutting.



The 2nd Society of Petroleum Engineers KOGS 2015, held at Kuwait International Fair, positioned itself as the premier oil and gas event in Kuwait

The event organisers, Arabian Exhibition Management, lauded the Kuwait government's efforts for a successful show and were buoyant with the response they received from exhibitors.

Stephen Key, chief executive, Arabian Exhibition Management, said, "The exhibition has grown by 20 per cent matched by a 33 per cent increase in the number of conference papers."

"Although in the last few months budgets have been tight and sponsorships have been down, overall the trends have been going upwards in the oil and gas sector, which is very surprising. KPC and its subsidiaries have helped us in every aspect of the conference and the exhibition. This is why KOGS has been successful."

The four-day conference and parallel three-day exhibition attracted a record total of 5,352 attendees from 45 countries, marking a massive 59 per cent increase over the inaugural 2013 edition.

The showcase oil and gas products and services spanned 14,000 square metres of space at Kuwait International Fair.

Principal exhibitors included KPC and subsidiaries, ADNOC, BAPCO, Saudi Aramco and EQUATE. Complementing these regional giants were a host of international powerhouses including Amec Foster Wheeler, Baker Hughes, BP, GE Oil & Gas, Halliburton, ONGC, Schlumberger, Shell, Total and Weatherford amongst others, who exhibited alongside independent specialist suppliers and distributors from Kuwait and across the world. The exhibition also featured large national groups from France, Egypt and Malaysia. ■



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→ Executives' Calendar 2015 / 2016

NOVEMBER 2015

9-12	ADIPEC	ABU DHABI	www.adippec.com
16-18	World Oil & Gas Week	LONDON	www.oilandgasouncil.com
18-19	PEFTEC	ANTWERP	www.peftec.com
23-25	Saudi Arabia International Oil and Gas Exhibition	DAMMAM	www.saoge.org
24-26	Intergas	CAIRO	www.intergas-egypt.com
25-26	Middle East Heavy Oil Congress	MANAMA	www.meheavyoil.com
30 Nov - 2 Dec	KIOG	LONDON	www.cwckiog.com

DECEMBER 2015

6-8	OpEx MENA	ABU DHABI	www.opex.biz
6-9	International Petroleum Technology Conference	DOHA	www.iptcnet.org/2015/qatar
7-9	ICSEE-2015	DUBAI	www.icsee2015.com
9-10	Bottom of the Barrel Technology Conference	ABU DHABI	www.bbtc-mena.biz

JANUARY 2016

17-19	Intersec	DUBAI	www.interseceexpo.com
18-21	World Future Energy Summit	ABU DHABI	www.worldfutureenergysummit.com

FEBRUARY 2016

3-6	Basra Oil & Gas	BASRA	www.basraoilgas.com
14-16	ME-TECH 2016	DUBAI	www.me-tech.biz
22-24	PetroEnvironment	DAMMAM	www.petroenvironment.com
22-24	Iran Oil & Gas Post Sanctions Summit	LONDON	www.iranoilgas-summit.com

MARCH 2016

7-10	GEO 2016	MANAMA	www.geo2016.com
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Readers should verify dates and location with sponsoring organisations as this information is sometimes subject to change.

SAOGE 2015 to highlight Saudi oil and gas opportunities

THE SEVENTH EDITION of the Saudi Arabia Oil & Gas Exhibition (SAOGE) will take place in Dammam between 23-25 November 2015, providing a platform for companies to showcase their latest technologies, and for delegates to build lasting business relationships. His Royal Highness Prince Saudi Bin Naif Bin Abdulaziz, governor of the Eastern Province, will officially inaugurate the show, with around 180 companies from 25 countries due to exhibit and around 8,000 visitors expected. Over the years, the oil and gas exhibition has witnessed strong attendance from industry leaders and professionals, with countries represented this year including Azerbaijan, China, India, France, Germany, Italy, Korea, Malaysia, Pakistan, Qatar, Russia, UAE, USA and the UK. Italy, China and Malaysia will host country pavilions.



The busy exhibition floor at SAOGE 2014

Companies which have confirmed their attendance include key industry players such as China Petroleum Technology & Development Company, Al Estagamah Global Group, Abdullah H. Shuwayer & Sons Trading and Contracting Company, Alfanar, Maxim, Draeger, Pioneer Technical, Saudi Chemical and X-Smart. Saudi Aramco's plans to spend US\$40bn a year over the next decade to maintain production capacity at 12mn bpd and double gas production, are creating plentiful opportunities for the supply of technology and expertise. Despite the downturn, the Kingdom continues to pump oil at record rates to maintain market share.

With its location in Eastern Province, the heart of the Kingdom's oil and gas industry, the event will provide a useful forum to obtain an update on the latest oil and gas developments, and explore business opportunities. For further information, see the website at www.saoge.org.

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Doha prepares to host ninth IPTC

THE NINTH EDITION of the International Petroleum Technology Conference (IPTC) is due to return to Doha, Qatar, from 6–9 December 2015, with Qatar Petroleum and Shell as co-host organisations.

To be held under the patronage of the Emir of Qatar, HH Sheikh Tamim Bin Hamad Al-Thani, the event is expected to attract more than 5,000 attendees from 120 countries, with more than 80 companies set to exhibit their latest products, technologies, and services at the 5,000 sq m exhibition.

IPTC will be organised by the American Association of Petroleum Geologists (AAPG), the European Association of Geoscientists and Engineers (EAGE), the Society of Exploration Geophysicists (SEG), and the Society of Petroleum Engineers (SPE), and will take place under the theme of "Technology and Partnerships for a Sustainable Energy Future".

The event will see two CEO Plenary sessions exploring collaborative strategies for improving the efficiency and sustainability of the current energy sources, as well as innovations in energy production and distribution.

Industry experts will discuss topical issues through five interactive panel sessions entitled 'Supply and Demand: Current Trends, Future Projections for a Sustainable Energy Future'; 'Unlocking Energy Resources through Technology'; 'Who will run the Energy Industry in the Future?'; 'Investing in Energy and Optimising Costs for the Long Term'; and 'The Role of the Oil and Gas Industry: The Climate Change Puzzle.'

There will also be 62 technical sessions



Doha awaits the arrival of IPTC (Photo: Omar Chatriwala/Flickr)

in which more than 300 technical presentations will be presented under nine technical categories, including Geoscience, Drilling and Completions, Reservoir, Field Development, and Over-Arching Industry Issues.

Another highlight will be the presentations by the IPTC Excellence in Project Integration Award finalists – Shell, Total and Saudi Aramco – on 8 December, when the three companies will demonstrate the methodologies and technology behind

their respective projects.

The annual award is given to a project that adds value to the industry and exemplifies strong teamwork, solid geoscience knowledge, reservoir and production engineering acumen, determined and watchful construction, and outstanding facilities engineering practices.

For more information, visit www.ipcnet.org/2015/doha.

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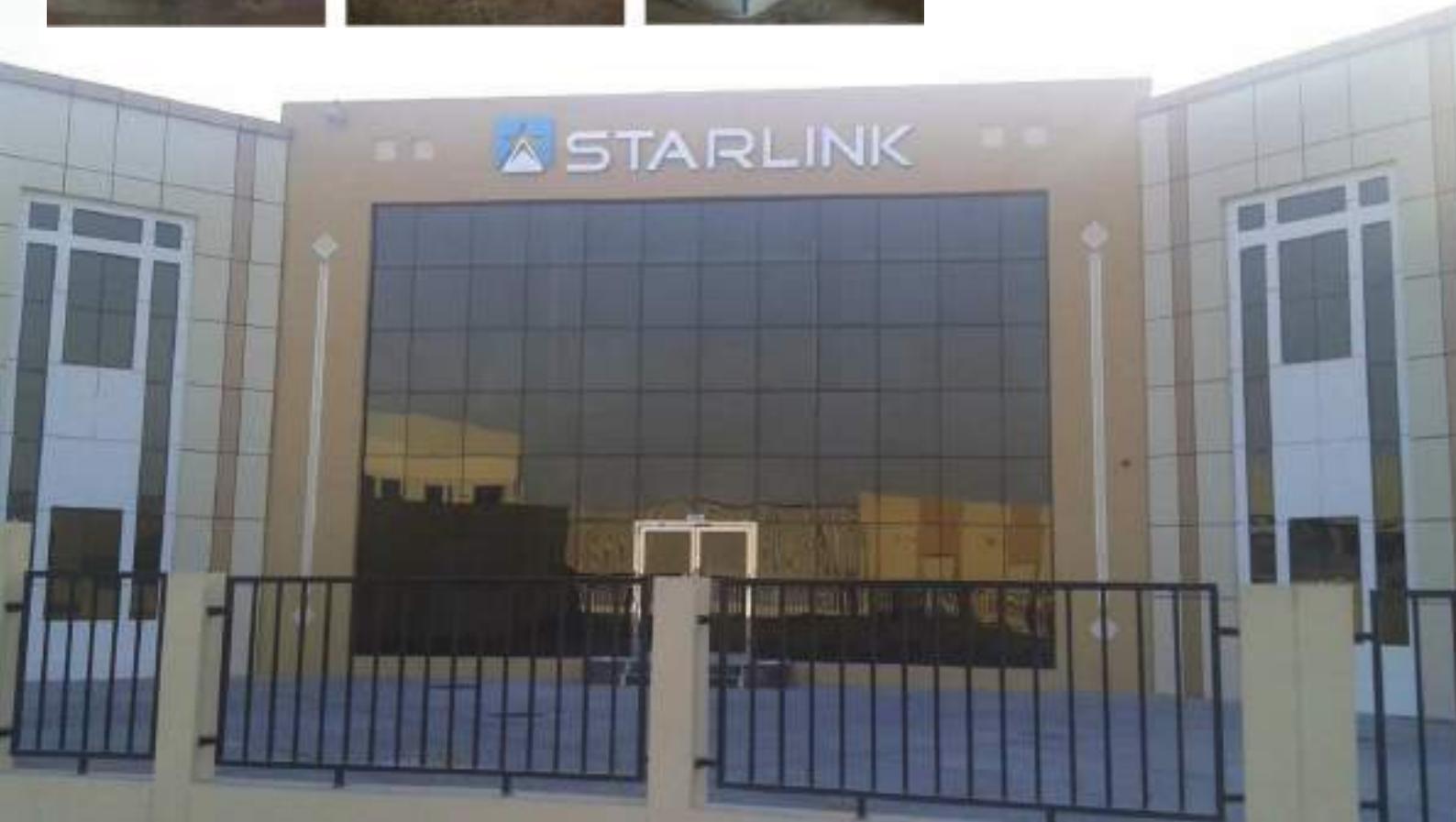
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GCC needs to adjust to new oil price 'reality' says IMF

GULF ECONOMIES NEED to adjust to the 'new reality' of oil prices, according to the International Monetary fund (IMF).

The IMF recently stated that the region should implement spending cuts and income diversification.

The IMF Regional Outlook, which was recently published, noted that Gulf states remain in a strong position to assess their spending.



The GCC is facing an average deficit of 13 per cent of gross domestic product. Photo: Shutterstock

"Not only this year, but for the years to come, these countries will need to make an adjustment to better balance their spending to the new reality of the oil prices," said IMF Middle East and Central Asia chief Masood Ahmed.

The Gulf Cooperation Council (GCC) members Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE are facing an average deficit this year of 13 per cent of gross domestic product (GDP), Ahmed said. The total budget deficit over the next five years will rise above US\$1 trillion as oil prices have fallen to about US\$50 a barrel from about US\$115 in June 2014.

OPEC oil demand to rise higher than expected in 2016

OPEC'S MONTHLY REPORT has stated that likely demand for its oil next year would be much higher than expected. OPEC has reduced its 2016 estimate by 40,000 bpd, citing slower growth in China.

According to its estimates, consumers would require 30.82mn bpd from OPEC next year, which was up 510,000 bpd from the earlier prediction.



Photo: skeeze pixabay

Based on its predictions, it would appear that the OPEC strategy is working, stated a Reuters report. "This should reduce the excess supply in the market and lead to higher demand for OPEC crude, resulting in more balanced oil market fundamentals," said the report.

Last year, OPEC decided against increasing prices and, instead, raised output and sought to recover market share taken by higher-cost rival production.

Currently, oil is trading below US\$53 a barrel - half its price back in June 2014.

Outside of OPEC, supply is expected to decline 130,000 bpd in 2016 as output falls in the US, former Soviet Union, Africa, Middle East and a considerable part of Europe.

Fluor to provide EPC packages for Al-Zour refinery

FLUOR CORPORATION'S JOINT venture team has been chosen by Kuwait National Petroleum Company (KNPC) as the preferred bidder for two engineering, procurement and construction (EPC) packages for the Al-Zour refinery

A host of facilities are included in these two KNPC packages, namely, multiple process units, utilities and infrastructure. All of these will support the development of the new Kuwait-based Al-Zour oil refinery project.

Fluor was awarded the US\$2.6bn contract in Q3 2015, and leads the joint venture that comprises Daewoo Engineering and Construction and Hyundai Heavy Industries as well.

The Al-Zour refinery, when completed, will be among the largest oil refineries in the world and will produce nearly 650,000 bpd. Fluor will provide a variety of key process units, utilities and infrastructure for the project.

Fluor energy and chemicals president for Europe, Africa and Middle East Taco de Haan said, "Fluor is proud to continue our long-standing relationship with KNPC, which spans more than five decades, and to become part of this prestigious and strategically important Al-Zour project.

"From the onset, and throughout every phase of the project, our focus will be on the safe and efficient construction, commissioning and start-up of this new refinery."

Political issues have put a hold on efforts to build the Al-Zour refinery, which was first announced in 2007. Previous contracts issued for its construction were cancelled in 2009 with suggestions that KNPC had not complied with tender rules.



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Petrofac joins forces with Nama

PETROFAC HAS ANNOUNCED that Petrofac Emirates, its joint partnership with Nama Project Services, in consortium with Daewoo Shipbuilding & Marine Engineering (DSME) has successfully achieved the sail-away of the first two modules for ZADCO's Upper Zakum, UZ750 field development, situated offshore Abu Dhabi.

Gulf Piping Company W.L.L. designed the two piperacks as part of a wider project, which sailed from their yard in Mussafah on an 80 km sea journey to the project's south island. According to the firm, this totalled a weight of more than 800 tonnes, with the biggest module around 60 metres long.

George Salibi, project director, stated, "This is a landmark achievement for everyone involved in the project. These are the first two modular items that we've sailed and the success of the operation is testimony to the dedication, efforts and teamwork of everyone involved."



Petrofac celebrated the sail-away of the first two modules for ZADCO's Upper Zakum

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Missing value link in offshore industry

A RECENT SURVEY conducted by Trelleborg's offshore operation paints a positive industry outlook, with decision makers taking a long-term 'value-add' view. Original equipment manufacturers (OEMs) rated product quality, responsiveness and skills above cost as the most important supplier attributes, according to Trelleborg's Next Level Report. In fact, only 4 per cent cited cost as a primary driver in determining preferred partners. However, there is a missing value link, as in practice cost savings appear to be taking priority.

While suppliers with more substance may be winning out at the tender stage, when it comes to implementation, the temptation to try and make short-term cost savings is clear. Seventy-eight per cent of OEMs, operators, contractors and consultants admitted to changing the specification of a project for budgetary reasons.

Those surveyed said they believed relationships between customers and contractors have improved due to better technical support, particularly from specialists dedicated to areas such as R&D, installation and maintenance. However, the majority stated that they would not be willing to work with a supplier that offers training and project support if it costs extra.

This highlights the need for suppliers to clearly communicate the value they deliver, and for customers to think more in terms of total cost of ownership, says the report. A more realistic attitude towards the procurement of services might lead to greater transparency, a collaborative supply chain and a more efficient and effective industry overall.

Thor Hegg Eriksen, president of Trelleborg's offshore operation, says, "The overall effect of reduced oil prices is applying pressure across the supply chain, and that's evidenced by the research findings. While the market buys into choosing a value-add partner over a purely transactional arrangement, it doesn't appear to be maximising the third-party expertise we know can make the difference.

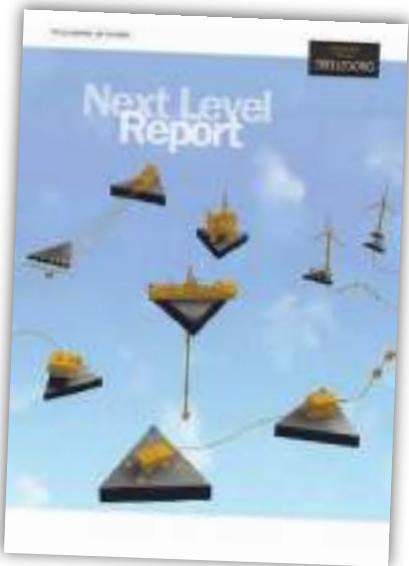
"Our survey points toward an offshore industry that believes it is putting long-term strategies first, when the research shows short-term decisions with cost front of mind. The market also seems to under-prioritise some of the most important value-add attributes that it should be seeking from a provider that can compete on more than just price.

"Innovation, for example, should be high on the agenda but it appears the link between new thinking, products and solutions and a healthier bottom line is missing.

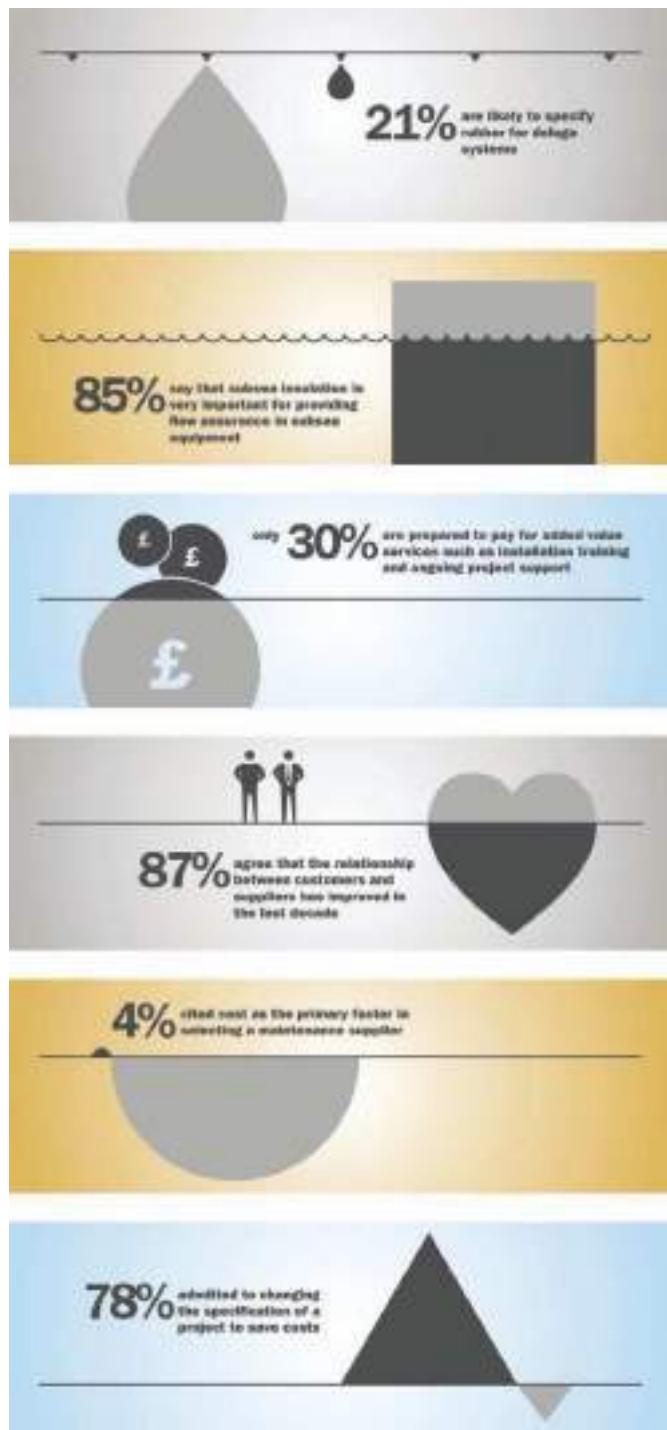
"Indeed, only 3 per cent of respondents identified 'creative approach to the brief' as a sought after supplier competency. This could lead to truly innovative suppliers being overlooked and potential overall cost savings being unexploited."

"The picture that emerges here is one of an industry that is a little set in its ways," concludes the report. "Tried and tested methods and technologies hold sway thanks to an 'if it ain't broke don't fix it' approach. There are certainly opportunities for improvement, and those willing to embrace change could secure a competitive advantage.

"Whether it's a greater knowledge of material properties and applications, streamlining project management, or simply being more open to innovation,



The report highlights the most important supplier attributes in the offshore industry



strategic partnerships will be crucial to unlocking these opportunities. These will help to spread the costs and risks associated with the development of new and improved technology, and help operators access the cutting-edge skills and knowledge required to drive progress.

"Collaboration is the key to growth as we drill ever deeper in search of success."

Trelleborg's offshore operation surveyed a global audience sample of original equipment manufacturers, operators, contractors and consultants, to identify ways in which the industry can respond to pressure against a backdrop of slowed market growth.

The report can be downloaded at www.trelleborg.com/next-level-report.

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Progress is Life

Iran to ramp up production following lifting of sanctions

FOLLOWING THE LIFTING of sanctions, Iran is expected to raise production by 500,000 bpd, according to senior oil industry officials. This target is expected to take less than a week after sanctions are lifted, they added.

The country is keen to regain its market share in the oil sector, and those likely to benefit from this increase in production are customers in Europe and Asia.



Iran is hopeful of regaining its position as a leading OPEC oil producer. (Photo: Schmucki/Pixabay)

Conditional sanction waivers have been approved by the USA but they will not come into effect until Tehran curbs its nuclear programme as per the nuclear deal that was agreed upon in July in Vienna. Since the deal was announced, Iran has been eager to increase oil production and exports, and eventually regain its position in OPEC as a major oil producer.

Iranian oil minister Bijan Zangeneh has said that OPEC would give room for Iran's gradual return to the market. Ever since sanctions were imposed, Iran's oil exports more than halved to 1.1mn bpd, compared to the 2012 levels of 2.5mn bpd.

'Balanced oil market likely next year'

WHILE THE DEMAND for crude is increasing globally, non-OPEC countries are producing less of it, aiding with an equilibrium in supply and demand in oil, said OPEC general secretary Abdalla Salem El-Badri. At a conference held in Kuwait City, El-Badri said that the current market situation appears positive and he expects a balanced market in 2016, should the current situation continues.

OPEC is expected to maintain output at 30mn bpd to re-balance the market and support prices, with no plans for a change expected from any OPEC member, said Kuwait oil minister Ali Al-Omair. OPEC has kept the group's official production target unchanged since June and has since exceeded it for 16 consecutive months, according to Bloomberg, in an effort to maintain market share amid a worldwide supply glut.



Demand for oil could reach 110mn bpd by 2040, said El-Badri.

Egypt gas discovery significant for Eastern Med

THE DEEPWATER ZOHR gas discovery in Egypt is of major significance to the Eastern Mediterranean region, says global consultancy IHS. As the largest gas find in the Mediterranean Sea, Zohr has the potential to supply much of Egypt's increasing domestic gas demand and will likely have an impact on regional gas commercialisation plans, the consultancy says. Eni's announcement in late August describing deepwater discovery well, Zohr 1X NFW, put initial potential reserves at an estimated 30 trillion cubic feet (Tcf) of natural gas, or 5.5bn billion barrels of oil equivalent (boe). IHS Energy analysis estimates that the find has significant technical, commercial and strategic implications for the gas market in Egypt, the region and the industry, where Egypt's access to monetisation infrastructure will likely put it ahead of rivals if commercial terms are right.

"Egypt has fast-growing domestic demand and decreasing production at the same time, so the Zohr discovery represents a major source of relief in the context of increasing gas imports," said Mohamed Zine, regional director for Africa at IHS Energy.

Egypt has been facing increasing energy deficits over the last four years.

BP and CNPC to strengthen oil alliance

BP AND CHINA'S CNPC are expected to form a strategic alliance to develop oil resources in Iraq's Rumaila oilfield and other regions.

Chinese president Xi Jinping who has been on an official visit to the UK, is expected to sign this deal among others, stated a Reuters report. BP and CNPC will also seek to expand into new joint ventures in other parts of the world, according to the sources. No clear production or investment targets are expected to be included in the deal, they said.

Rumaila in southern Iraq is the world's second-largest oilfield that produced 1.34mn bpd in 2014, said the BP website. Rumaila now delivers more than a third of Iraq's oil as production has risen from 950,000 bpd back in 2010.

BP and CNPC own stakes in the Rumaila oilfield. The 25-year technical service contract (TSC) was signed between SOC and BP (47.6 per cent), PetroChina (46.4 per cent) and the State Oil Marketing Organisation (six per cent), which sets out the framework to re-develop Rumaila and significantly increase production output, added the website. In June 2010, the Rumaila Operating Organization was formed as a joint venture with these organizations, with the remit to operate and redevelop the field, with BP as the lead contractor. In September 2014, the TSC was extended by another five years to service the field through to 2034, with the target of producing 2.1mn bpd.



Rumaila's production was 1.34mn bpd in 2014. (Photo: GeneratorPowerProducts/Pixabay)

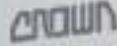
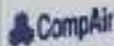
By Q3 2016, the gap between demand and supply for crude should become narrower, said Kuwait National Petroleum Company CEO Mohammad Ghazi Al-Mutairi. OPEC's monthly report states that the organisation expects demand for its crude to reach 30.8mn bpd in 2016. In September, OPEC members pumped 31.57mn bpd - the highest level since 2012.

Further, demand is expected to touch 110mn bpd by 2040, showing promise for the industry, added El-Badri. Specifically, Kuwait is set to boost output to more than 3mn bpd in Q1 2016, Al-Omair said. The country will increase production by as much as 100,000 bpd from current levels and plans for output to reach 3.2mn bpd.

OPEC's next policy meeting is likely to take place on 4 December 2015 at its Vienna headquarters.

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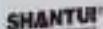
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Shaikan oilfield's proven and probable reserves rises

PROVED AND PROBABLE oil reserves at Gulf Keystone Petroleum's Shaikan oilfield have increased from 299mn gross barrels to 639mn gross barrels, based on an updated *Competent Person's Report* from Gaffney, Cline & Associates.

The oilfield's proven reserves have now increased 55 per cent to 306mn barrels from 198mn barrels last March, said the report.

Based on the new findings, the Iraqi oil and gas explorer can focus on developing the field at lower costs. The company's Shaikan oilfield, located in northern Iraq, has the potential to produce 100,000boepd. Using gas to aid oil recovery rather than water means the field's performance is more predictable, said the company. Now, each well can yield more reserves and operating costs (per barrel) are lower.

The company's chief executive Jón Ferrier described the new development as "a further independent endorsement of the calibre of Shaikan as a world-class field", adding that its technical confidence has markedly improved following the update.

Further, the company is preparing a revised field development plan based on fewer wells.



The Iraqi oilfield can now be developed at optimised costs.

(Photo: LindseyG/Flickr)

Morocco's oil refinery given lifeline

MOROCCO'S OIL REFINERY Samir has been given capital of US\$1.04bn to resume production and end the company's financial troubles. The company had suspended oil production in August 2015 at the Mohammedia plant, which was producing 200,000 bpd.

Samir is the country's only refinery, controlled by Saudi Arabia's Corral Petroleum Holdings, is planning to resume production. As Morocco's sole refinery, its closure would make the country entirely reliant on imports. At just under 300,000 bpd, Morocco's petroleum consumption is Africa's fifth largest, according to the US Energy Information Administration.

Samir officials said that Corral Petroleum Holdings will receive US\$672mn of the capital increase before 15 November from owner Mohammed al-Amoudi, if minority stakeholders do not subscribe.



Samir is Morocco's only oil refinery. (Photo: jp26jp/Pixabay)

Saudi Arabia will continue with oil and gas investments, said Ali al-Naimi

LEADING OIL PRODUCER Saudi Arabia is expected to continue with investments in oil and gas as well as solar despite the fall in oil prices, said the country's oil minister Ali al-Naimi.

The industry, according to al-Naimi, has witnessed a series of ebbs and flows from the 1970s that have affected oil and energy sectors.

"This volatile situation is not in the interest of the producing and consuming countries, and the G20 countries can contribute to the stability of the market," he said.

Global oil investments this year are expected to drop by 20 per cent, marking their biggest decline in history, said International Energy Agency head Fatih Birol. Naimi said Saudi Arabia's investments should continue in exploration, production, refining as well as other alternative sources such as solar energy. "The world needs clean, continuous and available energy now and for future generations," he said.

Naimi met with his USA, Russian and Indonesian counterparts in Istanbul, where they

discussed bilateral relations in the field of petroleum and protecting the environment.

Oil prices have almost halved in the past year because of excess supply, although analysts see signs that OPEC's strategy of allowing prices to fall to put a squeeze on growth in high-cost production areas is having some impact. International oil companies have significantly lowered spending this year due to persistently low oil prices, cutting budgets and thousands of jobs.

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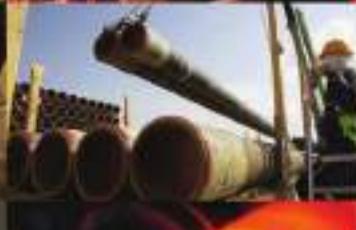
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BP to begin North Alexandria gas production by early 2017

BP IS SET to begin production of gas from the North Alexandria concession in early 2017, rather than the previously planned mid-2017, according to Egypt's petroleum minister Tarek El Molla.

Output is expected to be around 12.74 cu/m per day in 2017 and touch 33.98 cu/m per day by the end of 2019, the minister said.

Egypt's production of gas could aid the country by offsetting the energy shortage, which has affected industrial production across the country, said BP.

Earlier in October, the British oil major had been awarded three offshore exploration blocks, with an investment of US\$229mn along with partners.

BP added that Egyptian authorities have been working to improve terms for foreign oil and gas businesses and introduce competitive pricing that would encourage investment.

Formerly an energy exporter, Egypt's oil and gas production has been declining while consumption has been on the rise, forcing the country to divert supplies to the domestic market.



Egypt's energy self-sufficiency is being given a boost by the government (Photo: Mike Mozart/Flickr)

Bahrain set to build US\$400mn FLNG terminal

BAHRAIN IS SET to award a US\$400mn contract to build a floating LNG (FLNG) terminal off the country's northeast coast in November.

Bahraini energy minister Abdulhussain Mirza said that the LNG terminal will be constructed near Khalifa Bin Salman Port and is expected to be operational and able to receive ship deliveries of LNG by Q1 2018, according to a report in Gulf Daily News.

"This will allow us to import 11.3mn standard cu/m of gas per day with flexibility

to expand it to 22.6mn standard cu/m per day. This will be a complete solution for Bahrain's gas requirements and the country will never be short on the quantity of gas needed," he added.

It was reported earlier this year that the National Oil and Gas Authority (Noga) was planning to build the floating LNG terminal to augment gas production.

"The bidding closed in January for the provision, which is a combination of an LNG floating storage unit and an onshore re-gasification plant," said Mirza.

Barzan project expected to begin production by year-end

QATAR'S BARZAN GAS Project (BGP) is expected to begin production by the end of 2015, according to a report by the Qatar National Bank (QNB).

The GCC nation's domestic gas consumption has grown by around 80 per cent over the past five years – increasing from 24.9 bcm in 2009 to 44.8 bcm in 2014 – largely propelled by increasing demand for electricity and water.

The BGP was approved in 2011, with ExxonMobil and Qatar Petroleum (QP) signing agreements, and LNG enterprise RasGas managing the project.

The main drilling platform to supply the gas plant is located 80 km northeast of Ras Laffan Industrial City, with onshore and offshore facilities to be completed by Japan's JGC and South Korea's Hyundai Heavy Industries.



The Barzan Gas Project will contribute towards satisfying Qatar's electricity and water requirements. (Image source: ShinyThings/Flickr)

Sound Energy to buy MPE's Moroccan interests

SOUND ENERGY HAS signed heads of terms with Maghreb Petroleum Exploration (MPE) to purchase the latter's 25 per cent carried working interests in three onshore permits in Sidi Moktar, Morocco.

The permits cover 2,700 sq km in the Essaouira Basin and contain a material existing gas discovery in the Lower Liassic (Kechoula) where two wells have already been drilled and a near term well test is awaited prior to possible commercial production. Initial estimates by MPE have confirmed Kechoula to have an unrisked mid case gas originally in-place (GOIP) of 8.3bn standard cu/m. There is also significant (in excess of 28.3bn cu/m of unrisked GOIP) Triassic exploration potential.



The three blocks have been producing gas since the 1950s (Photo: Tod Baker/Flickr)

Under the heads of terms MPE has agreed to grant Sound Energy an option to purchase its 25 per cent carried working interest in the Sidi Moktar Licences for US\$1.13mn at any time up to first commercial gas from a Sidi Moktar Licence. On grant of the option, Sound Energy will issue MPE with new ordinary shares in the company with a market value of US\$5.5mn.

Sound Energy will now finalise due diligence and work with MPE in the preparation and negotiation of contracts for execution.

CEO James Parsons said, "The option will, when granted, enable Sound Energy to secure a 25 per cent carried interest in an already successfully drilled gas discovery with potential near-term production and significant deeper exploration potential. An interest in Sidi Moktar would also represent the second material asset in Sound Energy's onshore Moroccan gas portfolio, which is underpinned by strong European gas fundamentals."

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Shell pens two-year Jordan LNG supply contract

SHELL HAS WON a two-year contract to provide Jordan with liquefied natural gas (LNG) in 2016 and 2017.

The director general of Jordan's National Electric Power Company (NEPCO) Abdel Fattah Daradkeh said that, under the terms of the contract, Shell is expected to provide up to 20 shipments of LNG over the next two years.

With each shipment standing at around 3.3 trillion British Thermal Units (BTUs), the supply will cover about 40 per cent of Jordan's annual power needs.

Back in July 2015, NEPCO floated a tender for the purchase of LNG for four years, but awarded the contract to Shell for two years because several companies had submitted bids.

Jordan imports nearly 97 per cent of its required energy, and is particularly reliant on LNG for power generation.



Shell is expected to provide up to 20 shipments of LNG over the next two years (Photo: Shell/Flickr)

Shah development project reaches full capacity

THE UAE'S SHAH Gas Development project has reached its full production capacity of 28.3mn cu/m, according to Al Hosn Gas chief executive Saif Ahmed al Ghafli.

Al Hosn Gas is a 60:40 joint venture between UAE's ADNOC and USA's Occidental Petroleum, and manages the Shah sour gas field that lies around 200 km west of Abu Dhabi.

The project is considered a highly ambitious one for the UAE as it is designed to develop and process very sour gas.

Some of the largest amine treating and sulphur recovery units have been used on this plant for extraction, with the project likely to process 0.5 bcf per day of sour gas, according to officials.

Earlier this year, Ghafli had anticipated that the project would reach its full capacity by the end of 2015. He had said that the scale of the project was larger than any other sour gas project worldwide. The field has very high levels of hydrogen sulphide and carbon dioxide, making it a hugely profitable project for the country.

Noble Group awarded new slots for Egypt LNG delivery

NOBLE GROUP HAS been awarded a number of new slots for mid-term delivery of LNG cargoes to Egypt's second floating import terminal, which is due to begin operations next month.

The slots were awarded by state-owned Egyptian Natural Gas Holding Company (EGAS) following a competitive tendering process.

Egypt is the fastest-growing market for LNG globally and plans for a third import facility could see it become one of the five largest importers.

Gareth Griffiths, Noble's global head of power, gas and carbon trading, said, "LNG imports are a crucial part of the Egyptian energy mix, helping to ensure a reliable supply of gas for the power and industrial sectors."

"The new LNG supplies will help address Egypt's energy deficit and play an important role in its economic growth in the coming years. Egypt is emerging as a key LNG market and we are pleased that we continue to build on our successful track record in the country."

The agreement follows Noble's previous success in Egypt's first import tender early in 2015, and builds on Noble's existing business in the country.

The company commissioned Egypt's first terminal in Ain Sokhna and delivered the first two LNG cargoes ever imported into the country. Further deliveries under this first import contract are scheduled in 2015 and 2016.



Egypt is the world's fastest growing LNG market (Photo: Ken Hodge/Flickr)

Siemens signs service deal with UAE's Dolphin Energy

SIEMENS HAS SIGNED a contract with Dolphin Energy Limited, headquartered in Abu Dhabi, to extend for an additional 18 years the existing service agreement for aero-derivative gas turbine trains operating at the Dolphin Gas Project.

Under terms of the deal, Siemens will provide service and maintenance for the nine Industrial Trent 60 aero-derivative gas turbines with nine Dresser-Rand DATUM centrifugal compressors operating at Dolphin Energy's gas compression and processing plant, located at Ras Laffan, Qatar.

The contract will be managed locally through the Siemens Qatar team both at Dolphin Energy Tower in Doha and at the main operational site at Ras Laffan Industrial city.

A signing ceremony was held at Dolphin's headquarters in Abu Dhabi, during which Adel Ahmed Albuainain, CEO of Dolphin Energy, and Fatih Sakiz, CEO of Siemens Qatar, signed the contract in the presence of senior representatives from both companies.



The Siemens Industrial Trent 60 is one of the most advanced aero-derivative gas turbines available (Photo: Siemens)

"This long-term service agreement places our company on an even stronger footing because it supports our efforts to ensure the sustainability, reliability and availability of natural gas exports to the UAE and Oman," commented Albuainain. "It also builds on the existing strong relationship we developed with Rolls-Royce, which has now transferred to Siemens and continues to provide Dolphin Energy with direct access to the original equipment manufacturer, thereby providing us the best service available in the market."

The Dolphin Gas Project, Dolphin Energy's major strategic initiative, involves the production and processing of natural gas from Qatar's North Field and transportation of the dry gas by sub-sea export pipeline from Qatar to the UAE, which began in July 2007.

San Leon Energy hits Morocco gas

NORTH AFRICA-FOCUSED FIRM

San Leon Energy has announced the discovery of gas at Tarfaya Block onshore Morocco.

Morocco's Office National des Hydrocarbures et des Mines (ONHYM) and San Leon Energy intend to jointly apply for a new eight-year exploration licence.

The company also wants to acquire a 3D seismic survey across the multiple channels of the Tertiary play, one channel of which was drilled by the Laayoune-4 well.

The well (formerly known as El Aaiun-4) was drilled with Entrepose Drilling's Cabot 750 rig, targeting Tertiary channel sandstones and with an expected total depth of around 2,000 metres below rotary table (mBRT).

The work confirmed the presence of gas shows, the 'good quality' of the reservoir and the 'encouraging potential of the block', San Leon said.



San Leon have confirmed the presence and 'good quality' of gas (Photo: Mike Fisher/Flickr)

Middle East leads gas processing capacity expansion, says GlobalData

GLOBAL GAS PROCESSING capacity is projected to increase from around 458 billion cubic feet per day (bcfd) in 2015 to almost 516 bcfd by 2019, driven by a full slate of projects in the Middle East, North America and Asia, according to research and consulting firm GlobalData.

The company's latest report states that increasing domestic demand and opportunities for exports are driving gas processing construction plans in the Middle East and North America. The two regions together account for more than half of the planned global gas processing capacity growth and capital expenditure (capex) through the end of 2019.

The report highlights that some of the largest planned gas processing plants slated to come online are located in the Middle East, including the Kish terminal in Iran and the Wasit terminal in Saudi Arabia, with capacities of around 3 bcfd each.

"The Middle East has the most gas processing capacity growth with the highest spending of anywhere in the world over the next five years," said Matthew Jurecky, GlobalData's head of oil and gas research and consulting. "Around US\$32bn is estimated to be spent on the proposed projects to increase capacity to 17.9 bcfd."

GlobalData names Gazprom, Shell and Saudi Aramco as some of the companies leading the construction of the most significant planned gas processing plants.



Companies leading the construction of the largest planned facilities include Shell, Saudi Aramco and Gazprom (Photo: Shell/Flickr)

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The rise of the Chinese energy giants

Chinese energy companies are becoming increasingly powerful, according to the *Platts Top 250 Global Energy Company Rankings*.

CHINA IS SHOWING its increasing strength, not only as an energy production and demand centre, but also as a leader in the world energy arena, with three companies in the Top 10 according to the *Platts Top 250 Global Energy Company Rankings* announced on 27 October. The Rankings, now in their 14th year, were unveiled to more than 300 energy executives at an annual dinner in Singapore, hosted by Platts. They reflect the financial performance of publicly traded energy companies with assets greater than US\$5 billion, and are based on a combination of asset value, revenue, profit and return on invested capital (ROIC) for the latest fiscal year (2014).

Two Chinese state-backed energy giants, CNOOC Limited and PetroChina Company Ltd., moved into the Top 5 for the first time since the rankings began in 2002, PetroChina having appeared in the Top 10 for 11 years, and CNOOC Limited hovering in the 13th and 12th spots for the last several years. Despite weaker coal markets, China Shenhua Energy jumped into the Top 10 for the first time at number 9, up from 15th place last year, as shrinking earnings from leading oil producers gave it a relative boost. It was the only coal and consumable fuel company in the leaderboard and marked the first time that China has had three companies in the top ranks, traditionally dominated by European and American counterparts.

Retaining its stronghold

Exxon Mobil Corporation retained its stronghold on the number one spot for the 11th consecutive year, although integrated oil majors made up only half of this year's Top 10, with the sector's slightly weaker standing paving the way for two refining and marketing companies – Phillips 66 and Valero Energy Corporation – to join the Top 10 in 6th place and 8th place, respectively. Besides climbing from its 2014 rank of 13th place, Phillips 66 retained its position as the world's biggest refiner. Valero, the world's biggest independent refiner, continued to benefit from the glut of US crude oils in the US Gulf Coast region.

“ Two Chinese state-backed energy giants moved into the Top 5 for the first time”

The Americas moved up the regional rankings, with Americas energy firms now comprising 45 per cent of the Top 250, crowding out a number of rivals from Asia and Europe. The changes also mark an inflection point for Asia's energy sector, which for years has seen its overall standing in the Platts Rankings edge higher and higher. While Asia's emerging economies, led by China, continue to pull in the biggest share of incremental global commodity demand growth, the pace of growth is now clearly slowing, says Platts.

The Platts Top 10 Global Energy Companies

2015 Rank	Company Name	2014 Rank
1	Exxon Mobil Corp	1
2	Chevron Corp	3
3	Royal Dutch Shell plc	5
4	CNOOC Limited	12
5	PetroChina Ltd	7
6	Phillips 66	13
7	ConocoPhillips	10
8	Valero Energy Corp	19
9	China Shenhua Energy Co Ltd	15
10	OJSC Rosneft Oil Co	6

Source: Platts

Noticeably missing from the Top 5 and 10, were the UK's BP plc, France's TOTAL SA, and Russia's OJSC Gazprom. The latter state gas supplier, which ranked 4th overall last year, fell 39 places to 43rd, buffeted by the ruble's collapse, its impact on long-term credit, and other factors. TOTAL, once a Top 10 fixture, tumbled to 26th place this year as its earnings and returns faltered. While BP, ranked second last year, fell to 29th place this year, due in large part to its weaker profits and poor ROIC.

The number of EMEA entries on the list continued to slide this year; of the Top 50 Fastest Growing energy firms, only four were based in EMEA. The APAC region also slipped in terms of number, growth rates and average rank, although its fastest growing ten companies had an average 3-year compound growth rate (CGR) of 21 per cent, bettering the 14.8 per cent CGR of its European counterparts.

Shale oil retained centre stage, helping to usher 113 Americas companies (89 US and 14 Canada) into this year's Top 250, with an average ranking of 119. This is up from 103 companies with an average rank of 126 in 2014, but still below the 2003 peak of 149 companies. Despite being in its fifth year and in a much lower price environment, the shale oil revolution in some places of the USA has barely begun, says Platts. Basins such as the Permian in West Texas and Mexico are reportedly becoming more productive, and producers continue to knock down the cost of production, requiring fewer rigs to continue high oil output.

Dominating the world's Top 10 and Top 50 Fastest Growing Energy Company rosters are the Americas' tight and shale oil producers, as well as mid-stream and refining companies that are carrying and processing their increasing production volumes.

India also performed well with 14 energy companies on 2015 list, as compared with 13 in 2014. India's three leading energy companies included Reliance Industries (14th), ONGC (17th) and Coal India (38th). ■



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Competition among oil producers intensifies



The oil markets face a period of continuing uncertainty, says Samuel Cizcuk.

GLOBAL OIL MARKETS might have pulled themselves out of a recent low, but amid continued overproduction and uncertainty over whether last year's strong demand growth will be sustained, even a late-2016 market tightening might prove elusive. Meanwhile, the direction of global supply is clouded as well, with the capex cuts of the past year continuing, while Iran's oil exports might soon be unfettered by sanctions.

The oil industry is facing uncertainty at a time when producers around the world are starting to feel the pain from low prices. Following last year's rout, spring gave rise to optimism over demand growth being able to catch up with runaway supply relatively soon. Consequently, crude prices made a

partial rebound. By the end of summer another rout occurred, however, and demand optimists had to give way for "lower for longer" price scenarios.

Arguably, demand growth surprised on the upside during the second half of 2014 and the beginning of 2015. Forecasts had to be revised to allow for the price factor pulling demand growth sharply upward, particularly because of the return of impressive demand growth in China and North America.

By October 2015 it looks as if that scenario might have run its course, however. While demand growth is likely to continue through 2015 and 2016 as long as the global economy stays its course, China has officially adjusted its GDP growth forecasts lower and predicted a greater part of economic expansion will come from its service sector. This means gasoline and diesel demand growth will respond comparatively less to GDP growth than in the previous years of rapid industrial expansion. Moreover, doubts regarding the

veracity of China's official growth data are aired with increasing frequency and by an increasing number of analysts.

The loss of confidence in rapid demand growth, which had been hoped to counter the oversupply in the not too distant future, means many market actors are increasingly scrapping some of the most optimistic crude price scenarios. Fewer expect oversupply to decline until before late-2016, with end-2017 seemingly gaining adherents recently. Uncertainty about Chinese demand and statistics is only one part of that.

Little changed

On the supply side, little has changed. True, decline is evident in US shale oil, but more will have to come to really make a difference. Meanwhile, coordinated output cuts from OPEC and other countries, such as Russia and Mexico, seem as unrealistic as ever. Russia has even declared that it might be lacking the technical means to cut output without impacting its ultimate recovery levels at mature oilfields. If so, that

“ The oil industry is facing uncertainty on an almost momentous scale”



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Currently, SOCAR-AQS implements works on drilling the wells from fixed platform 11 located on Shallow Water Gunashli Field, and from fixed platform 1 located on Umid Field. At the same time, the company is continuing preparatory works on drilling the wells on the West Absheron, Bulla and Gunashli 7 platforms.

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At present, SOCAR-AQS is carrying out the works on implementation and subsequent certification of its system based on the requirements of API Spec Q2. In 2015, SOCAR-AQS was certified by Azermis for completing the Enterprise Development and Training Programme in Oil Well Services.



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should put such an alternative to rest, as Russia's remaining option would be cutting its output only at newer East Siberian oilfields. Doing that would undercut a decade's efforts to build Asian market shares through the ESPO pipeline bridgehead – an unthinkable strategy.

That, together with the support the two countries extend to opposing sides in the Syrian conflict and elsewhere in the Middle East, should likely put a damper on attempts to build trust and cooperation on cuts between the parties.

Furthermore, it still makes very little sense for Saudi Arabia and its Gulf producer allies within OPEC to relent in their drive against high cost producers (of which Russia to some extent is one) at this point. Output cuts would lead to a crude price rebound, which would quickly spur new shale oil expansion, leading to a renewed loss of market share for Gulf producers and a derailing of the shale industry's nascent drive towards consolidation. This consolidation is necessary to at least somewhat change the impulsive nature of the shale oil industry, by limiting the number of small players without any global demand-tuned outlook, whose only parameter of success is achieving near-term output growth.

The supply picture is, like demand, complicated too, however. While North American shale and oil sand producers are very much on the defensive, the battle for market share seems to be coming home to the very centre of OPEC. The ratification of the Iran nuclear agreement by all sides in the past month means that the most serious remaining hurdles to the agreement's implementation are out of the way. Provided that Iran continues to demonstrate the political will to meet the agreement's stipulations – reneging now would be an almost unthinkable squandering of invested political capital without the prospect of a real upside – any risk of the USA breaking out of its circle of allies and abandoning the deal, has declined. Sanctions on Iran's oil exports, shipping insurance and bank transfers will be gradually lifted as the deal is implemented.

“ Sustained upstream production capacity growth in Iran is likely to be well over a decade away”

Window for Iran

This opens up a window for Iran to try to regain its crude oil market share, at least until the next US president is inaugurated, but quite likely also beyond that. Iran's capabilities, after years of sanctions and



North American shale and oil sand producers are on the defensive
(Photo: Max Phillips / Jeremy Buckingham MLC)

before that, years of mismanaged investment and maintenance budgets, are in doubt. Annual natural decline rates in Iran were averaging as much as 8 per cent before sanctions set in, and reached 10-12 per cent at some key large mature oilfields. As investment in new production capacity has frozen to a virtual standstill in the past few years, a rapid return of the almost 1mn bpd of the export capacity shut in by sanctions, seems highly unlikely. Added to the mature decline, there are maintenance and reservoir management issues stemming from underinvestment and a dearth of western technology. Taken together, these issues are likely to cap Iran's exports at 1.7mn bpd for the foreseeable future. Yet, even reaching that level will be hard. Within the coming 18 months only an additional 400,000-500,000 bpd, on top of Iran's current exports of around 1mn bpd, can realistically be expected.

Of course, Iran holds vast potential for upstream growth, but this hinges on a return of foreign investment on a large scale. Investment in both oil and gas had dried up in Iran several years before hydrocarbon export sanctions kicked in during 2012, mainly due to poor investment terms dictated by resource nationalism. A new model contract designed to overcome IOC scepticism and attract new entrants is being designed, but has yet to be unveiled. The process is being engineered by oil minister Bijan Zanganeh, who authored Iran's last successful push to attract upstream foreign investment in the 1990s. One has to be clear, however, that the same political forces that successively derailed the upstream liberalisation in Iran and turned it in a

renewed resource nationalist direction, remain entrenched throughout the legislature and the Supreme Leader's office.

That, together with the sanction snap-back facility built in to the nuclear agreement and the risk of congressional pressure on the US president to slow or obstruct the sanctions-lifting, will mean a very cautious return of IOCs to Iran. Given the industry's lead times, that means sustained upstream production capacity growth in Iran is likely to be well over a decade away, particularly if investors wait until after a new US president has defined the long term road ahead a bit more clearly.

Along with all the political hurdles to Iranian foreign upstream investment, probably the biggest obstacle will be the market. Amid low prices and slashed capital spending, investor interest is likely to be put on hold. Tough times throughout the region might also spur the liberalisation of upstream investment regulations in other producing countries, notably Iraq, creating some competition.

The upshot might be that, while technology and project costs have come down and might come down further after a decade of cost inflation, given both Iran and Iraq's entry into the current price environment with cash-strapped economies, this situation is likely to benefit those Gulf states that were able to build financial reserves during the fat years far more. These Gulf states will be in a better position to protect their market share. All this boils down to Iran likely trying to make the most of whatever crude export hike it can achieve, condensate-heavy floating storage included, at whatever price proves possible. ■



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The outlook for regional contracting activity

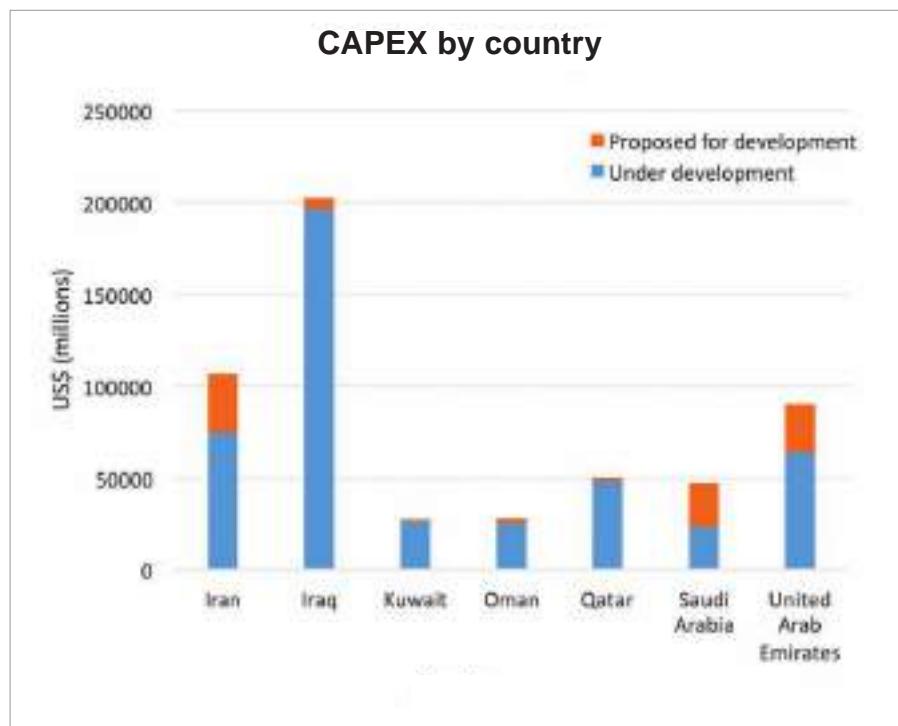
Terry Willis, director of the Middle East, Africa & CIS at the UK's Energy Industries Council (EIC), presents a snapshot of proposed developments in the Middle East and the opportunities they could offer, based on EICDataStream, the EIC's global energy projects database.

THE LOW OIL price may be impacting all oil and gas-producing regions around the world, but the Middle East, where contracts continue to be awarded, has fared better than most.

According to EICDataStream, Iraq has made the most recent significant investments in projects currently under development. This is predominantly down to the huge ongoing West Qurna oil and gas projects, north of the Rumaila field which, based on estimated figures, attracted US\$81bn of investment across its four related projects. This is not surprising, considering the area is believed to hold as much as 43bn barrels of recoverable reserves. The project has secured the interests of ExxonMobil (West Qurna One Oil & Gas, Phases 1 and 2), which invested US\$51bn, and LUKoil (West Qurna Two Oil Field, Phases 1 and 2), investing US\$30bn. Another major project in Iraq is the Majnoon Oil Field Development, 60km from Basra, with an estimated 13bn barrels of oil, in which Shell has invested around US\$30bn.

“Iraq has made the most recent significant investments in projects currently under development”

Although data for future developments across the Middle East would suggest that contracting activity will somewhat diminish, many of the projects listed are still in their early stages of development, and the stated capital expenditure (capex) figures could be on the conservative side. The information should therefore be used to give an estimate of the climate ahead, while not overlooking the significant



Source: EIC

opportunities that currently exist. The total figure of CAPEX, US\$92bn, reflects the amount of future developments among the major players in the region. Countries with the heaviest investment for proposed projects include Saudi Arabia (US\$23.4bn), the UAE (US\$26.5bn) and Iran (US\$31.7bn).

Saudi Arabia looks to unconventional

Besides holding one of the world's largest recoverable reserves of oil, Saudi Arabia is understood to have as much as 645 trillion cubic feet (Tcf) of technically recoverable shale gas, which equates to one fifth of the world's deposits. Saudi Aramco is therefore considering investing

significant sums in unconventional gas, with a US\$3bn proposal to develop shale gas resources in the Empty Quarter, South Ghawar in the Eastern Province, and Jafurah, located in the northern desert region of Saudi Arabia. Front-end engineering design (FEED) work is being undertaken by Foster Wheeler. The company's focus on gas, the preferred fuel for power generation and water desalination, is a response to the country's huge expected population growth and the increase in energy demand that this will bring, not to mention the thousands of extra jobs it would generate for the country.

Aramco is also looking at offshore projects following the discovery of gas in

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the offshore frontier areas of the Red Sea and oil at Al-Haryd. The company announced that it would spend US\$25bn in exploration & production (E&P) work to develop oil and gas resources in the Red Sea, and following seismic activity, it is estimated that the region contains 100bn barrels of oil equivalent (boe). Although the development of the asset is on hold due to the current costs and requirement for further studies, the size of the potential resource is extremely significant for the region. Furthermore, deep water discoveries traditionally lend themselves to subsea technical expertise, an area that the region has limited experience in, and with rig rates falling, we could soon see an increase in exploration drilling applications for these deeper waters.

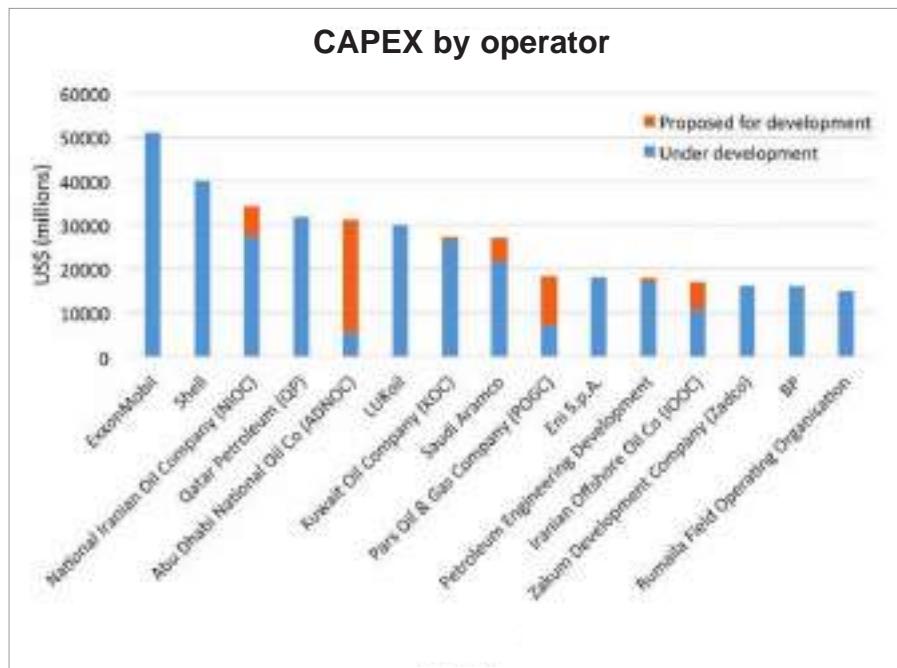
UAE pushes ahead

In the UAE, Abu Dhabi is attracting a lot of attention from operators, not least because of the ADCO (Abu Dhabi Company for Onshore Petroleum Operations) concessions that are currently being renewed. Shell is proposing to invest US\$10bn in the Abu Dhabi Onshore and Offshore Sour Gas Development Programme, Bab Field, which will be developed to produce 500-800mn cubic feet per day of gas. Fluor (UK) has been awarded the FEED for the project and WorleyParsons (Vancouver) has the project management consulting (PMC) for the FEED. Engineering, procurement & construction (EPC) contracts are expected to be awarded in 2017. This project follows hot on the heels of Hosn Gas' US\$10bn investment in the Shah Field, also associated with the sour gas programme that is now in production.

Additionally, the national oil company Abu Dhabi National Oil Company (ADNOC), through its operating arm ADMA-OPCO (Abu Dhabi Marine Operating Company), is proposing a substantial US\$25bn investment in Abu Dhabi Offshore Oil Production Capacity Enhancement to increase total oil production capacity in the UAE to 3.5mn bpd by 2017-18. This sum alone reflects a sharp increase from the US\$5.6bn that ADNOC has already invested in its various projects currently under development.

All eyes on Iran

Meanwhile, all eyes are focused on Iran as we await news regarding the lifting of sanctions. The country could become a major marketplace in the not too distant future, with tremendous opportunities emerging for the supply chain. Furthermore, much of the existing infrastructure remains dated and unmaintained, as the country has not



Source: EIC

been able to source spares and upgrades that were originally procured from the West. This will result in significant opportunities for operations & maintenance (O&M) players.

The development of the South Pars gas field remains the focus of investment with US\$13bn already committed to phases 13 and 14 by the National Iranian Oil Company (NIOC). The SP14 Block is located in the south central sector of the South Pars gas field and has estimated natural gas reserves of 13.1 Tcf (370 billion cubic metres). Plans are in place to deliver 24 phases for this significant development. In addition, NIOC is proposing to invest US\$5bn to develop the Madar gas field, planned to start up in 2020, which has around 495 bcm of in-place gas with an 80 per cent expected recovery rate.

“ Much of the existing infrastructure remains dated and unmaintained”

Pars Oil & Gas Company (POGC), an operator under the NIOC umbrella, is another major player in Iran. Like ADNOC, its budget for future developments (US\$11bn) outstrips its Capex on active projects (only US\$7.2mn). This includes a proposed US\$6bn investment in Golshan and Ferdowsi gas fields, located 65km

southwest of the Iranian Coasts in the Gulf, holding 42-56 tcf of in-place gas. Iran's current lead in future developments is thought to be just the beginning, and it can be certain that as and when sanctions are removed, the country could prove to be the focus for UK companies operating in the energy sector.

Oman's EOR potential

Enhanced oil recovery (EOR) continues to have a lot of potential in Oman, with associated methods currently capable of increasing recovery from the typical 30-50 per cent quantity up to 80 per cent. Although these technologies are at a relatively early stage in the Middle East, Oman is leading the way in implementation, with the major operator Petroleum Development Oman (PDO) anticipating that 22 per cent of its production will come from enhanced recovery by 2020.

The Middle East has always been an attractive market for UK companies, and although our data indicates a decline in contracting activity for the future, there remain significant opportunities in the region, with Iran in particular being one to watch. This is reflected by the popularity of ADIPEC (Abu Dhabi International Petroleum Exhibition & Conference), which now hosts the EIC's largest overseas pavilion. ADIPEC itself has grown to be one of the world's largest oil and gas trade shows, and is surely a testament to the high value that the Middle East brings to the UK supply chain. ■

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Incidents such as the Macondo oil spill have catalysed collaborative efforts to strengthen oil spill preparedness and response capability (Photo: ideum)

A new approach to prevent and respond to oil spills

The approach to risk assessment and its mitigation has changed significantly post Macondo, says Declan O'Driscoll, HSEQ director at Oil Spill Response Limited.

PRIOR TO MACONDO, the shape and scale of the approach to oil spill preparedness and response had been determined by the marine transportation oil spills through the later decades of the twentieth century. The frequency and severity of these maritime oil spills led to a range of regulatory and industry initiatives including international conventions, changes in vessel design, development of crew competency as well as a broad acceptance that national governments are better placed to have national contingency plans in place and to lead the response to a major oil spill within their jurisdiction. The result of all these initiatives has been a steady decline in the number of major maritime oil spills through the late 1990s to the present time.

The upstream industry, sustained by a long track record of offshore drilling without serious incident, operated under this paradigm until the Montara (Australia, 2009) and Macondo (Gulf of

Mexico, 2010) incidents highlighted the particular challenges to oil spill preparedness and response that exploration and production activity can bring. The intent by the industry in the last five years on strengthening oil spill preparedness and response capability for upstream activities has been highlighted by the collaboration across the Joint Industry Project (JIP) work groups and the significant investment in developing an industry subsea intervention capability.

Contingency planning

Contingency planning has become more structured and detailed. A comprehensive understanding of risk ensures that areas or resources under threat from an oil spill are identified, the most appropriate response strategies are developed and resourced and that there is the opportunity to engage with the relevant stakeholders in advance of any activity. A scenario-based approach to contingency planning gives flexibility in determining the threats that an oil spill presents to an operation and, importantly, ownership in the accurate assessment and mitigation.

Lengthy contingency plans that focused on regulatory approval have evolved into more fit for purpose and functional plans. A portfolio of contingency plans including site specific plans, tactical response plans and logistics plans provides a more holistic and

“ Contingency planning has become more structured and detailed”

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pragmatic capability to mitigating risk. The tools available to the contingency planner have become more sophisticated with, notably, three dimensional modelling becoming the norm to assess resources at risk from an oil spill. Verifying that resources identified in a contingency plan exist in practice and are accessible in the event of an incident has also become more evident.

“ Technology developments offer opportunities to enhance the encounter rate in combating oil spills”

The tiered response concept remains a key tenet in how to deploy industry resources in the most effective way. The traditional nine-box square has long been used to determine whether an oil spill was a tier 1, 2 or 3 incident and, hence, what was the appropriate level of response leading to an implied staging of resources. The three tier model has recently been adapted, recognising the advances in response technology, logistical capability and communication tools that have improved the ability for global resources to be cascaded to an incident location. A new capability wheel now identifies 15 elements of spill response capability and places the planning focus on assessing the capability for each element in the area of operation in terms of what resources can be sourced locally (tier 1) and what resources must be imported from further afield (tier 2 or tier 3). This approach will give a more



Significant progress has been made in evolving and developing the approach to risk assessment and resource planning in the last five years
(Photo: Oil Spill Response Limited)



Dedicated aircraft can relay key information on an oil spill to a control centre
(Photo: Brendon Rankin)

integrated response and ensure that the necessary resources can be cascaded in a timely manner into the area of operation. The approach should be to maximise the initial response to an incident; scaling down is inevitably easier than having to source and import additional resources should an incident becomes more serious.

The core of any capability is whether the responsible party for an oil spill incident has the operational wherewithal to respond. Ever more attention is justifiably focused on incident management systems. The Incident Management System provides an organisational structure that can be flexed to the scale of the incident, as well as identifying the roles and responsibilities to deal with it. The response to an upstream incident can be complex and prolonged, requiring organisations to have both the capability and experience to effectively manage the incident over an extended period. In addition to this operational capability, regulators are also now looking for financial assurance that a responsible party can sustain a response.

Technology developments

Technology developments offer opportunities to enhance the encounter rate in combating oil spills. Dedicated aircraft with sensors and communication tools can quickly relay key information on an oil spill to the command centre. This facilitates greater speed and quality in decision making and the initiation of the most appropriate response strategy. Looking forward, unmanned aerial vehicles (UAVs) and autonomous underwater vehicles (AUVs) offer further opportunities to maximise encounter rates and monitor the progress of a response. Perhaps, the greatest technological challenge in the future will not be the lack of data but rather the ability to store and process all the data from an ever-growing range of sources into a timely and meaningful output to support decision-making.

Intuitively, it would seem sensible to use the most effective response strategy first in a response, but the application of dispersants, which offers the best means of combating an oil spill on the widest scale, remains a challenge in terms of approval and strategic choice by regulators, and misunderstood by the media and the community. Ensuring global consistency in dispersant approvals and permitting is an industry priority, as is improving awareness on the benefits of dispersants inside industry and in the community.

Significant progress has been made in evolving and developing the approach to risk assessment and resource planning in the last five years. However, much of this progress has been led by a core group of international oil companies, and it is important to ensure the good practices that have either been reviewed or newly developed, be disseminated throughout the wider industry if they are to be sustained and adopted as the new benchmark of industry good practice. While the current focus has been primarily on upstream operations, industry should also be aware of new or emerging risks (as well as maintaining focus on pre-existing shipping sourced risks) that may arise and which may offer a new set of oil spill preparedness and response challenges in the future. ■

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Innovation can help the industry increase operational and cost efficiencies
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Tough times in oil and gas call for greater innovations

New study reveals the need for greater collaboration, data analysis and cultural change to address innovation challenges.

THE CURRENT climate of low oil prices, innovations in the oil and gas industry have taken a hit, according to a new report. The *Technology Radar 2015* from Lloyd's Register Energy says that 47 per cent, or almost half the oil and gas executives it surveyed, admitted to falling short of their own innovation goals. This is almost double the number of 26 per cent who had said that they had fallen short of their innovation goals in the spring of 2014.

The report, *Innovating in a New Environment*, says that the current environment is ripe for innovations, and through interviews with senior industry practitioners and a global survey of oil and gas professionals, it provides a compelling case for increased technological innovation in the industry.

"The oil and gas industry is undergoing a period of significant uncertainty," said John Wishart, group energy director at Lloyd's Register. "The oil price slowdown is clearly impacting investment in innovation initiatives. However, our report finds that contrary to perceived wisdom, innovation has a crucial role to play in the current

environment, where it creates operational efficiencies and is cost-effective."

In the opening part of *Technology Radar 2015*, the report considers the role for innovation in the changing landscape and concludes that the cyclical downturn should be a driver of innovation, not a barrier. Crucially for industry professionals, the report outlines three scenarios for how different oil prices may affect innovation, examining the types of innovation that will be prioritised in each scenario. The majority of oil and gas executives believe the oil price will sit between US\$50-\$70 per barrel in the next year, with just more than a quarter believing it will hover around US\$70. It is feared that this will hinder investment in innovation in many cases.

"To innovate properly and achieve business goals, companies must address a number of common challenges, including collaborating more openly, using data more effectively and changing traditional mind-sets," added Wishart. "Encouragingly, our findings show that overall the industry understands the need for innovation and has begun reaching out to other sectors to gain

technological insight."

The report also looks at how executives are placing increasing emphasis on collaboration, both internally and outside of the industry, as they adapt technologies from other sectors. Two-thirds of respondents say they are under pressure to collaborate with other organisations within the sector. When they do collaborate, upstream companies focus on the early stages of a project, and often around safety. The report reveals an overarching cultural shift is still required to fully integrate genuine collaboration in innovation.

Finally, in part three the role for data collection and analytics in driving innovation is assessed, finding that more advanced data collection and analytics are a must have in the current low oil price environment. Lack of data and systems integration across different parts of the business are huge barriers to successful data collection and analytics, with silos the biggest cause of the issue. ■

The full *Technology Radar 2015* report can be found at www.lr.org/technologyradar.



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Driving Operational Excellence in refining & petrochem

Luisa Sykes, senior consultant, and Ekaterina Kalinenko, project manager, Europetro Consultants DMCC, discuss the benefits of implementing Operational Excellence models.

THESSE ARE CHALLENGING times for the petroleum industry; the halving of the oil price to less than US\$50 a barrel in the past year has left both the upstream and downstream sectors in a state of flux. There have also been rising concerns that a China-led global economic slowdown would drastically hit oil consumption at a time of plentiful supply.

Despite these uncertainties, it is important that the oil, gas and petrochemical sectors continue in their efforts to find fresh answers to the challenges, through technology and catalytic innovations as well as through optimised operational efficiency. There remains a clear drive and commitment to improve product specifications, increase conversion, reduce emissions and increase margins.

The response to this period of uncertainty has varied, with many companies preferring to delay projects for the time being, adopting a wait-and-see approach, although a significant number of companies have driven ahead with planned investments backed by sound financial resources, as has been the case in the Middle East region. The total investment for the region during the next five years is estimated at US\$800bn, factoring in project cost inflation.

“ The petrochemical industry is navigating many challenges and adapting to very volatile feedstock prices”

Saudi Arabia remains the top investor despite a noticeable shift in its approach – Saudi Aramco has set a target of reducing CAPEX by 20 per cent and has turned its focus to driving operational excellence to increase all round efficiency.



Luisa Sykes, senior consultant, Europetro Consultants DMCC



Ekaterina Kalinenko, project manager, Euro Petroleum Consultants DMCC

In Kuwait, KNPC recently awarded contracts for the development of the Al-Zour new refinery project (NRP), located 90km south of Kuwait City. The grassroots refinery, with a production capacity of 615,000 bbl/d crude oil, will be developed in five packages, and is expected to account for more than 40 per cent of the total refining capacity of the country. It is set to be the largest in the Middle East upon completion in 2019. KNPC is considering integrating the Al Zour refinery with a proposed petrochemical complex and a liquefied natural gas (LNG) import facility. This project, along with other ongoing mega projects, is set to change the landscape of the oil refining industry in the region.

Navigating the challenges

The petrochemical industry is also navigating many challenges and adapting to very volatile feedstock prices, changes in global supply and demand patterns, and strict environmental regulations. The collapse in oil prices has added another layer of complexity

to the fundamental changes taking place in global energy markets and impacting the dynamics of the petrochemical sector.

The drop in naphtha prices has re-addressed the competitive position of European and Asian petrochemical producers versus Middle East and US producers. The global petrochemicals landscape was changing prior to the collapse of oil prices in the second half of 2014. A large amount of petrochemical capacity has been added in China, the USA and the Middle East, threatening the fragile supply-demand balance globally. The strategies implemented by the petrochemical industry in each region are quite distinct and are shaped by the particular conditions and characteristics of each region. Some of these strategies have been challenged by the decline in oil prices, leading to a potential re-shaping of the global petrochemical sector.

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*The region has seen substantial capacity additions over the last decade
(Photo: nekoho / Shutterstock)*



versus an average of US\$3.5 per million Btu in the USA in the last three years. The region has seen substantial capacity additions in the last decade – growing at an average of 10 per cent since 2008. The expansion rate is expected to be more moderate in the future, but several petrochemical projects are still underway or at the planning stage. The majority of the additional petrochemical production will be targeting export markets.

It becomes quite clear from developments in several parts of the globe that the expansion of the petrochemical industry could lead to overcapacity and intense competition amongst petrochemical producers. The question facing many petrochemical producers around the world is how to cope with a greater degree of uncertainty and still run profitable operations and make the right investment decisions. Petrochemical producers globally will need to win competitive advantage to maintain or increase market share based on feedstock costs, location and efficient running of their operations. Promoting maximum organisational efficiency and improving operational performance should be top objectives for all petrochemical operations.

Promoting efficiency during times of uncertainty

In times of economic uncertainty, companies are searching ways to maximise their returns and obtain ‘the competitive edge’. An effective way to promote these objectives is to implement Operational Excellence models, which are gaining a good track record within the oil, gas and petrochemical industries. Many

petrochemical companies are adopting Operational Excellence models using Key Performance Indicators (KPIs) to measure business and operational systems such as management and leadership, loss production and control, production optimisation, reliability and maintenance, etc.

“Promoting maximum organisational efficiency and improving operational performance should be top objectives”

The main objective of Operational Excellence programmes is to neutralise risk and maximise value creation. The Operational Excellence approach is placing people at the centre of business improvement practices. Key drivers of Operational Excellence for improving organisational performance include strong leadership; conductive organisational structure; and a clear focus and plan of action. Strong leadership implies commitment by corporate leaders to embrace the Operational Excellence approach – the leadership must present clear and unambiguous goals and plans. A suitable organisational structure can be categorised as including a well-informed workforce with well integrated team structures, a clear line of accountability and performance measurements and

motivational feedback on goals and achievements within the teams. A clear focus and plan of action is the ‘touchstone’ of the Operational Excellence process, requiring a good communication system. The aim is to identify all the areas which need to be tackled and improved, with particular emphasis for training and development. A clear plan of action is designed to promote best practices and work towards improving organisational performance.

The successful implementation of Operational Excellence programmes

The programme developed and implemented by Petrochemical Industries Company (PIC) is a good example of a successful Operational Excellence project. The achieved results were presented at the International Operational Excellence Conference organised by Euro Petroleum Consultants last spring in Istanbul.

Based in Kuwait, PIC was founded in 1963 as the first chemical fertilizer complex of its kind in the region. Today, PIC is a petrochemical industry leader in Kuwait and throughout the Middle East. In addition to manufacturing and marketing fertilizers, olefins and aromatics in Kuwait, PIC participates in multiple joint ventures that also produce and market chemicals both locally and internationally.

At the initial stage of the programme development, PIC’s concept of operational improvements implied formulation of vision, strategy and objectives. The company decided to develop the programme on the basis of three classical principles: Lean

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Among the top priorities were HR performance, focus on the consumer's individual needs, and the process approach under the slogan "Better, Faster, Cheaper!". The operational performance metric included criteria such as expenditure level, production cycle time and rejection rate. Improvements were introduced by using a standard procedure aimed at building a knowledge management system as the backbone for further optimisation. A critical factor was effective employee engagement, i.e. explicit goal-setting and adequate incentives, effective interaction and communication, and a consistent process of project evaluation and selection. Such a process needs to be well established, continuous and consider borrowing needs.

According to PIC, as a result of continuous leadership training of top managers, annual awareness sessions and quarterly training for identifying improvement possibilities the company saved US\$173mn, successfully completed 524 projects, obtained 84 certified project managers (leaders), acquired new competencies and revised the corporate culture to conform to the best global practices.

Ambitious goals

Operational Excellence was no less topical for Russian petrochemical companies. One of the most remarkable examples is the new production system developed under the Operational Excellence programme and implemented at the enterprises of the

Russian petrochemical giant PJSC SIBUR HOLDING.

SIBUR is a Russian gas processing and petrochemicals company headquartered in Moscow. It operates 26 production sites located all over Russia and employs over 25,000 personnel.

SIBUR pursued an ambitious goal – to gain Operational Excellence and become world-class in terms of market competitiveness, return on assets and production competencies. The efforts were focused towards the creating of a system of unified principles, standards and procedures to form the kernel of the corporate culture for continuous improvement of the whole company.

“ Investing in Operational Excellence will guarantee best practices, best results and best operational performance”

The system was built by reorganising the company culture, in the first place, through integration of the leadership vision and practices; teamwork in addressing problems; diagnostics of the business goals described above; implementation mechanism structuring (analysis – implementation – maintenance); and release of the available added value potential. Apart from attaining

the global objectives, the expected deliverables included the development of a 'road map' with sustainable annual cost recovery, a significant increase in the daily average output and perceivable improvements in the corporate culture. The programme was developed with international cooperation – SIBUR used consultancy of DuPont in building its Operational Excellence system.

The Operational Excellence pilot project was launched at SIBUR's synthetic rubber plant. The top priority task was to optimise workplaces and motivate the staff to get involved in generating ideas for performance improvement. It was elimination of losses and recognition of each participant's contribution to the plant's performance that was used as the foundation for the improvement programme. The results obtained built a case for rolling the programme out across the entire organisation.

Tomskneftekhim, another SIBUR plant and one of the largest Russian polymer producers, has also benefitted from the implementation of the Operational Excellence programme. The first stage of the programme was to train key executives to understand the principles of the programme. In the opinion of the company's management, organisational changes depend on how well managers understand the essence of the corporate improvement culture and the actual results impacting the workplace where the updated plant management system is expected to have maximum effect.

As the improvement projects were being implemented, the updated estimates showed a two-fold growth in the economic benefit of the projects, with work time losses reduced by 40 per cent and the increase in the plant's profitability nearly 20 times as high as the consultancy costs.

Best operational results

Both refining and petrochemical industries need to adapt to the high level of uncertainty and volatility in energy markets and still remain competitive. Investing in projects benefiting from competitive advantage is one of the keys for success, as is having a clear view of the most promising markets and clients. Investing in Operational Excellence will guarantee best practices, best results and best operational performance. Operational Excellence models are being widely applied across the petrochemical industry as the positive impact of the implementation of these models becomes more evident. These models are based on the concept of leadership, teamwork and problem solving, aiming to create a continuous improvement environment throughout the organisation – focusing on client/market requirements and optimising all activities for best operational results. ■



Operational Excellence models are being widely applied across the petrochemical industry
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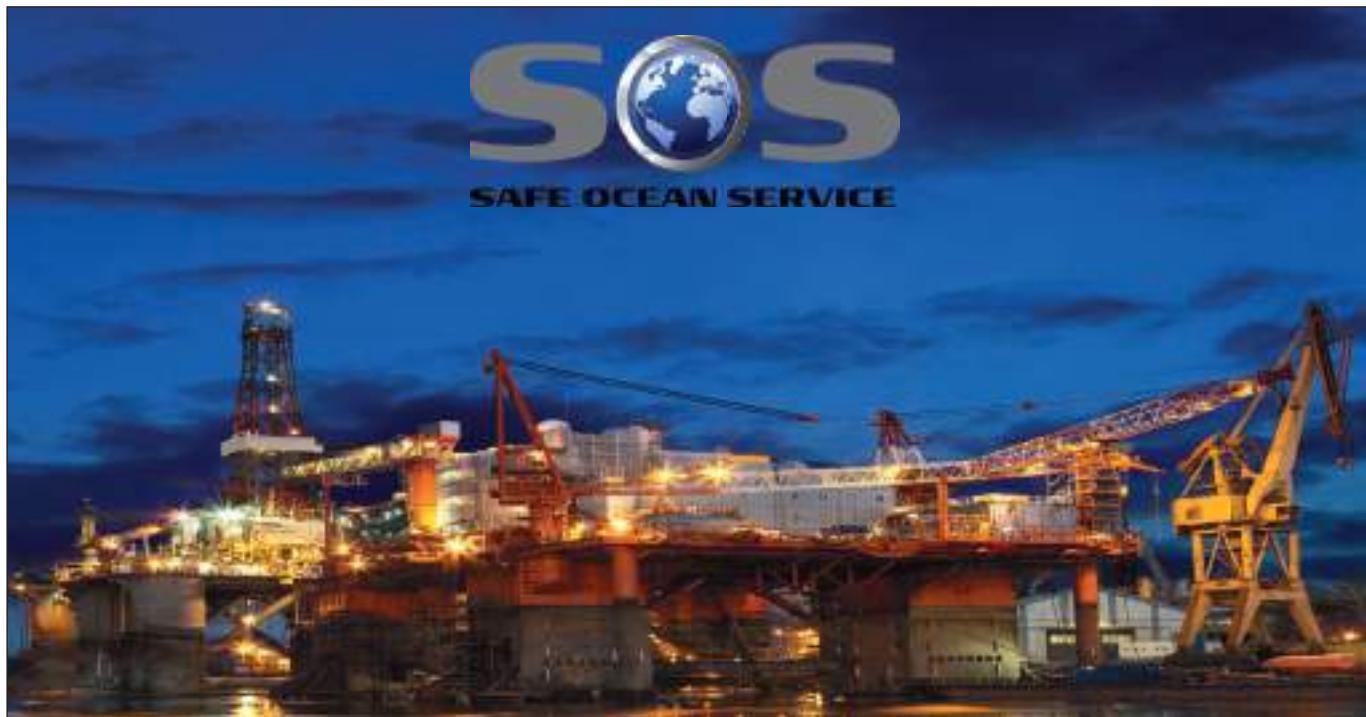
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Kuwait set to sign Al-Zour refinery contracts

KUWAIT'S NATIONAL PETROLEUM Company (KNPC) has announced that it will soon sign the main contracts awarded to companies for the new Al-Zour oil Refinery.

Construction of the 615,000 bpd refinery, which is touted to be the largest in the Middle East, could be a major boost to Kuwait's economy. "This is an important



Al-Mutairi has confirmed KNPC's plans to discuss building an integrated petrochemical complex at the site (Photo: zandura577/sxc.hu)

milestone," KNPC CEO Mohammed Al-Mutairi told *Reuters*.

Al-Mutairi added that the commissioning of the refinery is expected to start in November 2019 and the project cost is about US\$15.9bn. Heavy oil from new fields in the country will be used at the refinery to produce low-sulfur diesel, 340,000 bpd of high value light products and 225,000 bpd of fuel oil to feed power-generation plants in the country.

Commissioning for Kuwait's Clean Fuel Project is also expected to begin in April 2018. The project includes the upgrade and expansion of two of Kuwait's largest refineries to focus on producing higher-value products for export, such as diesel and kerosene.

"We are in the final stages of talking with the government on corporate financing," he said.

Al-Mutairi added that the company would look to finance 70 per cent of the project externally and the other 30 per cent would be funded internally through the Kuwait Petroleum Corporation (KPC).

A tender to build a permanent LNG import terminal will close in November 2015, with the awarding of contracts for the project expected by early 2016, Al-Mutairi revealed. The cost of the 85mn cu/m per day terminal is about US\$2.9bn.

SABIC and South Korean firm's new plant to create polyethylene products

SABIC AND SOUTH Korean petrochemical company SK Global Chemical's new US\$640mn industrial plant will manufacture a range of high-performance polyethylene products using NEXLENE™ Solution Technology in Ulsan, South Korea.

The 50-50 joint venture holding company, SABIC SK NEXLENE Company (SSNC) was established last July and is headquartered in Singapore. Its wholly-owned subsidiary, Korea NEXLENE Company (KNC), owns the plant in Ulsan, which has an annual capacity of 230,000 tonnes.

"The new industrial facility will enhance the petrochemical industries through innovating world unique solutions utilising NEXLENE technology," said SABIC chairman Prince Saud bin Abdullah bin Thennayan al Saud.

"Through this cutting-edge technology we will be able to meet our customers' needs around the world, through a more advanced, high value, and unique, customer-focused selection of products."

The plant will produce metallocene linear low density polyethylene (mLLDPE), polyolefin elastomers (POE) that will meet the growing needs of diverse industries such as advanced packaging, automotive, healthcare, footwear and electrical and lighting.

"We are very pleased to take this latest step in our partnership with SK Global Chemical, which further expands SABIC's presence worldwide," said Yousef Al-Benyan, SABIC's acting vice chairman and CEO.

"This new plant symbolises our determination to open new markets and underscores our position as a global leader – a major goal of our 2025 strategy."



The new facilities mark the latest SABIC investments in manufacturing and research capability in Asia after its partnership with the China Petrochemical Corporation (Sinopec) and the SABIC Technology Center in Shanghai, inaugurated in 2013 (Photo: Wikimedia Commons)

Iran's petchem exports hit close to 2.5mn tonnes

IRAN'S EXPORTS OF petrochemicals hit 2.48mn tonnes in the first six months of the current Iranian calendar year (started on 21 March 2015), bringing in more than US\$1.63bn revenue to the country, the SHANA news agency has reported.

The country's petrochemical output is anticipated to take a year-end hike once Phases 15, 16, 17, and 18 of the South Pars gas field come on-stream, swelling revenue from the sector up to US\$2bn, reports added.

Iran's petrochemical sector has also set an annual output target of around 129mn tonnes by the end of the country's sixth five-year development plan (2016-2021), Hamidreza Rostami, planning and management head of Iran's National Petrochemical Company, has said.



Iran's petrochemical sector has set an annual output target of around 129mn tonnes by the end of 2021 (Image source: Louis Vest/Flickr)

Increasing amounts of foreign financing as well as effective planning by the Oil Ministry will contribute to realisation of the goal. This enhanced production is especially brought about by the pumping of US\$11.5bn into the sector during the sixth development plan and also, accomplishment of 122 progressive petrochemical projects. The official further noted the petrochemical sector will have brought in US\$40bn revenue for the country by 2021 when the sixth development plan is over.

Also, pumping US\$41bn into 36 new projects will bring about an annual petrochemical production of around 180mn tonnes.

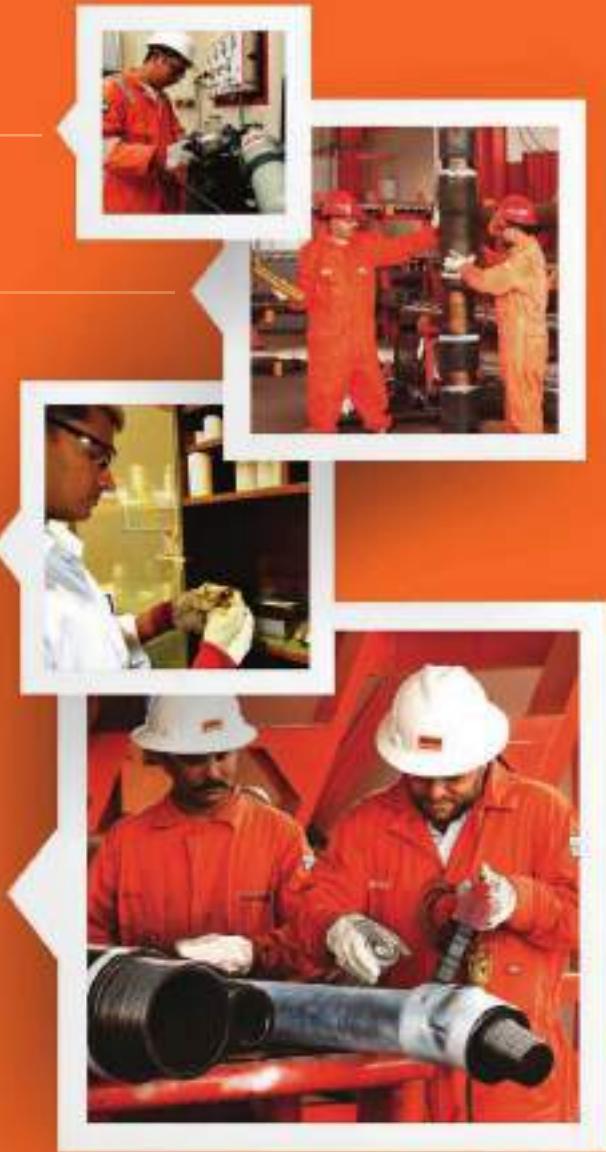
Iran had exported around US\$14bn of petrochemical products in 2014, the Fars news agency reported in April this year, down from more than US\$18bn in 2011.

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Saudi Arabian refinery may see rise in production

FRANCE'S TOTAL AND state-owned oil firm Saudi Aramco have expressed interest in expanding petrochemical production at their joint refining project, SATORP, in Saudi Arabia.

Jean-Jacques Mosconi, senior vice-president for refining and petrochemicals in the Middle East and Asia, told *Reuters* that the expansion would be large and involve production of linear alpha olefins, poly alpha olefins and elastomers.

However, he added that the partners would need to solve the issue of obtaining natural gas supplies before moving on to detailed studies of the project, which the companies have been considering for several years. "Total and Saudi Aramco remain interested in this project but to launch it we need gas allocations, and we are working on that," said Mosconi.



SATORP, located in Jubail, is a 400,000 bpd refinery complex which produces about one million tonnes of petrochemicals annually

The Kingdom's petrochemical companies have been struggling to expand production because of limited gas supplies, although the country is spending billions of dollars on locating and developing new supplies. Satorp, located in Jubail, is a 400,000 bpd refinery complex which produces about one million tonnes of petrochemicals annually.

Meanwhile, Saudi Aramco is also considering building a US\$20bn refining and petrochemical complex at Yanbu on the Red Sea coast. The new refinery would have a capacity of 400,000 bpd and be located next to an existing refinery at Yanbu, which has a capacity of 240,000 bpd. According to company sources, UK-based Amec Foster Wheeler was expected to win the contract to execute front-end engineering and design (FEED) work for the project. The project, planning for which is still in the initial stages, is likely to be completed in 2023, if it goes ahead.

UAE's Ruwais Refinery resumes operations to increase fuel oil exports

ABU DHABI NATIONAL Oil Company (ADNOC) has restarted a secondary unit at its newly expanded Ruwais Refinery and has increased its operating rates to over 80 per cent, according to industry sources.

The Ruwais Refinery, with a total capacity of 922,000 bpd, lowered its run rate to just above 70 per cent in August this year after it unexpectedly shut its residue fluid catalytic cracker (RFCC) — a unit which processes heavy fuel oil into higher value products such as diesel and gasoline.

Once fully commissioned, the expanded refinery is expected to produce an additional eight million tonnes a year of diesel and another four million tonnes a year of jet fuel on top of the current five million tonnes of diesel and six million tonnes of jet fuel.

The RFCC was restarted beginning October and is currently running at near maximum capacity, one of the sources said.

The refinery was operating at close to 95 per cent in the first two weeks of October, before reducing to between 80 and 85 per cent currently, the source added. The reason for the reduction in capacity since early October was not immediately clear, but is normal as crude oil intake fluctuates, the source said.

ADNOC will also likely increase its term volumes for its jet fuel and diesel exports for next year, though this will depend on the market outlook, the sources said.

The refinery signed term contracts to supply ultra low sulphur diesel for exports for the first time from July 2015 to June 2016 and resumed its jet fuel exports for the period after skipping them from July 2014 to June 2015.

GCC petchem output rises by 8.3 per cent in 2014

PETROCHEMICAL PRODUCTION IN the GCC rose by 8.3 per cent in 2014, making it the second-highest growth region in the world, according to the latest industry report by Gulf Petrochemicals and Chemicals Association (GPCA).

With revenues reaching almost US\$88bn in 2014, the petrochemicals industry contributed to 31 per cent of the GCC's total manufacturing GDP, the report added. However, the falling oil price and economic slowdown in China have had a direct negative impact on petrochemical prices, with revenues declining from US\$89.4bn in 2013, according to the GCC Petrochemicals and Chemicals Facts and Figures 2014, which will be released at the 10th Annual GPCA Forum in November 2015.

Abdulwahab Al-Sadoun, secretary general of GPCA, said, "The health of the global economy since the decline in oil prices and the slowdown of the Chinese economy, combined with the possibility of a nuclear deal with Iran, contributed to weak petrochemicals prices and created a difficult near-term outlook for the global petrochemicals and chemicals sector.

"Given that the GCC petrochemicals producers are not price-setters, it means that Gulf producers need to be more agile, collaborative and innovative to succeed."

Al-Sadoun added that looking ahead, the long-term scenario is more positive. The industry is expected to grow at six per cent per annum over the next five years, with the region producing more than 190mn tonnes of petrochemicals annually by 2020. "The drive into higher value products such as speciality and performance chemicals is gaining momentum and is expected to act as a catalyst for an even stronger growth of the GCC petrochemical industry in the years to come."

As the region's largest petrochemical producer, Saudi Arabia's manufacturing portfolio comprised 63 per cent of the region's chemical portfolio and earned US\$68.3bn, followed by Qatar's revenues of almost US\$8bn.

The GCC's total chemical capacity for 2014 exceeded 136.2mn tonnes. The strong sector attracted considerable GCC nationals into its workforce in 2014, with a nationalisation rate of 67 per cent among GPCA member companies.

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Creating value from flared natural gas

Martin Layfield, global segment leader of the Gas Value Chain with DNV GL, looks at prospects and initiatives for reducing gas flaring.

SUPPORT FOR THE World Bank's 'Zero Routine Flaring by 2030' initiative is gaining momentum in the Middle East as the oil and gas industry looks to alternative solutions to end routine gas flaring and address heightened climate change concerns.

According to a report prepared by the National Oceanic and Atmospheric Administration (NOAA) in co-operation with the World Bank-led Global Gas Flaring Reduction Partnership, Saudi Arabia, Oman and Qatar are among the top 20 countries with the highest volume of flared gas, based on the satellite data for the period 2007 to 2011. Russia, Nigeria, Iran, Iraq and the United States topped the list.

The World Bank estimates that flaring 140bcm would cause more than 350 million tonnes (mt) of CO₂ release into the atmosphere. This is equivalent to the combined gas consumption of Kuwait, Iraq, Oman, Qatar and the UAE in 2013.

Capturing the flared or vented gas presents an opportunity for Middle East and global operators to reduce the environmental impact, as well as providing an economic opportunity to generate an additional revenue stream.

“ A number of countries in the Middle East now have national strategies to reduce flaring”

To address both the need to end routine gas flaring and tackle climate change concerns, DNV GL has conducted new research 'Natural Gas Capture – Clean and Economic', which examines the viability of alternative solutions and their revenue potential.

The conceptual study involved looking at four existing oil and gas facilities, onshore in



DNV GL has conducted new research 'Natural Gas Capture – Clean and Economic', which examines the viability of alternative solutions and their revenue potential

North Dakota, Algeria and Russia and offshore Vietnam, which provided a variety of volumes and rates of gas being flared. This enabled the team to model a range of diverse technologies on real locations and field conditions, as most flaring occurs at either ageing and/or remote installations.

Understanding gas flaring challenges

A number of factors can impact on the drive and desire to undertake a reduction in gas flaring. Existing solutions are mature for large-scale applications, but fewer technologies have been used commercially at the small-scale level. This is perhaps due to uncertainty in the industry about the viability of capturing the gas at these levels.

Retrofits and transportation of recovered gas to processing facilities can be costly. Without a global cost penalty for emitted carbon there is seen to be little benefit to

capture the flared gas, particularly in countries with developing economies. Similarly, different geographies throw up various technical, regulatory and economic drivers and limitations. Access to funding to develop projects and the implementation of technologies is also a major factor.

In the Middle East we find that flaring often occurs at ageing and remote locations and can be cheaper due to subsidised internal pricing. Regulatory mechanisms are quite loose, although a number of countries in the Middle East now have national strategies to reduce the amount of flaring and other environmental initiatives to reduce emissions. This is underpinned by strong commitments to improve the environmental footprint of the industry in some countries. For example, the Qatar National Vision 2030 places significant emphasis on environmental aspects. Furthermore, operators in the country have initiated



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CREATING VALUE FROM FLARED NATURAL GAS

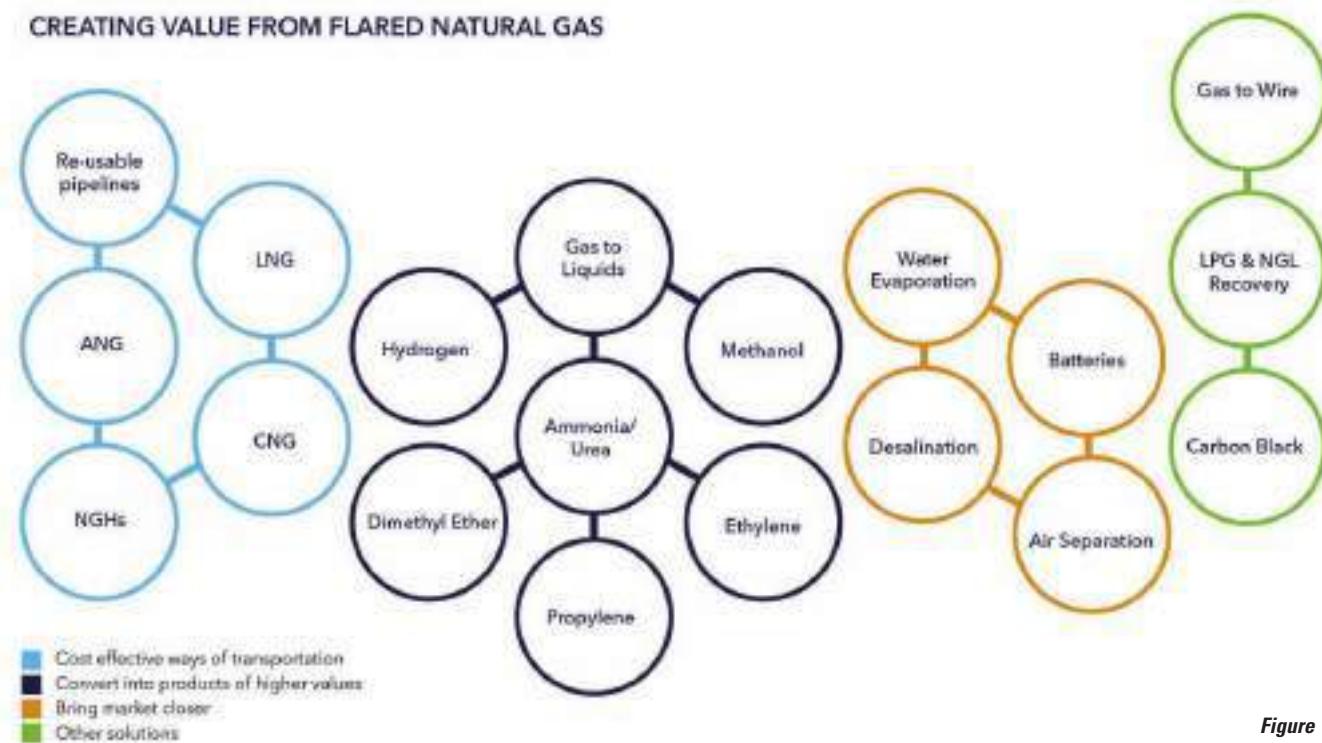


Figure 1

significant targets to reduce flaring levels. Unlike the USA, the Middle East does not, however, have penalties in place to scale production if flare targets are not achieved.

Notably, audience discussions during the 2nd Annual Gas Flaring Summit in Abu Dhabi largely centred around solutions to reduce the amount of flared gas. This might

“ Greater awareness and understanding of the technical and economic possibilities for gas flaring is needed”

consist of checking process upset, good maintenance procedures, flare modifications, installation of flare gas recovery units, flare modifications, etc. However, little was on the agenda around how flared gas might be captured to generate a revenue stream and provide societal benefit, and the volumes that will continue to be flared still present an economic opportunity for natural gas capture.

Such societal uses for valuable resources could have highly sustainable environmental benefits. The DNV GL work has demonstrated that there are a number of high potential capture and utilisation methods for onshore production in the Middle East for example, including water

desalination as well as gas conversion options and transportation methods.

Where there are carbon emissions regulations in place, there is obviously more incentive to capture the waste from gas flaring. As a result of new limits that have been introduced in the USA, new technologies are emerging with a variety of solutions. Since issuing their research, DNV GL has seen a number of companies approach them for assistance with the qualification process to help establish their technologies in the market.

Developing technology solutions

Gas flaring releases toxic components and greenhouse gases into the atmosphere that can have harmful effects on the health and

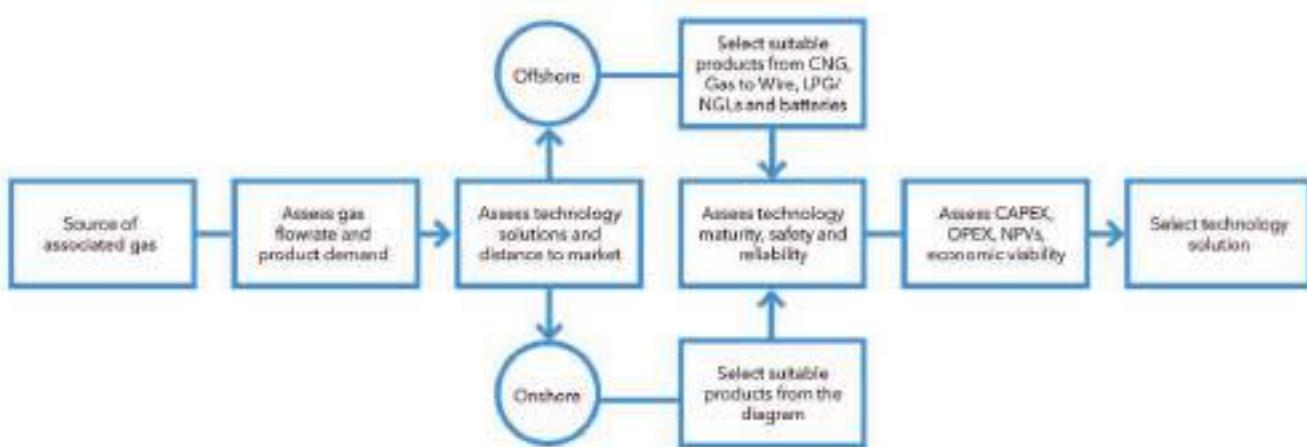


Figure 2

Technology Selection Methodology Flowchart

wellbeing of local communities as well as contributing to climate change.

If the 350 million tonnes of CO₂ estimated by the World Bank to come from flaring 140bcm could be harnessed for power, it could produce 750 billion kilowatt hours per year, more than Africa's entire annual consumption.

During the conceptual study, the company considered the techno-economic viability of 19 different conversion methods (as summarised in Figure 1). These were considered at different flow rates, gas composition and the distance to market. Over 150 suppliers/vendors and their technologies/methods were researched.

By examining the most cost-effective ways of transporting the gas and to convert the gas into products of a higher value, they were able to identify opportunities to produce valuable product alternatives like ammonia, ethanol, gas to liquids and hydrogen.

Other novel techniques examined considered how to bring the market closer to the source of the flaring and capturing it in-situ. These included water desalination, gas to power, LPG and natural gas liquids recovery and carbon black.

In the Bakken shale region of the USA, the fracking process generates produced water. Using desalination can clean that water and use it for local communities as a water source. Although some solutions might be immature for near-term implementation, current applications such as micro LNG, compressed natural gas, natural gas hydrates (NGHs) and conversion methods can deliver significant benefits, and are proving to do so in some cases in certain markets like North America.

Many of the novel techniques explored in the DNV GL study, particularly for small-scale capture of natural gas, are maturing well in the USA, but have yet to be adopted elsewhere. Innovation is being largely driven by the US shale industry.

By using the four case studies with small-scale gas flow rates, the study proved that economically viable solutions to assist in carbon abatement and develop flare gas for societal use are possible.

The solutions proposed by the study analysed the techno-economics of specific cases at a variety of small scale ranges. These are largely dependent on the flow rate, gas compositions and distance to market, and the viability of different technologies will vary accordingly. It is a complex process to determine suitable technology solutions as alternatives to flaring, and the flowchart (see Figure 2) shows the methodology used by DNV GL in carrying out the conceptual study.

The technology solutions and means of transportation explored can also be applied to:

- Monetisation of small-scale stranded gas fields
- Monetisation of associated gas from extended well tests
- Resolve demands at remote areas where there is no infrastructure
- Capturing vented gas.

The future for gas flaring

Though support for the World Bank's 'Zero Routine Flaring by 2030' initiative is gaining momentum, greater awareness and understanding of the technical and economic possibilities for gas flaring is needed to encourage commitment from operators and policy makers. As such, DNV GL has been developing a decision support tool to screen options for developers and operators and facilitate a quick evaluation of the most viable technologies prior to more detailed feasibility studies. In the Middle East, discussions need to include natural gas capture as well as the drive to improve operational processes to reduce flaring.

New technologies – or smarter uses of existing products and tools – are one answer to generating new value chains and revenue streams. However, if the industry is serious about ending routine gas flaring and addressing climate change concerns, it also needs to overcome the non-technical hurdles such as financial investment, time and resource commitment and the requirement for regulatory and legal frameworks. ■

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Innovative EOR technologies can thrive in low oil prices

Adriano Gentilucci, commercial director – IMEA, Dow Oil, Gas & Mining, explains how Dow's innovative technologies can help reach and recover more oil in tertiary operations.

There has been a growing interest from regional oil and gas players to implement secondary and tertiary schemes during the production planning process



DEPLETING OIL RESERVES are increasingly becoming dependent on enhanced oil recovery (EOR). Dow offers chemistries to help achieve more efficient flow; control contaminants, scale and microbes; and enhance all phases of an asset's performance.

Many of Dow's products and solutions for EOR enhance already existing EOR operations. For instance, the CO₂ conformance control solution is often implemented several years after initial CO₂ injection. Due to the relatively young miscible CO₂ EOR projects in the region, the solution is awaiting implementation. Dow is participating in a trial for the improvement of water flooding in region via the use of novel surfactants for wettability alteration of carbonate reservoirs. The trial is in the late planning stages.

EOR technologies

Dow's innovative technologies help reach and recover more oil in tertiary recovery operations. On the one hand, Dow, as a leading

“Dow helps provide solutions to the treatment of seawater and produced water prior to injection by using physical separation systems such as ion exchange, ultra-filtration and reverse osmosis”

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global manufacturer of surfactants, can develop customised surfactant formulations for specific reservoir conditions depending on the field characteristics. For instance, 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 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, the technical service and support team offers reservoir evaluations and modelling, customised product selection and validation, economic evaluations and field implementation.

Secondly, Dow has delivered state-of-the-art water treatment technologies such as DOW FILMTEC™ reverse osmosis membranes and nano-filtration elements that are being used worldwide. Globally, 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. 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.

Optimising costs and efficiency

Gentilucci says that EOR 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



**Adriano Gentilucci, commercial director –
IMEA, Dow Oil, Gas & Mining**

technical service team, delivers cost-effective and environmentally sensitive solutions to enhance all phases of an asset's performance."

Growing demand in the Middle East

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).

“ 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”

However, 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.

Dow helps provide solutions for the treatment of seawater and produced water prior to injection by using physical separation systems such as ion exchange, ultra-filtration 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.

Capturing CO2 for vertical conformance

Another trend that the company is witnessing in the region, especially in the UAE and Oman, are increasing efforts 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 the 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," adds Gentilucci.

Looking forward to ADIPEC 2015

As the leading oil and gas industry event in the region, ADIPEC is an excellent platform to showcase Dow's innovations across the oil and gas value chain, to the largest audience of industry players in the region, according to the commercial director.

Some of the innovations to be highlighted at ADIPEC this year will include solutions for exploration and production – EMBARK™ Rheology Modifiers, ACCENT™ Scale Inhibitors, DEMTROL™ Demulsifiers; microbial control – AQUCAR™ Water Treatment Biocides; water treatment – DOW IntegraPac™ Skid pre-engineered ultra-filtration, DOW FILMTEC™ Reverse Osmosis Membranes; transmission – HYPERLAST™, NEPTUNE™ Insulation systems; and refining and gas processing – AMINE MANAGEMENT™ Program, UCARSOL™ and SELEXOL™ Specialty Solvents, DOWTHERM™ Heat Transfer Fluids. ■

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Increasing value in a challenging environment

Integrating the specialist disciplines required during the life cycle of an oil and gas project can help optimise production and improve efficiency, says Phil McCurdy, principal geomechanics engineer with global energy services company, LR Senergy.

AS THE SEARCH for hydrocarbons increasingly requires drilling and production in challenging environments, the associated risks are magnified. This is particularly relevant in the current climate of US\$50 oil, where significant pressure is placed on realising value and maintaining positive cashflow against reduced revenues. The sheer volume of data that now requires to be processed, and the pace of operations in today's competitive marketplace, can also present a challenge. Operators, be they National Oil Companies or smaller independents, are all exposed to risks associated with optimal planning.

Successfully executing any oil and gas project – regardless of market conditions – requires input from a range of specialists whose expertise is needed at various stages of the exploration and production life cycle. With current industry pressures resulting in much tighter financial margins, the development and implementation of more cost-effective methodologies is proving to be critical. Increasingly, specific technical capabilities are being used to improve the efficiency of a development, reducing risk and optimising well productivity. This in turn can improve the return on CAPEX and OPEX investment, whilst maintaining safe and efficient operations.

In a typical oil and gas field development, production optimisation begins once the exploration and appraisal stages are complete. Ideally, specialist input is required early in the well planning process, and continues through to assisting with completion design and well construction. Experts in niche specialisms such as core analysis, geomechanics, formation damage, production technology, drilling optimisation, computational fluid dynamics (CFD), well and reservoir engineering, advanced drilling techniques and well integrity, are among the technical authorities sought by most operators looking to optimise the production of a well.



**Phil McCurdy, principal geomechanics engineer,
LR Senergy**

Taking a holistic approach

Within LR Senergy, we are acutely aware of the technical challenges and financial constraints facing operators and we have, over the years, established several groups which align to optimise production. By providing an integrated approach, the technical capabilities of all the specialisms required in production optimisation can be delivered in a systematic and efficient manner. The combined and proven expertise is therefore delivered and project-managed via a single source, ensuring effective collaboration and greater efficiency. We believe that taking a holistic approach to production optimisation produces the best results.

“ Collaboration between the technical disciplines can only improve efficiencies”

Independent experts in areas such as core analysis or production chemistry are absolutely capable of delivering an effective and technically accurate service. However, where a more efficient offering can be demonstrated in terms of value, is via an all-inclusive approach – looking at and considering the impact of the whole project as opposed to concentrating on particular elements. Collaboration between the technical disciplines can only improve efficiencies.

Obviously, every project is different. It is up to the technical experts to come up with the best solution for the specific challenge being faced by the client.

One of our recent studies demonstrates the application of this integrated process. In this case, the risk of sand production, coupled with the potential erosion issues arising from a combination of high gas flow rates and sand production in the wellbore and facilities components, were evaluated. Two engineering studies were undertaken to evaluate the geomechanical strength of the producing formations, select the most appropriate sand mitigation strategy and then identify the potential erosion issues at various critical points in the production network. This incorporated a CFD modelling approach, using LR Senergy's Wellscope™ approach to rank the relative erosion risks in various well components, and calculate the corresponding erosion rates for a range of operating conditions.

It was identified that although the intact rock strengths were relatively high, there was a rock strength reduction in the presence of brine, likely related to the fines content of the rock, clay-water interactions as well as capillary force reduction.

The well component erosion modelling study, conducted in parallel with this work, indicated significant erosion potential at the wellhead choke, effectively ruling out surface sand management as a viable option. A comparative/screening analysis considered various active sand control techniques and,

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in light of the formation properties, completion and production conditions, two methods were recommended: standalone control using premium or ceramic screens; and a chemical consolidation treatment. In addition, since both these techniques could be conducted through tubing, without the need for a major workover, the economics were considered favourable.

Finally, the study modelled the gas velocity in the tubing, the SSSV and the choke, concluding from detailed solids erosion modelling that the choke cage suffers the most metal loss when the choke is fully open. Simulation results suggested that a 14 per cent choke opening has the least metal loss on the choke cage. Whilst minimising the volume of sand produced would reduce the erosion risk identified, reducing the gas production rate by closing the choke would also reduce the erosion risk, although this would of course impact on hydrocarbon production and revenues.

Integrated reservoir study

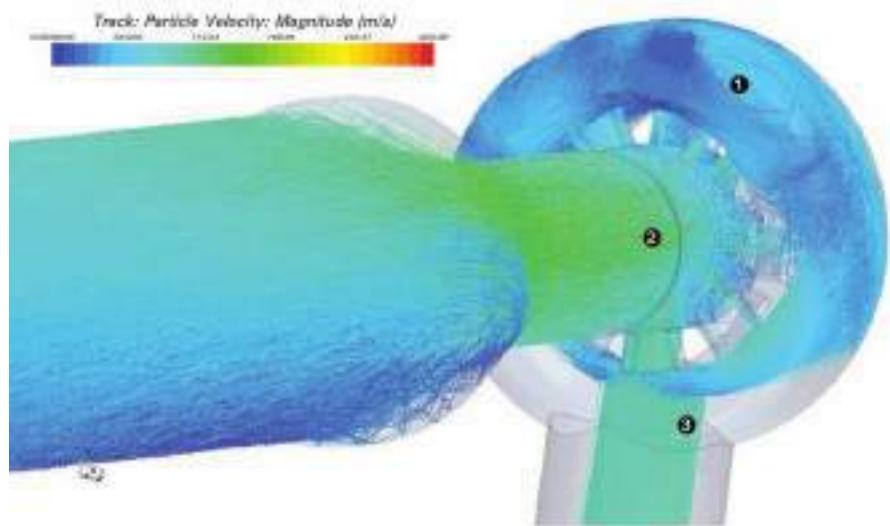
In another example, an initial appraisal well, drilled in the southern North Sea, produced only 3MMscf/d and effectively condemned the discovery to be non-viable. The operator subsequently relinquished the licence.

The new field operator commissioned an integrated reservoir study which demonstrated that the poor well productivity and high interpreted skin factors were due to exposure of the reservoir formation to water-based drilling and completion fluids which caused extensive formation damage as a result of water retention, fines migration and solids mud invasion.

Following extensive geomechanical analyses to ensure formation integrity during drilling and testing, and core testing to optimise drill-in fluid design and performance, a comprehensive plan was developed to access the hydrocarbons utilising best practice in well construction and completion design. The second appraisal well, drilled at lower overbalance using a specially-designed oil-based mud system, was tested at 17.6MMscf/d with low skin factor and no sand production, in line with expectation. In the absence of significant formation damage, the absolute open flow potential (AOF) was increased tenfold compared to the original welltest.

The recognition of the true reservoir potential by the new operator, and the integrated formation damage mitigation methodology, opened up a significant development opportunity which turned an unwanted asset into a commercially viable development, valued at around US\$500mn in a subsequent acquisition.

A further example is from well construction perspective. An integrated drilling support team was requested to



- ➊ The particles that impinge the choke housing wall cause the erosion (metal loss)
- ➋ The cage has an even distribution of nozzles which aims to collide the high fluid and particle velocity in the centre of the cage (which then flow in "an axial manner"), dissipating the most erosive energy away from the downstream components
- ➌ The particles enter the choke inlet and circulate in the annulus between the body and the cage (the choke housing)

The choke is in 100 per cent open position, flowing at 33MMscf/d gas and 120 kg/day sand

provide pore pressure and drilling optimisation support during a 2013 drilling campaign in West Africa. During the drilling campaign three deepwater wildcat exploration wells were successfully drilled to TD.

Given it was an unexplored basin, there was considerable uncertainty in the possible pore pressure and other issues such as shallow hazards which could give rise to drilling risks. With operational support the well was navigated through pressure ramps and the mud weight kept within the correct range for kick prevention and trip margins.

specialists within its team, including several Society of Petroleum Engineers (SPE) Distinguished Lecturers, who are recognised experts in their field. This combined expertise and experience coupled with innovative technologies and software solutions, allows us to offer an integrated approach in response to our clients' needs, as demonstrated in this study.

Working together

By having a greater understanding of the whole project and the challenges being faced in other specialist areas, a more cohesive solution can be delivered. Working closely together, right from the early well-planning phase, allows efficiencies to be realised almost immediately. In addition, utilising collective knowledge across disciplines affords a greater opportunity for ensuring a timely construction phase, which can allow production to begin earlier with minimal impairment to reservoir productivity. Optimisation and intervention options can be evaluated alongside production management decisions to minimise ongoing OPEX. By retaining this involvement in a project through to the production phase, a more holistic approach helps the team to identify late-life extension options to continue to maximise further hydrocarbon recovery and delay cessation of production decisions. Many fields are economic in a US\$50 oil environment, but often only if a truly integrated approach to production management is followed. ■

“The benefits in this case were over US\$2.7mn of savings and a collaborative technical environment”

In addition, drilling rate-of-penetration restrictions were removed from all hole sections following a hole cleaning review. Every section was completed in line with the planned one bit run strategy, through complex geological setting. The benefits in this case were over US\$2.7mn of savings and a collaborative technical environment where the drilling team worked closely with the more specialist disciplines to the benefit of the project.

LR Senergy has numerous technical



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Flare gas recovery a win-win for oil and gas industry

Installing a flare gas recovery system at oil and gas facilities saves costs, increases efficiency and reduces emissions.

FLARING IS USED in the oil and gas industry to burn hydrocarbons coming from different steps of the oil refining process or from gas field operations. It is primarily a safety device to burn all the superfluous gases and system leakage.

MPR Industries, a Moret Industries company, has been designing, manufacturing and supplying flare gas recovery systems (FGRS) to the oil and gas industry for more than 40 years. An FGRS increases the safety of the flaring process, but equally importantly, it also reduces flaring which has multiple benefits.

Reduction in the amount of flaring can help companies save costs if they use the recovered gas, which will otherwise be wastes, to produce electricity to power the plant operations. It will reduce the need to purchase additional power. Depending on the complexity of the installation, MPR Industries estimates that a facility will see return on investing in an FGRS between 16 to 48 months, with the investment paying itself off at an average of 24 months. Costs are also reduced by the extension of flare tip life, which will mean requirement of fewer spare parts and longer times between maintenance, which requires a shutdown of the facility.

Typically, all waste gases from leakages, vents and other sources go to flare. Some of those gases are clean enough to be used for power generation directly, and the others can be redirected to the refining inlet.

Reduced flaring also leads to lower



carbon emissions. It is not only better for the environment, but can also earn the company carbon credits and make it easier to meet relevant regulations.

A key equipment of an FGRS is the compressor. There are numerous compressor technologies available, each with its advantages and disadvantages. MPR Industries mainly designs and manufactures FGRS with sliding vane compressors.

The sliding vane compressor is a volumetric, positive displacement type of compressor. The vanes slide within the grooves of an eccentric rotor to form compartments and gas is trapped between the vanes. They are elementary machines that can also operate with a variable speed drive unit. MPR Industries's sliding vane

MPR Industries' FGRS are mostly based on sliding vane compressors (Photo: MPR Industries)

compressors have a flow range of 30-10,000 cu/m per hour and a pressure range of 0.01-25 bars.

MPR Industries says that the advantages of using its sliding vane compressors are increased efficiency in power consumption (by up to 70 per cent), flexibility and adaptability for dirty operations and their durable design (mean time between failures of 5,000 hours).

A flare gas recovery unit is a strategic piece of equipment for any refining facility. According to MPR Industries, gas flaring reduction programmes by some oil companies have allowed them to reach close to zero flaring, while the industry average is 20 per cent of gas production.

With 90 years of experience in manufacturing vacuum pumps and compressors, MPR provides complete packaged solutions for FGRS, including engineering, supply, commissioning and after sales support. It has partnered with many oil and gas companies over the years to aid in flare gas recovery solutions, including FGRS. ■

“ According to MPR Industries, gas flaring reduction programmes have allowed some oil companies to reach close to zero flaring, compared to the industry average of 20 per cent of gas production.”

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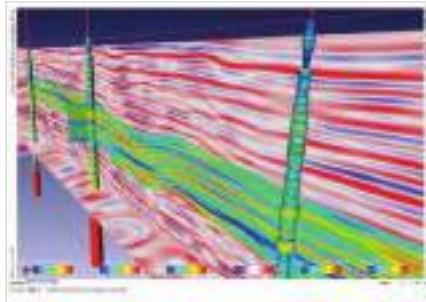
CGG GeoSoftware launches new geoscience solutions

PETROLEUM SOFTWARE TECHNOLOGY continues to evolve and take advantage of high-performance computing, new advanced algorithms and deeper integration across the geosciences. These advances have significantly reduced the economic and environmental risks associated with drilling, and deliver considerable improvements in targeting prospects and successfully developing fields.

Oil companies can now substantially enhance their understanding of reservoir properties, make better well location decisions and improve the quality and predictive nature of their reservoir models through integrated reservoir characterisation, petrophysical interpretation and reservoir modeling workflows.

CGG GeoSoftware has launched major new releases across its geoscience software portfolio. All three application suites, Jason 9.0, Hampson-Russell 10.0 and Insight Earth 3.0, feature technological advancements, improved workflow integration and greater ease-of-use to help oil and gas companies better understand and characterise the Earth's subsurface. New functionalities also enable users to assimilate and understand complex information for quick, accurate decisions.

Jason 9.0 has a new anisotropic inversion



GeoSI stochastic inversion can provide seismic resolution close to well log resolution (Photo: CGG)

tool for analysing anisotropy for effective well design and optimum production. The relationship between elastic dependence and anisotropy allows Quantitative Interpretation teams to more accurately characterise reservoirs that have significant anisotropy. Teams can realise the full potential of azimuthal seismic data and take advantage of the reservoir information to define optimum reservoir drilling locations.

A new integrated platform enables the sharing of well, seismic and geostatistically-derived lithology information across the GeoSoftware Seismic to Simulation (STS) workflow. Well-based petrophysical

evaluations of a reservoir's lithology can be compared to and integrated with equivalent seismically or geostatistically-derived lithology interpretations. This dramatically reduces the time asset teams spend on data and project management tasks. Changes made in one application are instantly shared in others.

Hampson-Russell 10.0 has a new GeoSI tool for geostatistical inversion that helps deliver lithology and other rock property volumes for a better understanding of your reservoir. The new RockSI tool helps users explore the link between rock properties and seismic data for quantitative interpretation.

Within Insight Earth 3.0, CGG GeoSoftware has introduced dip-guided auto-tracking so users can track horizons, faults, salt, canyons and other geological features in 2D, 3D, and curtain slice tracking modes using estimates of dip to properly constrain elements that define the feature. New tight, interactive 'stopping conditions' enable the user to impart their geological knowledge on the interpretation and maintain control to produce the most accurate subsurface interpretation possible in the shortest project timeframe. Complex geologic settings can be interpreted with one auto-tracker.

Emerson launches wireless-based corrosion monitoring system

EMERSON PROCESS MANAGEMENT has launched an innovative new corrosion monitoring system for refineries. The Roxar Corrosion Monitoring system, consisting of wireless-based probes, will provide refineries with flexible, responsive, integrated and highly accurate corrosion monitoring.

Combined with Emerson's non-intrusive Field Signature Method (FSM) technology, a non-intrusive system for monitoring internal corrosion at the pipewall, refinery operators will be able to access more comprehensive corrosion information and corrosion rates, leading to improved operator insight and control over assets. The new system will ensure optimal production processes and reduce refinery downtime with only the necessary amount of corrosion inhibitors being injected to meet environmental requirements.

The wireless-based corrosion monitoring solution also comes with fast response times, continuous measurements and installation in the plant's most critical and often inaccessible sections. The system provides crucial information to risk-based inspections with other wireless benefits including reduced installation costs and improved data management.

The system will also help identify and track opportunity/high TAN crudes and their corrosive elements. Such crudes are less expensive but more corrosive than others with the new system enabling the maximum amount of such crudes to be blended into the mix without increasing corrosion risk. An increase in opportunity crudes from 1.5 per cent to 3.5 per cent in a refinery with a capacity of 300,000 bpd can result in savings of US\$8.6mn per year based on a four dollar price difference, according to Emerson.

"Aging plants, extended operating windows (eg. the use of opportunity crudes) and an increased focus on safety and environmental regulations have placed corrosion and integrity management in the spotlight like never before," said Emerson's Kjell Wold, who was instrumental in developing the engineering principles behind the new system.

"That's why we developed our new integrated corrosion monitoring system – to help our customers take full control of their refinery assets and ensure all their production processes are operating at peak potential. Securing the ideal blend of crudes without increasing corrosion threats is also a major benefit to refinery operators."

The Roxar corrosion monitoring system consists of high quality electrical resistance (ER) and linear polarization resistance (LPR) probes and weight loss coupons – all coming with high temperature ratings, high resolution (10-100 nanometers) and fast response times. The ER and LPR monitoring functions are also available on the same instrument, and a 20 metre cable provides added flexibility with respect to positioning, optimised signal routing, easier maintenance and probe replacement. It also comes with advanced wireless capabilities and is compatible with the WirelessHART protocol as well as Emerson's broad product refinery range. The system is part of a complete asset integrity solution and works alongside the Roxar Field Signature Method (FSM) and Rosemount® Pressure & Temperature transmitters and repeaters. It can be installed in a number of refinery applications, including side streams, cooling systems and in addressing naphthenic acid corrosion in high temperature distillation processes. It can also tackle increased corrosion triggered by high velocity and temperatures, malfunctioning desalting units and high sulfur content.



The new wireless-based probe

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Collaborating on produced water treatment

A Joint Industry Project (JIP) sees the USA's ProSep collaborating with PDO and Qatar Petroleum.

THE "OSORB REGEN-DESIGN, Selection and Engineering of an Offshore Osorb Regeneration Package" Joint Industry Project (JIP) between Qatar Petroleum, Petroleum Development Oman (PDO) and ProSep, seeks to demonstrate a practical regeneration process for Osorb media.*

The 12-month project, which commenced in December 2014, sees ProSep work collaboratively with both parties in the Middle East to develop an offshore capable unit for oil-in-water removal and media regeneration using ProSep's produced water treatment technology. Part of this project involves the development and testing of regeneration processes at small scale before a field test is

completed towards the end of the year with a skidded, fully-automated water treatment and regeneration package.

The Osorb media can be regenerated using a variety of techniques and resources. One of the objectives of the JIP is to collect data on a specific and relevant set of resources in order to create a regeneration process that is both economically and operationally practical. This is because operators and oilfields have different resources available to regenerate the spent Osorb media. ProSep, with the guidance of Qatar Petroleum and PDO, focused on two regeneration processes, including a method to regenerate media used for enhanced oil recovery (EOR) operations. By providing their continued insight and support into the final regeneration process, Qatar Petroleum and PDO are helping to facilitate the quickest implementation of the technology.

Critical aspect

A critical aspect of the project has involved ProSep conducting tests to investigate and verify regeneration processes. The scope of this testing included verifying the efficiency of ProSep's regeneration process on media used for the removal of oil from chemically enhanced oil recovery (CEOR) operations, as well as utilising natural gas to regenerate the media. In the CEOR produced water treatment evaluation, a proprietary regeneration fluid followed by steam was used. The second regeneration process evaluated the use of NGLs to replace the regeneration fluid and potentially the steam.

The results from each of the regeneration tests support previous regeneration processes as being economically and operationally feasible. The regeneration of Osorb media exposed to CEOR, as well as larger scale regeneration testing, continues to support the regeneration processes developed by ProSep. Additionally, the expanded testing into using natural gas liquids demonstrates the flexibility of the media to adapt to applications according to resource availability.

The most important aspect of the regeneration testing is the recovery of water treatment capabilities after regeneration. The results from the CEOR produced water testing displays the media's superior performance at removing oil from this problematic waste stream through several regeneration cycles. The data generated from these tests is important for scaling up to commercial systems and verifying the media's water treatment abilities over extended periods. The results from the NGL testing provided data for alternative regeneration methods using resources which are available on site. If the location of an Osorb water treatment system is near a facility capable of generating natural gas liquids, the requirement to bring ProSep's regeneration fluid to the site is decreased or eliminated. ■

* Osorb® Media technology adsorbs free, dispersed, and water soluble hydrocarbons, as well as many oilfield chemicals from produced water. ProSep will evaluate Osorb® Media's performance over repeated capture and regeneration cycles on customer-specified water streams. The JIP will culminate with the integration of a commercial unit into the target process stream for extended trialing. The unit will be in commission for a period of three months, with the objective of full technology adoption into the field thereafter.

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The case for parallel operation

Off-grid power supply inadequate? It should be easy to increase the capacity of your existing bank of diesel gensets.

FINDING AN ENGINE generator that meets your varying requirements at all times is an impossible task. So parallel operation of two or more sets working together in an expandable 'bank' is the normal solution.

This review summarises the issues faced by genset operators who are not connected to the national grid at all, so-called 'island' applications. Synchronising with a utility supply is more complex. The simplest way to proceed is to start with individual sets that are precisely matched, with the same nameplate and age, output rating and alternator pitch, linked up synchronously by the latest generation of special paralleling switchgear.

The objective of such an ideal array is to produce maximum output at peak times while maintaining an acceptable minimum level of supply when just one set needs to be running, feeding lighting, communications and air conditioning, for example. Capability for flexible power output is much more desirable than having a single large engine/alternator combination that is just ticking over some of the time. Large or small, no diesel-fuelled set thrives in these conditions.

The conventional solution, a multiple installation in parallel operation, ensures maximum reliability and expandability of the system and most effective use of capital resources – along with ease of maintenance in the sort of challenging remote environment oil and gas operators are accustomed to.

Today's fully-integrated digital control equipment from specialised power-management equipment suppliers such as Eaton Corp (teamed with Caterpillar), Emerson Network Power (ASCO) and GE Industrial Solutions (Zenith) makes it easy – temporarily or permanently – to import an extra set, possibly borrowed from a company-operated site nearby. The generators do not have to be of the same type or output rating, although nameplate



Diesel gensets are found on most oil and gas installations (Photo: Cummins Power Generation)

matching always helps.

Each genset within such a parallel-connected system can incorporate several micro-controllers that are teamed together. Matching devices incorporating either analog or digital components that are specifically designed to work with one another are the optimum combination, but your supplier should be able to cope with a range of manufacturers and technologies. The points needing attention include control of the individual prime-mover RPMs, the balancing of loads, synchronisation of the phase of each alternator, and matching of the individual output voltages. All to be achievable within a few moments from start-up.

“The simplest way to proceed is to start with individual sets that are precisely matched”

A proactive relay controller will ensure both the synchronisation and load/voltage balance issues are satisfactorily resolved. The supplier will also fit an overall controller to match up all the output parameters of each engine/alternator unit within the 'bank'. Digital controllers that are easy to monitor remotely are the norm within both large and small genset combinations today. With appropriate security, even a hand-held device will often do.

All the line output features outlined above will be regulated by the microcontrollers built into each set, matched up by the master controller within an old-style analog system. Accurately specifying and then hard wiring this is a significant task, hiking relative cost-per-installation in the case of small banks of equipment especially. Each controller has to be individually synchronised with the parallel system overseen by the master device; simultaneous operation of these may introduce electrical 'noise' which can affect the operation of some applications – notably ICT equipment. So excessive supervision and adjustment may be necessary if an analog system is being extended.

Today's universal digital control outdoes all this. Each engine generating set so equipped incorporates just one plug-and-play device that is used to simultaneously monitor, control and boost all the output parameters; this keeps the level of interference down, enhances the performance of the whole system, and reduces the trouble-shooting and general maintenance requirements of an extensively hard-wired network. Most checks can be made on a remote device via the Internet or phone network.

The key requirement is to ensure that the necessary technical expertise is on hand from your supplier at the paralleling design stage, so that when actual installation takes place the entire system is properly configured, incorporating the latest appropriate technologies. For busy energy operators this is rarely an in-house task. ■



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Full steam ahead for ADNOC

Despite weaker energy prices, ADNOC remains committed to boosting output, both onshore and offshore, says Martin Clark.

ONE OF THE world's leading oil exporters, Abu Dhabi produces more than 2.7mn barrels of crude per day - that's nearly all of the combined output coming out of the United Arab Emirates - and more is to come.

The industry is dominated by state-owned Abu Dhabi National Oil Company (ADNOC), with its multiple subsidiaries that span all corners of the energy sector, both upstream and downstream.

Despite the recent downturn in oil prices, these group companies continue to invest heavily in new capacity and in maintaining established operations.

There are plans to spend an estimated US\$25bn over the next five years to keep the oil flowing and to feed the hungry Asia market, which now consumes around 90 per cent of Abu Dhabi's crude.

Going forward, ADNOC hopes to raise output to as much as 3.5mn bpd, although such ambition could be challenged, or delayed, by soft oil prices.

Investment in other infrastructure, from downstream facilities to marine terminals is also ongoing, a reflection of the sheer size of the emirate's energy sector.

And ADNOC is actively developing its upstream gas portfolio too, partly in a response to rising demand at home, and shortages that have plagued the domestic market. Abu Dhabi has been importing natural gas via Qatar's Dolphin pipeline for some years.

“ Despite the recent downturn, these group companies continue to invest heavily in new capacity”

Onshore operations

At the heart of ADNOC's empire is the Abu Dhabi Company for Onshore Petroleum Operations Ltd (ADCO), which manages the nation's onshore oil concessions.

It is focused on various integrated asset groups around key fields like Bab, Bu Hasa, South East (Sahil, Asab, Shah, Qusahwira, Mender) and Northeast Bab (Al Dabb'iya, Rumaitha, Shanayel).

Collectively, these onshore fields contribute the bulk of the nation's oil output. ADCO hopes to raise its own production to 1.8mn bpd in 2017, an illustration of the company's ambition even in the face of tough market conditions.

This is being tested, however, amid a lengthy concession renewal process, which groups ADCO with various international firms. Historically, this has been a partnership with big Western oil



ADNOC is looking to increase capacity to 3.5mn bpd
(Photo: Huyangshu/Shutterstock)

companies, but there is a shift to embrace new partners from Asia, where Abu Dhabi's major customers are now located. It is a political process, and the battle for a strategic hold in the onshore sector remains ongoing.

There have been some appointments, though. Total of France has secured a 10 per cent interest in the new-look ADCO concession

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make-up and has been appointed leader for the South East and Bu Hasa integrated asset groups.

ADNOC has also signed a 40-year agreement with JODCO Onshore Ltd, a unit of Japan's Inpex, handing it a five per cent interest in the consortium. JODCO also holds a share in offshore operators, ADMA-OPCO (Abu Dhabi Marine Operating Company) and ZADCO (Zakum Development Company) - both key ADNOC companies. South Korea's GS Energy, backed by Korea National Oil Corp. (KNOC) has also been awarded a small equity stake.

Other international names linked to the ADCO deal include long established European and North American partners including Shell and BP.

ADCO activated the latest part of its growth plan just recently, handing a US\$344mn contract for the development of the Mender field to China Petroleum Engineering and Construction Corporation, another indicator of its growing links with the Far East.

The Mender field, part of ADCO's South-East Abu Dhabi asset group, will have a production capacity of about 20,000 bpd. The CPECC contract covers the construction of gathering stations, pipelines and power transmission lines, as well as sewerage systems.

Offshore focus

Increasingly, however, much of ADNOC's focus will turn offshore, and this is expected to account for almost half of overall production within a few years.

ZADCO - which groups ADNOC with JODCO and ExxonMobil - is currently working on a massive upgrade of the Upper Zakum oilfield, north-west of Abu Dhabi, that will boost output from 550,000 bpd to 750,000 bpd. Huge work packages have been issued for what is one of the biggest offshore fields in the Gulf. The largest, worth US\$3.7bn, was awarded to Petrofac and Daewoo Shipbuilding and Marine Engineering, while Technip of France and the National Petroleum Construction Company (NPCC) also secured a US\$800mn contract for work on the field.

The field site includes four artificial islands all with associated drilling and production facilities, underlining the scale of the project, which is set for completion in late 2017.

ADMA-OPCO is also working on several key upstream developments with plans to add 270,000 bpd of additional production from its new fields Umm Lulu, Nasr and Satah Al Razboot (SARB).



Offshore production is expected to account for almost half of overall production by 2018

The company, which groups ADNOC with Total and BP, as well as JODCO, produces about 650,000 bpd. Again, there's a huge price tag, with three major contracts for the Nasr full field development project totalling US\$3bn alone, with Hyundai Heavy Industries, NPCC and Technip securing the lion's share of the work.

Natural gas

As well as bolstering oil production for export, ADNOC is also leading the charge to diversify the UAE's energy mix and reduce its dependence on natural gas imports for power generation.

Although renowned around the globe as an oil exporter, the exploitation of Abu Dhabi's gas resources has been a key theme of recent upstream projects, and a high priority for government as it has in many other Gulf states facing rising energy needs.

The irony is that, despite suffering shortages in recent years, the emirate has long been a producer of liquefied natural gas (LNG) to the Asia market, which consumes a large proportion of any gas produced locally.

Much of ADNOC's recent efforts have thus been geared to reversing that situation.

ADMA-OPCO also awarded a separate US\$500mn contract to NPCC for gas work at the Umm Shaif complex as part of its overall development, for instance.

And there are signs that this new focus and investment is starting to pay off. In October, officials declared that the Shah gas field - ADNOC's flagship gas project with the USA's Occidental Petroleum - had reached full capacity. The project, developed by ADNOC unit, Al Hosn Gas, in partnership with Occidental, is now producing at 1 billion cubic feet per day (bcf). ADNOC holds 60 per cent of the joint venture with its American partner holding 40 per cent. The multi-billion dollar project produces usable gas from Shah's high-sulphur content gas field.

ADNOC is also working alongside Shell on another sour gas project, at the Bab field.



ADNOC is also leading the charge to diversify the UAE's energy mix"

Transitional times

Given the tough market conditions facing all oil and gas companies right now, these are crucial times for ADNOC.

With the UAE facing up to its own critical energy supply issues, there is little margin for error in its swathe of development work, nor in maintaining the enormous infrastructure that already exists offshore and onshore.

Looking ahead, other projects are in the pipeline too, including another tie-up with Occidental to evaluate the Hail and Ghasha oilfields. The pair will spend up to US\$500mn on 3D seismic surveys, engineering studies and appraisal wells to assess development prospects by 2017.

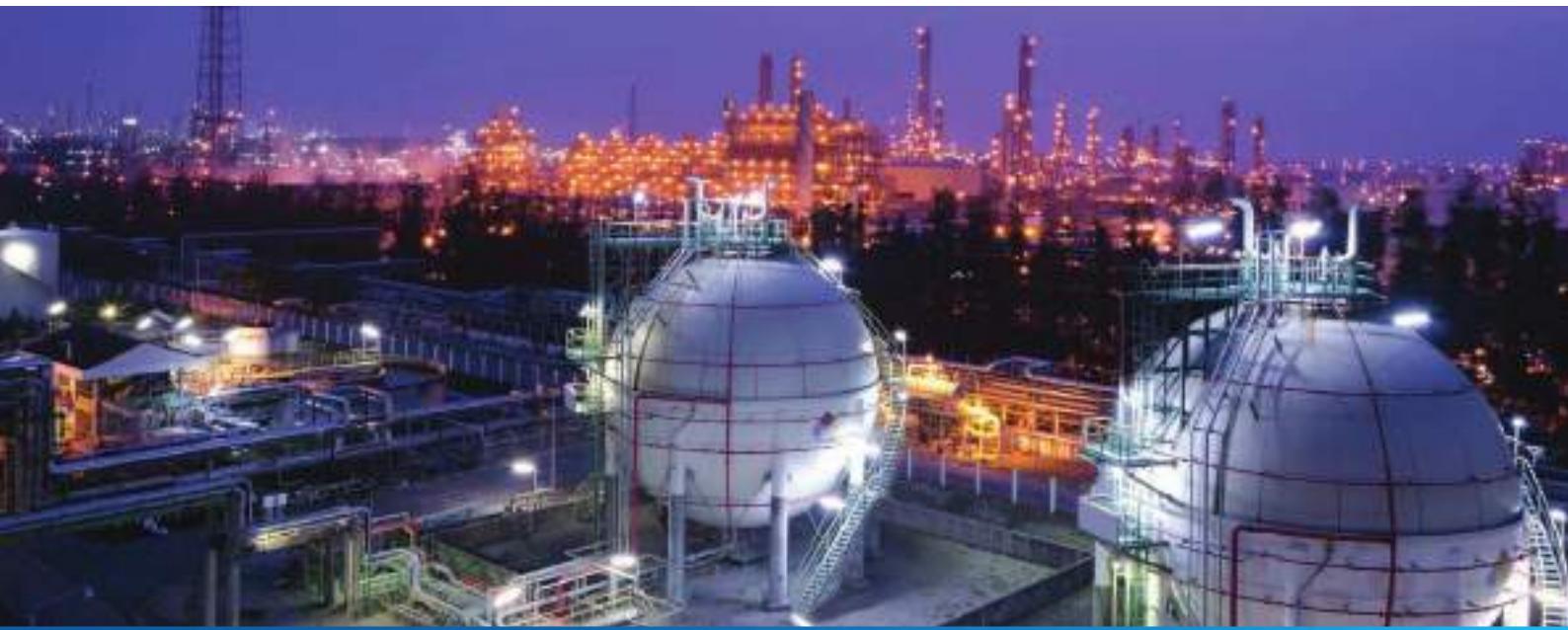
But the UAE is navigating a transitional time as well, with fossil fuels dependency poised to soften in the decades ahead as new technology and a shift to renewables and even nuclear energy gathers pace.

The strong political will to proceed on these fronts means Abu Dhabi – already named the world headquarters for the International Renewable Energy Agency – will gradually start to shape a new-look energy sector, side-by-side with its hydrocarbon industry.

ADNOC's position, therefore, becomes even more significant, as it helps the country ease through this long phased shift, all the while maintaining the security of the oil and gas sector and the immense income that it returns for the nation. ■

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Innovation at the core of sustainable oil output

ADIPEC 2015 is set to play an ever-important role to help oil and gas firms maximise output in this economically challenging environment.

WITH THE ADVENT of ADIPEC 2015, Abu Dhabi National Oil Company (ADNOC) strategy & coordination director and ADIPEC 2015 chairman Ali Khalifa Al Shamsi, speaks with Oil Review Middle East about the UAE's role in supporting energy industry growth across the globe.

How can innovation and sustainability in the oil and gas industry help in today's transforming energy landscape?

The UAE leadership has formally declared 2015 as the "Year of Innovation", ensuring the achievement of Sustainable Development

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ADIPEC 2015 chairman Ali Khalifa Al Shamsi

Goals for 2030 put forward by the UN. This, combined with current market conditions, makes innovation and sustainability fundamental to the progress of the energy sector.

Innovation sits at the core of sustainable energy production. It helps reduce costs, enabling companies to become more competitive in this economic environment. For example, developments in technology have allowed us to tap into very tight reserves, which was once not possible or very expensive to do. However, innovative technologies are allowing us to explore new resources both safely and economically.

How does ADIPEC contribute to the global oil and gas community both globally and regionally? What value does it bring?

The oil and gas industry is currently going through a transformation. Innovation, research, and development are an absolute must to keep up with evolving market demands. It is projected that demand for energy will increase 37 per cent by 2035, and fossil fuels will continue to serve the majority of the world's energy needs.

ADIPEC provides an ideal global platform for bringing the best and brightest minds – including industry leaders, business innovators, and decision makers – to not only discuss impending challenges and opportunities in the oil and gas industry, but also to exchange valuable knowledge and information that will play a pivotal role in securing a sustainable energy future.

What do you think will be the most important issues discussed at ADIPEC this year?

Exploration and production is becoming increasingly challenging, as extracting hydrocarbons from the deep reaches of the earth is no easy task. The level of technology and innovation required rivals that of any other high technology industry. Today, most of the 'easy oil' has been discovered and the task to produce and recover more

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hydrocarbons from tight reserves, particularly in today's economic environment, is becoming more difficult. Meeting those challenges and advancing the industry through technology and innovation across every aspect of exploration and production will drive discussions at ADIPEC this year.

This will be addressed through various components of the ADIPEC 2015 Conference Programme, including two ministerial sessions, two CEO plenary sessions, six panel sessions, industry breakfasts and luncheons, and 79 technical sessions that will look at topics ranging from field development to Operational Excellence.

How will ADIPEC address the issue of HSE, and how much progress do you think has been made in the oil and gas industry in this area?

Effective Health, Safety, and Environment (HSE) policies are crucial for every company, a moral and ethical obligation, and fundamental to its success and organic growth. Injury or damage to people and the environment not only harms a company's valuable assets and potentially its public image, but also leads to money lost. Therefore, direct and indirect costs need to be taken into consideration when making decisions on cost optimisation.

The current business environment presents a challenge to the industry, but also presents an opportunity for companies to maintain and enhance HSE in innovative ways without significantly impacting the bottom line.

“ It is projected that demand for energy will increase 37 per cent by 2035, and fossil fuels will continue to serve the majority of the world's energy needs”

The HSE panel discussion at ADIPEC invites speakers to highlight their achievements in addressing these challenges without compromising on HSE, and also share their proven initiatives that have improved HSE commitment and performance.

Companies in the region and around the world have made great strides when it comes to HSE, and the relentless efforts of regulators and associations, combined with the industry's unwavering commitment to protect its employees and the environment, have helped make this possible.

ADIPEC will, for the first time, launch the Offshore, Marine, and Heavy Equipment Zone. How will the sector benefit from this new addition?

The newly launched Offshore, Marine, and Heavy Equipment Zone consists of a purpose-built area that provides water access, mooring, and quayside exhibition space that will allow more than 200 exhibitors to showcase a host of offshore products and services, including ships, rigs, and vessels. The new area will cover 8,000 gross square metres of space, with a jetty that extends 500 metres long.

Globally, about 30 per cent of oil produced worldwide comes from offshore oil wells, and offshore resources are playing a greater role in supplying the rising demand for energy, with a growing interest in the potential of deep water reserves. Extracting oil and gas from offshore reserves is a complicated and often expensive process, and, therefore, advancing the sector through developments in research and technology is becoming more critical to preserving it as a valuable energy resource.

The Offshore, Marine and Heavy Equipment Zone and the Offshore and Marine Conference offer experts the perfect platform to discuss these developments and exchange knowledge and information that will drive the sector's growth. ■



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Innovation and sustainability in a new energy world

Showing little sign of being hit by the downturn, the leading oil and gas exhibition returns to Abu Dhabi in November, with a focus on innovation and sustainability.

THE OIL AND gas industry's commitment to innovation, research, and development will ultimately determine its capacity to sustainably meet the ever-growing global demand for energy, experts said ahead of the largest Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) to date. Global energy demand will be 37 per cent higher by 2040, according to the International Energy Agency's World Energy Outlook. With the Middle East expected to become the major source of oil supply growth, investment in cutting-edge innovation and technology will help the region's energy industry meet growing needs.

Held under the patronage of His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE, ADIPEC will take place from 9-12 November at the Abu Dhabi National Exhibition Centre (ADNEC).

Inspired by the UAE leadership's declaration of 2015 as the "Year of Innovation", the theme for ADIPEC this year is "*Innovation and Sustainability in a New Energy World*", bringing together the best and brightest minds, including ministers, senior-level industry executives, world renowned energy experts, and thought-leaders to shed light on the critical topics driving the transformation of the energy sector – from the innovative technologies advancing exploration and production, to the evolving global energy mix and the emerging



The packed exhibition floor at the 2014 event

role of unconventional resources.

Ali Khalifa Al Shamsi, director of strategy & coordination at the Abu Dhabi National Oil Company (ADNOC), and ADIPEC 2015 chairman, said, "ADIPEC provides a significant global platform for oil and gas professionals to exchange ideas and knowledge and share best practice in the industry. Global leaders across the sector

recognise the value that ADIPEC brings and the role it plays in support of industry development and growth. This recognition positively reflects on ADIPEC and is what has helped the event achieve significant growth over the last three decades of its history."

ADIPEC is supported by the Ministry of Energy, ADNOC, and the Abu Dhabi Chamber, and organised by dmg events. Despite the low oil price scenario, the acclaimed event is expected to host more than 2,000 exhibitors from more than 120 countries, 85,000 attendees, and 7,000 delegates this year.

15 national oil companies and 15 international oil companies have already confirmed their participation, including regional market players the Kuwait Oil Company, Qatar Petroleum, and Saudi Aramco, as well as global giants BP, ExxonMobil, Shell, and Total.

“ ADIPEC provides a significant global platform for oil and gas professionals to exchange ideas and knowledge and share best practice”

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The media briefing for ADIPEC 2015

Saif Ahmed Alghfeli, CEO of Al Hosn Gas, and co-chairman of ADIPEC 2015, said, "Innovation and creativity have been hallmarks of the oil and gas industry, and those who have been in the industry long enough have experienced first-hand how it has transformed over the years, thanks to innovation."

In addition to providing a platform for exchanging industry-setting knowledge and technical expertise, ADIPEC also offers the ideal meeting place for stakeholders – be it investors, service providers, contractors, or suppliers – to forge new partnerships and seek business opportunities.

Bringing the world's thought-leaders to Abu Dhabi

The ADIPEC Conference Programme comes back even bigger and better this year, with more than 600 speakers and 7,000 delegates from both technical and non-technical functions exploring regional and global views on impending industry topics.

The ADIPEC 2015 keynote presentation will be given by Dr. Daniel Yergin, the world's leading authority on energy and award-winning author, who will offer insights on the challenges and opportunities in meeting the ever-growing global energy demand, including recent developments in the areas of conventional and unconventional hydrocarbon resources.

Two dedicated ministerial sessions and two CEO plenary sessions will bring together international and regional ministers, industry chiefs, and decision makers to discuss and address the challenges presented by the new energy landscape.

The record-breaking ADIPEC Technical Conference, which is organised by the Society of Petroleum Engineers (SPE) and received more than 2,000 abstract submissions this year, is also back with nearly 600 technical presentations in more than eight categories organised across 79 technical sessions.

Fareed Abdulla, senior vice president – North East Bab (NEB) Asset at the Abu Dhabi Company for Onshore Oil Operations

Ltd. (ADCO), ADIPEC 2015 Technical Conference chairman, and SPE regional director, Middle East and North Africa, said, "It has been amazing to see the growth of ADIPEC's Technical Conference over the years. In the oil and gas industry, the ADIPEC 2015 Call for Papers has broken the world record for the number of submitted abstracts. This impressive achievement comes at a time when we are in the middle of reduced oil prices."

“ADIPEC will be launching a dedicated Offshore, Marine and Heavy Equipment Zone”

The exclusive VIP Conference Programme, organised for members of the Middle East Petroleum Club (MEPC), the definitive club for senior oil and gas executives, will also welcome big names to the stage, including world renowned adventurer Sir Ranulph Fiennes, who will highlight the important values of endurance and resilience when facing challenges.

The VIP Conference Programme will also give MEPC members an opportunity to listen to insights from Jon Duschinsky, a thought-leader on social engagement and future business who will draw on the areas of innovation, leadership, and motivation as tools for creating change and fostering engagement within the business environment.

All-new Offshore, Marine and Heavy Equipment Zone

In line with regional and global efforts to continue exploring and developing offshore production, ADIPEC will be launching a dedicated Offshore, Marine and Heavy Equipment Zone, making it the first oil and gas exhibition in the region to dedicate an entire waterfront section to offshore,

subsea, and marine products and services.

The exhibition will be complemented with the inaugural ADIPEC Offshore and Marine Conference, located in a dedicated waterside theatre, where more than 40 industry experts will present valuable offshore oil and gas information.

"New field discoveries indicate the future of oil and gas lies offshore, and this creates the pressing need for a dedicated platform where experts from the sector can meet with the common goal of sustainably advancing offshore exploration and production," said Jean-Philippe Cossé, ADIPEC 2015 event director at dmg events.

"Visitors to this year's event will truly witness the growth and scale of ADIPEC, with a dedicated zone that is easily accessible and within 150 metres of walking distance from the main exhibition floor. Guests will have an opportunity not only to see oil rigs in their natural setting, but also to attend a conference that will address current topics in offshore production."

Also returning to ADIPEC 2015 will be the ADIPEC Awards, which celebrate innovation, best practice, and excellence in energy for people, companies, projects and initiatives in the oil and gas industry regionally and internationally. Winners will be announced during a gala dinner taking place at the Emirates Palace on ADIPEC's opening night.

Challenging the perception that the oil and gas industry is a male-dominated environment, the official ADIPEC Women in Industry series will give attendees the opportunity of meeting with peers and discussing the future role of women in the energy arena, with a full day gathering on Sunday 8 November.

Young ADIPEC, the hugely successful programme designed to engage the younger generation in the oil and gas industry, is back for its third year and expanding its reach with the creation of a Young Ambassador for each participating school. The programme will also feature interactive engagement sessions to help students learn more about the energy sector and develop key skills. ■



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Staying ahead in today's energy landscape

Embracing sustainability is key to surviving oil and gas industry transformation, says world renowned thought leader Jon Duschinsky.

OIL AND GAS companies must embrace sustainability in today's transforming energy landscape or risk losing to competitors who are redefining their approach to business, says Jon Duschinsky, globally acclaimed thinker and speaker on engagement, leadership, and the future of business.

Duschinsky will give an exclusive speech on 'Staying ahead in today's energy landscape' as part of ADIPEC's VIP programme, with insights on how oil and gas companies can leverage current market challenges as opportunities to drive long-term profitability.

The industry is "at a crossroads," according to Duschinsky. Either it can stay attached to the status quo and lay low until oil prices rise, or it can embrace sustainability and profitability.

"In the long term, those that choose the first path don't have a future," he says. Whether it is the next market fluctuation, or the one after it, or the next technology step-change, at some point they will see their market share and profitability eroded to the point where they are taken over or put out of business by companies who have made the investment in changing now.

"This economic environment marks the

industry's opportunity to change not just its capital and operating bottom lines, but its mindset. Because however we spin it, we are collectively consuming our planet in ways that are simply not sustainable nor healthy. And this needs to change."

By working closely with stakeholders to give back to the community, not only through a streamlined corporate social responsibility programme, but also through transparency and ethical practice, companies can help paint a positive picture of the industry, says Duschinsky.

"The only way to be able to change this is to set out a vision for an energy industry that is a force for good," he comments. "Engage people in working out what that means for them. Work out how your companies, how oil can set a path for a better tomorrow. Be part of the solution, not the problem. And be honest about what you do and how you can do it better."

As demand for energy continues to increase and operational efficiency becomes a growing concern for the industry, research and development on its own will not be sufficient to stay competitive, Duschinsky warns. Rather, it must be complimented with the disposition to challenge the paradigm that "oil moves all things."



John Duschinsky

"In Canada, there is an oil company that is applying Silicon Valley thinking to their work. It offers a young, dynamic workforce a chance to collaborate, innovate, be creative and fail. They have a flat organisation – with few hierarchical levels, a meditation room, lego blocks, creative spaces in its offices... The company has no problem hiring and retaining talent," says Duschinsky.

"And it's producing new thinking that is both more sustainable and more profitable; installing solar panels to provide the energy for two of its wells, for example, to reduce operating costs, but also provide an additional sustainable income stream once the well runs dry. This is the kind of thinking that can emerge from a different paradigm." ■



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IBM present for first time

IBM, THE GLOBALLY integrated technology and consulting company, is exhibiting at ADIPEC for the first time this year.

With regional headquarters in Dubai, IBM's presence in the Middle East and Pakistan dates back over 60 years to the installation of the first computer at Saudi Aramco in 1947.

IBM has industry leading experience of working with major oil and gas companies, with a presence in more than 170 countries. IBM's industry expertise and solutions are backed by IBM research capabilities. It has several oil and gas centres of excellence spread across the world. IBM continues to invest in path breaking research initiatives such as Watson, and collaborates with business partners to deliver a full suite of solutions across the geographies to help oil and gas companies to work smarter.

Stand: 13047

Bulwark FR to run free sessions at ADIPEC

THE OIL AND gas industry is highly vulnerable to fire hazards. Workers in oil and gas facilities face a serious and real risk from flash fires, and employers must ensure their safety.

Bulwark FR, the leading suppliers of fire retardant (FR) clothing, invites visitors to its stand to discover how it can help companies to solve their FR challenges and navigate the every-changing sea of safety standards. The company manufactures FR garments for a wide range of hazards, including arc flash and flash fire. Its products comply with rigorous industry standards.

Bulwark FR will be running free sessions at ADIPEC, at which the speaker will be Derek Sang, technical training manager at Bulwark and a recognised Subject Matter Expert (SME) and certified Safety Manager Trainer (SMT) for the National Association of Safety Professionals (NASP). He will discuss the various test standards and methods for the ultimate FR apparel and the implications for your business.

The sessions will run at 2pm on Monday 9 November; 11am and 2pm on Tuesday 10 November; 12pm and 3pm on Wednesday 11 November; and 11am and 1pm on Thursday 12 November.

Participation can be confirmed by emailing BulwarkFR_ADIPEC@vfimagewear.ae.

Stand: 13187

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Innovation through R&D to lead **ADIPEC 2015 agenda**

Developing safe, ecologically-friendly and cost-efficient methods of hydrocarbon production is the primary focus of ADIPEC 2015.

THE ADIPEC 2015 Conference will invite the world's best and brightest minds to the stage to address the challenges and opportunities facing the oil and gas industry.

Ali Khalifa Al Shamsi, strategy and coordination director at Abu Dhabi National Oil Company and ADIPEC 2015 chairman, said, "Sharing knowledge and forging partnerships is key to innovation. ADIPEC provides a perfect platform for collaborating, sharing and partnering as we maximise our joint resources and expertise."

Energy security is a responsibility shared by all industry stakeholders, one that relies on the application of innovative,

environmentally-safe technologies, according to the world's oil and gas giants.

"Global energy demand is set to rise by up to 75 per cent by the middle of the century as many people are lifted out of poverty, and our industry has a strong role to play in helping meet that demand," said Andrew Vaughan, vice president for Abu Dhabi and Kuwait for Shell, and country chairman for Shell Abu Dhabi.

"The challenge we face is how to meet that demand in a cost-effective manner while protecting the environment and, in particular, facing the real challenge of climate change. The opportunities are for those companies that can innovate and maximise recovery and efficiency of production," said Vaughan.

"Over the past decade, we have seen huge advances in enhanced oil recovery, drilling technologies with expandable tubulars, reservoir imaging with advanced seismic processing, as well as recent advances in carbon dioxide capture and storage, which will ultimately contribute to mitigating the effects of climate change," Vaughan added.

Although fossil fuels will continue to meet the majority of the world's growing energy demand through to 2035, cleaner and more cost-efficient resources will experience rapid growth. This is why companies need to maintain a long-term approach to business, making the right investments in the global journey towards sustainable energy, according to experts.

"We are all adapting to life in a lower oil price world. We need to run safe, reliable, simple, and efficient businesses," said Lamar McKay, upstream CEO at BP and an ADIPEC 2015 Conference speaker. "We need to manage capital spending. We need to reschedule some projects. But we also need to make the right choices about where investments for the future will occur."

The technology challenges for the oil and gas industry seem reasonably clear, according to McKay – producing hydrocarbons safely, accessing new resources economically, using energy more efficiently and creating a more sustainable energy future.

Aside from the current economic environment and the geopolitical instability in some parts of the region, the major challenges facing the Middle East energy sector are maximising resources, including balancing regional supply and demand, and increasing the contribution from sustainable energy, according to Hatem Nuseibeh, president of Total UAE.

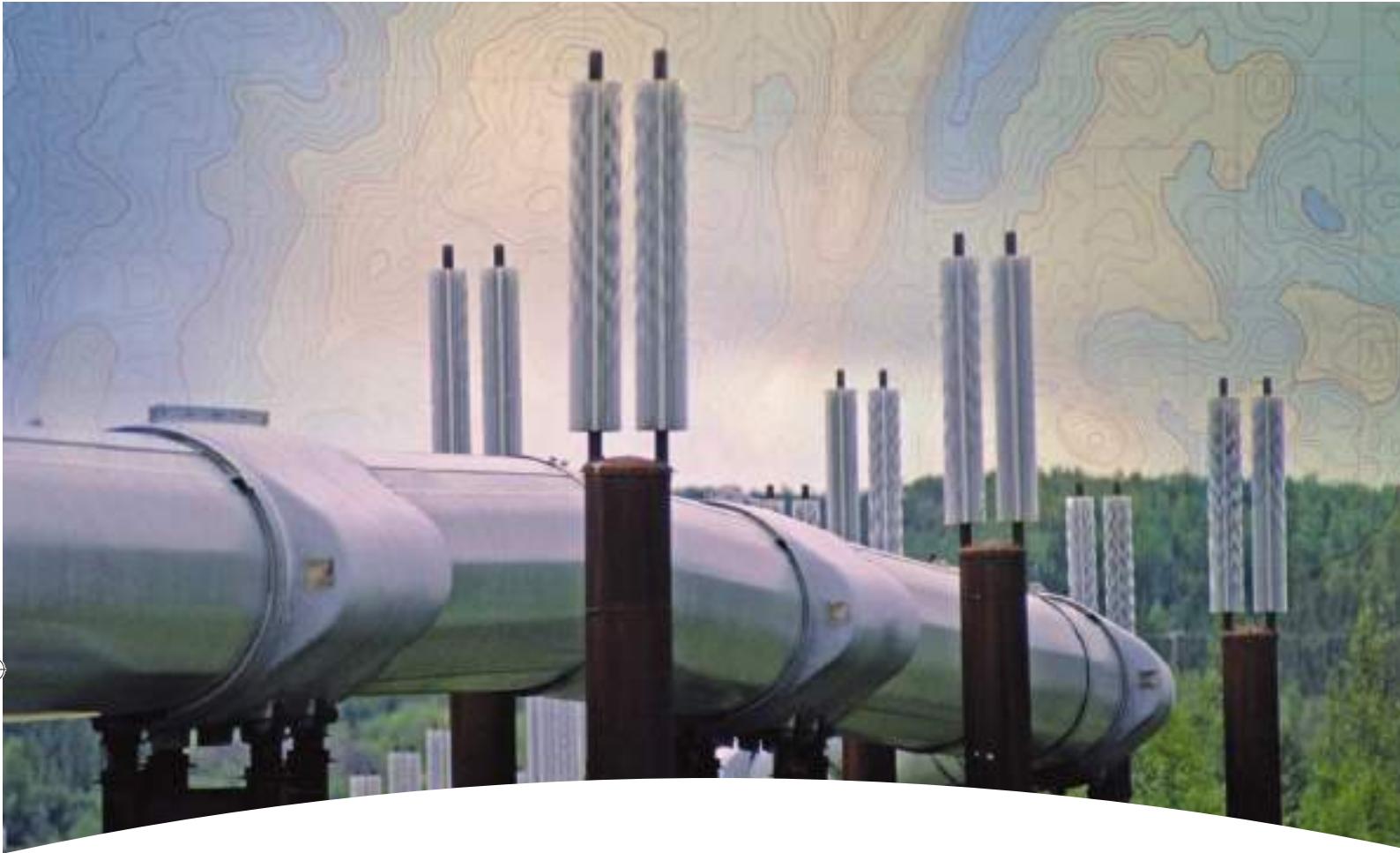
"With respect to maximising reserves, Total's long term presence and knowledge of the region's reservoirs and their geology are enabling us to make a major contribution," Nuseibeh said. "Through such intra-country projects as Dolphin, which supplies gas from Qatar to the UAE, we are also helping to balance supply and demand."

The four-day ADIPEC 2015 Conference Programme kicks off on 9 November and is organised by the Society of Petroleum Engineers. ■



Recent advances in R&D will help mitigate the effects of climate change, says Andrew Vaughan

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Innovation is the way forward: Aggreko

POWER SUPPLY AND temperature control rental solutions provider to the oil and gas industry Aggreko is the Power & Cooling Partner at ADIPEC 2015 and will be showcasing its solutions for offshore and onshore operations in the region.

As an established business in the Middle East for over 15 years with clients in the energy, construction, petrochemicals, events, manufacturing, services and utility sectors, Aggreko's generator range scales from small 30kVA units to multi-MW packages. The temperature control solutions include air conditioners, water chillers, cooling towers as well as specialised Process Cooling Services tailored for the petrochemical industry.

Aggreko's diesel generators are by far the most utilised, however, gas fuelled generators also have a huge market as they are often more efficient where a gas fuel infrastructure is available. Several years ago, the company introduced heavy fuel oil (HFO) generators into their power product range. HFO is an unrefined fuel and Aggreko is using this low cost fuel to power its generators. For example, Saudi Arabia and Iraq are creating numerous opportunities for use of this fuel type because of the huge amount of heavy oil prevalence in these countries. This development clearly demonstrates Aggreko's ability to innovate and be a recognised leader in the market.

Exhibiting at the recently held Kuwait Oil and Gas Show (KOGS), Patrick Haberthuer, area manager in Kuwait, talked about the positive domestic operations but would like to expand Aggreko's presence and operations in the country. "We see good opportunities on the horizon with some projects recently announced by KNPC and KOC. The 2016 outlook for Kuwait looks positive in the oil and gas and construction sectors both of which Aggreko have a vast experience of providing solutions for."

The power rental market in the Middle East region is currently estimated at US\$1bn, according to Steve Bailey, head of sales and marketing at Aggreko. However, he noted that the figures change on an

annual basis based on geopolitical and economic factors. "We operate in a market worth approximately US\$800mn and have a significant market share across the region.

"Yes, construction is an important market for us but Aggreko provides rental solutions and services to all key industry sectors. Petrochemical, manufacturing as well as food and beverage markets are equally important, not only for power, but also for our cooling solutions in the Middle East region.

"In this part of the world where the ambient temperatures are extreme, we have developed unique solutions to maximise production output for our customers. Maintaining the correct temperature during a manufacturing or a petrochemical process is critical and Aggreko have developed specialised process services and solutions to assist these industries," Bailey added.

Health and Safety for its staff, equipment and customer site is taken very seriously by Aggreko. QHSE processes and procedures are carried out diligently by the Aggreko operations team at all their sites to ensure minimum risk is faced by all parties involved. This is especially important in the oil & gas and petrochemical sectors where we are surrounded by various chemicals and fuels.

Being one of the market leaders in the power rental & cooling industry, Aggreko has many value propositions. For example, offering their customers the option of saving capital expenditure costs by providing long-term rental solutions complete with full servicing, maintenance and fuel management. This allows the customer to concentrate on their core business and reallocate the expenditure elsewhere.

Innovation is paramount to Aggreko and with a strong R&D backdrop, the company's focus lies in sustainability as well.

Bailey said, "In 2012, Aggreko opened its new world-class manufacturing facility in Dunbartonshire, Scotland, which was an important milestone in our growth.

The new facility enabled us to meet increased customer demand for our products and ensure that we had the ability to continually innovate and develop our products. This is the key to Aggreko's future, success and growth."

Stand: HV165, 3530



Steve Bailey, head of sales and marketing at Aggreko

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New lighting solutions from Pelican Products

US-HEADQUARTERED MANUFACTURER OF advanced portable lighting and protective case solutions, Pelican Products (Pelican), will present its latest lighting solutions, including new lights that meet EU ATEX standards and torches that have approval from US safety regulators, at ADIPEC 2015. Pelican's advanced lighting tools are innovative and tough, and have been used by professionals working in the oil and gas industry for nearly four decades. The company offers more than 15 lighting solutions and here are some of the products that visitors to ADIPEC can find on display at the Pelican stand.

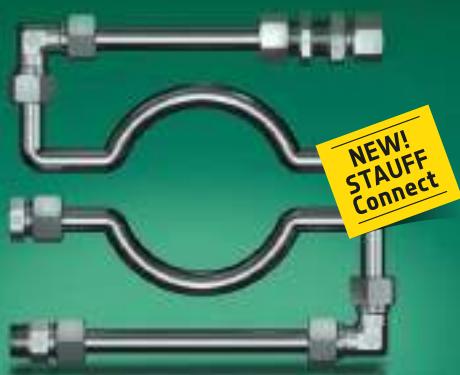
Peli 9415Z0 LED lantern

This lantern is Pelican's most powerful rechargeable lantern, approved by ATEX Zone 0 (Cat. 1) and complies with the new 2015 ATEX regulations. Weighing only 1.65 kg and producing 392 lumens of light, the Peli 9415Z0 LED lantern packs a lot of power without being too heavy. It features four LEDs powered by the



Peli 9415 weighs only 1.5 kg and still provides 392 lumens of light
(Photo: Pelican Products)

latest generation Ni-MH batteries. Among the innovative features in the lantern are a 120° rotating head, a battery status indicator and a three-mode switch that can shift the light between high, low and flashing. The battery is rechargeable and runs for 11 hours on the low setting and four and a half hours on the high setting. The lantern also comes with a shoulder strap.

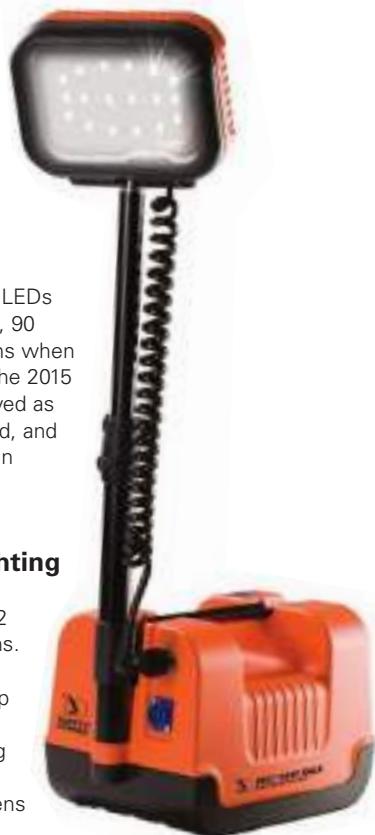


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Peli 9435 Remote Area Lighting System

The 9435 is certified as ATEX Zone 2 (Cat. 3) for use in hazardous locations. It features 18 LEDs and a beam spread of 90 degrees which lights up a large area effectively. It offers two brightness settings. The high setting shines 1,500 lumens for five hours and the low setting shines 750 lumens for 10 hours. ■

Stand: CN134

Peli 9435 uses 18 LEDs to provide 1,500 lumens of light
(Photo: Pelican Products)



ADIPEC 2015
STAND CN134

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**9415Z0 LED
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- 392 lumens and only 1,65 Kg of weight
- Rechargeable with up to 11 hours of run time

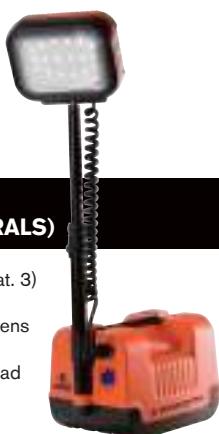


**PELI 3715 LED
FLASHLIGHT**

- ATEX Certified Zone 0 (Cat. 1)
- 189 lumens (high), 90 lumens (low) and 23 lumens (downcast)
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Dow to showcase its oilfield water management solutions

THE DROP IN oil prices and the decline in mature oilfields have prompted the Middle East oil and gas industry to shift towards technological innovation to lower costs and increase process efficiency. Dow has been providing chemical solutions to this industry in the region for more than four decades. At ADIPEC this year, Dow wants to demonstrate its chemistry expertise in helping industry players improve their efficiency, speed, capacity and environmental sustainability of their operations. For that, the company will present solutions that help in the effective management of oilfield water.

The quantities of water required in upstream processes are quite significant, making oilfield water management a key challenge faced by both the global and regional industry. The problem is especially acute in water-challenged regions like the Middle East where companies are compelled to ensure oilfield water is managed effectively and efficiently, so that the burden on local water resources is reduced. Oil operators are looking for techniques that will manage oilfield water more efficiently by maximising water recycling, increasing reservoir productivity and reducing the environmental impacts of wastewater disposal.

These techniques call for sophisticated chemistries, particularly in water treatment and microbial control. Some solutions from Dow that enable complete or tailored removal of ionic, organic and particulate contaminants from source waters for injection or produced waters for discharge are DOW Ultrafiltration modules and skids, DOW FILMTEC Reverse Osmosis and Nanofiltration membranes, DOWEX Ion Exchange resins and TEQUATIC PLUS fine particle filter modules.

The company will highlight the following solutions at ADIPEC 2015:



Proper oilfield water management is especially important in the water-scarce regions like the Middle East (Photo: Dow Chemical)

- Exploration and production: EMBARK Rheology Modifiers, ACCENT Scale Inhibitors, DEMTROL Demulsifiers
- Microbial control: AQCUCAR Water Treatment Biocides
- Water treatment: DOW IntegraPac Skid pre-engineered ultrafiltration, DOW FILMTEC Reverse Osmosis Membranes
- Transmission: HYPERLAST: NEPTUNE Insulation systems
- Refining & gas processing: AMINE MANAGEMENT Program, UCARSOL and SELEXOL Specialty Solvents, DOWTHERM Heat Transfer Fluids

Stand: 6230

Globalstar and IDENTEC SOLUTIONS to show new tracking technology

GLOBALSTAR EUROPE SATELLITE Services Ltd. (Globalstar), a wholly-owned subsidiary of Globalstar Inc., and wireless communications specialist IDENTEC SOLUTIONS (Identec) will be at ADIPEC 2015 to showcase their new, highly capable and versatile asset tracking solution enabled by the Globalstar constellation of low Earth orbit satellites.

The Identec iQ350LX GPS/SAT uses the Globalstar STX3 chipset and integrated sensors to report the precise location of an asset, be it a container, vehicle or any other heavy equipment, even when in remote areas beyond the reach of GSM networks. The iQ350LX

GPS/SAT is the first-ever ATEX-certified, multi-frequency asset tracking solution. It also provides valuable metrics on movement, instantly reporting whether the asset has experienced damage or shock.

James Pentreath, global V-P sales for oil and gas at Identec, said, "The iQ350LX GPS/SAT tag is a game changer for the industry as we help operators track billions of dollars worth of assets across the region and provide real-time visibility to maximise operational efficiency."

A technological breakthrough made by Identec is its use of both satellite technology as well as Active RFID features. This hybrid multi-frequency

capability means that users can take advantage of low power and long range Active RFID transmissions as well as reliable satellite transmissions. The system dynamically switches transmission types to deliver uninterrupted tracking visibility.

Globalstar's STX3 simplex satellite transmitter features the lowest power-consuming technology on the market. It can be integrated into a variety of devices and applications to enable remote sensing, tracking and monitoring of high-value items with maximum cost and energy efficiency.

Globalstar's network of satellite fleets in orbit will enable Identec's customers to know the precise location and status of their assets, wherever they are, including far-flung locations where communications infrastructure is inadequate, uncertain or even non-existent. Globalstar's network has coverage to support major international oil and gas operations, so customers around the globe can help their businesses perform better with reliable, high-quality asset-monitoring.

"Helping companies to reliably and accurately keep track of their assets, while supplying essential data that can help them optimise their operations, has long been at the core of what we do at Globalstar," said Corry Brennan, regional sales manager, Simplex at Globalstar. "We look forward to meeting those involved in the Middle East oil and gas industry at ADIPEC 2015, and to explore how businesses can benefit from the latest in satellite asset tracking."

Stand: 15084



The device reports the precise location of assets even in remote areas beyond the reach of GSM networks (Photo: Globalstar)



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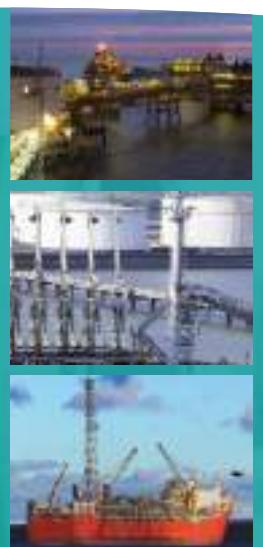
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LEISTRITZ SCREW PUMPS are used globally in various application areas, such as in tank farms, in the power generation industry and in the chemical and petrochemical industry, to mention but a few. In the oil and gas industry they are applied for handling crude oil, emulsions, produced water, multiphase fluids with high gas contents as well as intermediate and final liquid products. With an extensive product range of twin-, triple-, and even five-screw pumps, Leistritz is serving the oil and gas industry upstream, midstream and downstream. Today, pumps and systems made by the German experts are priming the most modern oil and gas processes. Continuous improvement of its products and state-of-the-art engineering are the keys to its success, says the company.

Multiphase pumps in Algeria

"Leistritz entered the African market years ago," says Lotfi Chouba, director of Sales Africa at Leistritz. "Our pumps are used in numerous projects all over the continent, for example in South Africa, Egypt, Libya, Sudan and Angola." The most recent project in this range was executed in an oil field in Algeria. Since February 2014 five Leistritz Multiphase Pumps have been transferring crude oil and gas with a gas volume fraction (GVF) of 97 per cent from well-heads and manifolds to centralised treatment facilities. Following the separation of oil and gas, the oil is transferred over a distance of 700 kilometres across the Sahara to the Mediterranean.

"Handling liquids and gas at the wellhead of an oil field is a costly procedure," Chouba explains. The conventional way is to separate the associated gas from the liquid fraction

“ Our pumps are used in numerous projects all over the continent”



The Leistritz multiphase pump skid

(hydro-carbons with water) and to convey them in separate pipelines to a gathering point for a first separation process before feeding them into trunk pipelines.

"Conventional equipment like separators, compressors, liquid pumps, heaters or individual flow lines are replaced by economical multiphase pumps which also boost the well flow to a central treatment facility through a single pipeline," the pump expert continues.

Sophisticated technology

Leistritz multiphase pumps are used for handling untreated well flow with capacities of up to 5,000 m³/h and differential pressures of up to 100 bar. Multiphase pumps are based on twin screw pump technology. The self-priming pumps are of double volute design and hence, axially balanced. The possibility of speed variations by means of variable frequency drives offers

a wide operating range. The pump, along with all further equipment including required controls and electric motors, is usually skid-mounted. The special Leistritz Liquid Management System guarantees the operation for GVF of up to 100 per cent.

"One very important aspect must be highlighted; by using multiphase pumps, flaring is vastly eliminated," Chouba points out. "So, by handling the entire well flow within one machine we not only contribute to a cleaner environment, but also to a more efficient use of our energy resources."

"Africa represents a very promising market for us, since its prospects and potential for further oil and gas finds remain exceedingly positive," he concludes. "We will continue to intensify our presence on this continent. We are looking forward to future projects here." ■

Stand: 8721

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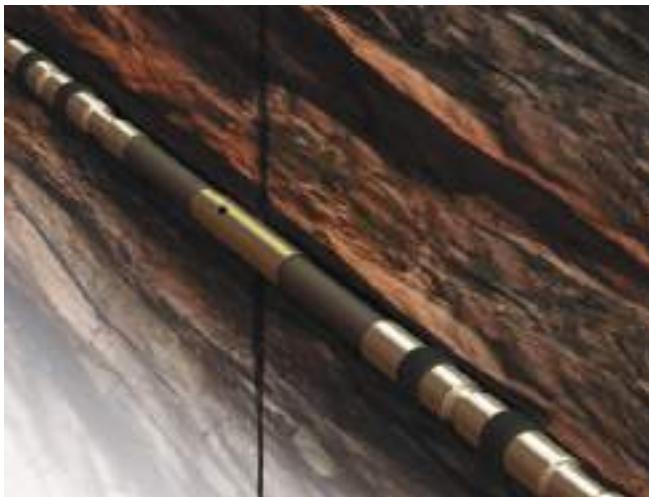
www.well-flow.com/KOGS-2015

Reducing operational risk in HPHT formation with Packers Plus

THE PACKERS PLUS StackFRAC® Titanium® XV multi-stage completion system enables operators to stimulate wells in situations where high treating pressures are required for zones with high fracture gradients/breakdown pressures.

Rock temperatures above 149 deg C and pressures above 10,000 psi (69 MPa) are commonly used to describe high pressure, high temperature (HPHT) wells. For tools to function safely without failure in this environment, it is critical for materials to be carefully selected and tested to ensure performance. The StackFRAC Titanium XV system builds on the benefits and features of the company's existing technology, with the added capability of withstanding HPHT environments. The burst and collapse pressure rating on all metal parts of the Titanium XV system ensures that the liner and tools do not deteriorate when exposed to high differential pressures up to 15,000 psi (103 MPa) inside the wellbore. The HPHT capability of this system makes it ideal for deep wells with long laterals and tight stage spacing.

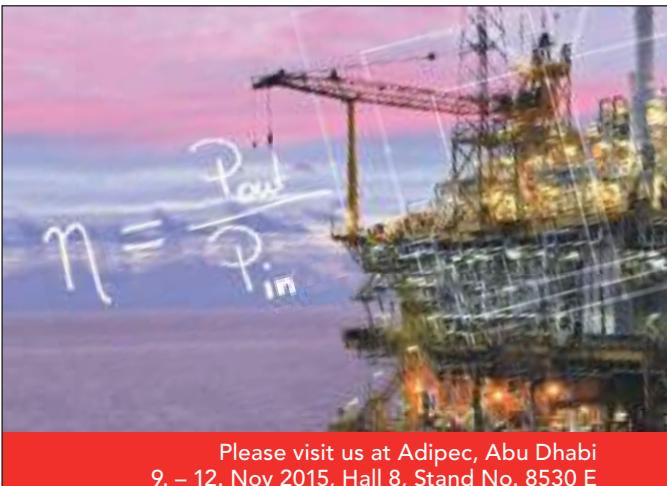
It is this HPHT capability which an operator in Oman required. The operator was working in the Khazzan field and required a completion system with equipment rated for a 15,000 psi working pressure. Traditional cemented completions resulted in poor production in the area, and swell packers rated at 10,000 psi and above were unproven. After some consideration, the operator decided to use a ball-activated completion design for the lower toe stages and a plug-and-perf design for the upper stages. Packers Plus was single sourced by the operator after an eight-month-long feasibility study. The Titanium XV tools were successfully tested within just six weeks of the project start date.



The device was used in Oman's Khazzan field (Photo: Packers Plus)

Since 2011, Packers Plus has completed over 215 wells using Titanium XV systems, amounting to over 4,050 stages.

Stand: 12940



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Extended range from Raccortubi Group



Raccortubi offers an extended product range as a result of its acquisition of Petrol Raccord

AT THIS YEAR'S ADIPEC, Raccortubi Middle East FZE, stockholder and supplier of pipes, fittings and flanges, will be exhibiting with support from an even wider manufacturing range integrated within Raccortubi Group.

Raccortubi's acquisition at the end of 2014 of Petrol Raccord, manufacturer of butt weld fittings in stainless steel, duplex, superduplex, superaustenitics and nickel alloys, represents an extended Group production range, from $\frac{1}{2}$ " to 56", almost without wall thickness limitations. A significant part of Petrol Raccord's production is also dedicated to special/customised fittings such as flow/barred tees, "Y" pieces, laterals, manifolds and headers, which can be produced to customer specifications.

Petrol Raccord has a considerable number of end-user approvals, including that of Saudi Aramco, as well as quality certification for the nuclear industry. Add this to dedicated internal specifications and quality homologations at the Group's other Tecinox fittings plant, and the result is ex-stock material that already adheres to the most stringent market requirements.

Sunzeev Swami, managing director of Raccortubi Middle East, explains where the added value lies for the client. "The fact that we can call on our integrated manufacturing facilities for the production of fittings, for continuous stock replenishment or completion of a package where necessary, means that we are able to offer customers full piping solutions to short timescales."

Indeed, the Raccortubi Middle East warehouse contains pipes, tubes, fittings and flanges, in stainless steel, duplex, superduplex and special alloys, for projects in a variety of industrial applications, from chemical, petrochemical and oil installations, to power plants, shipyards and offshore platforms.

Raccortubi Middle East is looking forward to welcoming visitors to its stand and presenting the benefits of the Group's latest developments.

Stand: 1230

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Pelican to make its ADIPEC debut this year

US-BASED AND MANUFACTURERS of high-performance case solutions and advanced portable lighting systems Pelican Products, Inc. will exhibit at ADIPEC 2015 for the first time. The company also recently announced expansion in its Middle East facility at Jebel Ali Free Zone.

As the biggest energy forum, ADIPEC is an apt platform for the company and Pelican has revealed plans to showcase its unique products at the event.

Ahmed Khodeir, business development manager – Middle East, said, "We plan to do something big at ADIPEC like a conference or a presentation where we would showcase our units to customers. We have products – cases and flashlights – that can be applied to oil and gas, industrial, piping and HSE sectors, besides many other industries."

The company is one of the few who builds on its ranges almost every other month, the most recent being Pelican 3310ELS, Pelican 2780 LED headlight and Pelican 7000 LED flashlight.

The Peli 3310ELS is a wall-mountable emergency lighting station that includes a clear polymer protective enclosure that houses a Peli 3310PL photoluminescent LED light. It is made of virtually indestructible polymer material that gathers ambient light to glow in the dark when the lights are off, making it easy to locate in blackout situations. The 3310PL body is engineered to fit the natural grasp of gloved and bare hands and the ridges along the handle allow for a strict non-slip grip. It measures 15.6cm and weighs 176g only (including batteries).

With three AA batteries (included), the light offers three modes: high (234 lumens), low (28 lumens) providing up to 190 hours of light for long-term power outages, and flashing mode which can be used for signalling purposes. It leads the way with a beam distance of 240 m and a peak beam intensity of 14,500 candelas.

Falling oil prices being the primary concern of most of the companies worldwide, Khodeir said that it does not



Ahmed Khodeir, business development manager – Middle East

discourage him as oil and gas companies still need to operate with certain products and flashlights are a very integral part of their operations.

Stand: CN134

New flame detection system from Spectrex integrates smart camera

SPECTREX, INC. (SPECTREX) will bring its top-end range of 40/40 series flame detection systems to ADIPEC 2015. The US-based company, now a part of Emerson Process Management, will showcase the 40/40VID system at the show.

The Spectrex 40/40VID is a reliable, high performance flame detection system, featuring the advantages of proven its IR3 flame detection, combined with a smart camera, making it a new and unique way to ensure superior flame identification at oil and gas facilities.

The system provides flame detection capabilities at up to 65 metres and the highest immunity to false alarms at all times, irrespective of external conditions such as extreme weather and environmental illumination. This is achieved by combining the power of IR3 flame detection with advanced video analysis technology. The IR3 flame detector identifies the unique infrared spectral signature emitted by a hydrocarbon fire, while the smart video provides picture analysis of the real-time video feed in order to interpret flame characteristics, which is an



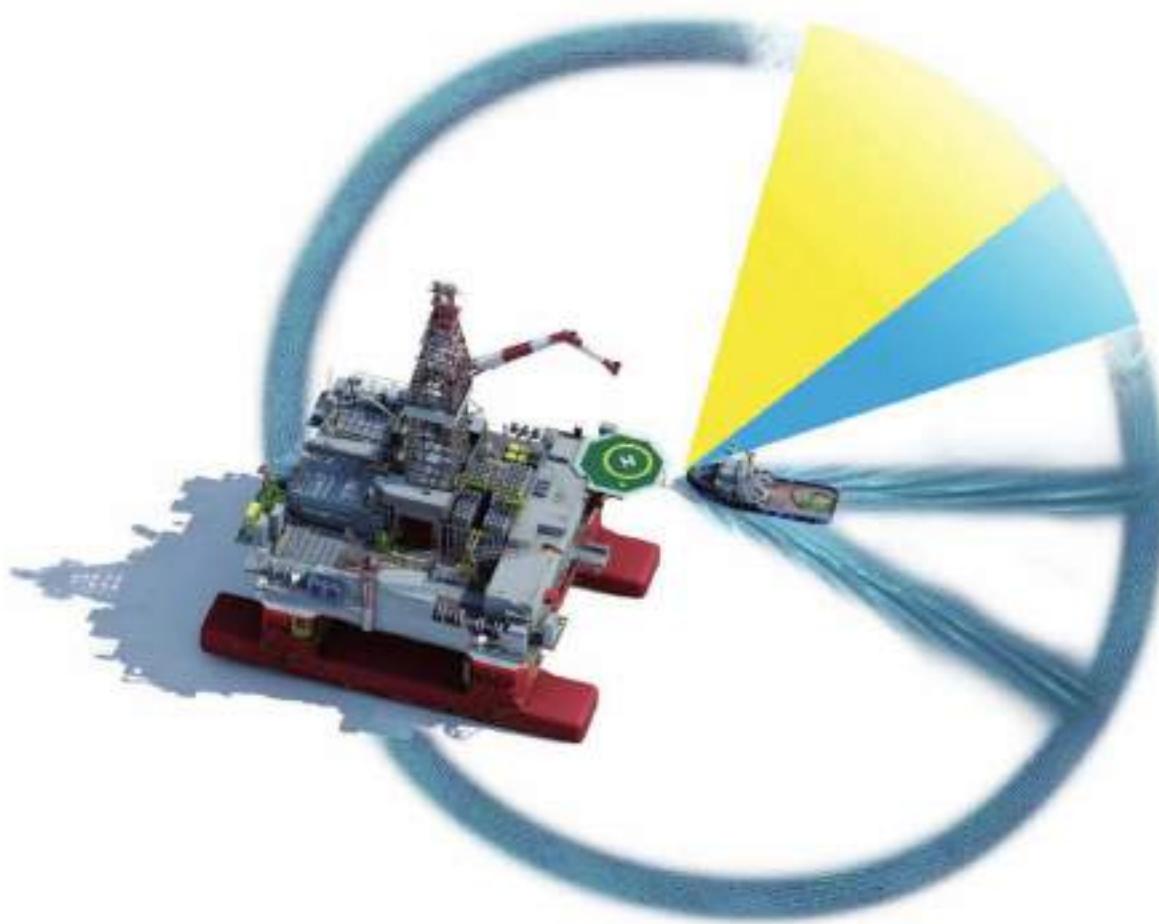
The real-time video feed from the 40/40VID's smart camera helps interpret physical characteristics of the flame (Photo: Spectrex, Inc.)

providing remote surveillance capabilities to display the protected area in high quality, with clear markings of the area of the fire. This combination allows those monitoring the output to differentiate between real fires and other radiant sources, while obtaining the actual size and location of the fire helps fire-response personnel to select the best response to the situation.

Spectrex offers a wide range of flame detectors, from ultra-fast detection time (in milliseconds) to high sensitivity hydrocarbon and hydrogen flame detection, alongside the equally large open path gas detection (OPGD) range that can detect hazardous gases, from flammable hydrocarbons to toxic ammonia (NH₃) and hydrogen sulphide (H₂S). The company's patented optical UV/IR and IR3 flame detector designs, as well as its patented Xenon Flash designs in OPGD detectors are widely used in oil and gas projects. All Spectrex products can operate in the toughest conditions, from the heat of African deserts to the chill of Alaskan waters.

Stand: 13107

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30 years young and growing

The growth story of oilfield equipment manufacturer PT Sagatrade Murni continues.



PT Sagatrade Murni's production facility in Samarinda, East Kalimantan

PT SAGATRADE MURNI, Indonesia-based manufacturer of quality oilfield equipment, continues to experience growth, with a US\$4mn-plus expansion completed in early 2015. This has involved the installation of new equipment and sophisticated CNC machinery to meet production requirements and enable the company to diversify its product base.

Based in Samarinda, East Kalimantan, the company, which employs 300 Indonesian workers and has a revenue stream exceeding US\$50mn, manufactures products to API specifications and recognised safety standards with many threading options available, under the operational management of Tony Beale, president and Akbar Rivai, vice president. The extensive product list ranges from welded centralisers to hydraulic liner hangars and cementing manifolds.

Recent developments

Developments in 2014 included the launch of the Saga Inflatable Casing Packer. In addition, PT Sagatrade Murni Ltd entered into a joint venture with Houston-based Lancaster Flow Automation, LLC which will manufacture choke valves for oil and gas exploration and production in Indonesia and worldwide.

In 2015 PT Sagatrade Murni has to date entered into two joint ventures in Australia; the first a sales, marketing and service

“The international sales offices are experiencing increased demand as the range of products diversifies”

company, Integrated Oil Field Services Pty Ltd, will sell all Sagatrade Murni products. The second, Pro-Test Well Services Pty Ltd, provides services including open/cased hole drill stem testing, injection face off testing and diagnostic fracture injection testing as well as data acquisition services. Both joint ventures are operated under the supervision of director Ewan McDonald.

Also this year, PT Sagatrade Murni will unveil a new packer product and will establish a new Saga division for well testing in Indonesia.

International expansion

The mandate of PT Sagatrade Murni and Saga-PCE Ltd is to create jobs, develop local expertise and assist the petroleum industry in Indonesia and internationally.

PT Sagatrade Murni Ltd opened their international sales office Saga-PCE Pte Ltd in Singapore in 2008, following which Kim Sadler, international sales director, opened a Middle East office in Oman. The company has also established a manufacturing base in Mexico under the directorship of Ron Wilson, and a sales office in Brazil under the directorship of Brian Tytler.

In the Middle East, Saga-PCE Pte Ltd / Sagatrade Murni Ltd are looking to expand their production and sales with an investment of US\$5mn in production facilities and the expansion of their sales offices in Oman and UAE.

Sagatrade Murni and Saga-PCE have many large international clients throughout the world, and the international sales offices are experiencing increased demand as the range of products continues to diversify. The company looks forward to many years of growth ahead. ■

Stand: 7430

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Well Flow pushes for stronger hold in Middle East with tech-driven solutions

WELL FLOW INTERNATIONAL, an independent provider of technology-enabled stimulation chemicals, wellbore cleanup chemicals and associated downhole tools, showcased its products at the Kuwait Oil & Gas Show (KOGS) 2015 in October.

"Well Flow provides a wide range of stimulation chemicals, which focus on scale removal rather than reservoir stimulation in oil and gas wells," said Tom Sherwin, vice president and group commercial director.

Scale deposits, like barium sulphate, can build up inside the wellbore after drilling. The hydrochloric acid-based cleanup solutions offered by most companies are not completely effective in removing scale.

"Our solutions mitigate wellbore damage in all types of formations and reservoir environments. By combining Well Flow's chemicals and tools, resource holders can improve recovery and injectivity rates, accelerate production, and maximise existing production or disposal infrastructure," Sherwin asserted.

At ADIPEC, Well Flow will launch its newest, state-of-the-art stimulation chemical, HDC®-3. "It is the most powerful barite-dissolving chemical we've ever seen," said Sherwin, adding, "And this solution is a game-changer. It is effective in downhole temperatures greater than 200°C/400°F, can dissolve 300 gm/litre or



Tom Sherwin, vice president at Well Flow International

more of drilling-grade barite."

Already being extensively tested by customers in the region, Sherwin said it will have a great impact on solubility. Other products include tools and chemicals that provide efficient and cost-

effective wellbore cleanout appropriate in nearly every major producing region.

KOGS was a huge support in promoting engineered chemistry technologies in scale remediation to the Kuwaiti market, Sherwin noted. "Kuwait is a major oil producer and we understand there is a huge market for specialised, technology-driven chemical and mechanical solutions for oil and gas industry leaders worldwide."

Focussing on ADIPEC 2015, Sherwin reiterated that Well Flow looks to engage with as many customers as possible at the international event, as well as increase brand and product awareness. "There is an opportunity to expand operations into the UAE, Kuwait, Oman and Iraq, and Well Flow will also be exhibiting at trade shows in those areas," said Sherwin.

Outside of Well Flow's long-time partnership with Saudi Aramco and IOCs such as BP, Halliburton and Shell, the company is active in pilot projects specifically focused on analytics-oriented solutions. "ADIPEC is an international gathering of the strongest, smartest, most strategic organisations in the world, and the Well Flow team looks forward to promoting new advancements in this ever-changing industry," Sherwin remarked.

Stand: 13485

Terracotta and CURISTEC to launch joint venture in UAE

EMIRATI ESTABLISHMENT TERRACOTTA and French energy services consultant CURISTEC have announced that they would be launching a joint venture Curiscotta to cater to the oil and gas companies in the region.

Already associated with big names like ADNOC, Philippe Thirion, managing director at Terracotta, said, "We are a local company with global expertise. The reason we have associated ourselves with CURISTEC is to bring their R&D and software expertise to the Gulf to benefit local companies here."

Axel-Pierre Bois, CEO at CURISTEC, added, "We did not want an agent or a branch. This JV with Terracotta will help us get connected to the right people in the Middle East region. We have the best solution for oil and gas industry. What we want is to create value for the services we provide. We want to show that Curiscotta is about creating values."

Already working with clients in Oman, Kuwait and Saudi Arabia, CURISTEC is hopeful that their association in the UAE will be long-term.

Apart from imparting training skill sets to locals, Terracotta's Thirion said that with oil prices going down, many companies are looking to spend on solutions rather than not spend at all. With CURISTEC technology and expertise, the joint venture can help clients save costs and optimise operations. "Innovation is the key," Bois added.

CURISTEC's CEO also noted that the company is a pioneer in creating one-of-a-kind software like CurisData and CurisIntegrity.

Stand: 9230E

Al-Rewaq Al-Dahabi brings the best of Europe to Kuwait

KUWAIT'S AL-REWAQ AL-DAHABI established its foothold at KOGS that was held from 11-14 October 2015.

Ibrahim Al Muwaizri, commercial manager at Al-Rewaq Al-Dahabi, said, "We are the supplier of best and highly-certified European products in the GCC specialising in design, installation, integration, training, maintenance and consultation in electro-mechanical, O&G, petrochemical industries, defence, security and construction."

Al-Rewaq Al-Dahabi client list includes Spain's Cofen, Umirs from Hungary and H&G Explosives from the UK.

Showcasing world-class solutions at KOGS, the commercial manager noted that Al-Rewaq Al-Dahabi also tailors products as per the customers' needs in Kuwait. Giving an example, Muwaizri mentioned USA's AVANTE that provides web-based 24/7 end-to-end tracking services by using its RFID ZONERTM-RELAYERTM container security devices, carrier-based and yard based fixed site communication links and personnel badges to provide cargo container visibility and security management.

With oil prices falling, he opined that companies are looking at health and safety to optimise costs.

Muwaizri added, "With regards to business, we are growing and strategising further reach in the GCC. We are a local company working with international companies. I believe there is a need for domestic companies to grow in Kuwait to push the economy in these times."



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More French companies to showcase at ADIPEC

FRENCH OIL AND gas firms will once again take part in the ADIPEC exhibition in Abu Dhabi on 9-12 November 2015, with 33 companies representing the various sectors of the industry.

The French companies will be grouped together in a 315 m² French section organized by Business France, a government agency supporting the international development of the French economy.



French companies will exhibit in a 315 m² section organised by Business France

The French oil and gas sector brings together the world's leading operators, such as Total and ENGIE, with companies who provide equipment or services to the oil and gas industry, some of them global giants such as CGG and TECHNIP.

But this sector also has a network of SMEs to cover its needs from exploration through to the processing of hydrocarbons.

French oil and gas companies generate around US\$38.6bn in turnover and provide 60,000 high-level technical and scientific jobs, while French technologies enjoy an excellent international reputation.

With more than 90 per cent of turnover generated abroad, France is the second-largest global exporter after the United States.

This extraordinary performance reflects the high technological level of French companies, bolstered by ambitious research and development programmes.

By attending the ADIPEC exhibition, French companies are looking to develop or consolidate their business in the Middle East, a key region in the oil and gas industry.

Hall 9

Kermel innovations attract attention of Middle East professionals

KERMEL WILL BE showcasing its fabrics and clothing, which protect against heat, flames and electric arc, at this year's ADIPEC exhibition, offering solutions for both individuals (safety equipment for high-risk industries, fire brigades, law enforcement, public order, military personnel) and industry (hot-gas filtration, transport, electrical insulation, etc.).

Kermel fibre textile solutions are specifically suited to the needs of end users and to the climatic and technical constraints they face.

Kermel garments are the ideal solution for hot and humid conditions, such as those found in the Middle East: lightweight (for greater comfort), soft to the touch and offering a level



Kermel offers protective solutions for individuals in high-risk industries like oil and gas



The GM'S range consists of eight different models

Mille SAS unveils new range of safety shoes at ADIPEC 2015

MILLE SAS WILL be presenting its new GM'S-branded range of safety shoes at ADIPEC.

The GM'S range is comprised of five heavy duty models (Winboots, Sunboots, Monster brown and black, and Dealer) and three executive models (Oxford, Derby and Loafer).

Available in European sizes ranging from 39 to 48 (7 to 14 for the US market), the shoes have a number of strengths that mark them out from the competition, according to the French company, including a wide fit for maximum comfort and a non-metallic toe cap for greater insulation from heat and the cold.

The footwear also has a puncture-proof outsole that is metallic on the five heavy duty models and non-metallic on the three executive models, as well as a lightweight outsole for maximum comfort, a deep tread, high stability and high-performance anti-slip technology.

With the EN ISO 20345 and ASTM certified GM's range, Mille SAS is able to meet the requirements of professionals across a wide range of business sectors, including construction, industry, oil & gas and risk prevention.

Renowned for its expertise in the manufacture of safety shoes, Mille SAS offers a wide variety of injected, welt and cemented footwear.

Founded in 1912, the ISO 9001-certified company sells 1,500 pairs of safety shoes a day, generating US\$12.5m turnover, around 20 per cent of which comes from exports to countries including the UAE.

Stand: 9220B

of protection that meets international standards.

A regular participant in the exhibition, the French company is able to meet the needs of customers by offering exclusive customized solutions when it comes to yarns, fabrics, knits and protective clothing, to cater for the specific requirements of buyers or end users.

Last year, Kermel sold its 165 gsm K-Durashield suits to various types of end user in the oil and gas industries of the UAE and Qatar.

The company has also encountered a great deal of success with its 150 gsm Sofshield suits, whose light weight closely meets the needs of customer.

Stand: 9220D



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Container Solutions to meet your container design and manufacture needs

DUBAI-BASED CONTAINER SOLUTIONS will bring its entire range of services, including shipping and offshore container conversion, trading and depot services as well as container transportation in the Middle East and nearby regions, to ADIPEC 2015. The company has had a busy year and hopes to garner more business at the premier event for the oil and gas industry.

Along with more than a decade of experience dealing with the oil and gas industry in the Middle East, Container Solutions offers the following advantages to existing and potential customers in the region:

- Branches in Oman, Qatar and head office in the UAE
- More than 800,000 sq ft depot space in Dubai, UAE and Sohar, Oman
- Dry and refrigerated container repair services
- ISO 9001 and OHSAS 18001 certifications
- Dedicated sales and operations teams
- Exclusive partner of TAL International, USA

Container Solutions has displayed its proficiency in managing oil and gas projects through winning and successfully completing various contracts in the industry. In 2015, the company has already



The company has an in-house team to design and implement container conversions (Photo: Container Solutions)

designed, built and supplied 1,000 custom-built 40 ft containers to Boreuge, a 20-man living space for Dragon Oil's Turkmenistan operations and five 40 ft trailer-mounted office-cum-accommodation units to Halliburton. In addition, the company has also supplied other oil and gas companies in the region with various types of modified modules,

based on DNV GL-certified offshore containers.

Set up in 2003, Container Solutions has become a major player in the region's container industry in a relatively short time, and has also expanded operations beyond the Middle East.

Stand: CN116

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First mixed-gender event for **'Women in Industry'**

ADIPEC's acclaimed 'Women in Industry' Conference has expanded into a full-day programme this year, inviting male participation and attendance for the first time since the series' inception.



The 'Women in Industry' Conference provides a forum to explore ideas for promoting more female participation in the oil and gas industry

HOSTED UNDER THE patronage of Her Excellency Sheikha Lubna Al Qasimi, Minister of International Cooperation and Development, the conference will take place on Sunday, 8 November at the Eastern Mangroves Hotel and Spa by Anantara.

With an established track record of raising passionate debate on the issues surrounding the role of women in the energy sector, the 'Women In Industry' Conference aims to address the challenges faced by women in the oil and gas industry. It brings women leaders to the stage to share their experiences and insights.

This year's conference programme includes a keynote address by HE Sheikha Lubna on empowering women to achieve success and contribute to society, including a live on-stage interview.

Also giving a keynote address on the important role of women in energy will be Ali Khalifa Al Shamsi, strategy and coordination director at the Abu Dhabi National Oil Company (ADNOC), and ADIPEC 2015 chairman.

"Inclusive workplace policies will enable more women to enter

“Inclusive workplace policies will enable more women to enter and thrive in the oil and gas industry”

and thrive in the oil and gas industry, which will ultimately bring value and promote an overall forward-thinking attitude within the sector," Al Shamsi said.

"A comprehensive approach is key to bridging the gender gap, and this includes action on both sides – educating women from the grassroots about the wide range of opportunities available in the industry, and creating workplace environments that enable the growth and development of female professionals," Al Shamsi added.

The first half of the conference, which kicks off at 9am, will be open to both men and women, followed by women's only sessions, roundtable discussions, and a majlis gathering from 2pm onwards.

The morning sessions include a live on-stage interview with Vicki Hollub, senior executive vice president and president of Occidental Oil and Gas, on her experiences transitioning from manager to C-level, and a keynote innovation address by Mohammad Husain, CEO of the Kuwait-based petrochemical company Equate, on innovation and diversity in the workplace and how it can drive a competitive advantage in any business.

Other sessions will cover the importance of women in today's energy market; how implementing a diverse workforce makes business sense; current industry challenges and building a business around a diverse culture; and building a talent pipeline to satisfy increasing demands in a new energy world.

The value of inviting men as both speakers and audience members to the conference is two-fold, explained Claire Pallen,

OilTec Division

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conference director at dmg events.

"First, it offers the perfect platform for men to listen to the concerns of their female colleagues, concerns that might otherwise go unheard," she said. "Second, it enables male speakers to set precedent for other male colleagues, and inspire industry-wide change in corporate policy – one that promotes workplace diversity."

Additional confirmed panellists this year include Melanie Kenderdine, director of Office, Energy Policy and Systems Analysis, US Department of Energy; and a one-to-one interview with Sara Akbar, CEO and co-founder of Kuwait Energy, on her career highlights, which include insights into being the only female on Kuwait's Wild Well Killers team back in 1991.

Importance of role models

The oil and gas industry, traditionally a male-dominated domain, has witnessed great strides in attracting and retaining more women into engineering positions. Women comprise a larger proportion of the global energy workforce today than at any point in history.

Figures from Shell Global show that 29 per cent of its employees in supervisory/professional positions are women, and the proportion of women in its senior leadership positions has nearly doubled over the last decade – from 9.9 per cent in 2005, to 18 per cent in 2014. Similarly, about 28 per cent of ExxonMobil's global workforce is women, and in 2014, 40 per cent of management and professional new hires were women, significantly higher than the percentage of women in its overall employee population.

However, there are still challenges to be met. According to a 2015 report by PricewaterhouseCoopers, only 5 per cent of executive board seats in the top UK-headquartered energy firms are currently held by women, while 61 per cent of leadership boards have no women present at all.

Continuous efforts will have to be made to support the industry's female workforce, and distinguishing women achievers as role models is an important component of that process, according to women in the industry.

The ADIPEC 2015 Oil & Gas Woman of the Year Award will recognise a female whose career has progressed at a rapid pace, demonstrating the empowerment process in her company that encouraged her to reach her aspirations.



Recognising women achievers in energy is more important than ever"

Hosnia Hashim, vice president – Operations at the Kuwait Foreign Petroleum Exploration Company, one of Forbes Most Powerful Arab Women in 2014, and a speaker at the 'Women in Industry' Conference, said, "Recognising women achievers in energy is more important than ever to challenge the perception that the oil and gas industry is a male domain. The journey to success is not an easy one, but can be achieved with commitment, determination, and the support of corporate policy. The ADIPEC 2015 Oil & Gas Woman of the Year Award helps to transform what may seem as only a dream for young women to pursue a career in energy into a tangible reality."

Winners and runners-up will be announced at the ADIPEC Gala Awards Dinner on ADIPEC's opening night, 9 November 2015.

In addition to recognising female achievers and bringing to light role models within the industry, the Oil & Gas Woman of the Year Award is a powerful message to society that women are equally capable and can play significant roles, said Reem Al Anbari, chief financial officer at Borouge, an ADNOC Group company, and a speaker at the 'Women in Industry' Conference.

"Many organisations are now focusing on diversity as a way of increasing their effectiveness and competitiveness by attracting the



Hosnia Hashim, vice president - operations, Kuwait Foreign Petroleum Exploration Company

best talent regardless of gender. In many countries, women comprise more than half of the population, and leaving this resource untapped is a detrimental mistake. The oil and gas industry is an engine for the economy, and we need to get women involved across all corporate levels to change the dynamics and make sure their voices are heard, not overlooked or ignored," Al Anbari said.

"Thanks to the UAE government's unwavering support for women, many companies offer effective career development tools and policies – it is now up to women to take advantage of these opportunities by asking questions, taking risks, and being involved in major projects to try and deliver results," added Al Anbari.

Mariam Al Badr, director of corporate communications at Dolphin Energy, said: "When it comes to oil and gas, there tends to be negative connotations about women as engineers, working offshore and developing a career in the sector. As someone who works in communications I can see that there is a strong need to dispel these misperceptions by engaging more effectively with females and profiling the different opportunities and roles they can assume within the energy sector.

"The notion of equal opportunity, training and education is very important," added Al Badr, who is also a speaker at the 'Women in Industry' Conference. "For example, at Dolphin Energy it is made very clear what is needed to progress to the next level. This is of great help because not only are you given clear targets to aim for but also as a woman you feel part of the company's future plans for success. It is very motivating."

Although corporate tools and policies play a critical role in supporting women through their career development, Amna Al Maqtari, process engineer at the TAKREER Research Centre, says before looking outside for external support, it is important that women look inside first.

"Managing your internal expectations is key, and this holds true for any employee whether male or female. We are here to prove that women are just as capable and competent as men, and so expecting that you will receive special treatment because you are a woman does not work in our favour," said Al Maqtari.

The best resource in the workplace for women looking for guidance on their journey to success are their senior colleagues, Al Maqtari added. "My superiors are my greatest mentors and have always lent their support and advice when I needed it most. So finding someone that you can trust – a person who will not push you aside, but push you forward – can be of great help, especially in times of difficulty," she said. ■



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AEG POWER SOLUTIONS, a global provider of power electronic systems and solutions for industrial power supplies and renewable energy applications, will be showing its latest Uninterruptible Power Supply (UPS) and industrial chargers at ADIPEC.

AEG PS will display its full industrial range of solutions which meet the most stringent international standards to guarantee power supply to mission-critical applications in the up, mid and downstream segments of the oil and gas and petrochemical industry. The company

will be displaying its Protect 8 UPS system, which is designed to ensure the continuous availability of power and safe operations for all types of critical applications in the harshest environments. Protect 8 is adapted to be rugged, and to cope with extremes in temperature and humidity, as well as dust and sand. AEG PS will also be showing its Protect RCS series of robust industrial rectifiers, chargers and DC systems.

AEG solutions are used throughout the oil, gas and petrochemical industry



Stand: 8530E

Prosep to focus on mixing technologies

PROSEP, THE OIL, gas and produced water treatment specialist, will be showing its portfolio of proprietary solutions for the effective treatment of oil, gas, and produced water at ADIPEC. Its proprietary ProPure mixer technology, which is already being utilized by major operators including Pemex, Statoil and Saudi Aramco – offers a cost-effective and reliable solution for reducing chemical consumption, maximizing hydrocarbon recovery, and process optimisation.

ProSep has recently signed a collaboration agreement with Generon IGS, an industry-leading provider of comprehensive gas separation and compression solutions, to develop and commercialise a state-of-the-art line of CO₂ separation membrane products. Generon's CO₂ membrane modules dramatically increase hydrocarbon recovery and minimise permeate loss. ProSep will engineer, manufacture and distribute gas treatment packages, including Generon's membrane technologies, for the upstream oil and gas industry.

Stand: 7327

Corrotherm to show nickel alloy engineering expertise

CORROTHERM INTERNATIONAL, SPECIALIST in the supply of nickel and nickel alloy materials, will be showing its wide range of heat- and corrosion-resistant nickel alloys, available as seamless pipes, fittings, flanges and plates. In particular, nickel-based alloys from the INCONEL®, INCOLOY® and MONEL® ranges are ideal for the cost-effective manufacture of pumps, valves and process control equipment. From all-round robust alloys like INCOLOY® alloy 825, which offers outstanding resistance to general and localised corrosion, to specialist alloys like INCONEL® alloy 725, used for the manufacture of down-hole tubulars, hangers and tooling, these alloys offer solutions to fit the bill for all kinds of onshore and offshore extraction applications across the oil and gas industry. The latest product in the Corrotherm line-up is electro-deposited nickel foil. This is ultra-thin and yet offers excellent corrosion, welding and forming properties. It can be manufactured in incredibly thin sheets, down to a minimum of 6µm – thinner than a human hair – and has a wide range of applications within the engineering sector.

Corrotherm's expertise has helped build many strong relationships in the energy industry across the region, strengthened by the regional sales office.

Stand: 8510B



Corrotherm's Middle East regional team will show its nickel and nickel alloy engineering expertise

Victaulic debuts new coupling

VICTAULIC, THE WORLD'S leading producer of grooved mechanical couplings and pipe-joining systems, will present a wide range of products - including the new Style 809 coupling - at ADIPEC for the first time. The coupling provides high pressure joint integrity while maintaining a degree of flexibility to facilitate easy joint assembly where slight misalignment conditions exist.

The new Style 809 coupling engages directly onto rings, which are supplied with each coupling and are welded to the O.D. of the pipe. It is ideal for oil and gas applications and can accommodate working pressures up to 3000 psi/20700 kPa on 6 – 10"/ 150 – 250 mm Schedule 80 or heavier wall carbon steel pipe. The gasket in the coupling is a special compound with excellent oil resistance and a high resistance to extrusion. Temperature tolerance is -20°F to +180°F/-29°C to +82°C.



The Style 809 coupling

"The Style 809 coupling was developed specifically to address requirements for a highly reliable high pressure coupling that maintains full pipe wall thickness without intrusion into the pipe ID," said Daniel Christian, Victaulic Oil & Gas, Chemical & Power Markets director. "It is therefore perfect for demanding applications in the oil and gas industry."

"The pressures being placed on construction may be increasing, but accelerated schedules are also an opportunity for owners, project managers and contractors to look at alternatives to the traditional time-intensive welded pipe," concluded Christian. "Victaulic systems perform as well as welded and flanged pipe but offer built-in flexibility, safety and time-saving installation methods."

Stand: 8311

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SPECTREX INC.

Bauer Kompressoren launches compressors for offshore operations

COMPRESSOR SOLUTIONS PROVIDER for the oil and gas industry in upstream, midstream and downstream, Bauer Kompressoren has impressed many exploration companies with its seismic survey compressors. These compressor packages produce acoustic waves to generate data about oil and gas reserves.

The solutions mainly include Breathing Air compressors for H2S protection, commercial divers offshore; nitrogen generators for blow out preventers (BOP); air compressors for rig tensioning and motion compensation. Nitrogen generator with high flowrate (Nitromax) is used for critical horizontal drilling using coil tubing.

In the midstream segment, medium pressure compressors are used in surge vessel applications. Also, LNG carrier vessels are classic examples where nitrogen generators are used for inerting or blanketing applications. For downstream, Bauer's nitrogen compressors are used for the purging of mechanical seals, and distance pieces of turbo machineries. The Breathing Air packages are certified by major refining companies for their internal fire stations and H2S Protection.

For the last 68 years, Bauer has progressively developed solutions adapting to various industrial demands. Beginning with breathing air compressors that meet European specifications, the company has



diversified its businesses catering to special requirements for industrial compressors. NFPA, ASME and ABS are well-versed standards, which are rigorously followed by Bauer's packaging facility in the USA. Catering to oil and gas industry's special requirements, explosion proof packages, which are ATEX certified, are also available.

On sustainability, Colin Fountain, managing director of Bauer Kompressoren GCC FZE, said that Bauer has never stepped back when it comes to innovation.

"Thanks to our marketing and product development teams, we are working closely with the end-users to understand technology trends and market demands. Our focus has been to produce compact, user-friendly, completely integrated solutions. This has brought us to the market leader position over many years."

UNICUS 4i is the most recently developed Breathing Air package, which includes compressor, storage and filling station all together in a compact unit. Its special PLC panel is designed to produce air quality reports directly.

Another innovative product is the Instru Aire package, which is designed to produce ANSI grade instrument air without the use of desiccant dryer.

The oil price drop is affecting everyone and Bauer is no different. "Projects are on hold and contractors have been asked to reduce the prices for services. We cannot escape the situation. Therefore, we are diversifying into the other business areas that will help us survive the slowdown."

Still, Bauer is not slowing its operations down. It is working closely with EPC firms for projects like Emirates Global Aluminum, Dubai Airport and a jet fuel pipeline project in Qatar.

"We are expecting a bio-methane project in the UAE, which will showcase our 'Go-Green' initiative. Oman is still going strong with new development plans in oil and gas, which will be monitored closely by all equipment manufacturers," Fountain added.

Bauer Kompressoren will be at ADIPEC 2015 promoting the Breathing Air package for H2S protection and nitrogen generators for coil tubing and blow out preventers.



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E2S Warning Signals to launch new products

E2S WARNING SIGNALS, the UK-based independent audible and visual warning device manufacturer, is launching two new families of alarm horn sounders and light strobes at ADIPEC, as well as introducing two ranges launched earlier in 2015. The stand focuses on explosion-proof and intrinsically safe warning signals developed to meet the challenging needs of the offshore and onshore oil and gas industry.

The centrepiece of the stand is a preview of the new premium 'STEx' stainless steel enclosure explosion proof warning signal range, which offers outstanding corrosion resistance in aggressive environments, combined with outstanding performance. Also on show is the new 'D1x' range, intended for NEC/CEC Class I and Class II Division 1 and Zone 1 & 20 applications. The strobe units are available with a UV stable polycarbonate, field replaceable filter; the



An example of the STEx warning signal range

alarm horns with either traditional flared horns or an omni-directional compact radial horn. A threaded flame path enables quick installation and simplifies maintenance inspection, and the innovative internal arrangement maximises wiring space.

Stand: 8320

FFE brings smoke and flame detection innovations

FFE WILL BE showing its ATEX-certified, explosion-proof Fireray optical beam smoke detectors and Talentum flame detectors at ADIPEC. FFE's Fireray 3000 Exd optical beam smoke detectors protect wide areas (up to 1,500m²) against smoking fires in potentially explosive environments. They are designed for large enclosures within oil rigs, refineries, ordnance stores and similar premises, and provide an early warning of smouldering or highly smoke-generative fires which may not be picked up by flame detectors. Fireray's intrinsically safe, flameproof Talentum flame detectors use infra-red (IR) sensing technology to detect flames from all fuel types – from hydrocarbon fires with 4.3μm emissions through to invisible hydrogen fires – and can even detect flames through dust, steam and smoke. They are also immune to the effects of wind. FFE's Fireray smoke detectors and Talentum flame detectors are ideal for high value, high risk installations with potentially explosive atmospheres, such as offshore platforms, onshore oil refineries, storage farms, pipelines and LPG/LNG facilities.

Stand: 8510C

Capital Safety to showcase extensive product range

CAPITAL SAFETY, THE leading provider of safety solutions for workers at height, will present its extensive offering in fall protection equipment at ADIPEC.

Capital Safety will showcase the latest addition to the DBI-SALA portfolio – the ExoFit STRATATM, the lightest-wearing safety harness ever created. The ExoFit STRATATM is designed to take the weight off workers' shoulders and redistribute it to the hips. It features PolarMesh™ padding, which keeps users' backs cooler with greater air flow alongside a Revolver™ vertical torso adjuster and Tri-Lock Revolver™ connectors which provide added security around the legs.

The company will also be showcasing a full range of confined space equipment, various fall protection harnesses including the new Delta™ Comfort harness, as well as horizontal and vertical lifelines and personal self-retracting lifelines.



Python Safety will be represented on the stand
Stand: 13205 & 13225 (Yusuf bin Ahmed Kanoo Company Limited)

Hand protection solutions

GLOBUS WILL DISPLAY high-performance hand protection solutions, specialist chemical protective clothing and respiratory protection for hazardous working environments at ADIPEC.

It is essential that workers across the oil and gas sector protect their hands, with gloves playing an important role in optimising hand safety. In the oil and gas industry, gloves need to be chosen to match the hazards and the task, as well as worker requirements so that the job can be carried out without restriction. The right choice of glove should impact positively on the company's hand accident rates and productivity levels.

Globus has developed effective hand protection solutions to perform in extreme climates and to protect from impact, chemicals, cuts, abrasion, water and punctures. As well as reducing the risk of hand accidents, the specialist gloves on display at ADIPEC help to provide wearers with powerful grip in wet and oily handling conditions.



Globus gloves provide wearers with powerful grip

Following Globus' recent corporate acquisition, a complementary range of Alpha Solway's latest innovations in chemical protective clothing and respiratory protection products for hazardous environments across the oil and gas sector will also be on display. These proven ranges are manufactured using cutting-edge technologies and are designed to keep petrochemical workers safe when performing chemical handling operations and when protection is needed against inhaling hazardous substances.

Steve Shale, marketing manager of Globus said, "We are delighted to be showcasing our hand protection solutions as well as our newly acquired range of Alpha Solway chemical protective clothing and respiratory equipment at ADIPEC. Oil and gas workers shouldn't be at risk of injury caused by ineffective personal protective equipment (PPE)."

Stand: 8410A



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- SledgeHammer Americas Inc. (USA)



USA to put up biggest country pavilion at ADIPEC

THE USA IS expected to put on a show of strength at ADIPEC with more than 200 exhibitors expected from the country, including heavyweights such as ExxonMobil, Schlumberger and Baker Hughes. The country's presence at ADIPEC is organised by Kallman Worldwide, in association with numerous government agencies such as the US Commercial Service.

The USA pavilion spans 3,400 sq m, spread across halls 7, 8 and 13 at the Abu Dhabi National Exhibition Centre (ADNEC).

Kallman worldwide president and CEO Tom Kallman said, "When the USA commits to exhibit at ADIPEC, we're saying we believe in the power of this event to attract real business prospects and customers. The steady growth and diversification of this show speaks for itself. As the organiser of the US international pavilion, our team is proud to help our exhibitors capitalise on this international business event to grow their share of the regional marketplace, and further extend our nation's global oil and gas leadership."

Of the 104 companies participating in the pavilion, 35 are new to the show while 10 of the 35 are new to the market altogether. The USA pavilion is expected to create a wealth of opportunities and strengthen relationships with the buyers in the region.

Some of the product highlights presented by the USA include Bayco Products state-of-the-art dual-light flashlight; Galvanic Applied Sciences Inc.'s tail and gas pit analyser to monitor H2S, SO2, CS2 and COS; Vulcan Systems' innovative drilling waster solutions; Kerite's electrical submersible pump cable; DrawWorks' Casing Running Tool (DWCRT) and Flush Mount Spider (DWFMS); Lamons' fire safe flange isolation kits; Aereon's steam-flare assist options; inoVX's V-Suite business application; Victaulic's ball valve for upstream oil systems



The pavilion is expected to provide a good base for networking opportunities at ADIPEC

and Cestus' anti-vibration glove called TrembleX.

In addition, some other companies are using ADIPEC as a launch platform for major announcements - one such is the opening of Oxifree's office in the UK, which could potentially help technical and business development, and RedGuard's Middle East expansion plans.

The pavilion is primary destination for buyers to meet USA companies, and will be an on-site business hub for exhibitors looking to maximise their exposure and time at the event, said Kallman officials.

3M Gulf to debut its latest Glass Bubble product at ADIPEC

3M GULF'S OIL and Gas Solutions division will debut its newest 3M Glass Bubbles product in the Middle East region at ADIPEC. The new HGS4K28, which will be commercially available later this year, with sample and field trial quantities available for order since October, is a high-strength, low-density additive specially designed to afford greater density reduction capabilities than other lightweight additives under similar downhole conditions.

"With the improvement in the strength-to-density ratio, our newest addition to the Glass Bubbles portfolio is ideal for low to moderate downhole pressures," said Konstantinos Spyropoulos, leader of Industrial Business Group for Middle East and Africa. "No other additive on the market today can match the value we provide with Glass Bubbles, as these hollow glass microspheres offer more strength at less volume, meaning you purchase less, ship less, inventory less, and reduce storage costs."

The use of HGS4K28 as a density reducing agent for completion, work-over and cement slurries offers the potential for improved well integrity, reduced non-productive time and increased well productivity when drilling in highly depleted zones and weaker formations, as it may help minimise or eliminate problems associated with fluid loss, lost circulation and formation damage.

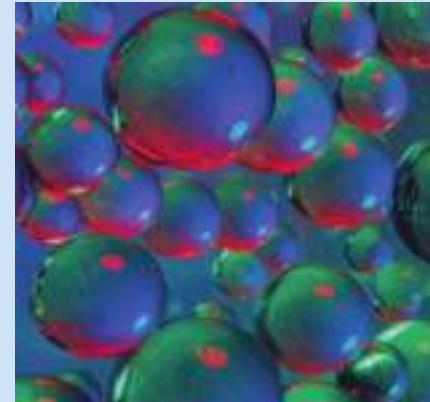
"With HGS4K28, coupled with our higher



3M Glass Bubbles

strength Glass Bubbles HGS19K46, which launched globally earlier this year, 3M demonstrates that less can be more, even under pressure, as these products reduce costs by creating lighter cement slurries and drilling fluids while requiring less additive to achieve target density at pressure," Konstantinos continued. "Using less additive creates stronger, cured cement for better performance, and in drilling, completion and work-over fluids less additive gives customers more pressure control, as HGS4K28 and HGS19K46 help to achieve and maintain target density throughout the operation."

Glass Bubbles HGS4K28 and HGS19K46



complement 3M's popular Glass Bubbles portfolio, which includes a variety of strengths, densities and sizes. 3M's portfolio of hollow glass microspheres are used as an additive for a number of applications in the oil and gas industry, as well as automotive, aerospace, rubber and plastics, paints and coatings, construction materials, and electronics industries. The technology behind Glass Bubbles, first introduced in 1968, has become widely accepted for its performance and processing enhancements across a number of industries.

Stand: 10730

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Pipeline maintenance made easier with Joint Yoochang's expansion joints

JOINT YOOCHANG THERMAL System Company (Joint Yoochang) is showcasing a variety of its innovative pipe joints at ADIPEC 2016. The company is a South Korea-based manufacturer of expansion joints used in a range of industries.

For the oil and gas industry, Joint Yoochang's products include ball, slip and multi joints. The piping systems in oil and gas facilities have to deal with both high temperature and high pressure, and both those factors are not constant either. It is therefore imperative to use joints that can withstand the physical changes in the pipes that are caused by the changes.

The company's Spare Pak Slip Joint can absorb 10-120 cm of displacement caused by thermal expansion and contraction in piping systems. This compares favourably with the bellows expansion joints typically used in oil and gas installations, which tend to absorb only 5-10 cm of displacement. The larger traverse absorption using slip joints means that fewer expansion joints and anchors are needed for any given length of pipeline, thereby reducing the points at which leaks can occur.



The Spare Pak Multi Joint can absorb both linear and 3D displacements (Photo: Joint Yoochang Thermal System Company)

Joint Yoochang's Spare Pak Ball Joint can absorb 3D displacement as well as seismic displacement, and the length of its traverse absorption is the distance between the centres of two ball joints. The Spare Pak Multi Joint combines the slip and ball joints, and can therefore absorb both linear and 3D displacements.

The joints have an in-built maintenance tool to handle leak occurrences. They are fitted with a packing injection that contains graphite powder which can be used under full line pressure. This allows for maintenance to be carried out without needing to shut down the pipeline operations, thus saving downtime in the facility, which directly affects productivity in a positive way.

All the joint products from Joint Yoochang are made of a carbon steel/stainless steel alloy, and can handle pressure up to 75 kg/cm³ and a maximum temperature of 650°C. The company says that its Underground Slip Joint was the first product of its kind in the world to have passed the steam cycle test 100,000 times. All its various joints are certified by US-based safety consulting and certification company UL.

Stand: 12710

SSAB offers high-strength steel solutions for oil and gas structures

SEEING THE CURRENT slowdown in the oil and gas industry in the Middle East as a good time for companies to reengineer their steel structures, SSAB is coming to ADIPEC 2015 offering high-strength steel solutions for offshore facilities. The company says there is a great potential to save both weight and cost in many OEM applications and structures simply by optimising the structures with new designs and stronger steels, and without compromising on safety or reliability.

Joakim Nyström, key segment manager at SSAB, says that companies need to "put a stop to copy paste engineering and make use of the

latest 30 years of steel development and design knowledge." Pointing out that there are areas where high yield strength in a steel structure would not be suitable, he goes on to list important factors that make for good optimisation.

The first factor is proper knowledge of load distribution and the dynamics of the load. Calculation systems that can make detailed load analyses are available now, and a better understanding of the load distribution makes it easier to find the critical areas in a structure and then adjust the design accordingly to have the

entire structure perform better.

The second factor is to adapt the design for managing the higher stress in the material, says Nyström. With more elastic behaviour, joints need to be designed with more care. With dynamic loads that can cause fatigue, the ideal would be to create solutions without any welding at the most critical areas. Using a high quality cold formed steel is often a good way of moving a critical joint from the most difficult position.

The third key to successful optimisation is to use a high quality steel. Allowing higher stress in the material also increases its sensitivity to porosity, inclusions and crack propagation. With dynamic loads, thickness steps between plates will create load concentrations, so there is a higher demand for narrow thickness tolerances. High impact toughness comes from clean steel with low alloy content, and it provides both a good safety margin and good welding ability.

By using cold forming where possible, moving welds from critical positions and reducing the plate thickness by 30 per cent by allowing higher stress in the design, more than 50 per cent of the weld cost can be reduced. The lower cost for welding, cutting, transport, installation and storage compensates for the higher plate price.

At ADIPEC, SSAB will showcase different types of high-strength steel from its Strenx brand that can be used in the oil and gas sector to make facilities stronger and structures lighter, while also reducing costs. The Sweden-based company has more than 100 engineers and experts to support customers with designs.

SSAB's high grade steels are also used in cranes and containers, both of which are commonly found on offshore platforms (Photo: SSAB AB)



Stand: 121160

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Hi-Force's new facility in Abu Dhabi

BASED IN DAVENTRY, Hi-Force has rapidly emerged as the UK's leading manufacturer and supplier of hydraulic tools and bolting equipment.

The product offering includes cylinders, pumps, torque tools, bolt tensioners, hydrotest pumps, crimping tools, nut splitters, puller kits and many other industry-specific tools in use every day in a variety of industries worldwide. Hi-Force has regional operations in seven countries and an increasing distribution network covering more than 100 countries.

Incorporated in 1997, the Hi-Force Abu Dhabi office grew from a need to serve the requirements of the thriving oil and gas industry within the emirate. Over the years and with continued growth, the Abu Dhabi office has tripled its stock levels and staffing, enabling it to offer supply, after sales services, repair and calibration, on-site services and tool rentals to its huge customer base.

Having operated successfully from its current location for more than 15 years, Hi-Force Abu Dhabi regional office has relocated to a new, purpose-built facility. Situated within the existing premises, the new, two-storey office block covers an area of over 5,000 sq ft and houses a significantly larger warehouse and a fully equipped workshop repair and rental facility.

Stand: 140

WEG shows oil and gas industry the way to increasing energy efficiency at ADIPEC

WEG, A LEADING global manufacturer of motor and drive technology, will demonstrate how its energy-efficient solutions can help the oil and gas industry address today's challenges at ADIPEC. Visitors to Stand 12130 in Hall 12 will have the opportunity to learn more about WEG's Super Premium W22Xd motors – the most energy-efficient explosion-proof motors currently available on the market, according to the company - as well as some of WEG's most ambitious oil and gas projects, including the supply of motors to enhance gas recovery in Oman's US\$550mn Saif Rawl Field Depletion Project.

"Today's oil and gas industry is faced with new challenges including the current low oil prices and the need to reduce energy consumption and keep costs down. With some of the most easily accessed oil fields becoming exhausted, the industry is also finding itself operating under harsher environmental conditions – often in deeper waters and under higher temperatures and pressures," comments Colin Cox, managing director, WEG Middle East. "With this mind, this year we will show visitors at ADIPEC our state-of-the-art motor technology which combines best-in-class energy-efficiency with strength, reliability and safety to endure the most aggressive environments while complying with global hazardous area safety certification requirements."

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A WEG W22Xd series motor

to 800 (NEMA equivalent available), the W22Xd is one of the broadest ranges of energy-efficient explosion-proof motors on the market. It features an advanced cooling system with cooling fins that reduce noise levels while significantly increasing heat dissipation, thus contributing to higher efficiency up to IE4 levels.

The standard W22Xd series is ATEX-certified and designed for use in IEC Zone 1 and 2 hazardous areas and with group IIA, IIB and IIC gases. The W22XdB and W22XdCD versions provide additional protection against explosive dusts for use in aggressive atmospheres classified as Zone

21 or 22, group IIIA, IIIB or IIIC, and EPL Db. The W22XdM version is suitable for use in coal pits with classification Group I, Category M2 and EPL Mb.

To demonstrate its expertise as a full-spectrum manufacturer of automation solutions for the oil and gas sector, WEG will also be showcasing a range of motor control equipment, including the CFW500 range of variable speed drives for applications including centrifugal and process pumps, fans and compressors, and the SSW06 and SSW07 soft starters.

Stand: 12130

DSL MENA opens new facility in Hamriyah

DSL MENA IS opening a new facility in Hamriyah, UAE, with quayside access providing direct access to the Gulf. This facility will support DSL's growth in the Middle East and enable expansion of products and services for upstream customers in the region. The facility is equipped with a modern office space, 3,700 sq m of fabrication workshop, 4,000 sq m of fabrication/rig up yard space and direct quayside access to the Gulf.

DSL will support customers in the MENA region by offering an extensive range of products and services, including mast and sub-structure manufacture, derrick manufacture, recertification of drilling structures, API 4G CAT III/IV inspections, drops surveys, offshore trades and rope access. DSL also has a significant engineering resource in this operation to support design requirements for our customers.

"The new facility demonstrates our commitment to building upon our reputation in the Middle East. We are excited by the opportunities available in the region and look forward to utilising our experience and expertise to support the growth and development of the Middle East oil and gas market," said Mike Smith, managing director of DSL.

Stand: 8520B



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Celebrating achievement in energy

A record number of entries have been submitted for the ADIPEC Awards this year.

ADIPEC HAS ANNOUNCED the 33 shortlisted entries across eight categories for the 2015 edition of the ADIPEC Awards. The distinguished and internationally coveted accolades celebrate achievement in energy, and recognise the leading companies, individuals, initiatives, projects, and technologies that have demonstrated excellence – further cementing Abu Dhabi's position as a global hub for knowledge-exchange in the oil and gas industry.

Driving the ADIPEC Awards growth and success is the pressing need for sharing best and sustainable practice, says Abdul Munim Saif Al Kindy, CEO of the Abu Dhabi Company for Onshore Oil Operations Ltd., (ADCO), and ADIPEC Awards chairman.

"Today, companies are looking for ways they can optimise their operational efficiencies and sustainably enhance exploration and production while meeting the world's growing demand for energy," Al Kindy said.

"The Awards enable industry peers to shed light on some of the world's greatest projects, people, and ideas. This dissemination of knowledge and best practice is critical now more than ever in today's evolving energy landscape."

Record number of submissions

The ADIPEC Awards received a record 501 submissions from 32 countries this year, with participation from 247 organisations from around the world. Postponing continuous growth since their launch in 2010, the awards received 105 more submissions than last year, representing six more countries, and with the participation of a remarkable 140 more organisations.

Nominees were shortlisted after a meticulous assessment by the Regional Select Jury comprising 28 experts from across the oil and gas industry. Each shortlisted entry was thoroughly screened at the Regional Select Jury Meeting on 21 October 2015.

New to this year's Awards is the 'Best Practice' category, which recognises the creation and successful implementation of an initiative that offers improvement to an internal business process, structure, or culture.

"Best practice and innovation are crucial to the success of our industry, especially in the new commodity price environment," said Edward LaFehr, CEO of Abu Dhabi National Energy Company PJSC (TAQA), and member of the ADIPEC Awards jury.

Also new is the new 'Best Dissertation of the Year' category.

“The Awards enable industry peers to shed light on some of the world's greatest projects, people and ideas"



**Abdul Munim Saif Al Kindy, CEO
ADCO and ADIPEC Awards chairman**

"Going forward, we are all aware that the oil and gas industry will be facing both challenges and enormous opportunities – developing our knowledge and understanding of the sector is absolutely essential if we are to grow and develop the industry," said Dr. Thomas Hochstettler, president of the Petroleum Institute and RSJ member. "The Best Dissertation Award will promote academic excellence and help to deliver real-world understanding."

"Advancing the oil and gas industry can only be achieved by benchmarking success, and the ADIPEC Awards provide the perfect platform for companies to share their achievements in their journey towards sustainability," said Jean-Philippe Cossé, ADIPEC 2015 event director at dmg events.

"This year's selection demonstrates how far the industry, both in the region and worldwide, has come because of its tireless efforts and unwavering commitment to progress, be it in research and development, innovation and technology, or corporate social responsibility."

The shortlisted companies are as follows:

Category 1 – Best Oil & Gas Mega Project

- International Petroleum Investment Company
- Abu Dhabi Crude Oil Pipeline Project (ADCO)
- Petroleum Development Oman (PDO)
- Harweel 2AB: PDO First and World's Largest Miscible Sour Gas Injection Project



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Category 2 – Best Oil & Gas Innovation or Technology (Surface or Sub-Surface)

Surface

- Petroleum Development Oman (PDO), GlassPoint Solar
- *Solar Steam Generation for Enhanced Oil Recovery*
- Schlumberger
- *Vx Spectra Flowmeter—Multiphase Metering Comes of Age*
- Total Research Center-Qatar, Total E&P Pau – France
- *LIPS: A New Instrument Performing High Resolution Logs and Big Data of Organic Carbon*

Sub-Surface

- BP Exploration (Epsilon) Ltd. - Oman Branch, Schlumberger
- *Geo-Engineered Completion Optimization in a Giant Unconventional Tight Gas Reservoir, Khazzan Field, Oman*
- Schlumberger
- *ZEiTCS Shuttle Rigless ESP Deployment System*
- Schlumberger
- *Manara Production and Reservoir Management System*

Category 3 – Best Oil & Gas CSR/HSE Project or Initiative

- ADCO
- *Achieving Sustainable Zero Flaring through Spiking Gas Compressor at ADCO Shah Field*
- Samsung Engineering Co., Ltd.
- *The Shah Gas Field Development Project: From Barren to Barrel*

- Saudi Aramco
- *Saudi Aramco Environmental Education Program*

Category 4 – Oil & Gas Woman of the Year

- KUFPEC, Kuwait Oil Company
- *Hosnia Hashim, a Visionary Leader*
- Mubadala Petroleum
- *Salma Al Hajeri, Oil & Gas Woman of the Year*
- Petroleum Development Oman LLC (PDO), Shell Development Oman LLC
- *Intisaar Al-Kindy, Exploration Director, PDO*

Category 5 – Best Oilfield Services Company (Local, Regional or International)

Local

- EMDAD LLC
- *EMDAD LLC Integrated Service Company*
- Megarme General Contracting Co. LLC
- *Best Oilfield Services Company - Inspection, Repair, Maintenance Utilizing Rope Access Solutions*
- Trizac Abu Dhabi, Oilfield Supplies and Services
- *30 Years of Operational Excellence*

Regional

- Gulf Drilling International
- *GDI: Towards Sustainability and Operational Efficiency*
- Narayana Expert Engineering, Industrial Inspection, Technology & Energy Consultancy (NeemTech)
- *Best Oilfield Services Company*
- Zamil Offshore Services Company
- *Offshore Fleet, Services Expansion & Quality Enhancement*

International

- Halliburton
- *Halliburton - Solving Challenges*
- Schlumberger
- *Global Strength, Local Understanding*
- Weatherford Manufacturing and Services
- *Ahead of the Curve, Proudly Made in the UAE*

Category 6 – Young ADIPEC Engineer

- Talha Ahmad, Saudi Aramco
- Ali Al-Khatib, Saudi Aramco
- Abubaker Saeed, Saudi Aramco

Category 7 – Best Dissertation of the Year

- Amar J. Alshehri, Stanford University
- *An X-ray CT Study of Multidimensional Imbibition in Dual Porosity Carbonates*
- Marzieh Riahinezhad, University of Waterloo
- *Can Copolymerization Kinetics Help Tailor Properties Of Poly (Acrylamide/Acrylic Acid) For Enhanced Oil Recovery?*
- Saif Al-Ghafri, Imperial College London
- *Phase Behaviour and Physical Properties of Reservoir Fluids Under Addition of Carbon Dioxide*

Category 8 – Best Practice Award

- ADMA-OPCO, NDC, Nobel-Denton, LOC
- *New Rig Pre-loading Procedure on Difficult Location*
- BAPCO
- *Rapid Operational Excellence by Technology Assisted Governance*
- Petroleum Development Oman
- *Delivering Technical Integrity & In-Country Value (ICV) Through the In-Sourcing of Equipment Repairs*

Winners and runners-up will be announced at the ADIPEC Awards Gala Dinner, which is hosted by the Abu Dhabi National Oil Company (ADNOC) and takes place at Emirates Palace on 9 November 2015. ■

Rockwell Automation to exhibit product portfolio for oil and gas sector at ADIPEC 2015

ROCKWELL AUTOMATION'S INTEGRATED and scalable solutions for digital oilfield and other technological advancements will be exhibited at ADIPEC 2015 to address challenges in reducing energy consumption, upgrading legacy systems and making better use of data.



The PlantPAX system uses scalable, multi-disciplined control technology to provide a common automation platform for seamless integration between it and the balance of the plant

World energy consumption is projected to increase by 49 per cent from 2007 to 2035. That kind of unprecedented demand means you need to maximise uptime, increase recovery from new and existing fields, and consistently drive innovation from new production technologies. ADIPEC will be held at Abu Dhabi National Exhibition Center from 9-12 November 2015.

Keeping in tune with this year's theme around innovation and sustainability in a new energy world, Rockwell Automation will focus on exhibiting technologies and solutions that cater to helping companies optimise product processes, maximise the company's profit, and reduce operational costs.

Neil Enright, sales director for Rockwell Automation Middle East, said, "We will be presenting PlantPAX to help drive productivity, Optilift Platforms to optimise production and more.

"This year we opt to give more information about the benefits of harnessing a connected enterprise. We believe that there is a great opportunity for oil and gas and energy producers to improve on their operations and gain increased competitiveness should this be realised."

Rockwell Automation will showcase its latest advancements in tools, technologies, services and solutions that can help the oil and gas companies understand the value of being more connected between operational technology and information technology disciplines and having a higher level of information visibility.

- In a 90 sq m floor space, Rockwell Automation will be exhibiting:
- Advanced wireless communication solutions
- Optilift Platforms: Artificial Lift Surveillance, Optilift-RPC (Rod Pump Controller) and NF (Natural Flowing Wells)
- OptiSIS: Optimized and Packaged Process Safety Instrumented System
- Plant PAX: Modern and world class Distributed Control System (DCS)
- ConnectedProduction™: Secure pathway from production data to actionable knowledge.

Stand: 1220



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Edgen Murray products made of specialised steel

EDGEN MURRAY, A subsidiary of Sumitomo Corporation, will be attending ADIPEC 2015 to showcase its specialised steel products for the energy and infrastructure industries, including the oil and gas sector. The company manages procurement, value added services and delivery of high performance plate, section, pipes, fittings, flanges and valves through its global distribution network. Edgen Murray also provides a wide range of testing, cutting and finishing services, along with global project management and fabrication

coordination for the delivery of finished material packages.

The company operates in the Middle East through Edgen Murray FZE, located in Dubai's Jebel Ali Free Zone with a facility that covers 22,000 sq m in yard area and another 1,600 sq m of covered warehouse space. Three overhead gantry cranes with the capacity of 20 tonnes each allows the company to offer storage solutions as well.

Operating in the region for 35 years now, the location allows the company to offer a comprehensive inventory of plate, pipe components, sections and valves to meet

immediate supply requirements for businesses in the region. Edgen Murray also offers a wide range of testing, cutting and finishing services at the location, making it a complete turnkey supply solution.

Edgen Murray's inventory includes offshore and onshore material grades, pressure vessel and shipbuilding grades, including Hydrogen Induced Cracking (HIC) plate. The company's global inventory is in excess of 100,000 tonnes of plate, welded and seamless pipe, pipe components, a wide variety of sections and valves.

Some of the strengths the company brings on board for its customers are:

- Specialised product offerings from multiple supply partners
- Long-standing mill and manufacturing partnerships
- On-hand inventory
- Global scale and purchasing power
- Quality control and coordination of logistics, staged delivery, fabrication and other services, including documentation
- Staff with experience and in-depth knowledge of the market dynamics, price trends and lead times.

Valve offerings

Through its subsidiary HSP Valves, Edgen Murray supplies manual and actuated valves to end users, contractors, distributors and module suppliers in the oil and gas, petrochemical and power industries. Edgen Murray established a valves division in Dubai in April 2015 to support HSP Valves, which supplies a wide range of products including ball valves, gate, globe and check valves, butterfly valves, plug valves, solenoid valves and actuators. HSP Valves plans to open a new office in Abu Dhabi later this year.

Derrick Mackenzie, director of sales at Edgen Murray, said, "Our new valve division in Dubai is a testament of our commitment to be closer to our clients and better serve their needs. Our success has come about through a strong attention to detail and sense of urgency from our staff." ■

Edgen Murray will be at the Sumitomo Corporation stand at ADIPEC 2015.

Stand: 1121



Other than their standard product offerings and engineered valves, like in the lower picture, the company also customises products for clients, such as the 27m long pipe above (Photo: Edgen Murray)



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MEDrillTech Conference & Exhibition

Date: 5-7 October 2015

Venue: Abu Dhabi



Promoting drilling efficiency in the Middle East

The MEDrillTech event gave attendees a valuable platform to share knowledge and expertise to maximise rig efficiency.

THE MEDRILLTECH CONFERENCE & Exhibition 2015, a joint initiative by ADMA-OPCO and E&P Management, with support from NDC, ADCO, ZADCO and KOC, was attended by a regional and international audience from the Middle East oil and gas drilling sector.

Oil and gas rig counts have reached an all-time low. Currently, global rig counts are 995 lower than the 1,590 rigs in 2014. Also, faced with declining oil prices, major oil producing nations especially in the Gulf region, are seeking innovative ways to increase efficiency of oil production. The declining prices have created an environment conducive for inter-industry cooperation with an aim to increase efficiency and efficacy to reflect new technological and process advances. The MEDrillTech consortium which focused on the drilling sector "Provided a platform for an inclusive approach to highlight the great work and leadership of operating companies and their partners," said Rafeeq Kunhi, director Oil & Gas, E&P Management.

Medhat G. Saleh, manager, Fluids Engineering (Mud & Cement), ZADCO, added, "Oil prices are low and it is better if we look at developing new technologies whereby we can reduce the well duration. However, it's the reverse trend in the Middle East, especially in Abu Dhabi. We have more rig numbers compared to earlier years – 21 jackup units and artificial island rigs in addition to four barges. The challenge is to get good calibre personnel to operate these rigs."

“ The Middle East is seeing an increase in the number of rigs, in contrast with other parts of the globe”

The inaugural MEDrillTEch witnessed high attendance and participation of senior and leading professionals, engineers, and experts key technology and services providers, end user operators, various departments and organisations from the local, regional and international oil and gas industry.

The programme was headed and chaired by Ali Al Jarwan, CEO, ADMA-OPCO and supported with a keynote speech from Abdalla Al



Ali Rashid Al Jarwan, CEO, ADMA-OPCO with Abdalla Al Suwaidi, CEO, National Drilling Company

Suwaidi CEO, NDC, as well as presentations from key sponsoring and supporting organisations including Shelf Drilling, Weatherford, Schlumberger, Halliburton, Baker Hughes and COSL Drilling.

Faisal Al Hosaini, ADCO vice president, said, "There is lot of sharing when it comes to drilling technology. We can see an increase in the number of rigs in the Gulf, whereas everywhere else it is declining. What I can see is that this event is adding a lot of value for us. There are lot of chances for international companies to move to the MENA region. Aramco is expanding, and so is Kuwait Oil Company (KOC). The new discovery in Egypt will also be expanding the region's growth."

A focus of the discussions and knowledge sharing initiatives, through inclusive panel discussions and multiple networking opportunities, was on new technologies and methodologies in comparison to existing protocols and technology. "These discussions gave service providers a chance to speak firsthand with project owners to understand the current status quo and identify areas in which they could contribute for the future," said Kunhi. ■

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The Offshore and Marine "OM" versions of our Strenx steel deliver the consistency, tolerances and properties of our best structural steels in combination with the classification and branch standards of the Offshore and Marine segment. Going from a standard 355 Mpa grade to a Strenx 700 OME might allow a 30 % weight reduction and 50 % weld reduction. Can it work for you? Let's find out, together.

For a complete picture of Strenx advantages visit strenx.com.



A standards-based approach to training

A skilled and safe workforce is key to operating efficiently and remaining competitive in the current climate, says David Doig, group chief executive, OPITO International.

THE REPERCUSSIONS OF the sharp decline in oil price are being felt globally but, in this new era of cost-cutting and increasing efficiency, the industry must ensure it keeps its people safe and continues to develop the skills of the workforce.

In times of cost reduction all too often, and wrongly, training and development budgets are prime targets for cuts. But sweeping cuts in these areas are often born from ignorance of the real harm they cause and only serve as short term measures. History shows that the true cost of cuts in training come back to haunt us later in the form of skills shortages and wage inflation.

“The smart employers and governments are seeking the standards-based approach to training to improve skills and competence”



David Doig, group chief executive, OPITO International

Hazards and risk remain the same regardless of the oil price, and a lower BOE must not mean that they are managed differently.

A robust people strategy must be applied

in a downturn to keep the workforce safe and ensure the operator is well placed and has a competitive edge to take advantage of the upturn when it arrives, as it undoubtedly will, given the history of the industry.

It is the smart organisations who realise that in times of cost cutting and a drive for increased efficiency, it is our people who are the key to our success. It is a highly skilled, safe and motivated workforce that will ensure the industry remains competitive. Even in the current climate, production operations will continue, as will the need for maintenance. If we take a cynical view that maintenance activities will be reduced, then the need to ensure the workforce is trained and competent becomes greater.

Doing more with less will be the way of the future for some years, and by taking a standards-based approach to training through skills and training standards body OPITO, companies can ensure the workforce has the right skills, operates safely and is therefore much more efficient.

In the Middle East the oil and gas market is holding up better than in other areas around the world. OPITO is seeing some inevitable rationalisation in the region as a result of the shrinkage in the number of

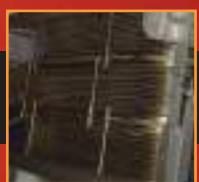


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people being trained. This is to be expected as the market corrects itself. Less activity leads to fewer people required and therefore less training. But as the region matures, there is greater sophistication required, which makes for very interesting dynamics in the market.

One of these is the growing demand for OPITO standards. Training providers in the Middle East want to grow and develop and are looking to broaden what they offer - moving from basic survival and safety training to more specialist and technician training. We are seeing an increase in accreditations and approvals for rigger and lifting, offshore installation management and fire-fighting training. Training providers in the region want to capture a bigger share of a shrinking market, and the best way to do that is to be accredited and approved by OPITO. Equally, the smart employers and governments are seeking the standards-based approach to training to improve skills and competence.

An example of this is our work in Iraq with Shell to ensure that 15,000 Iraqi oil and gas workers are being trained to a globally recognised standard in dealing safely with the potential hazards of hydrogen sulphide (H₂S). A corrosive and hazardous gas, also known as "sour gas", H₂S occurs in the production of oil and gas fields which have a high content of this gas in their reservoirs and is one of the biggest risks in production in Iraq.

“ Hundreds of Omanis will be trained to recognised industry qualifications in electrical and mechanical maintenance as well as instrumentation and controls”

This is the first industry-led training programme to be rolled out across Iraq since OPITO signed an agreement with the Ministry of Oil to help develop the country's local workforce with the necessary skills and training to safely utilise Iraq's hydrocarbon resources, and provide qualifications needed for Iraqis to access jobs in the country's energy sector.

As one of the largest international companies in Iraq, Shell has invested in a new training centre in Majnoon (near Basrah) and worked closely with OPITO to customise the training standard relating to H₂S for the Iraqi workforce.

Shell's training centre in Majnoon is now up and running and is the first OPITO-approved centre in Iraq. This is a major step



A well-trained workforce will ensure that the industry remains competitive
(Photo: Sornranison Prakittarakoon)

in our journey towards building a safe Iraqi workforce that is accredited to international standards.

Shell has shown real leadership in the development and roll-out of this training standard and must be recognised and commended for investing time and financial resources in its delivery, which will ultimately save lives. We are confident that the other major employers operating in Iraq's oil and gas sector will follow Shell's example and commit to training their workers in this standard.

This initiative represents an acknowledgement of OPITO's role in influencing and shaping common global safety standards. But, more importantly, it is the catalyst for the development of a learning infrastructure for the people of Iraq who, if they are to successfully re-build their country, must create a safe, sustainable and profitable oil and gas industry.

Building an indigenous workforce

In Oman, government and employers are also looking to improve the delivery of training, which will result in a skilled and safe oil and gas workforce and make a positive contribution to the country's economy.

With a track record in helping oil and gas producing countries to build indigenous workforces to exploit their reserves, OPITO is working on a phased plan that will provide the Omani Government with a sustainable solution to the employment needs of its people and to the demands of the industry.

The first phase is an analysis of the current provision of vocational and non-vocational training throughout Oman. OPITO

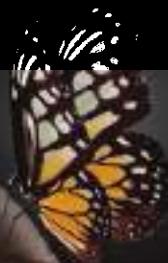
will be visiting training centres and colleges to identify the standard of training and then provide recommendations on how technical training provision can be improved to deliver a framework of qualifications which will meet current and future skills demands and improve competence in the operations and maintenance activities associated with the extraction of hydrocarbons.

By working with the government and employers, we will help Oman develop an in-country learning infrastructure which will be able to deliver industry-designed and industry-recognised qualifications underpinned by technical training standards, occupational standards, a robust assessment process and accredited certification and qualifications. This will ensure that the training is delivered in the correct way, by the right people, using the right equipment in a safe and well-managed environment where competence can be effectively measured.

As a result of OPITO's ground-breaking work in Oman, hundreds of Omanis will be trained to recognised industry qualifications in electrical and mechanical maintenance as well as instrumentation and controls, allowing them to work in the oil and gas industry. This will open-up new economic opportunities for the Omani people, impacting positively on the economy and giving the oil industry confidence in the competence of their technicians.

As a not for profit organisation, owned by the industry, OPITO will reinvest the revenues generated by this work in the continuous development of educational products and services for the benefit of the Middle East and the wider industry. ■

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Optimising HSE processes

Derek Hibbard, Director HSE, USA and International Operations, Trinidad Drilling, speaks to *Oil Review* about HSE trends and the benefits of MACS-G Solutions' AEGIS QHSE management solution.

How do you see HSE practice in the region; what are the new trends and how do you view the future of HSE professionals in the GCC/Middle East?

HSE standards in the GCC are generally high, but are also generally compliance-driven. The importance of core compliance cannot be overstated, but in order to mature the industry, we need to transition HSE and HSE professionals to be more focused on the proactive measures that have been proven to keep our workers safe. For example, walking around completing a mandatory inspection is a critical element of our business, but I think the importance of the behavioural elements commonly get lost. By really focusing on human behaviour, we will prevent people from being injured in this business, whereas a checklist will not do that. Virtually all hazards are at one point or another, the result of substandard or unsafe behaviours. By setting up your systems and programmes to identify and eliminate those behaviours, you will intuitively eliminate hazards. To mature as a region, we need to start applying an equal focus on behavioural-based safety as we do on compliance. This does not mean more stop cards either, it means people looking out for one another because they truly care and they, like their colleagues, want to get home to their families the same condition in which they left.

What are the key challenges facing HSE practitioners, and how do you think they can be overcome?

One of the biggest challenges today is the significant headcount reduction seen across the industry, resulting from weak commodity prices. Over the last 12 months, our industry has been in full survival mode and has reduced global headcount by upwards of 50 per cent in some markets, so we are doing more with less. Coupled with this is the ever more critical aspect of maintaining a safe workplace in the interests



Derek Hibbard, director HSE, USA and International Operations, Trinidad Drilling

of competitive advantage. We will overcome this by becoming standardised in our processes and disciplined in our implementation, as well as by implementing technology where we can to allow us to transition the focus from administration to execution.

“ One of the biggest challenges today is the significant headcount reduction seen across the industry”

The Middle East's workforce is comprised of many different nationalities and cultures. In your opinion, can this affect an individual's understanding of the importance of health and safety practices at workplaces in the region, and what measures can be taken to ensure employees from different backgrounds share the same understanding of health and safety practices?

The demographic variation we have in this business poses a major challenge and is one that will not go away anytime soon. In addition to the obvious elements, such as language, customs, standards, religion etc., we rarely consider the massive variation in risk tolerance amongst different cultures around the world. Many factors impact individual risk tolerance, including age, experience, skills, knowledge, training, where you grew up, etc. The real key is for an organisation to identify their internal tolerance of risk, and to then construct the entire HSE system and programmes to drive the culture around working within that tolerance, and stop work whenever it's exceeded. This is a very challenging process to implement, because you are continually raising the standards for some people, but concurrently lowering the bar for others, in the effort to achieve a single approach that works for everyone, regardless of nationality or culture.

What role can technologies play in improving health and safety in the Middle East?

The effective implementation of technology in our business enables us to work smarter, not harder. By utilising systems and technology effectively, you can relieve a dramatic amount of administrative burden on our operational personnel and allow them significantly more time to address proactive HSE measures, such as enhanced focus on BBS systems and observation programmes. Our industry, at the field level, needs to

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accelerate the process of implementing technology to enhance and optimise existing or traditional processes. This generates more effective time utilisation and can lead to significant cost reductions and better resource allocation.

What were the major reasons for selecting AEGIS as your QHSE Management solution?

AEGIS enabled my company to quickly implement a working “off the shelf” product that was cost effective and simple enough to be successfully implemented at the field level. The ability to customise the system dramatically also played a critical role in its selection. Having the ability to essentially tailor system inputs on an as-needed basis, dramatically expedited our ability to implement AEGIS in the field and to make corrections and amendments in real time. Having the ability to initiate immediate change when the need arises allows us to have credibility in the field, and significantly improves the engagement of our workforce to drive the implementation process.

How has AEGIS assisted you in resolving some of the more pertinent HSE issues within your organisation?

AEGIS has helped us to centralise much of our QHSE data, which has, in turn, dramatically enhanced our internal efficiency and data analysis capabilities. The ability for the system to consolidate customisable corrective action assignment and mail

“ Consolidating our internal inspection and audit protocols has dramatically improved our ability to standardise across our global fleet”

notifications has also improved our ability to communicate and more easily verify action implementation. In addition, consolidating our internal inspection and audit protocols has dramatically improved our ability to standardise across our global fleet, providing consistent data that has allowed us to more proactively identify issues and problems so we can get ahead of them.

What do you think will be AEGIS’ role within your operations, moving forward?

AEGIS will play a significant role in our operations moving forward. The system has been put in place to establish a baseline to measure the application of our management system in the field. Over time, as we fully integrate the system, I expect that we will see a tremendous amount of value added due to the critical and proactive processes that the system is set up to manage. Now that the foundation has been established

with the AEGIS platform, we will be taking lessons learned from the implementation process and identifying ways of optimising our management system processes to better tie into the system, in order to be in a position to better quantify our internal effectiveness and efficiencies. The ability to capture essentially real time data from the field provides us with the ability to enhance our data analysis and trending capabilities to optimise our operations.

How can organisations align their HSE objectives to organisational objectives and targets?

Really this one is simple; without an integrated focus on HSE and Operations, an organisation cannot reach its true potential. The goal is to make HSE a core value, as important as EBITA, cash flow and customer satisfaction. All of these metrics are critical measures of an organisation’s success, but are generally meaningless if you’re hurting people. In order to achieve alignment, HSE has to become a valued member of the management team and have a valued seat at the table. That said, it is critical to establish effective and objective KPIs that help the organisation to quantify the criticality of effective HSE management and programmes. Leading companies are now looking at HSE as an investment in both current and future success, not only a non-revenue generating cost centre. The real business value of strong HSE performance is immeasurable. ■





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Hi-Force to manufacture aluminium hydraulic jacks

UK'S LEADING MANUFACTURER of high pressure hydraulic tools Hi-Force has taken over all the manufacturing rights to produce a wide range of lightweight aluminium jacks, previously manufactured and sold under the ASTRO brand. The deal was concluded in August 2015.

As part of the deal four HAAS CNC Machines and associated tooling were transferred from ASTRO facilities, in Birmingham, to the Hi-Force manufacturing plant in Daventry, Northants, where they are now producing component parts, under the strict quality control of Hi-Force.

Hi-Force has for many years been marketing its own range of JAH Series lightweight aluminium jacks, under an own brand agreement with ASTRO. This currently comprises eighteen models, available in 20, 30 and 60 tonnes lifting capacities, with a choice of 152mm or 305mm lifting heights and options like claw attachments for "toe lifting" and mechanical lock rings, for sustained load holding. Predominantly made of lightweight aluminium, the design of these jacks makes them useful in a wide variety of industries, including aerospace, railways, defence, steel and aluminium plants and heavy industries worldwide.

Expressing his pleasure at a further significant expansion of Hi-Force in-house manufacturing capability, Hi-Force group



JAH series lightweight aluminium jack

managing director Kevin Brown said, "Once we get production into full swing and we are able to offer our global customer base, product from stock, I am confident that our sales of this highly popular range of products will continue to grow at a healthy rate. Secondly, we are well advanced in the planning and design of additional models, to

add to the range, particularly focused towards the aerospace industry, where we see tremendous potential."

Customers who previously bought jacks from ASTRO, either under the ASTRO brand name or as own-branded product, are invited to contact Hi-Force, to discuss any future requirements for lightweight aluminium jacks and/or spare parts.

Zahara Group eyeing growth in petroleum products trading

ZAHARA GROUP HAS been involved in the downstream petroleum products trading across Middle East for the last twenty years. It has expanded its presence in the UAE, Saudi Arabia, Kuwait, India and Singapore since its inception. Encouraged by its continued success and having gathered vital sector experience, Zahara Group is now ready to take its trading capabilities to the next level.

In emerging economies, the demand for global crude oil and downstream petroleum products like diesel, base oils, bitumen, naphtha and others is on the rise. Taking a look at the global market - base oil is set to grow at more than one per cent annually until 2020 and the bitumen market is set to grow at whopping 3.6 per cent annually until 2017. With bulk of the future demand expected from Asia, Middle East and Africa, the trade hubs like the UAE is set to see an increased transactional activity.

In this increasingly vibrant trading atmosphere and all time low price of oil, owning a storage terminal might become a strategic asset for a petroleum product trading company. With a third of global oil exports passing through the region, the addition of oil terminal at a strategic location is expected to boost the trading capabilities of any firm. It can bring enhanced flexibility in pricing, provide ability to fulfill bulk orders and empower Zahara to meet fragmented distribution requirements as well. Given the rising traffic in Hamriyah port and the wide trading network established by Zahara during last 20 years, commissioning of a storage terminal at Hamriyah Free Zone Phase 1, close to the Strait of Hormuz, is a good idea to leverage this increased trading activity.

For the project, Zahara has already leased a land of 10,000 sqm area to build nine storage tanks with the total capacity of 73848 cu/m complying with all health, safety and environmental standards. The terminal will cater



An oil terminal at a strategic location can boost a firm's trading capabilities. (Image source: Zahara Energy)

to Class I, Class II as well Class III petroleum products. The capacity dedicated to each class of petroleum product has been decided after analysing the trading requirement of the firm.

The project will be equipped with state-of-the-art fire detection and protection system and latest instrumentation and control systems. Strategic features like jetty lines; water separation system and blending system will be part of the facility. All essential support systems like nitrogen generation package unit, Hot Oil System for fuel oil and bitumen storage tanks are also included in the project. The tank terminal project will consist of computer control and data acquisition system, which will carry out real-time monitoring and management to the entire tank terminal and its corollary facilities, realising automation of the storage and transportation system of the tank terminal. The PLC based control system, Emergency Shutdown System, CCTV System, telecommunication systems, weigh bridge system and interfaces to other systems will collect and provide data to assist in optimising the terminal operations.

The oil storage terminal is expected to be operational in Q3 2016.



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GLOBAL PRESENCE

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Bulk launches new sunshade to protect electronic instruments

ELECTRONIC EQUIPMENT INSTALLED on field requires protection from high ambient temperatures and direct sunlight. Bulk's new sunshade TYPE 115, made in hot pressed glassfibre reinforced polyester (GRP) is suited to protecting instruments with extremely compact dimensions from solar radiation.

Non-flammable and self-extinguishing, the sunshade has a "V" classification according to UL 94 June 2009 (Istituto Giordano test report nr 311399). It is resistant to most corrosive types of industrial environments, acids and alkalis, as well as to the absorption of hydrocarbons.

The sunshade has a high structural strength and is UV resistant according to ISO 179-1 (IMQ test report 43SL00177), with a working temperature range between -40°C and +100°C. It has been positively tested in a wind tunnel with speeds of up to 160 km/h (Politecnico di Milano test report nr P48-07), and is suitable for pipestand or wall/panel mounting.

Bulk protection systems are designed to reduce the malfunctioning of instruments as a result of environmental causes, and to guarantee long life, thus contributing to a considerable reduction in plant maintenance costs. The objective is guarantee maximum protection for instrumentation against corrosive agents, atmospheric events, frost, shocks and fire.

Further information is available at www.bulksrl.it.



The Bulk instrument enclosure and sunshade

RhinoBoat launched for offshore oil and gas use

DUBAI'S MARSOL INTERNATIONAL has introduced a multipurpose workboat Rhino Craft specifically for the oil and gas industry. The vehicle functions as a support vessel for maintenance operations (a sound replacement for small, inflatable boats) as well as the ability to assist with firefighting duties.

Rhino Craft can also be used as a Dive SRP boat - a game changer according to Marsol International managing director Mike Young. "The practical applications of this craft are immense. Offering Rhino Craft to the offshore oil and gas market is at the request of our clients, and our years of operational experience, who have a need for a multi-purpose support vessel tailored to meet their needs," he said.



Mike Young and the Marsol team at the Rhino Craft launch

Rhino Craft hulls are fabricated from High Density Polyethylene (HDPE) which is a ductile, high strength plastic with excellent abrasion, UV and chemical resistance. HDPE is ideally suited to use in harsh environments and is easy to repair by relatively unskilled staff when damaged. These qualities make Rhino Craft tailor-made for the offshore oil and gas market where the conditions are rough and craft are exposed to severe impact loadings.

Marsol International leads a number of initiatives in the marine sector including emergency pipeline repair, hose management, asset integrity management, and MIRMO (management, inspection, repair maintenance, and operation) of offshore terminals. Rhino Craft's versatility ensures the right craft is used for the job, ensuring safe, efficient, and high quality operations, said Young.

Real-time reporting necessary for good HSE practice

AS AN EXHIBITOR at Middle East Health & Safety Forum, Enablon showcased its broad range of solutions which cover Sustainability, EHS and Risk compliance management for industries from O&G to pharmaceuticals to fashion.

Enablon offers the industry's most comprehensive software platform with technology, content and services that help organisations manage risks, ensure compliance and continually improve performance.

Steven Robinson, global account manager at Enablon, explained, "The advantage we have is that we offer a complete package — when a client has a particular business need, they can start off anywhere in our product range and then expand and add other modules as and when needed. This saves them the time and expense of going to another vendor."

On the EHS side, Robinson said that the firm effectively helps create action plans, track completion, manage reminders, ensure follow-up and create reports for clients. This helps drive improvement starting by gaining better understanding current performance levels.

Enablon dashboards can display relevant reports of incidents in real-time and manage the corrective measures that can be taken immediately.

"We help our clients capture that information in real-time so they can start analysing the data, seeing trends, seeing areas of improvement and improving in a much faster way than they would otherwise, and compared to their competitors."

Enablon Incident Management software allows companies to identify new areas for improvement through analysis of the underlying causes of the incidents, dashboards and reports for monitoring progress, automatic warnings in the event of significant disparities with regard to targets or prevailing legislation, and data traceability and audit ability facilitates achievement and/or maintenance of OHSAS 18001 certification.

Talking about the event, Robinson said, "The forum had a very interesting panel session on HSE laws. Some of the organisations involved in the legal side of things said that companies in the region have two challenges — firstly to understand the regulations and legislation which they need to comply with, and secondly to manage that process of achieving compliance within their organisation. That's a challenge for all businesses around the world, including within the GCC, and that's where Enablon can significantly help."

SOC chooses Intertek for quality control of oil and gas projects

SOLUTIONS PROVIDER INTERTEK has won a third party inspection procurement contract from Iraq's South Oil Company (SOC) to step up quality and safety of projects contracted to oil and gas companies. The UAE company's scope of work includes conducting inspections of components and materials used by SOC-managed oil and gas

companies. Intertek staff will also verify the quality of products and processes throughout the supply chain – right from sourcing materials through to the manufacturing and fabrication of products. Additionally, some technical inspection services will take place at the factories to oversee the way production processes are

piloted, ensure they comply with international standards and adhere to specifications set by the client. Other inspections and testing will be conducted in Intertek laboratories across the world. This is the first time SOC has appointed a third party inspection company to ensure the quality and safety of their projects.

Eaton launches high collapse-resistant thermoplastic hose

POWER MANAGEMENT COMPANY Eaton has introduced the Synflex® 33CH-08 high collapse resistant thermoplastic hose, designed mainly for subsea oil and gas applications. The new hose features a liner tube made of polyvinylidene fluoride (PVDF), which can handle fluids with higher concentrations of acid and lowers permeability with methanol and other similar fluids. The hose can manage hydraulic flying leads, Installation/Intervention Work Over Control (IWOC) umbilical hoses, high flow rate applications and methanol injection.

Yokogawa's Exaquantum R3.01 for enhanced oil and gas data results

YOKOGAWA ELECTRIC CORPORATION has released the Exaquantum R3.01 plant management system, which delivers a six-fold increase in data acquisition performance and can handle five times as many data points. Plant operators need to keep track of temperature, pressure and other kinds of data to improve plant operations, and the Exaquantum R3.01 delivers a quantum increase in data acquisition speed and the number of tags that can be handled by a server, giving plant operators detailed data.

The upgraded version provides increased data acquisition and processing speed of 600,000 tag updates per minute – six times faster than the company's previous release. In less time, this software can obtain more detailed information on the changes that are taking place in a plant's processes. Being able to handle up to 500,000 tags and more, customers have a more information at their disposal. By analysing a wider range of process data, they can obtain an accurate understanding of a process and zero in on solutions that will improve their plant operations.

Additionally, users can now access their data not only from a browser on a desktop or laptop PC, but also from any Windows or iOS tablet. Exaquantum R3.01 comes with an improved conversion tool that allows users to convert Exaquantum R3.01 graphic windows so that they can be viewed from inside an operation and monitoring window (graphic window) of Yokogawa's flagship product, the CENTUM(R) VP integrated production control system. This conversion tool now has the capability to simultaneously convert multiple process graphics.

Eaton product manager Johannes Kammerlohr said, "The 33CH-08 is the latest addition to Eaton's Synflex line of subsea hose products, built to meet the evolving needs of the oil and gas industry. In handling fluids with high concentrations of acid, and significantly reducing permeation of methanol-type fluids, this hose product will help end users achieve their production goals both safely and sustainably."

Comprising a stainless steel carcass, which is reinforced with two braids of Kevlar aramid fibre, the 33CH-08 hose is jacketed with blue polyurethane. The blue colouring makes the hose

easily identifiable underwater compared to conventional subsea hoses. The jacket is pin-pricked in accordance with American Petroleum Institute (API) specification 17E.

The new hose is rated for 345 bar (5000 psi) working pressure (WP), with a full ISO 13628-5 rating, including a 4-to-1 burst to WP ratio and more than 200,000 test cycles at 460 bar (6650 psi). The 33CH-08 is expected for use at temperatures from -40°C to +70°C, and is lightweight at only 23 kg per 30 m (50.1 pounds per 100 feet). It is available in continuous lengths of up to 3 km.



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The drive to reduce spending and increase efficiency

Oil Review Middle East speaks to Philippe Marceau, executive vice president of enterprise engineering software provider Intergraph® Process, Power & Marine.

How is business going for you currently in the Middle East?

Despite the economic challenges the oil and gas industry has witnessed lately, it is good to see that Intergraph® Process, Power & Marine clients continue to put their faith in our solutions. This has enabled us to see record revenues over the past year, further increasing the distance between us and the competition in the region.

One of the recent customer success highlights is the YASREF project, where Intergraph SmartPlant® Enterprise solutions were chosen to optimise the operation and maintenance of YASREF's full-conversion refinery. This is a complex and large project, including the construction and operation of a 400,000 bpd integrated petroleum refinery in Saudi Arabia.

Which of your applications are you seeing a demand for in the Middle East, and what are the benefits?

There has been increased adoption of SmartPlant Enterprise solutions by owner operators who are dedicated to decrease CAPEX and OPEX expenditures, deliver projects faster and safer, while improving overall efficiency.

At the same time, SmartPlant Fusion is gaining ground in companies that are eager to lengthen the life cycle of their existing assets and maximise the quality of asset information. SmartPlant Fusion is an easy-to-use and fast to implement engineering information management system that enables users to dramatically reduce the time and effort required to find and validate engineering documents, discover content that would otherwise be hidden, and avoid bad decisions caused by relying on the wrong information.

Intergraph's SmartPlant Cloud is the first technology in the sector to facilitate the use of a full range of solutions – Intergraph, third-party and in-house – through a cloud-based option. The availability of information helps companies to reduce project risk, shorten project schedules by maximising reuse of data, and stop data erosion in projects.

How do you view prospects for your business in the Middle East, and how are you looking to develop your business further?

We can see that more advanced, next-generation engineering solutions are clearly becoming more and more popular. These solutions make all the engineering data and information available at all levels of the organisation, which makes all the difference when operating a plant.

So these solutions help to make the existing engineering

“ More advanced, next-generation engineering solutions are clearly becoming more popular”



Philippe Marceau, executive vice president, Intergraph® Process, Power & Marine

information more intelligent, and provide our customers with significant productivity gains and increased plant uptime, in other words, killing inefficiency!

Are there any particular issues or challenges you have come up against?

During the past year, we have witnessed the growing need in the industry to minimise CAPEX and OPEX as well as to enhance both productivity and efficiency, to tackle the challenges related to the oil price. Having the right tools in place helps companies to adapt to changing economic and industry climates – no matter what happens, the next-generation solutions can help companies to adjust their business effectively.

What do you think are the main ingredients for achieving success in the Middle East?

The key is to understand the unique requirements and challenges in the region, and to be able to provide adequate solutions to enable businesses to overcome these threats. There are of course also cultural factors to be taken into consideration, thus having a strong local presence is an important ingredient for success. ■

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GENAVCO Power Package (GPP) launched

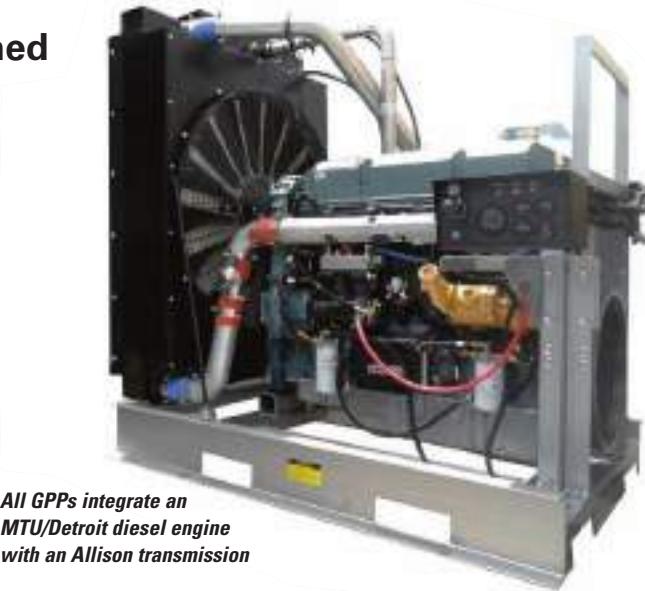
ESTABLISHED IN 1967, General Navigation and Commerce Company (GENAVCO) LLC, a member of the Juma Al Majid Group, has maintained its position as a major supplier of industrial, construction, material handling equipment and commercial vehicles in the UAE.

GENAVCO provides a range of high quality products from around the globe, representing world leading brands such as MTU and Detroit Diesel Engines, Allison Transmission, Isuzu Commercial Vehicle, British Petroleum (BP) Lubricants, Vogelev Asphalt Pavers, JLG Aerial Work Platform, Kleemann & Terex Crushing and Screening Equipment, Wirtgen Road Milling & Recycling Machines, Benninghoven Asphalt Plants, Hamm Rollers, Liebherr Construction Equipment, SDMO Diesel Generators, Boge Stationary Air Compressors, CompAir Portable Air Compressors, Crown Electric Forklifts, and Flexi Narrow Aisle Articulated Lift Trucks.

GENAVCO has a longstanding relationship with Detroit Diesel Co. and Allison Transmission (GM), beginning in 1967. Since then, the company has invested in order to develop the level of service provided to its customers, and extend its product range. Its qualified, trained and highly expert technicians and engineers are able to provide overhaul for all models and provide technical training for key international customers.

GENAVCO's position has been enhanced this year by the signing of an agreement with MTU/Allison to promote its own developed Power Package product throughout the MENA region.

MTU is one of the world's leading manufacturers of large diesel engines and complete propulsion systems. Its robust and durable engines reliably propel large ships, heavy agricultural and rail vehicles, and industrial applications. While Indianapolis-based Allison Transmission is the world's largest manufacturer of commercial-duty automatic transmissions and hybrid propulsion systems, with an international presence spanning more than 80 countries. Its products



All GPPs integrate an MTU/Detroit diesel engine with an Allison transmission

are specified by more than 300 of the world's leading vehicle manufacturers and are used in a range of market sectors.

The GENAVCO Power Package (GPP) is built to suit the need of today's pumping units, delivering high performance, efficiency and reliability, even under extreme conditions. From 300HP up to 2500HP, all GPPs integrate an MTU/Detroit diesel engine with an Allison transmission, complete with all the components. All components are engineered to meet the highest quality standards and designed for easy serviceability. Several options are available to meet specific work needs, and GENAVCO parts and service solutions, as well as expert support, are available in the Middle East region.

Stevens Supply celebrates 15 years in the industry

DUBAI-BASED OILFIELD specialty supplier Stevens Supply International (SSI) is celebrating 15 years of excellence in the oil and gas industry this year. Since its beginning in 2000, SSI has been providing the oil, gas, and energy related industries with the best products and service available and has become the company the industry turns to when they have to have the right product and the best service possible, on time, every time.

Representing some of the premier manufacturers of oil and gas equipment, Stevens Supply offers its extensive list of clients a one-stop shop solution for all of their supply needs. In addition, Stevens Supply provides agency services to some of the region's premier service providers for both upstream and downstream operations.

Bobby Stevens said, "Having my own business had been a lifelong dream of mine. I realised after first arriving in Dubai in the early 90's that this region would be a fantastic location to do just that. After working as a field engineer and then in a sales role, I decided in the year 2000 to have a go at it and started Stevens Supply. I had no idea what an interesting



Bobby Stevens



Dubai, with its excellent infrastructure, has proved to be the ideal base for the company (Photo: Michael Theis)

and eventful journey I had set off on, and as I look back over the past 15 years I realise how fortunate I have been. Although the industry is experiencing one of, if not the, worst downturns I have seen in my 35 years in the business, I still enjoy being a part of and a player in what I consider the most important industry in the world. I am extremely grateful for the support the people of this industry have given me over the past 15 years and look forward to the next 15, and all the challenges and opportunity for success they will bring."

Cost efficiency in oil and gas solutions key to maximising profits

TRANS ASIA PIPELINE Services specialises in the pre-commissioning of newly-constructed pipelines that are inspected and certified as fit-to-service. Managing director Surendranath Dhanekula spoke to *Oil Review Middle East* about the company's projects and diversification plans. The Middle East is a primary target market, he stated. "We are seeing some major projects being awarded in the UAE, Kuwait and Saudi Arabia with each nation wanting to increase production capacity."

The oil prices have caused several oil and gas companies and their related service sectors to re-strategise profit making plans. "In general, the oil and gas market is the prime mover of growth in the region, so any volatility and downturn in oil price does affect the market seriously. Existing projects and ones under execution do not get impacted but new projects usually do. We expect that the new project awards might get slowed down or might



Trans Asia Pipeline Services offers versatile pipeline solutions for clients

altogether be put on hold."

At such a time, the challenge is for companies like Trans Asia Pipeline Services to provide innovative engineered solutions to the clients. Operational efficiency is the buzzword of oil companies, EPC contractors and service companies. "At ADIPEC, we are also trying to look for innovative products and services to supplement and complement our core competencies in

addition to diversification."

In addition to maximising opportunities at ADIPEC, Trans Asia Pipeline Services is keen to capitalise on its versatility in offering solutions. "Clients in the oil and gas industry are looking more frequently for a single source to provide them with all their pre-commissioning and maintenance needs rather than having to deal with a number of contractors for individual services. Our capabilities allow us to get involved in the early phases of a project and look at potential problems before they have a huge impact on the execution schedule. The savings made alone by remedial work can actually cover the cost of the total precommissioning work if the planning is not done from the initial stages."

Cost efficiency includes in-house packaging and customised designs. A readily available inventory of equipment allows the company to manage utilisation and pass on cost savings to clients as well.

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R. STAHL's LED lights deliver glowing performance

UNLIKE CONVENTIONAL LINEAR luminaires that are ill-equipped to withstand extreme temperatures and harsh environments, LED tube lights from R. STAHL's 6036 Series, however, are quite a different calibre. They can tolerate temperatures as low as -55°C and are, therefore, suitable for applications such as LPG exploration in the Arctic region. On the other end of the spectrum, they withstand heat up to +60°C and also tolerate extreme temperature fluctuations.



The lightweight R. STAHL Series 6036 tubular light fitting (Photo: R. STAHL)

The LED tube lights are available with an IP66, IP67 or IP68 ingress protection rating, suitable also for maritime applications. They are vibration-proof and impact-resistant up to IK 10. Available in 0.75 metres, 1.1 metres, and 1.4 metres versions, these durable units feature a nominal lifespan of 80,000 hours. While their design is very rugged, the LED tube lights are absolute lightweights — having a maximum weight of 2.45 kg amounts to less than half that of comparable linear luminaires. The low-maintenance products are suitable for general lighting purposes or for use as machine lamps. Due to their slim design, they are easy to install even in hard-to-access locations.

In addition, the 6036 series is extraordinarily light-efficient: the overall power consumption is only about half that of conventional box-type units and the specific power consumption per 100 lx is merely 1.5 watt/sq m. Operating expenses are, therefore, greatly reduced and realistic cost savings range from some 20 per cent to more than 50 per cent.

In addition to ATEX and IECEx certificates for zones 1/21 and 2/22, the lights feature many regional approvals for many major markets (EAC TR CU, Gazpromnadzor, UL do Brasil, GL). The versatility of the series is further enhanced by the choice of connection cables. While H07RN-F is the default cable, users can also choose Thermflex, low-temperature, special offshore cables, or cables that are high-voltage-proof up to 1 kV.

New range of explosion protected network cameras from Axis Communications

AXIS COMMUNICATIONS (AXIS), the Sweden-based manufacturer of network cameras, has introduced its first explosion protected network cameras. With a stainless steel housing and full HDTV resolution image, the Q1765 cameras are ideally suited for video surveillance monitoring of onshore, offshore, marine and heavy industrial environments, such as the oil and gas industry, as well as dusty environments, such as paper and textile industries.

The XF40-Q1765 Explosion Protected Fixed Network Camera and XP40-Q1765 Explosion Protected PTZ Network Camera both feature a 316 litre stainless steel housing certified for hazardous areas, and are fitted with customized AXIS Q1765-LE Network Cameras.

The cameras are designed not to cause an explosion. Their housings prevent any spark or explosion inside the housing to escape and ignite gases or dust in the surrounding air. The cameras can also be equipped with certified, explosion protected accessories, such as wall mounts, pole top brackets and a pressurised washer tank.

They provide high-definition image quality and colour fidelity, as well as a high level of flexible integration with other



The new range of cameras is well-suited for hazardous areas like oil and gas refineries. (Photo: Axis Communications)

equipment, such as access control and fire alarms. They also offer flexible remote accessibility, using any existing IP-based networks. The XP40-Q1765 also offers continuous 360° pan-tilt control.

"With the new explosion protected network cameras, we are offering plant managers in the oil, gas, chemical processing, paper and textile industries a powerful video surveillance monitoring solution for hazardous areas," says Roy Alves, business development manager for Middle East and Africa at Axis.

The cameras are supported by the industry's largest base of video management software through the Axis Application Development Partner Programme, and AXIS Camera Station. The cameras also include support for AXIS Camera Application Platform and ONVIF for easy camera system integration and for application developers to provide the camera with intelligent capabilities.

"In addition, Axis' broad safe area product portfolio complements these two new cameras, opening for new installations in new markets.

We have partnered with Oxalis, a member of Eaton Corp., combining our profound knowledge of digital network systems with the expertise in explosion protection of Oxalis," said Alves. Oxalis is manufacturing and certifying the cameras' stainless steel housing.

The explosion protected network cameras and their accessories are expected to be available in Q4 2015 through Axis distribution channels.

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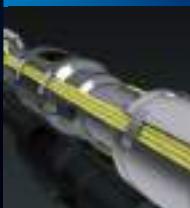
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When oversupply is good news

The oil price is going down due to oversupply. So too is the price of satellite bandwidth - and for similar reasons. What does this mean for energy companies - and can they look forward to an extended period of falling communications costs? With the help of two industry experts, Vaughan O'Grady looks at the present - and possible future - of satellite capacity pricing.

AS OIL PRICES tumble, some energy companies are trying to cut all costs – including their communications costs. But Susan Bull, senior consultant with specialised satellite communications consultancy Comsys, argues that this isn't necessarily a rational approach.

For example, a telecommunications service provider may charge an E&P operation, say, US\$10,000 a month, but the daily rig rental fee would dwarf that – at up to, and possibly beyond, US\$200,000 a day. Thus, if the energy company mandates 20 per cent costs across the board, this may not produce the desired efficiencies, Bull points out. Why cut a telecommunications service that costs, in relative terms, very little and that could make a major difference to operational efficiency – not to mention the health and safety of staff on the rig? "Blanket cost-cutting isn't thinking things through and will have material effects," Bull says.

A more measured approach

But a more measured approach might be simply to wait for market forces to do the job. Telecommunications costs are already falling. On land, consumer prices haven't risen much for services and yet bandwidth availability is going up, usage is going up and traffic is going up, effectively giving users more for the same outlay. "It's no different for satellites," says Bull. "Pricing for satellite capacity is coming down significantly across the world."

What is causing this price drop? In part, it's a result of the rush to market with HTS* and Ka band services. These may not have directly addressed the energy sector, but the extra capacity they are supplying has had an effect on pricing in that sector. However, Brad Grady, senior analyst with satellite industry market research and consulting services company NSR, argues that bands are less influential than the service they



The extra capacity HTSs are supplying has had an effect on pricing in the energy sector.

operate on. "It's really HTS that's changing the pricing dynamics and HTS could be any frequency," he points out. "It's people like Intelsat (with Epic), Eutelsat and SES, and others like O3B, which is a non-GEO** HTS system, that are putting pressures on the market."

“ It's really HTS that's changing the pricing dynamics and HTS could be any frequency.”

As is the growth of certain non-oil sectors. Grady says, "A lot of people are bringing capacity onto the aeronautical market. That's really changing the price points – and is going to trickle down to oil and gas and maritime. Also a lot more maritime customers are moving to VSAT. That means more bandwidth and a lot more maritime capacity coming online. So the price points are definitely lowering. And end users are recognising that."

Bandwidth price fall unplanned

But the falling price of bandwidth was not planned. "I do not believe that anybody looked at the business case," Bull suggests, citing the lack of business model, the difficulties of selling space to multiple operators, and managing the extra bandwidth HTS implies, as well as the arrival of fibre in key satellite markets such as Africa and formerly underserved parts of the Middle East. Even before HTS the price per mega amp was going down, and then HTS launches began offering five or 20 or more times the capacity of a normal satellite. What will that do to pricing? "It's already doing it," Bull says. "It will help the energy business because it's pushing the price of satellite capacity down."

However, the energy business doesn't necessarily hold all the cards. "Drilling has gone further offshore so satellite is more vital – certainly for deepwater," says Bull. "And you can't fibre up an offshore service vessel. Satellite will be there one way or another." Even here, however, newer service provider players like Speedcast and ITC Global are threatening the former dominance

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of Harris CapRock, and RigNet, and giving energy companies a bit more leverage when negotiating contracts.

A non-satellite alternative?

Grady suggests that there may be a non-satellite alternative in certain cases. "Terrestrial microwave communications continues to be able to push further and further and deeper and deeper – so there's still that hedge," he says, but he agrees that offshore needs satellite. However he adds: "The satellite industry needs oil and gas. I'm not saying you can build an entire satellite business case on this market. But it's not an insignificant amount of capacity and revenues being generated."

That's the situation at present. How about the future? Well, more flexibility in choosing bands might help energy companies save even more money. Harris CapRock, a major player in the provision of managed communications services in remote locations, might argue that this future is already here. It recently announced CapRock One – an intelligent service delivery architecture using proprietary multi-band stabilised antennas.

Bull is impressed with the ambition of the project and agrees that multi-frequency antennas are a likely way forward. She does, however, question the timing of what is going to be a fairly expensive system – especially if you want built-in redundancy. On the other hand, when CapRock One was being developed, oil prices weren't expected to slip much below US\$100 a barrel, let alone US\$50. At that time, affordability may have been less important than reliability. Nevertheless, while it's easy to argue that the market for CapRock One may not be as strong, Bull says she understands the service shows promise.

A sign of things to come

But CapRock One is still a sign of things to come. "Everything's going to go to multi-band flexibility," Grady says, "and there are a number of reasons." He cites changing prices, access or regulatory requirements from region to region – or just that one band works better than another in a given place. Clearly being able to change band would be helpful for energy companies moving rigs or vessels around the world or a region. But it also makes sense from a service provider perspective. "One of the biggest headaches for service providers is end users who want more capacity but they can't give it to them," says Grady. "They would have to make a deal with competitors or go to the spot market, which could be very expensive. If they had a multi-band terminal that could either switch to new frequencies or take in multiple frequencies at once it wouldn't be too big an issue to dynamically configure these remote networks. And a service



High Throughput Satellites: Laying the foundations for investment and financing. (Image courtesy: Fieldfisher)

provider could manage its costs because it could get the lowest available price for capacity that it needs."

Room to add antennas

Multi-band is not the only possibility, he adds. There's now room to add antennas if you prefer. "Antennas are getting smaller and have higher performance, plus smaller dish size," Grady explains. "Companies are coming out with flat panel antenna architectures that have fewer moving parts. They're smaller, they're lighter, they don't take up so much space but they have similar performance to a 1.2 metre Ku band dish."

“At the offshore installation end of the equation the bandwidth needs of the oil and gas market are going to change and grow.”

But there's another possibility – one that may bring better news for communications providers. At the offshore installation end of the equation the bandwidth needs of the oil and gas market are going to change and grow. Many more apps are becoming available for helping staff to manage activity on the rig. Many more sensors are monitoring equipment, which means much more information being transmitted from the rig to the shore. Video feeds and streams – especially in real time – may use even more capacity – especially as the evolving rig automation process reduces staff numbers in remote locations. Much further down the line, drones and robots, undersea and in the air, could eventually send information to people in Houston or Aberdeen monitoring drill sites from thousands of miles away.

But some of this will be high bandwidth real-time data. How can it be sent back to head office? One possible answer is HTS – but not just from GEO and MEO constellations but low earth orbit (LEO****) constellations – like the recently announced deal in which Intelsat and OneWeb plan to build, deploy and operate a LEO Ku-band

satellite constellation. That means less latency and more capacity. That also means, in theory, more effective real-time monitoring of rig operations at a distance.

That scenario, admittedly, is some years off – 2019 in the case of Intelsat and OneWeb. But by then will service providers be serving a buoyant or troubled energy market? Will demand rise to meet extra capacity availability or will new entrants and established players end up dumping excess capacity on markets that don't need it, further depressing prices? Will the accelerating pace of technological change and new sources of capacity boost or challenge the companies that supply oil, gas and other sectors with satellite communications?

No one really knows. Even the experts aren't sure. Susan Bull spoke at the VSAT 2015 event, which took place recently in London. She summed things up rather well when she said: "The potential technological change – born from necessity – now promises to change the fundamentals of the satcoms market. And I'm not just talking about LEOs! Wherever you look – antennas, modems, spacecraft, launchers, business models, M&A, competition, demand – it's all being thrown into the air!" ■

Notes:

*HTS refers to high throughput satellites, which use a number of technological advances to allow a significant increase in bandwidth capacity

**A GEO — or geosynchronous — orbit is one where a satellite maintains the same position relative to the earth's surface. It is usually more than 35,000 km above the earth. O3B is a MEO — medium earth orbit — satellite constellation at an altitude of about 8,000 km.

***Low earth orbit (LEO) satellites are even closer to the earth. The closer the satellite the higher the bandwidth and the lower the latency. But a higher orbit gives greater coverage from fewer satellites.

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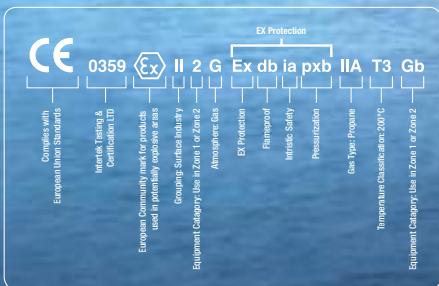
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New frontiers in downstream IT

Scott Fleck, chief strategy and technology officer, outlines Schneider Electric's inventory management system for enhancing accuracy and speed of information transfer between terminals and suppliers.



*The information management side of the oil and gas industry is still coming of age
(Photo: Philip Lange / Shutterstock)*

THE FLOW OF information is becoming just as important as the flow of product in the downstream oil and gas industry. Critical operational data needs to get to the right place, at the right time, and with a high degree of accuracy.

In recent years, new solutions have been developed to support the efficient and accurate flow of information, and yet the industry is still playing catch-up in the information age. We have begun addressing some issues, such as paper bills of lading (BOL), with suppliers and customers now able to receive streamlined electronic BOLs almost instantaneously after a load is pulled from the terminal.

However, when it comes to inventory balances and bulk movement activity, the

“ The information flow between terminals and suppliers has been operating at pre-21st century levels”

information flow between terminals and suppliers has been operating at pre-21st century levels. This critical information is required to be transferred daily from terminal and pipeline operators to suppliers, and, until recently, was sent mostly via email or fax. When considering suppliers managing dozens of products across large terminal networks are receiving hundreds of these

disparate reports a day, the potential information management challenges can turn from a headache into a full-blown migraine, at the risk of potential supply shortages, increased costs and lost revenue.

To facilitate the flow of information, terminals and suppliers need a streamlined solution that improves the accuracy and efficiency of information transfer. Additionally, breaking new ground in managing inventory data creates the opportunity to integrate with other terminal data to create new insights and analysis.

Modern data flow

Terminals are required to provide daily inventory reports to suppliers. Suppliers rely on these reports to support many of their operations, including supply, contract and

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risk management. Terminal operators record this information, often manually, and send it to their suppliers in various forms. Until recently, the primary options for sending have been email, or even fax.

Now imagine you're an inventory manager for a major supplier. You are likely tracking dozens of products and customer contracts across hundreds of terminals. This means each day, you would receive hundreds of individual reports, at different times, and each with its own individual format and each needing to be individually entered and validated against existing data before being delivered for analysis and decision-making.

This is a data management nightmare and it has far reaching ramifications.

First, the resources needed to collect and enter in all the data to balance the inventory books for the day are significant, and grow with the size and scope of supply operations. Second, all the manual data-handling, on both the collection and entry side, creates many opportunities for human error, which, because of the scope of the data being collected, is also hard for human monitors to catch. Third, any errors or delays in this data-entry process can have significant business ramifications, namely supply unexpectedly running out at a terminal, or needlessly shipping extra product at less-than-ideal margins, or even a loss to prevent a phantom outage.

As a solution, Schneider Electric has developed a streamlined inventory management system that simplifies the communication process for terminals and suppliers, while automating the standardisation and validation of inventory reports for suppliers to enhance the accuracy and speed of information.

When there is a central, digital source of shared data, multiple parties benefit from the accuracy and efficiency of the inventory management system process. This is a concept Schneider Electric has used in the past for eBOL (electronic bills of lading) management and is now applying to daily inventory reporting.

Instead of receiving dozens, or hundreds, of individual reports, a terminal inventory management system, or TIMS, collates everything into one report formatted to be compatible for entry into the supplier's back office systems. In the downstream petroleum market, TIMS helps operators

“ Maximising the benefits of TIMS can help reduce the capital deployed into the terminals”



Streamlined processes offer the potential for efficiency savings
(Photo: Stockphoto mania /Shutterstock)

automate the aggregation, translation and delivery of inventory and pipeline-related data from proprietary and third-party pipeline and terminal networks. By accessing high-quality information through a single interface, schedulers, supply and marketing analysts, inventory accountants and risk management are positioned to do their jobs more effectively.

Integrating data

Even greater potential for efficiency exists in what TIMS information can deliver when integrated with other information in the downstream supply chain.

As an example, suppliers have had the ability for several years to track in near real-time the individual outbound transactions across their terminals. Terminal automation solutions in conjunction with web-based lifting control systems collect and provide information to suppliers on each load pulled by a given customer. By compiling and analysing that data over a period of time, suppliers can develop demand forecasts for individual products at individual terminals, helping them predict when and where they will need to provide supply.

Terminal automation solutions only provide insights on forecasted outbound product. Without accurate and timely information on inventory levels and the scheduled delivery of supply to the terminals, an accurate demand forecast merely reduces the amount of guesswork needed to manage supply.

TIMS incorporates supply-side information into the inventory management equation. By incorporating information from transportation schedulers and demand forecasts derived from lifting control systems data, along with accurate inventory reports, suppliers can receive automated

notifications of when demand is forecasted to outstrip supply. Receiving these warnings as far in advance as possible is critical because whether shipping product by pipeline, rail or truck, it can sometimes take weeks to deliver a new infusion of supply. Early warning gives suppliers the ability to evaluate options and make these moves early, as well as adjust lifting permissions for customers to ensure no contract goes unfilled.

As this integration becomes more seamless, suppliers will get closer to true real-time inventory monitoring.

Capital savings

Maximising the benefits of TIMS can help reduce the capital deployed into the terminals. Of course, there is a direct link between the amount of inventory and capital investment.

If terminal suppliers gain the ability to better manage their inventory levels, they have the opportunity to decrease the amount of capital they commit in the terminals.

TIMS provides the visibility into the distribution network that allows for decisions to be based on real-time, comprehensive and accurate data. Suppliers who lack access to TIMS and are still relying on paper-based data gathering and validation are going to err on the side of having extra fuel products at the terminal sites. That's because they fear supply outages. However, with excellent visibility of the supply chain, a supplier can reduce inventory, and the net benefit is less capital deployed for a given product.

The information management side of the oil and gas industry is still coming of age, but future benefits like these are not far off. Continuing to identify ways to not only streamline data, but increase integration across the enterprise, will ensure those benefits come sooner rather than later. ■



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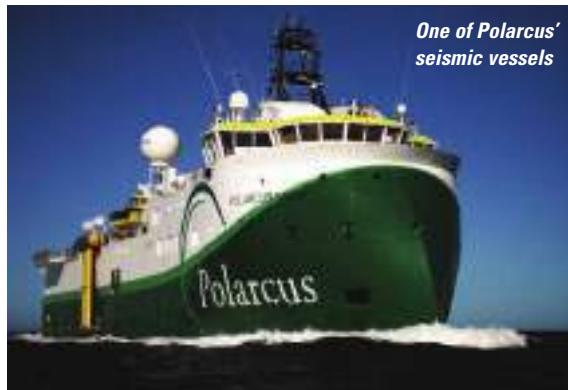
Polarcus extends global VSAT contract

DUBAI-BASED GEOPHYSICAL SERVICES company Polarcus has extended its global VSAT (Very Small Aperture Terminal) contract with Marlink for a further three years. The contract includes on-going provision of reliable voice and data connectivity through Sealink, Marlink's C-band VSAT solution for Polarcus' fleet of seismic vessels. This year the fleet will also be migrated from a dedicated configuration to a shared non-contended configuration using the new iDirect X7 modem to benefit from more dynamic bandwidth allocation to optimise connectivity.

Marlink provides VSAT based broadband connectivity to support Polarcus' vessel operations and enables the fleet to operate safely and efficiently worldwide. Using smart IP connectivity from Marlink, Polarcus can monitor advanced operations from shore and execute quick interventions when needed.

"Reliable connectivity on board is essential to achieving safe and efficient operations, and our experience with Marlink so far has shown that they can deliver the availability and quality of service fulfilling both our own and our clients' needs," said Magnus Oberg, VP IT, Polarcus.

As part of the contract extension with Marlink, Polarcus will continue to receive reliable global VSAT coverage whilst benefitting from a faster link, with an increased Committed Information Rate (CIR) of 512/1536 Kbps and a Maximum Information Rate (MIR) of 1536/3096 Kbps. Possible through the move to iDirect X7, the MIR is a burstable bandwidth increase, ensuring that Polarcus in addition to its guaranteed IP connectivity always has potential for more throughput if available at the time.



RigNet to Offer Inmarsat Fleet Xpress to energy maritime industry

RIGNET INC., A leading global provider of remote managed offshore communications solutions, telecoms systems integration services and collaborative applications to the oil and gas industry, today announced that it has signed an agreement with Inmarsat to offer Fleet Xpress, the maritime version of its Global Xpress service, to the oil and gas maritime sector. The agreement will enable RigNet to extend high-speed communications to offshore service and supply vessels within the oil and gas industry across the globe.



"RigNet differentiates itself in the oil and gas industry by providing fit-for-purpose technologies to help our energy customers operate remotely in a more productive, efficient and safe manner," said Mark Slaughter, RigNet's CEO and president. "The addition of Inmarsat's Fleet Xpress to our energy maritime

offerings will enable RigNet to deliver a high degree of service and functionality to this important sector of the oil and gas market."

"We are continually looking to strengthen our partner network through working with organisations that have the length and breadth of experience, industry knowledge and commitment to best service the market", commented Ronald Spithout, president, Inmarsat Maritime. "With the launch of Fleet Xpress, the world's first hybrid Ka/L-band mobile satellite system, we are committed to driving innovation and bringing a new high-speed broadband service that will re-define maritime connectivity. By working with organisations such as RigNet, we can extend our market reach and open up new possibilities to the maritime community, offering competitive and innovative solutions."

Harris CapRock Communications provides on-demand bandwidth to nearly 100 oil and gas sites

HARRIS CAPROCK COMMUNICATIONS has transitioned 36 oil and gas customers to its Advanced Very Small Aperture Terminal (VSAT) solution, providing on-demand bandwidth service to nearly 100 sites around the world.

Harris CapRock's Advanced VSAT is the first secure, cost-effective service that dynamically reassigned satellite capacity according to need and availability in real time to meet the growing communications requirements of offshore and deepwater operations.

Harris CapRock's dynamic bandwidth management architecture provides customers the required capacity for applications ranging from data logging or drilling at the critical part of a well to streaming a training video or treating a medical emergency via telemedicine. The bandwidth is available on demand when needed.

The company launched Advanced VSAT in 2014 and first deployed it on Royal Caribbean Cruises' global fleet and customer operations networks in the Gulf of Mexico. It delivered unmatched processing capacity and nearly 20 times the information rates of a prior solution.

"The Advanced VSAT network answers customers' need for unprecedented speed and flexibility in capacity changes," said Tracey Haslam, president, Harris CapRock Communications. "We combine next-generation technologies, partnerships with key equipment providers and an unmatched commitment to customer service to help advance oil and gas operations worldwide."

Customer response to the service has been very favourable. "On a traditional single channel per carrier link, any operational challenges related to connectivity could take weeks, technician site visits and higher dedicated bandwidth subscriptions to pinpoint, troubleshoot and solve," said an offshore Information and Communications Technology support manager. "Now that we're on Harris CapRock's Advanced VSAT network, we can adjust bandwidth for communications applications as needed, saving us valuable time and money in the field with a service provider we trust to be safe and reliable."

Harris CapRock Communications is a global provider of managed satellite, terrestrial and wireless communications solutions for the maritime, energy and government markets. Its global infrastructure includes teleport on six continents, five 24/7 customer support centers, a local presence in 24 countries and hundreds of global field service personnel supporting customer locations across the world.

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ABOUT THIS REPORT

Amidst rising costs of extraction and falling oil prices, the oil and gas (O&G) industries have turned their attention to looking for solutions to optimise their upstream, midstream and downstream operations and reduce costs. Oil is fast becoming an information technology driven business. In this sector, all data is critical and is generated at an incredible rate. Companies, traditionally, have been pulling out a lot of data, but are now constantly generating extreme volumes at a higher exponential rate than ever before with advanced analytical tools. However, not everything is used. According to the latest reports, O&G uses 1% of the data it generates. Therefore, how to make the maximum use of the remaining 99% should remain the focus of E&P companies.

Studies show that a gradual shift to data and technology driven oilfields is expected to improve productivity by 30% on pipeline operation and safety. If the O&G industries improved their performance by even 1%, it would increase oil production by half a million barrels per day. In this regards, big data with advanced analytics can transform enterprises into a data-driven, decision-centric industry, Sandeep Bhagat, big data analyst from Wipro, said.

Big data real-time analytics present opportunities to establish more efficient oil production, reduce costs and risks, improve safety, enhance regulatory compliance and lead to overall better decision-making. Growing populations and emerging economies are set to raise demand, thereby encouraging exploration in new frontiers with new technologies. This will need rapid application design and deployments.

The goal of this report is to help O&G decision makers understand the significance of big data, which some companies like Total and Shell are already working towards, and bring to the fore the ideas and guidance of industry leaders from the sector to gain insights and make profitable decisions.

Encompassing upstream, midstream and downstream, the three-day Big Data Oil and Gas event from 19-21 April in Abu Dhabi provided an insight on how to manage Big Data for efficient production to attendees from across the world. Key industry experts from Wipro, CommScope, Total, ADNOC, Booz Allen Hamilton, PPDM, Petrofac, Halliburton, Sigmoid, along with independent data analysts, presented papers on how to address big data strategies.

FOREWORD



Why does O&G require big data? Analysts opine that downstream uses data to deliver fuel accurately to customers; finance uses data to pay vendors and reconcile accounts; data is used to determine oil/contract pricing; HR uses data to manage staff performance and improve productivity; and upstream uses data to locate and mature hydrocarbon prospects.

Taking the big picture into account, big data is all about 4Vs – Volume, Velocity, Variety and Value.

O&G data has unique properties that make it even more challenging to work with than the data first companies like Google and Amazon. The complex nature of big data is primarily driven by the unstructured nature of the data that is generated by modern technologies such as that from web logs, sensors embedded in devices, Internet searches, social networks, portable computers and smartphones. Therefore, when dealing with larger datasets, organisations face difficulties in being able to create and manage big data. It is a problem in business analytics because standard tools and procedures are not designed to search and analyse massive datasets.

In order to effectively utilise big data, it must be combined with structured data (typically from a relational database) from more conventional business applications such as Enterprise Resource Planning (ERP) or Customer Relationship Management (CRM) systems.

In order to simplify things, organisations must look to innovate and apply new technologies and give actionable insights.

Common E&P issues that companies

usually face include wrong coordinate reference systems assigned to wellbore directional surveys loaded in corporate data stores; data corruption due to system or application upgrade; wellbore directional surveys loaded without depth units; poorly computed well paths loaded in corporate data stores; incorrect UWI or well names across the different corporate databases; wrong naming conventions applied to acquired logs or logs acquired with a non standard sample rate affecting log accuracy in resolving bed thickness and bulk density; and lack of standardised data management procedures resulting in several versions of the same data/document enterprise wide.

Data can be captured from drilling wells and seismic activities, as well as webpages, which may also be old but necessary. This data, when captured, formatted, manipulated, stored and analysed can help a company to gain useful insights to increase revenues, win or retain customers and improve operations.

Research suggests that big data initiatives are poised for explosive growth. Datasets of interest to many businesses found today include traditional structured databases of inventories, orders and customer information, as well as unstructured data from web, social networking sites and intelligent devices. By rapidly analysing incoming technical and business data and applying that information to complex models in real time, O&G companies can generate tactical insights that help increase drilling and production performance while preventing problems.

TERMINOLOGY

Brownfield project: An area that has been previously used for drilling oil and/or gas.

Data silos: A repository of fixed data that an organisation does not regularly use in its day-to-day operation.

Downstream: Commonly refers to the refining of petroleum crude oil and the processing and purifying of natural gas, as well as the marketing and distribution of products derived from crude oil and natural gas.

Greenfield: In O&G, a greenfield project is a completely undeveloped area.

IoT: Internet of Things is a network of physical objects embedded with electronics, software, sensors and connectivity to enable it to achieve greater value and service by exchanging data with the manufacturer, operator and/or other connected devices.

Midstream: Involves the transportation by pipeline, oil tanker or truck, storage, and wholesale marketing of crude or refined petroleum products.

Open source: Promotes universal access via a free license to a product's design or blueprint, and universal redistribution of that design or blueprint, including subsequent improvements to it by anyone.

Structured data: Data that resides in a fixed field within a record or file. Includes data contained in relational databases and spreadsheets.

Unstructured data: All those things that cannot be so readily classified – photos and graphic images, videos, streaming instrument data, webpages, PDF files, powerpoint presentations, emails, blog entries, wikis and word processing documents.

Upstream: Includes searching potential underground or underwater crude oil and natural gas fields, drilling of exploratory wells, and subsequently drilling and operating the wells that recover and bring the crude oil and/or raw natural gas to the surface.

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INFORMATION OVERLOAD

“ According to an IDC report, big data technology and services market is expected to grow from US\$3.2bn in 2010 to US\$16.9bn in 2015.

There are multiple sources of mining big data — geological, engineering, production, equipment, to name a few. We are talking about terabytes and petabytes of data available and accessible.

With machines evolving, companies are generating a lot of data on a daily basis. According to latest reports on big data, O&G, however, uses only 1% of the data it generates. Therefore, how to make the maximum use of the remaining 99 per cent should remain the focus of E&P companies.

A term coined by Erik Larson in 1989, big data is everywhere. Although the concept has been picking ground in the last few years, the earliest recorded history of big data dates back to the 17th century. Also in O&G, big data has been around for a long time. But with oil prices sliding, the real challenge of big data will be to offer maximum optimisation in minimum value.

Available data proves that if the global oil and gas industry improved pump performance by even 1%, it would increase oil production by half a million barrels a day and earn the industry an additional US\$19bn a year in revenues. With the continuous churning of enormous data on a daily basis,

O&G has significant amount of data for many analyses, especially the seismic sector. “Some of the data have been migrated to parallel computing, but now we want to talk about parallel scale-out approach to take advantage of the distributed grid and process algorithm to

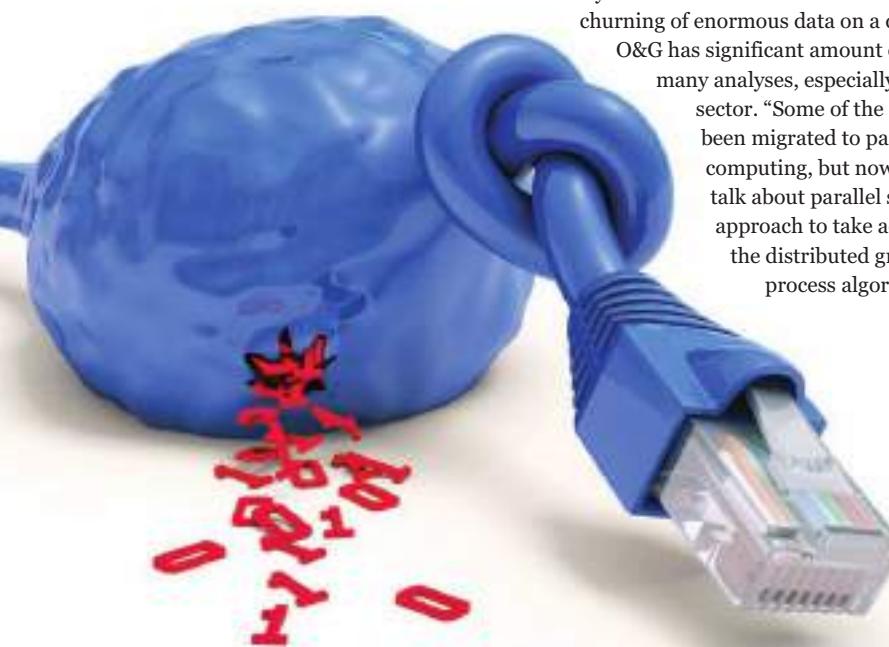
analyse big data for O&G,” said Satyam Priyadarshy, chief data scientist at Halliburton.

Recent years have seen O&G companies invest a considerable amount in software and tools to understand better the data coming onto their systems. And with each year, the systematic output is increasing that aids O&G explorers with better information. According to Priyadarshy, this can lead to Return on Innovations (RoI) in the sector with companies launching initiatives for the low-level data being pulled up.

However, no method is fool-proof, say analysts. There are challenges that the sector is still facing with respect to data analytics and availability of data banks. With potential value gains from having access to more data, it is seen that much of the data cannot be shared efficiently due to legacy systems still in use in many companies. Therefore, here the data scientists play an important role to push companies for latest technologies and create a unified system for open source.

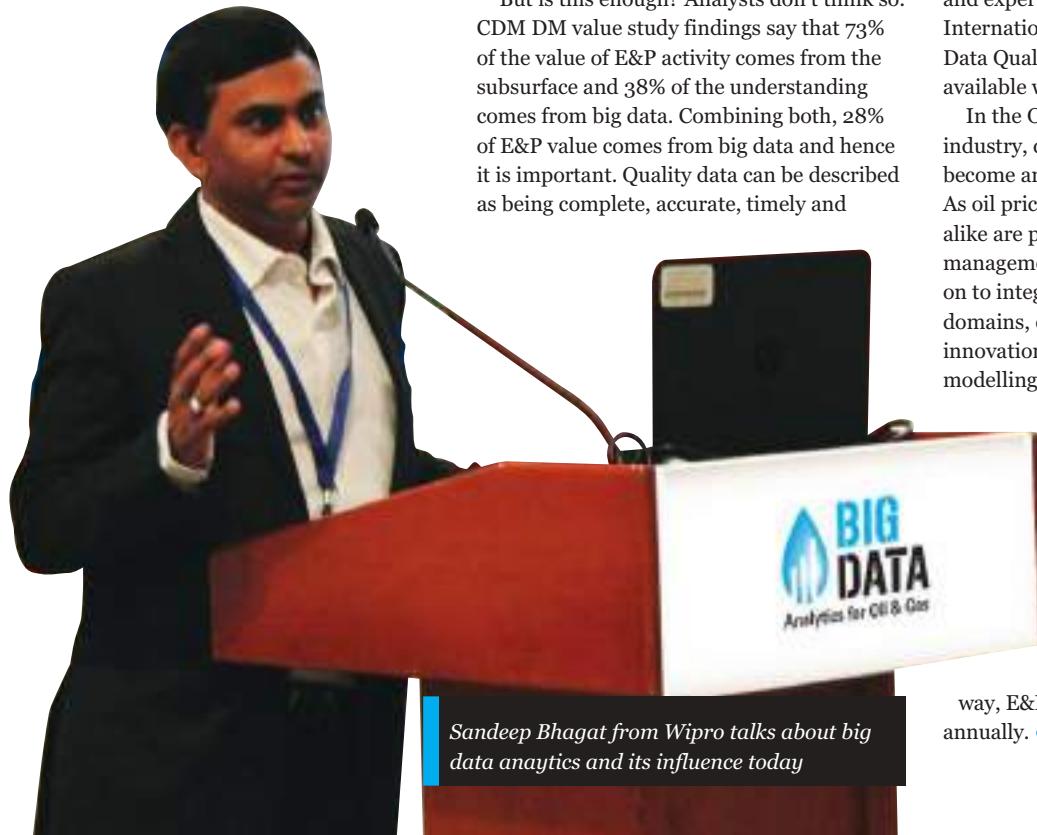
Ali Rebaie, independent analyst, compared data traces to Matryoshka doll toy — a concept wherein larger toys fit into smaller ones. He said that the same can be aptly used for a lot of bigger data that is being pushed into efficient smaller devices like smartphones. As data is becoming bigger, companies are looking for apps with built-in sensors that can be compact (for mobiles and tablets) and smarter. It is transforming the way we engage with ‘things’, he added.

“It is the age of ‘ephemeralisation’, our ability to do more with less, until eventually we can do everything with nothing. This means by being more efficient and accomplishing more work with fewer materials, our entire economies will change. The ephemeralisation of technology using big data and the Internet of Things will continue to move us to gradually replacing specific-purpose devices. This transition will be accelerated by today’s innovative nanotechnologies that are present.” •



HAVING ENOUGH DATA IS NOT ENOUGH

“ Big data has been leveraged by many other industries. With the oil price slide, the time is perfect for the industry to leverage data technology.



In O&G, huge amounts of data are collected in the seismic world that comes at a much slower speed but has significant value. If it is misinterpreted by few metres, the loss of millions in dollars is bound to happen. The value is significant in digital media world when compared to government data. So companies have to be careful how to analyse data correctly, analysts opine.

Emphasising the importance of data, Emmanuel Udeh, subsurface data analyst from Benejecti Nigeria, said that downstream uses data to deliver fuel accurately to customers and finance department uses data to pay vendors and reconcile accounts. He also added that data determines oil or contract pricing and HR uses data to manage staff performance and improve productivity. In upstream, big data locates mature hydrocarbon prospects.

But is this enough? Analysts don't think so. CDM DM value study findings say that 73% of the value of E&P activity comes from the subsurface and 38% of the understanding comes from big data. Combining both, 28% of E&P value comes from big data and hence it is important. Quality data can be described as being complete, accurate, timely and

consistent. Most times, poor quality data in data centres/warehouses can lead to poor decision making, reduced efficiency and increased labour costs.

Now the question remains: How to unlock data value? This can be fixed by finding and addressing the root causes of errors, which involves looking for and eliminating inefficiencies in data collection, entry and quality control procedures. To elaborate, companies need to optimise big data analytics to enable organisations to analyse a mix of structured, semi-structured and unstructured data in search of valuable business information and insights.

To unlock data value, it is important to establish a structured process framework for data quality management based on proven experiences from leading organisations like the CDA, from industry-wide best practices available through professional organisations and experts like PPDM, Energistics and the International Association for Information & Data Quality (IAIDQ), from global resources available within the enterprise.

In the O&G segment of the energy industry, data-driven optimisation has become an essential form of digital business. As oil prices decline, IT and business leaders alike are preparing for quantum changes in management methods. CIOs are being called on to integrate data across organisational domains, enable advanced analytics to drive innovation, enhance the quality of business modelling such as predictive analysis and support stronger data-driven decision-making such as prescriptive analysis.

Booz Allen Hamilton believes that big data analytics can aid a 6-8% boost in production from data driven oilfields. And also a 13% increase in increased uptime in offshore environments. That way, E&P companies can save up to US\$1bn annually. •

ADVANCED ANALYTICS & ASSET MANAGEMENT

In the O&G sector, huge amount of data in the seismic world is collected. If misinterpreted by a few metres in the field, firms can lose millions of dollars. Hence, the correct analysis of data is necessary.

Sandeep Bhagat, big data and analytics practitioner at Wipro, points out that big data analytics can usher in a new era of E&P technologies that will support seismic 4D activities and horizontal drilling and upstream drilling will shift toward newer and more challenging fronts such as deepwater, shale, arctic areas and sensitive geo-political areas, requiring the industry to rely on more complex applications and platforms. A more digital generation of employees will persuade movement toward rich, visual, flexible, mobile interfaces and myriad user platforms.

Industrial companies are at varying stages of adoption of big data analytics and as with all the new technologies, a maturity curve is emerging that is delineating the early adopters from those who are at a more matured level. One of the first stages in that maturity curve is connecting operating assets with performance monitoring and problem diagnosis. Companies are focused on moving from this type of asset monitoring to areas of higher operational benefits. By introducing analytics and more flexible production techniques, manufacturers, for instance, can boost their productivity by as much as 30%.

O&G companies have already, to a great extent, mastered the challenge of providing reliable reporting and routine analysis through business intelligence technologies and rock-solid management of information from IT systems. Now, the industry is uncovering new opportunities to improve performance through fast, agile analytics aimed at modelling and simulating business performance (predictive analytics) and improving decision making (prescriptive analysis).

Companies are also shifting their business strategies sharply to emphasise data-driven optimisation of business performance. Technologies that model, simulate and predict business performance have become priorities for O&G CIOs and IT leaders.

Using existing asset data integrated with

digital visualisations, analytics and shared situational intelligence, pipeline operators can respond to potential events even faster. This helps prioritise maintenance tasks, resource allocation and capital spend more effectively based on risk assessment, Bhagat adds.

According to Booz Allen Hamilton, the key trends observed currently include:

- Oil extraction is becoming more complex and thus more expensive; this coupled with the volatility of oil prices necessitates increased efficiency in execution of operations
- As instrumentation becomes smarter, more and more data is becoming available; allowing for complex projects to be undertaken
- The availability of digital technology has enabled companies to access and monitor data related to their operations around the world in real-time

Some of the platforms that are critical to big data analytics include Hadoop, Appliance, Streaming and NoSQL.

How can advanced data analytics help?

- In exploration, analytics such as pattern recognition and seismic data acquisition can help trace more hydrocarbon
- In drilling, big data can help real-time anomalies to predict the success of failure of well sites. It can also help predict equipment failure and operational mistakes
- In production operations, enhancing oil recovery from existing wells is a key objective for oil and gas companies. Analytics can help engineers to map changes in the reservoir and make profitable decisions
- Predictive maintenance, in midstream, can help predict failures in pipelines and connected equipment before its too late
- People management is another key aspect where big data analytics plays a big role. It can help HR with the recruitment of a skilled workforce •



SMAC THAT SYSTEM: LEGACY TO MODERN

Many organisations are already struggling to manage their existing data. Inflow of more data only adds complexity. Some of the persistent questions that companies deal with include what data should be stored and how long it should be kept; what data should be included in analytical processing and how to properly analyse it; and do we keep existing technology to study incoming data or upgrade or totally replace it?

At ADNOC Distribution, in the year 2000 traditional analytics to study data constituted Oracle Reports, MS Excel Sheet and Forrest & Tree Tool that gave way to time-consuming design, shortage of expertise on the domain and not very user friendly applications.

The year 2008 saw the Abu Dhabi-state owned company do away with traditional analytics and bring in interactive dashboards, ad-hoc reporting, point and click ease of use, heterogeneous database access plus a unified view of data from multiple sources.

Awad El Sidiq, senior database administrator at ADNOC Distribution, said that in the light of the need for big data analytics, legacy systems must be either upgraded or replaced. "The big data strategy that we see today works on SMAC (social networking, mobile, advanced analytics and cloud computing) concept."

ADNOC Distribution, the world's fourth biggest oil company as measured by hydrocarbon reserves, has now switched to running Oracle E-Business Suite on Exadata, becoming the first oil and gas company in the Middle East to implement Oracle Exadata. The move yielded immediate results, helping the company boost order processing speeds 5-10 times and complete payroll processing in 20 minutes compared to 2.5 hours before. In its back offices, the energy company has shrunk financial closing cycles from hours to minutes and eliminated long waits for business reports. The company attributes the improvement to Exadata's scale-out architecture, query accelerating technologies

such as Smart Scan, and the platform's massively faster I/O throughput performance. All this has added up to savings of thousands of hours of transaction time per year and translated into a more productive and competitive workforce.

In 2012, a Garter report stated that 78 per cent of enterprise legacy applications will witness a dramatic change over the next two years. "Most of the organisations are now talking about enhancing their legacy applications, discontinuing them and bringing new technology or upgrading them to achieve SMAC elements," Sidiq adds.

So which is the best approach? Upgrading or replacing the existing data sets is the way to go. The ADNOC executive asserts that upgrading/enhancing will usher in technology modernisation and transfer everything to virtualisation, thereby getting rid of mainframes and physical infrastructure. This promises the reduction of data centres and bringing in management operability. App modernisation will help HR, CRM and supply chain. This leads to experts advising transformation to mobile-based application.

Replacing the legacy app with a vendor-friendly app will mean new process and best practices. The change in the enterprise can be costly but necessary as the current design can be no longer service-enabled. •

“ Legacy infrastructure can be complex and could hinder business ability to grow as it lacks modern interface.



PREDICTIVE ANALYTICS & REAL-TIME DECISIONS

“ The bottom line of the analysis is to get people to the right place at the right time.

The O&G industry is uniquely positioned to benefit from predictive analytics as the facilities often operate in harsh conditions and at hard-to-reach areas that make safety and maintenance a critical priority. Predictive maintenance can reduce costs by up to 30% and eliminate breakdowns by up to 70%, according to a study by the US Department of Energy.

Jess Kozman, Asia Pacific's regional representative of Professional Petroleum Data Management (PPDM), reveals that with falling oil prices "not only is this the best time to do data management but the only time to do it. Since we do not have money to look into field activities, we ought to look at engineering and HR data".

IDC report adds, "50% of O&G companies will have advanced predictive analytics and asset integrity capabilities by 2016."

In drilling wells, the data analytics helps O&G sector look for hydrocarbons in the right place and improves recovery rates. Companies can leverage big data technologies such as the MapR Distribution for Hadoop to collect, manage and rapidly analyse seismic, drilling and production data. Oil companies can also leverage this data to gain new insights that help increase drilling and production performance while preventing environmental/safety problems.

In the industry, an acceptable non-productive time (NPT) in drilling is 4.9-5.8%, whereas in actuality NPT is 7.9-

21.3%, which is costing the O&G

industry US\$2.8mn per hour in downtime. With the high cost of exploration wells currently being drilled in deepwater, minimising these events and more effectively predicting what lies ahead could pay huge dividends

by helping operators stay on budget, reach total depth on time and execute a successful drilling operation. Therefore, companies have to determine what are the key performance indicators (KPI) that analytics is looking to

address from big data perspectives. Kozmann explains how structured data can be extracted from surplus data and the properties then be analysed in software to put it all together.

"Data analytics is high-value information. It can help predict and prevent losses. However, it is advisable not to overdo predictive maintenance as it may do more damage than repair," he added.

Identifying new patterns in multiple data sets for use in clusters-in memory and analytics servers can reduce hours to minutes in the seismic world (via Hadoop). This also reduces NPT.

With big data analytics, a company can achieve 25% in operating cost savings, 8% higher production rate, 2-4% lower project and 6% improved resource recovery.

Apart from the 4Vs, big data is also about 4Ps

- Propagation: distribution and duplication by iterative workflows in disparate disciplines
- Proliferation: rapid multiplication in specialised tools with divergent interpretations
- Pervasiveness: expansion to fill available storage through multiple working hypotheses and probable realisations
- Persistence: value over decadal and generational life spans

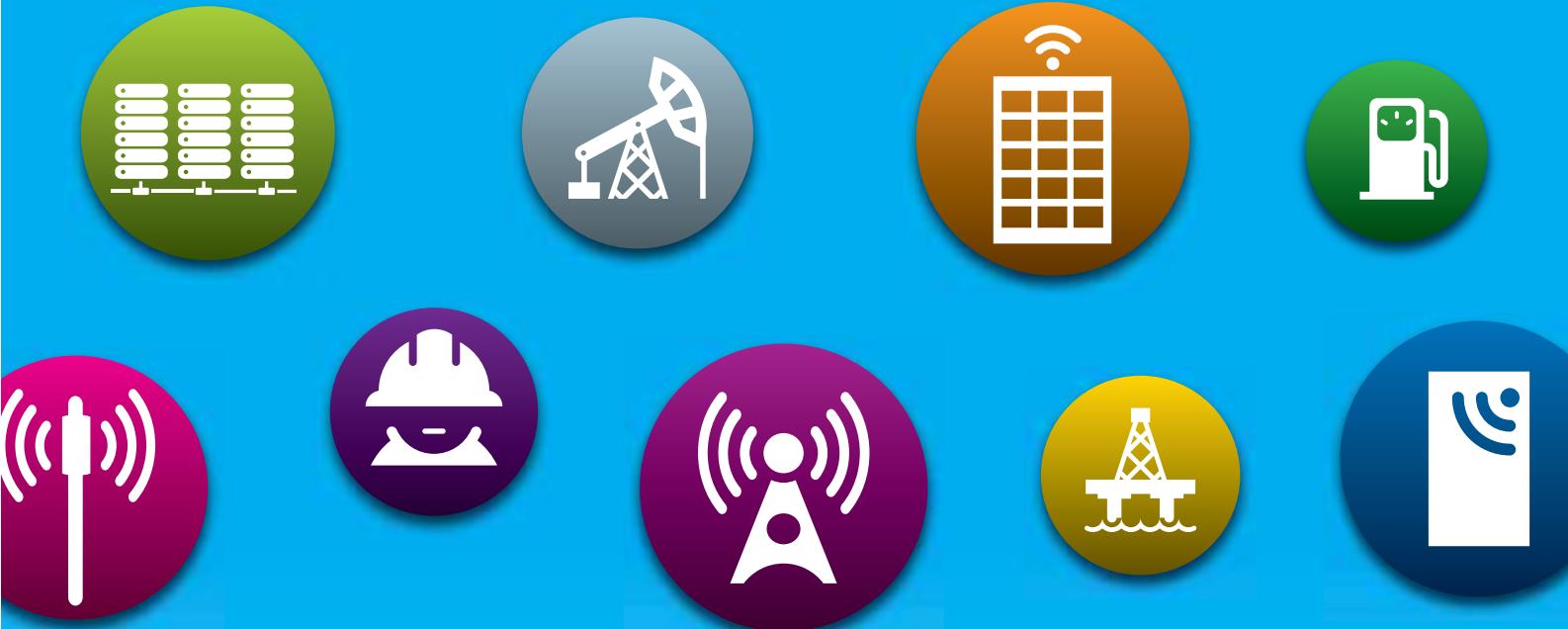
Predictive analytics, in the O&G sector can aid in predictive maintenance, forecasting, energy trading, risk management and optimisation. This gives an idea too as to where to look for O&G next. But predictive analytics for predictive maintenance can also have its shortcomings and one needs to be careful.

In predictive analytics, one needs to watch out for:

- Context from unstructured data
- Connection with third-party datasets
- Proactive management based on real-time trends
- Quantitative competitive intelligence •



Kozman sees data analytics as high end information in the value chain



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For Jones, having a modular data centre can effectively lead to business growth

How do O&G companies manage big data with a valid data centre strategy?

As data is increasing exponentially, enterprises are coming to rely on efficient data centres that store and protect important information.

A data dashboard integrates multiple systems and data storing applications coming in from oilwells, pipelines and related O&G equipment. A dashboard utilises data visualisation to display a combination of company metrics, and by using an API you can integrate accounting software, sales spreadsheets, customer relationship management (CRM) systems, email, website analytics and other systems into your dashboard display. But it can't tell you how efficient your wells, pipelines, refineries and everything else is actually built. So if the data centre infrastructure management (DCIM) goes down, companies lose the visual representation of how they are actually doing and that will potentially affect production and lead to loss of money.

Ian Jones, global account manager, oil and gas at CommScope, says, “As products are growing, there is a lot of information coming in. Whether it's the temperature, geoseismic data or the engineering, everything produces data. Depending on technology, the data may range from 2MB to 1GB a day. If a company has thousand of wells and it has information constantly being generated, it goes into the analytics engines that gives us a dashboard, which gives us the ability to be able to decide where you need to put maintenance and where potentially you are going to have failures within your oil and gas pipeline network.”

Then lays the most pertinent question: What do we do with the rest of the data? Are we keeping everything or are we discarding a lot of the information generated?

As analytics, engines and programmes are getting bigger, better and more efficient, companies can get more interesting

information. Therefore, how big data is managed and stored is critical to operations.

Telecommunications network infrastructure solutions provider CommScope has been one of the global companies instrumental in making data centres efficient.

According to Jones, a good data centre is able to model, add changes and share all the information between the subsystems.

“Everything we know these days is connected — from a PDU to a SWAC switch and even to the point where you can map what your physical infrastructure looks like and what goes from A to B.”

Experts opine that in a company, from standards perspective, DCIM software is a significant tool. “This gives the ability to look what the data centre actually looks like. And we can see how every single subsystem interacts with one another. What one can actually do is to model everything that is going on in the data centre,” Jones adds.

“In O&G, it is imperative to model everything incase some system goes down. Whether monitoring a small part of your data centre or managing the entire enterprise, the companies must need to have a clear view to see how well they are meeting their business performance objectives based on all data — connected and interrelated.”

A DCIM, like iTRAC by CommScope, helps deliver best-of-breed functionality in six areas; namely operations management (monitoring physical ecosystem), resource management (lowering energy bills), cutting asset costs, delivering services faster, capacity planning and demand management and resilience management.

A company should always look at a good data centre that can reduce both CapEx and OpEx costs by maximising existing physical footprint. And, to do that, enterprises need to start building analytics in data centres.

If a data centre can reduce the chain management cost and time of a company by 85%, then it's a good sign. •

DOF FOR RESERVOIR MANAGEMENT

OF programmes are expanding the universe of connected things in upstream theatres of operations.

Abdulhameed Aborshaid, CEO of Sigmoid Knowledge Development Consultancy, demonstrated the technology evolution and its impact on oilfield development and oil recovery. He also stated that the O&G industry follows the Sigmoid Model approach in dealing with technology.

The Middle East is rich with a long production history that is normally used as a base for field development across the globe. Several technologies have been very successful in maximising oil recovery, reducing operating cost, enhancing operational efficiency and promoting safety. These technologies include horizontal drilling, geo-steering, advanced well completions and intelligent field applications."

Earlier, like most regions, in the Middle East vertical drilling was rampant, Aborshaid reveals, adding that operators later started horizontal drilling to save costs and saw it to be more beneficial, which has now aligned them towards the same method.

The advantages include reduced water and gas coning; increased production rate because of the greater wellbore length exposed to the pay zone; reduced pressure drop around the wellbore; lower fluid velocities around the wellbore; and larger and more efficient drainage pattern leading to increased overall reserves recovery.

A "tsunami is happening in intelligent fields," Aborshaid adds, revealing that ifield adds to values, sometimes producing 4,000 bpd and saving costs with operational flexibility and safety.

Reservoir management uses ifield data in making and managing business as there is a lot of information in flow mechanism in the reservoir. Low depletion rate is the strategy in most regions as well, as maximising hydrocarbon output. He advises that, before firms embark into field development, geological assessment is essential as well as



Sergey Fokin

avoiding premature breakthrough to maximise recovery. "Sigmoid recommends what is called 'pressure transient analysis' to help identify what kind of flow mechanism the fields have."

Horizontal drilling requires water and Aborshaid warns about premature water breaking as it leads to a reduction in a well's profitability because of both a reduction in net oil rate and an additional cost for water handling. He advises that after injection, additional pressure coming out must be monitored and then water injection reduced accordingly. This leads to minimum oil intervention.

Wireless technology has also proved to be potential in transferring real-time data, which is a cost-effective means for converting brownfields to an ifield. Applications in harsh operating conditions such as offshore, remote and congested areas can benefit from this technology since it requires minimal infrastructure. Technology providers and regularity authorities need to work on setting guidelines, ensuring data security and enhancing coverage.

Aborshaid also mentions geosteering as it helps identify targets and achieve higher production rate, therefore enhancing decision-making process. "Real-time geosteering has added a lot of value to offshore operations while dealing with complex architecture. It helps reduce costs

and increasing production rate to more than six times."

So what we need to now see is how oilfields are being driven from data-driven perspective?

Booz Allen Hamilton suggests that since shareholders and operating companies want to see their infrastructure safe, from a security perspective, a lot of the work that the company is doing in the Gulf region is protecting and integrating the operations to neural networks, implanting the ICS scale in the environment and integrating and securing that along with the enterprise.

From integration perspective, the consultant has a robust understanding of what are those interfaces where the data lives, what are the business drivers to help you integrate across project and support teams. Some reports suggest few other ways in which operators can harness big data and the digital oilfield to maximise yield include:

- Monitoring the health of its production equipment. BP said that this could cut down on unplanned downtime and boost output by 10 per cent, resulting in 214,000 additional barrels of oil per year
- Real-time production surveillance provides engineers with an understanding of how the field is performing. Onshore automation means operators are able to view the entire field allowing them to make short-term changes
- Reservoir surveillance allows engineers to understand its behaviour as well as modelling scenarios using simulation software. This can allow the creation of long-term forecasting and planning the placement of future wells or effective IOR/EOR strategies
- Mostly importantly of all, the DOF can drastically improve safety in oilfields. By monitoring equipment in real-time, operators can be alerted in advance when a leak or event which may compromise the integrity of an asset is likely to occur and allow them to take action to prevent it •

AVEVA Engage redefines decision support

AVEVA recently launched AVEVA Engage, a collaborative decision-support solution for capital projects and operating assets, including oil and gas.

ACCORDING TO THE company, the technology, launched in Dubai, combines the power of instant access to a digital asset's full contextually-integrated information with a simple, yet entirely intuitive, touch-driven interface, all visualised and navigable in an Ultra-High Definition (UHD) whole-model view. Part of AVEVA's 'Future of Decision Support' programme, AVEVA Engage is bringing a new dimension to decision support for better, faster decisions across the lifecycle, AVEVA added.

Entirely touch driven and capable of running on the largest format touchscreens, AVEVA Engage seamlessly combines whole-model visualisation with immediate contextually-filtered access to validated, relevant documents and information which helps customers design, review, plan and execute work safely and efficiently.

"AVEVA Engage redefines what is possible in engineering," said Dave Wheeldon, CTO, AVEVA. "Delivering quality information through a highly intuitive interface, AVEVA Engage gives users immediate access to the wealth of resources within their Digital Asset. Simple and dynamic, its touch user experience is both visually breathtaking and amazingly insightful when combined with the huge UHD touchscreen devices available today. Early adoption of this technology has clearly demonstrated just how game-changing AVEVA Engage can be to our customers' businesses."

Wheeldon added that over the past six months, ten companies have enrolled on the Early Access Programme (EAP) across the oil and gas, power and mining sectors for the technology.

Robert Samudio, global design/drafting manager, Shell New Orleans, who has worked with AVEVA on the development of AVEVA Engage, noted, "With AVEVA we



AVEVA Engage allows whole model visualisation on a large touch-screen and opens new possibilities for collaborative decision-making

have pioneered touch-screen technology and the ability to use 3D models with other disciplines across global locations. We can use it for collaboration, decision-making and safety. It will help us to deliver multi-billion dollar projects, setting industry benchmarks for quality, cost and speed. More importantly, it will change the way we work, our processes, our tools, our collaboration and the promise on how we deliver our projects. Our relationship with AVEVA is the

best in the industry."

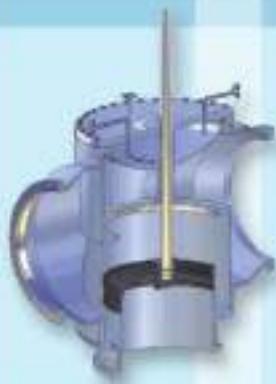
According to Richard Longdon, AVEVA's CEO, AVEVA Engage reaffirms the company's position as a leader in the market by delivering innovation that solves real-world problems for its customers.

"Our mission is to create technology that is constantly pushing the boundaries of what our customers can achieve. With AVEVA Engage we are helping customers to truly realise their digital asset," he said. ■

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Developing a lean enterprise

Ian Fleming, managing director, IFS Middle East, Africa and South Asia, discusses the benefits of lean practices for businesses.

GOVERNMENTS WITHIN THE GCC have been making use of lean practices while providing government services for some time now. In the UAE, for example, they have gone as far as to make lean administration one of the government's four pillars of its Smart government strategy. Similarly, lean practices bring many benefits to businesses, and now is the time for them to be embraced by enterprises within the region, given the lower oil prices and a stagnation in regional economies.

Lean is a systematic approach to identifying and eliminating waste through continuous improvement, and covers the complete spectrum of a value chain. While, traditionally, lean has been the focus of high volume repetitive industries, Engineer-to-Order (ETO) companies in other sectors, including oil and gas, can also benefit from implementing lean principles and incorporating business modelling, enterprise operational intelligence, planning, execution, waste analysis and reduction capabilities.

The benefits for adopting lean enterprise concepts depend on the level of integration that exists from design through engineering into build, installation and service. They include:

- Improved bid management and win ratios from data re-use and business focus;
- Better project control, risk mitigation and cost management through the integration of project management activities with back office functions;
- Improved design and delivery data through web-portal collaboration with customers and suppliers;
- Reduced data input and errors through sharing common data from design to

- manufacture, installation and service;
- Increased business capacity through synchronising delivery milestones with current work tasks;
- Reduced customer delivery cycle times through parallel planning and concurrent activities;
- Improved customer delivery dates from common data and integrated design, build and install solutions;
- Improved customer satisfaction from better quality, lower prices and on-time delivery;
- Improved quality and design by analysing failures.

When adopting the concepts of a lean enterprise, a systematic approach is needed. An organisation needs to develop a strategy for deploying these concepts, and there are a range of systems and technologies to guide them through this process.

Basic principles

There are five basic principles to adopting lean practices:

- 1. Value:** Lean thinking demands that anything that does not add value to a customer must be eliminated. It is vital to understand that, only what your customers perceive as value is important. This often requires a complete review of each step in the customer buying process to create for them a hassle-free buying and service experience. If customers believe that short order lead time from their suppliers is the differentiating factor in the market, within given standards of quality and functionality, then those who can respond the fastest will dominate. Price may become a secondary

issue, so premium pricing may apply to those who deliver in the shortest time.

2. The Value Stream: Once an enterprise understands the value that it delivers to its customers, there is a need to analyse all the steps in their business processes to determine which ones actually add value, and review those processes that add value to see how these can be improved.

3. Flow: This relates to the uninterrupted movement of physical objects and data within the enterprise. In a complex ETO company, this will mean that information from design will flow into engineering and into estimating and into projects and then to procurement. In a complex contract this will mean that as sections are completed in one department, they are made available to others – rather than a single department spending weeks completing the contract before any information is made available. Flow challenges the tradition of processing in batches and moving these batches from one department or machine to another. This requires the removal of physical barriers and co-operation across functions. The goal is to reduce the time it takes to complete an end-to-end process.

4. Pull: Rather than working from a forecast of potential customer demands – a ‘push’ system – the goal in Lean is to perform a process by linking it directly to a real customer demand – a ‘pull’ system. Often in ETO organisations, there are broken links between when the customer requires part of the delivery, to when the delivery is available.

5. Perfection: As you continually eliminate waste from your processes and flow information, product or services, you will realise that there are always changes that can be made in the goal of perfection. The continual re-evaluation of the entire value stream is essential to remove non-customer value adding activities. ■

“ Lean is a systematic approach to identifying and eliminating waste through continuous improvement, and covers the complete spectrum of a value chain”

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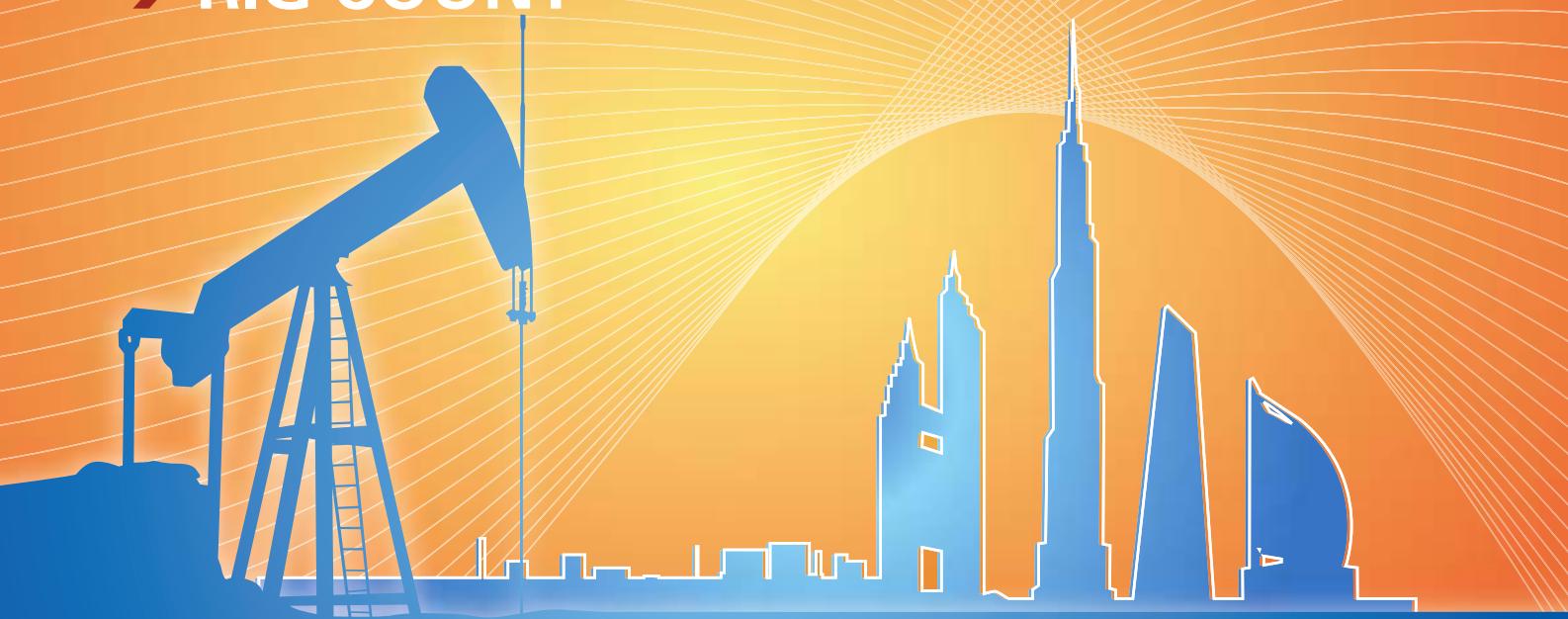
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→ RIG COUNT



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.

Country	THIS MONTH			VARIANCE From Last Month	LAST MONTH			LAST YEAR		
	Land	OffShore	Total		Land	OffShore	Total	Land	OffShore	Total
Middle East										
ABU DHABI	24	16	40	0	22	16	38	25	11	36
DUBAI	0	2	2	0	0	2	2	0	2	2
IRAQ	49	0	49	4	48	0	48	61	0	61
JORDAN	0	0	0	0	0	0	0	0	0	0
KUWAIT	43	0	43	2	46	0	46	45	0	45
OMAN	66	0	66	-1	66	0	66	57	0	57
PAKISTAN	27	0	27	0	23	0	23	19	0	19
QATAR	2	4	6	2	3	6	9	2	7	9
SAUDI ARABIA	106	19	125	-3	98	22	120	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	317	41	358	4	306	46	352	309	38	347

North Africa

ALGERIA	51	0	51	2	52	0	52	49	0	49
EGYPT	32	6	38	-1	35	6	41	46	16	52
LIBYA	0	1	1	0	0	1	1	4	3	7
TUNISIA	1	0	1	-1	1	0	1	3	0	3
TOTAL	84	7	91	0	88	7	95	102	9	111

Source: Baker Hughes

Project Databank

Compiled by Data Media Systems

OIL, GAS AND PETROCHEMICAL PROJECTS - UAE

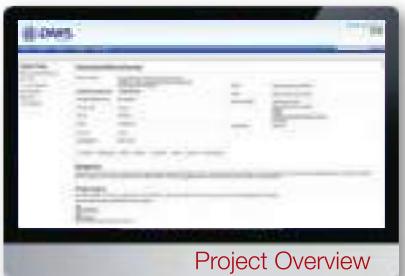
Project	City	Facility	Budget (\$US)	Status
ADCO - Bab Far North CO2 Injection Pilot Project	Bab Habshan	Oilfield Development	305,000,000	Construction
ADCO - Bab Gas Compression Project (Phase 2)	Bab	Gas Production	500,000,000	Construction
ADCO - Mender Field Development	Abu Dhabi	Oilfield Development	200,000,000	Engineering & Procurement
ADCO - Nitrogen Gas Injection (NGI)	Abu Dhabi	Gas Production	50,000,000	Construction
ADCO - North East Bab (NEB) - Phase 3 [Al Dabbiya]	Abu Dhabi	Oil Production	2,500,000,000	Construction
ADCO - North East Bab (NEB) - Phase 3 [Rumaitha-Shanayel]	Abu Dhabi	Oil Production	2,500,000,000	Construction
ADCO - Rumaitha North CO2 Injection Project	Rumaitha	Oilfield Development	500,000,000	Construction
ADCO - Sahil-Asab-Shah (SAS) Full Field Development - (Asab Field)	Abu Dhabi	Oilfield Development	2,300,000,000	Construction
ADCO - Sahil-Asab-Shah (SAS) Full Field Development - Overview	Abu Dhabi	Oilfield Development	3,750,000,000	Construction
ADCO - South East Asset- Sahil Field Development - Phase 2	Abu Dhabi	Oil Field Development	800,000,000	Construction
ADCO- Bab Integrated Facilities Project- Expansion	Bab	Oilfield Development	3,000,000,000	EPC ITB
ADCO- Bab TH-F Peripheral Development	Abu Dhabi	Nitrogen	400,000,000	FEED ITB
ADCO- Bu Hasa Shuaiba South- Gas Lift Network	Abu Dhabi	Gas Network	800,000,000	Engineering & Procurement
ADCO- Fujairah MOT - Hydraulic Pressure Recovery System Turbine	Fujairah	Oilfield Development	800,000,000	FEED
ADCO- Qusahwira Field Development - Phase 2	Abu Dhabi	Oilfield Development	900,000,000	EPC ITB
ADCO- South East Asset- Tie-in Project	Abu Dhabi	Oilfield Development	650,000,000	Engineering & Procurement
ADGAS - Das Island - Fuel Distribution Sulphur Recovery (Phase 4)	Abu Dhabi	Oil & Gas Field	491,000,000	FEED
ADGAS - Das Island Flaring & Emission Reduction (Package 2 & 3)	Das Island	Gas Production	100,000,000	Construction
ADGAS - Das Island Pentane Storage Facility	Das Island	Gas Storage Tanks	65,000,000	Construction
ADGAS- Integrated Facilities Project (IGD-S) Expansion Phase 4	Abu Dhabi	Gas Field Development	1,057,000,000	EPC ITB
ADGAS- Integrated Gas Development (IGD) - Expansion (Phase 1 & 2 Overview)	Abu Dhabi	Gas Field Development	1,057,000,000	Engineering & Procurement
ADGAS- Integrated Gas Development (IGD) - Expansion (Phase 1)	Abu Dhabi	Gas Field Development	1,057,000,000	Engineering & Procurement
ADGAS- Integrated Gas Development (IGD) - Expansion (Phase 2)	Abu Dhabi	Gas Field Development	1,057,000,000	EPC ITB
ADMA OPCO - Nasr Full Field Development - Phase 2 (Package 2 - Platforms)	Abu Dhabi	Oilfield Development	20,000,000,000	Engineering & Procurement
ADMA OPCO - Nasr Full Field Development - Phase 2 (Package 3)	Abu Dhabi	Oilfield Development	200,000,000	Engineering & Procurement
ADMA OPCO- Nasr Full Field Development - Phase 2 (Package 1 - Wellheads and Pipeline)	Abu Dhabi	Oilfield Development	900,000,000	Construction
ADMA OPCO- Nitrogen Plant Upgrade	Abu Dhabi	Nitrogen	55,000,000	Design
ADMA OPCO-Umm Shaif Oil Network Expansion-Phase 2	Abu Dhabi	Oilfield Development	300,000,000	EPC ITB
ADMA-OPCO - 100 MBD DAS Facilities Upgrade Project	Abu Dhabi	Oilfield Development	48,000,000	Construction
ADMA-OPCO - Das Island Flares Modifications - Revamp Project	Das Island	Gas Processing	50,000,000	Construction
ADMA-OPCO - Nasr Full Field Development - (Overview)	Nasr Field	Oilfield Development	3,500,000,000	Construction
ADMA-OPCO - SARB Offshore Oil Field Development - (Overview)	Abu Dhabi	Oil Processing Facility	2,000,000,000	Construction
ADMA-OPCO - SARB Offshore Oil Field Development - Package 2	Abu Dhabi	Oil & Gas Field	500,000,000	Construction
ADMA-OPCO - SARB Offshore Oil Field Development - Package 3	Abu Dhabi	Gas Pipeline	300,000,000	Construction
ADMA-OPCO - SARB Offshore Oil Field Development - Package 4	Abu Dhabi	Gas Processing	500,000,000	Construction
ADMA-OPCO - Umm Al Lulu Field Development - (Overview)	Umm Al Lulu	Oilfield Development	2,500,000,000	Construction
ADMA-OPCO - Umm Al Lulu Field Development - Package 1	Abu Dhabi	Oilfield Development	2,500,000,000	Construction
ADMA-OPCO - Umm Al Lulu Field Development - Package 2	Umm Al Lulu	Oilfield Development	2,500,000,000,000	Engineering & Procurement
ADMA-OPCO - Umm Shaif Infield Pipelines Replacement	Umm Shaif	Oilfield Development	500,000,000	EPC ITB
ADMA-OPCO - Zakum Facilities for 4 Gas Injectors	Abu Dhabi	Gas Production	100,000,000	Construction
ADMA-OPCO- Lower Zakum - Oil Lines Replacement (Phase 1)	Zakum	Pipeline	950,000,000	Construction
ADOC - Hail Offshore Oilfield	Abu Dhabi	Oilfield Development	500,000,000	Engineering & Procurement
ADOC - Mubaraz Field Expansion	Abu Dhabi	Oilfield Development	500,000,000	FEED ITB
ADPC & Al Gharbia Pipe Company - KIZAD- Pipeline Factory	Abu Dhabi	Oil	300,000,000	Engineering & Procurement
BOROUGE - Borouge III - Flare Gas Recovery	Abu Dhabi	Gas Processing	150,000,000	Construction
Borouge - Mix 4Cs Export Facility	Abu Dhabi	Butadiene	60,000,000	Design
BPGIC - Fujairah Oil Terminal (Phase 1 & 2)	Fujairah	Oil Storage Tanks	200,000,000	Construction
Chemaweyaat - Tacaamol Aromatics Project	Abu Dhabi	Petrochemical Plant	10,000,000,000	EPC ITB
Dana Gas - Zora Gas Field	Sharjah	Gas Exploration	100,000,000	Construction
Dolphin Energy - Northern Emirate Pipeline (NEP)	Sharjah	Gas Pipeline	45,000,000	EPC ITB
DPE - Al Jalila Field (Phase 2 - Offshore platform B and pipelines)	Al Jalila	Oilfield	100,000,000	Construction
Ecomar- Fujairah - Petroleum Regeneration and Processing Facility	Fujairah	Refinery	70,000,000	Engineering & Procurement
Emirates LNG - Fujairah LNG	Fujairah	Liquefied Natural Gas (LNG)	3,000,000,000	EPC ITB
ENOC - Jebel Ali Refinery Capacity Expansion	Jebel Ali	Refinery	850,000,000	EPC ITB
Fujairah Port - Port Facilities Expansion	Fujairah	Oil Storage Tanks	100,000,000	Construction

Project	City	Facility	Budget (\$US)	Status
GASCO - Abu Dhabi Sales Gas Network- Compression Station	Abu Dhabi	Gas Pipeline	900,000,000	Feasibility Study
GASCO - Black Powder Management	Abu Dhabi	Gas Pipeline	44,000,000	Construction
GASCO - Habshan to Ruwais - 16 inch Condensate Replacement Pipeline	Abu Dhabi	Gas Pipeline	90,000,000	Construction
GASCO - Habshan-Maqta-Taweelah Gas Pipeline	Abu Dhabi	Gas	150,000,000	Construction
GASCO - Integrated Gas Development (IGD) - Expansion [Onshore Pipeline]	Abu Dhabi	Gas Production	12,000,000,000	Engineering & Procurement
GASCO - Shah Habshan Sulphur Granulation Plant	Abu Dhabi	Gas Production	479,000,000	Construction
GASCO - Yas - Mina Zayed Gas Pipeline	Abu Dhabi	Gas Processing	45,000,000	Engineering & Procurement
GASCO- Gas Turbine Replacement (Phase 1 - Asab & Buhasa)	Abu Dhabi	Gas Processing	130,000,000	FEED
GASCO- Habshan 5 - New Compression Train	Abu Dhabi	Gas Processing		EPC ITB
GASCO- HP Connection- New NGV Filling Stations (Phase 2A)	Abu Dhabi	Gas Pipeline	10,000,000,000	EPC ITB
GASCO- Integrated Gas Development - Expansion (42 Inch Pipeline)	Abu Dhabi	Oil Field Development	12,000,000,000	Engineering & Procurement
GASCO- Taweelah Compression Station	Abu Dhabi	Gas Processing	70,000,000	FEED ITB
Gulf Petrochem - Fujairah - Bitumen Refinery	Fujairah	Bitumen	300,000,000	Feasibility Study
Gulf Petrochem - Oil Storage Terminal Facility at Fujairah - Phase 2	Fujairah	Oil Storage Tanks	300,000,000	Feasibility Study
IPIC - Fujairah Refinery [EPC 1 & 2]	Fujairah	Refinery	3,500,000,000	EPC ITB
Kaloti Jewelery Group - Dubai - Precious Metals Refinery	Dubai	Gold	60,000,000	Construction
Kismat International - Petroleum Terminal [Phase 1]	Sharjah	Oil Storage Tanks	50,000,000	EPC ITB
Lamprell- Hamriyah Facility Upgrade	Hamriyah	Oil Storage Tanks	400,000,000	Construction
MASDAR & ADNOC - Carbon Dioxide Capture and Storage - Phase 2 [Pipeline Network]	Abu Dhabi	Carbon Dioxide	300,000,000	Construction
MASDAR - Carbon Dioxide Capture and Storage - Phase I (Mussafah Steel Rolling Mill)	Abu Dhabi	Carbon Dioxide	280,000,000	Construction
MASDAR - Carbon Dioxide Capture and Storage - Phase I [Overview]	Abu Dhabi	Carbon Dioxide	2,500,000,000	Construction
MASDAR - Carbon Dioxide Capture and Storage - Phase I [Pipeline Network]	Abu Dhabi	Carbon Dioxide	280,000,000	Construction
Petrixo Oil & Gas - Fujairah Bio-Fuel Refinery	Fujairah	Biofuel Refinery	1,300,000,000	FEED
Primestar Energy - Prime Tank Terminal & Jetty Pipeline	Fujairah	Oil Storage Tanks	165,000,000	Construction
Saif Al Khaili & KIZAD - Emirates Chemical Plant	Abu Dhabi	Caustic Soda	800,000,000	Engineering & Procurement
Sharafco - Hamriyah Free Zone - Storage Terminal	Sharjah	Oil Storage Tanks	100,000,000	EPC ITB
Takreer - Abu Dhabi International Airport Expansion - Aviation Fuel Depot	Abu Dhabi	Oil Storage Tanks	200,000,000	Construction
Takreer - Ruwais Refinery Expansion [Overview]	Ruwais	Refinery	10,000,000,000	Construction
Takreer - Ruwais Refinery Expansion [Package 1 - Crude Distillation Units]	Ruwais	Refinery	2,100,000,000	Construction
Takreer - Ruwais Refinery Expansion [Package 2 - Residue Fluid Catalytic Cracking Unit]	Ruwais	Refinery	3,100,000,000	Construction
Takreer- Carbon Black Plant	Ruwais	Polymers	200,000,000	Construction
Takreer- Hamriya Jetty and Pipeline Network Project - Marine Works 2	Hamriyah	Oil Storage Tanks	250,000,000	Construction
Takreer- IRP - Phase 3	Abu Dhabi	Refinery	200,000,000	FEED ITB
Takreer- Processing Offshore Crude Project	Abu Dhabi	Refinery	10,000,000,000	EPC ITB
Takreer- Ruwais Refinery East - Construction of Additional Outfall	Ruwais	Refinery	350,000,000	EPC ITB
Takreer- Ruwais Refinery East- SRU Replacement	Abu Dhabi	Refinery	100,000,000	FEED
Takreer- Ruwais Refinery Expansion [Package 3 - Offsites and Utilities]	Ruwais	Offsites & Utilities	2,730,000,000	Construction
Takreer- Ruwais Refinery Expansion [Package 4 - Tank Farm and Pipeline]	Ruwais	Oil Storage Tanks	1,300,000,000	Construction
Takreer- Ruwais Refinery Expansion [Package 7 - Marine Works]	Ruwais	Refinery	270,000,000	Construction
Takreer- Waste Heat Recovery	Abu Dhabi	Refinery	150,000,000	FEED ITB
Takreer-Ruwais East Refinery- Air Emission Measurement System	Ruwais	Refinery	40,000,000	FEED ITB
Union Chlorine - ICAD Chlorine Alkali Plant	Abu Dhabi	Chlor Alkali	70,000,000	Construction
VOPAK HORIZON - Fujairah Oil Terminal Expansion [Phase 7]	Fujairah	Gas Storage Tanks	200,000,000	Engineering & Procurement
VTTI - Fujairah Terminal	Fujairah	Oil Storage Tanks	120,000,000	Construction
ZADCO - Umm Al Dalkh ESP Installation - Package 1	Umm al Dalkh	Sub Sea Cable	650,000,000	Construction
ZADCO - Umm Al Dalkh ESP Installation - Package 2 [Phases 3, 4 and 5]	Umm al Dalkh	Sub Sea Cable	650,000,000	Construction
ZADCO - Umm Al Dalkh Full Field Development [Overview]	Umm al Dalkh	Oilfield Development	650,000,000	Construction
ZADCO - Upper Zakum Full Field Development - 750 Project [Overview]	Zakum	Oilfield Development	15,600,000,000	Construction
ZADCO - Upper Zakum Full Field Development - 750 Project - Surface Facilities - EPC 1	Zakum	Oilfield Development	1,300,000,000	Construction
ZADCO - Upper Zakum Full Field Development - 750 Project - Surface Facilities - EPC 2	Zakum	Oil Production	4,200,000,000	Construction
ZADCO - Zirku 7th Crude Oil Storage Tanks	Abu Dhabi	Oil Storage Tanks	30,000,000	Construction
ZADCO - Zirku Facilities Capacity Enhancement	Zirku	Oilfield Development	400,000,000	EPC ITB
ZADCO- 750 West Region- Capacity Expansion & Sulphate Reduction Plant- EPC 3	Zirku	Oil & Gas Field	300,000,000	EPC ITB
Zahara Group - Al Hamriyah - Storage Terminal	Sharjah	Oil Storage Tanks	200,000,000	Construction

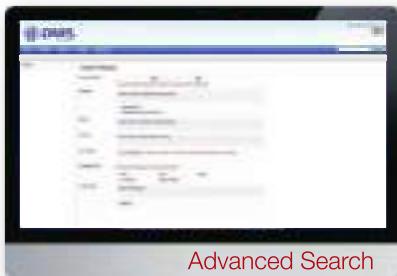
Over **10,000** major projects tracked
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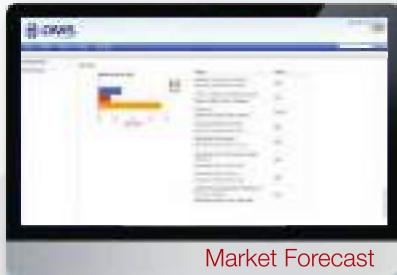
Project Overview



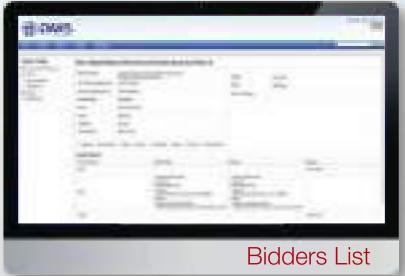
Advanced Search



Key Personnel



Market Forecast



Bidders List



Industry News



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- Project Scope and Background
- Track Project Schedules
- Key Personnel Details
- Track Entire Project Lifecycle
- Access Linked Projects
- Access Project Locations
- Advanced Search Features
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- Data Download
- Project Values and Financing
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- 65 Levels of Key Personnel
- Deeper Project Financing Data

CONTACT US

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Project Databank

Compiled by Data Media Systems

Project Focus

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Project Summary

Project Name	TAKREER- Processing Offshore Crude Project
Name of Client	TAKREER - Abu Dhabi Oil Refining Company
Budget (\$ US)	10,000,000,000
Facility Type	Refinery
Status	EPC ITB
Start Date	Q4-2013
End Date	Q1-2020
FEED	Bechtel Corporation
Award Date	Q3-2015

Project Background

Abu Dhabi Oil Refining Company (TAKREER) has announced plans to carry out modifications to process heavier offshore crude oil at Ruwais. Murban crude, which is used for feeding the new facilities, will be replaced by offshore crude from Upper Zakum fields and will be transferred by subsea pipeline to onshore. The project will modify RRE and CBDC Facilities to process 420,000 bpsd of offshore crude from Upper Zakum instead of Murban Crude.

Project Status

Sep 2015	Amec Foster Wheeler, Jacobs Engineering, Technip and Worley Parsons are currently bidding for the PMC contract.
Aug 2015	Technical proposal submission is scheduled for September. The bidders are revealed and listed in the bidder section.
Jun 2015	The project is currently under EPC bidding- technical. Companies participating in the bidding process cannot be disclosed at the moment.
Mar 2015	Bechtel have completed the FEED works on the project.
Jan 2014	Worley Parsons is the PMC for FEED for the project. The PMC for EPC will be allocated post EPC award.

Project Scope

FEED key areas of focus include:

- Crude assay characterisation
- Revamp process simulations
- Associated systems and processes

Treatment through new de-sulphurisation processes for distillate and residue streams produced is required due to higher residue yield of the Upper Zakum offshore crude and contaminants compared to Murban. Hence, there will be an addition of a 177,000bpsd Atmospheric Residue De-Sulphurisation (ARDS) Unit and supporting facilities. The scope includes existing RRE and CBDC modification and works related to utilities (power, water, steam).

Additional units implementation, including: Hydrogen Manufacturing Units, Saturated Gas Plant, Atmospheric Residue De-Sulphurisation Unit (ARDS), Sour Water Stripper (SWS), Amine Regeneration Unit (ARU), Sulphur Recovery Units (SRU) Tail Gas Treating Unit (TGTU).

Modified units, including: Crude Distillation Unit (CDU), Saturated Gas Plant and Saturated LPG Splitter, LGO Diesel Hydro-treating Unit under UOP License, HGO/LCO Mild Hydro-treating Unit under UOP License, Sea Water System.



مدينة الكويت

العطاءات والفساد. وليس هذه هي المرة الأولى التي تم فيها منع العقد، مرة أخرى، لمجموعة من المقاولين الدوليين من آسيا وأوروبا والولايات المتحدة للتقدم بالتقدم بالمشروع خطوة أكبر. وإذا ما سارت كافة الأمور وفقاً لما هو مخطط لها، فإنه يمكن في النهاية اكتمال المصفاة وتشغيلها مع نهاية عام ٢٠١٨ أو بداية عام ٢٠١٩.

ذلك واجهت شركة البترول الكويتية الوطنية تحديات أخرى شملت سجل أمان مشوب عقب وقوع مجموعة متتابعة من الحوادث والحرائق في موقع التكرير الأخرى لديها. وتسببت إحدى الحرائق، التي اندلعت في أغسطس/آب، في إغلاق مصافة الشعبية التي طاقتها ٢٠٠ ألف برميل يومياً، والتي تقع على بعد ٥٠ كيلومتراً من مدينة الكويت. وكانت هذه الحادثة ضمن آخر سلسلة من الحوادث، رغم أنه لم يتعرض أحد للضرر. وهذا يبين التحديات التي تواجهها شركات الطاقة الوطنية بالكويت، والمتمثلة في الحفاظ على بنية تحتية متقدمة للطاقة وتحديثها، وفي الوقت نفسه التقدم نحو مجالات جديدة، مثل إنتاج النفط الثقيل وأنواع وقود أنظف.

لكن ليست كل الأمور تبعث على التفاؤل. فقد صرحت وكالة الطاقة الدولية، العام الماضي، أنها تعتقد بأن أهداف الكويت لعام ٢٠٢٠ كانت غير واقعية بالنظر إلى الغياب التام لمشروعات التطوير المسجلة، وهو الأمر الذي يفتنه المسؤولون الكويتيون. ويكمّن التحدي الآن أمام مؤسسة البترول الكويتية ووحداتها التابعة العديدة في إثبات أن هذه الهواجس خطأً.

ال الكويتية. ويشمل المشروع المبدئي مرفق المعالجة المركزية (CPF) الرئيسي والبنية التحتية المرتبطة به، وكذلك مجمعاً لدعم الإنتاج. وهذا يتضمن إنشاء خط أنابيب يبلغ طوله ١٦٢ كم تقريباً، وسينقل النفط الخام الثقيل من مرفق المعالجة المركزية إلى منطقة صهاريج التخزين الجنوبي في الأحمدية.

نحو قطاع الصناعات التحويلية

من المحتمل أن يتم إرسال هذا النفط الثقيل، عبر قتوات، إلى مصافة جديدة في منطقة الزور، وهي عالية التقنية وقد التطوير حالياً. فقد توجه معظم اهتمام الكويت مؤخراً إلى تحسين قطاع التكرير والصناعات التحويلية المرتبطة به. وهذا يشمل تشغيل مشروع الزور الذي تأرجح طويلاً بين الإيقاف والتشفيل، وهي مبادرة تقودها وحدة أخرى تابعة لمؤسسة البترول الكويتية هي شركة البترول الكويتية الوطنية (KNPC). وب مجرد الانتهاء منها، ستكون المصفاة، التي تبلغ تكلفتها ١١ مليار دولار أمريكي، إحدى أكبر مصافي التكرير من نوعها في الشرق الأوسط، بطاقة ٦١٥ ألف برميل يومياً، مما يضاعف من الإنتاج الحالي بفعالية. كذلك سيرفع المرفق الجديد قدرات التكرير بالكويت من ٧٣٠ ألف برميل يومياً إلى ٤،٤ مليون برميل، ويسمح لها بإنتاج مجموعة كاملة من منتجات الوقود المتقدمة.

غير أن عملية تطوير حقل الزور قد تأجلت أيضاً أكثر من مرة بسبب التدخل السياسي، وقضايا

يقرب من ١٠٠ ألف برميل يومياً، هذا بالإضافة إلى المياه والغاز المرتبطين به. وسوف يعمل نظام خط أنابيب نقل النفط المجمع المتنوع، المقرر الانتهاء منه مع نهاية عام ٢٠١٧، على إمداد المواد الأولية الخام لكل مركز من مراكز التجميع الجديدة، وذلك عبر ثلاث شبكات مستقلة من أنابيب متفرعة وخطوط الأنابيب.

آفاق جديدة

ومع مواجهتها بتطوير مزيد من حقول النفط العتيقة التي تمثل تحدياً أكبر، تسعى شركة نفط الكويت أيضاً إلى افتتاح مناطق جديدة لتطوير قطاع التنقيب والإنتاج. وقد عكفت الشركة مؤخراً على إجراء مسح ثلاثي الأبعاد لمنطقة خليج الكويت بالتعاون مع وحدة زلازل بشركة BGP التابعة للشركة الصينية الوطنية للبترول (CNPC). ويعطي المسح، الذي من المتوقع أن يتم الانتهاء منه في شهر يونيو/حزيران ٢٠١٧، مساحة تبلغ ٢٥٠٠ كم مربع تمتد من شمال حقل البرقان في جنوب الكويت إلى حقل البحرين في الشمال. وسوف تشكل البيانات التي تم تجميعها جزءاً من الاستراتيجية المستقبلية للشركة لدعم الإنتاج على المدى الأبعد حتى عام ٢٠٣٠.

والجانب عكوفها على دراسة مجالات جديدة، تعامل شركة نفط الكويت كذلك مع الإمكانيات الهيدروكربونية غير التقليدية للدولة. فقد بدأت مشروع فارس للنفط الثقيل المنخفض، والذي يمكن أن يرفع الإنتاج بمعدل ٦٠ ألف برميل يومياً بحلول عام ٢٠١٨. ووّقعت الشركة مؤخراً عقداً لتنفيذ المرحلة الأولى من المشروع بتكلفة ٤ مليارات دولار أمريكي في حقل الرقيقة في شمال الكويت مع بتروفاك ومجموعة اتحاد المقاولين (CCC).

ووصف هاشم هاشم، الرئيس التنفيذي لشركة نفط الكويت، هذا المشروع بأنه علامة بارزة للكويت، فهو سيمكنها من إنتاج النفط الثقيل بكثبيات تجارية لأول مرة.

وتتوقع الشركة تنمية براعتها الفنية والتشغيلية في إنتاج النفط الثقيل عبر مشروع فارس المنخفض. ويقول هاشم إن تطوير النفط الثقيل يظل أحد الأهداف الاستراتيجية لشركة نفط



الكويت واحدة من أكبر منتجي النفط في العالم

تطوير قطاع التنقيب والانتاج

رغم هذا، يعني نطاق قطاع النفط الكويتي أن الاستثمار مستمر في مرافق الإنتاج الجديدة، والبنية التحتية المرتبطة بها. وإلى جانب تطوير المشروعات الجديدة، فإن هذا يعني أيضا دعم الإنتاج في الحقول المعمرة. ولشد ما توقى الحكومة الكويتية إلى رؤية سعة الإنتاج ترتفع لتصل إلى ٤ ملايين برميل بحلول عام ٢٠٢٠، مما يحتم على شركة نفط الكويت وشريكها. العمل بجد لاستخراج القيمة القصوى من حقل البرقان، والحقول العديدة الأخرى المنتشرة عبر الأراضي الصحراوية بالكويت.

وفي شهر يوليو/تموز، منحت شركة نفط الكويت عقداً قدره ٧٨٠ مليون دولار أمريكي لمجموعة الخدمات بتروفاك التي يقع مقرها بالمملكة المتحدة، وذلك لإنشاء نظام خط أنابيب نقل النفط المجمع المتعدد (MGT) في شمال البلاد. ويشكل هذا المشروع جزءاً من الخطة الإجمالية لشركة نفط الكويت من أجل زيادة إنتاج الخام، والحفاظ عليه على مدار السنوات الخمس المقبلة.

كذلك يجري حالياً تشييد ثلاثة مراكز تجميع جديدة (GCs)، وهي تكون جزءاً من المشروع الأكبر، مع قيام بتروفاك بتنفيذ عقد أحد هذه المراكز، وهو مركز التجميع رقم ٢٩. وسيكون بإمكان كل مركز من هذه المراكز الثلاثة إنتاج ما

دولة صغيرة وخطط طموحة

مارتن كلارك يشرح في هذا المقال خطط الكويت طويلة المدى لزيادة إنتاج النفط واستمرارها في لعب دورها الأساسي في أسواق النفط العالمية والتحديات العديدة التي تواجهها.

صغر مساحة دولة الكويت يتناقض مع أهمية قطاعها النفطي الغني. إذ أنها تصنف من بين المجموعات القابضة لمؤسسة البترول الكويتية (CPK). وتقود شركة نفط الكويت (KOC) صناعة صادرات النفط تحت إدارة مؤسسة البترول الكويتية. ويقع مقر الشركة في الأحمدي، وتشمل مسؤولياتها، على المدى الطويل، إدارة حقل البرقان الهائل الذي يمتد على معظم مساحة صحراء الجنوب الشرقي من الكويت. ويعتبر هذا المجمع النفطي البري الشاسع ثالثي أكبر حقل في العالم بعد حقل الغوار في المملكة العربية السعودية. وقد تم تقدير إجمالي النفط الذي يمكن استخراجه من هذا الحقل وحده بما يصل إلى ٧٥ مليار برميل، إضافة إلى احتمال وجود ٧٠ ترليون قدم مكعب من الغاز الطبيعي. وبالرغم من أن أحدث التقارير تشير إلى أن الاحتياطيات قد تكون الآن تهاوت إلى ٥٥ مليار برميل بعد عقود من الاستخراج المعزز للنفط، فإن هذا القطاع يظل مورداً في غاية الأهمية. وينتج حقل البرقان وحده أكثر من نصف إنتاج اليومي للدولة، وهو يمثل الأصل الوطني الذي تُقدرُه الكويت.

للكيانات الكبيرة المملوكة للدولة، والتي تترأسها صغر مساحة دولة الكويت يتناقض مع أهمية قطاعها النفطي الغني. إذ أنها تصنف من بين أكبر الدول العالمية المنتجة للنفط في العالم. فمع مستوى إنتاج يبلغ معدله ٢،٢ مليون برميل يومياً، تصل مبيعاتها النفطية إلى ما نسبته ٦٠ في المائة من إجمالي الناتج المحلي. وبنفس القدر من الأهمية، التي تقسم بها التدفقات الهائلة للعملة الأجنبية، خلق هذا القطاع أيضاً شيئاً من عدم التوازن في الاقتصاد، وهو الخلل الذي يظل عرضة لتقiplبات سعر السلعة. ولم يُجد ذلك نفعاً، في بعض الأحيان، لما يعيق وضع السياسات الملائمة بسبب الصراعات السياسية، وسعى المسؤولين إلى التغلب على قضايا حول الجدل الذي يحيط بدور الشركات الأجنبية في هذا القطاع.

مثال على ذلك «مشروع الكويت» سيئ الطالع، وهو محاولة، بدأت منذ عشرين عاماً لا جذب مزيد من الاستثمارات لقطاع التنقيب والإنتاج من الشركات الأجنبية، يسلط الضوء على بعض من هذه التوترات بوضوح. وعلى الرغم من أن الشركات العالمية مشاركة بفعالية كشركاء في قطاع الطاقة بالدولة، فإنه، مع ذلك، يظل خاصعاً

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تحقيق النجاح بفضل المشروعات المتكاملة

الموظفين الأساسيين بخبرة مكثفة في كل من مجالى التكرير والبتروكيماويات.

أما بالنسبة للمشروعات الجديدة، فبإمكان تطوير الثقافة التنظيمية على أساس التكامل، مع تعلم الدروس من أولئك الذين حققوا التكامل بنجاح. ومن وجهة نظر المشروع، وفي عالم تهيمن عليه المثالية، يجب دمج فرص التكامل في المشروع منذ بدايته. فالواقع المعاش، والقيود المالية تحد مما يمكن عمله عند بدء تصميم المشروع، ومع ذلك يمكن «إعادة تهيئته» العديد من فرص التكامل، ويمكن تطويرها بين المؤسسات الشريكة شريطة تنفيذ التخطيط المستقبلي في مراحل التصميم الأولية، ودمج وصلات مناسبة وعمليات عزل في التصميم. وهذا يعني أن الترابط بين المشغل وبين مقاول الأعمال الهندسية والشراء والتثبيت، وأيضاً مناخ تراخيص التقنية، يعتبر أمراً مهماً ويجب إدارته بكفاءة.

وحتى يكون التوفيق حليفها، لابد للشركات المنتجة أن تحظى بأعلى درجة من التفاني، والالتزام التام، وأن يكون لديها التنظيم المناسب لإدارة التكامل. إذ يجب أن يكون هناك دعم على مستوى مجلس الإدارة، ومشاركته في عملية التكامل. وفي حالة وجود أطراف متعددة، يجب أن يكون هناك التزام وفهم لتحقيق حل «مربي دائم». أما بالنسبة للمشروعات الجديدة، فيجب بدء تخطيط التكامل التفصيلي في المرحلة الأولى من العملية. كما يجب إشراك خبراء مستقلين نيابة عن المالكين، وذلك من أجل تحديد فرص التكامل العديدة التي توجد للسيناريو المحدد. إن العمل من أجل تحقيق مرونة المواد الخام سوف يكلف الكثير مبدئياً، ولكنه سيضاعف - بشكل حاسم - من المزايا المحتملة، والعائد على الاستثمار. إن التكامل الناجح يتطلب التفكير الذكي، والمعرفة والخبرة. ويجب على كل شخص مشارك في هذه المشروعات أن يقتصر كل فرصة للتعلم من الآخرين، وأن يسعى باستمرار لتحسين نهجه.

تعتبر [EPC] Euro Petroleum Consultants (الأوروبية للاستشارات البترولية) مجموعة استشارية مستقلة تأسست في لندن عام 1996. للحصول على مزيد من المعلومات، يرجى زيارة موقع www.europetro.com أو الاتصال بمكتب دبي على office@europetro-me.com.



التكامل هو الطريقة المثلث لتحقيق أعلى الأرباح

في هذا المقال، يلخص آندي جيبينز، نائب رئيس شركة Euro Petroleum Consultants (الأوروبية للاستشارات البترولية) بالشرق الأوسط وشمال أفريقيا، مزايا التكامل، والتحديات التي تواجهه.

نحن نسمع كثيراً، في هذه الأيام، عن مشروعات تتضمن التكامل بين التكرير والبتروكيماويات. وفي ظل انخفاض أسعار النفط الخام، تعتبر الكفاءة الانبعاثات والتكليف وتقديم منتجات ذات جودة عالية يطلبها العملاء (والجهات المنظمة). وإكسون موبيل لديها نموذج من خمس نقاط كانت تطبقه. بكل صراحة. على جميع مشروعاتها المتكاملة. ويكمّن الهدف من ذلك في تحسين المواد الأولية والمنتجات وتحسين التكاليف ورأس المال، والأهم من ذلك كله تحسين الأشخاص. ونجاحاً هذه المشروعات، التي اكتملت وتم تشغيلها، نجاحاً هائلاً. غير أن المؤسسات التي تولت تنفيذ تلك المشروعات سوف تقر، بكل تأكيد، أن هناك منحنى تعلم منحدر، وأنه يجب تطبيق الدروس المستفادة لمشروعات التكامل المستقبلية. مفهوم التكامل ليس بجديد. فشركة إكسون موبيل - على سبيل المثال - تتمتع بمستوى من التكامل يفوق نسبة ٩٠% في المائة. وتفوق الشركة، بشكل دائم، على نظائرها من حيث العائد على رأس المال الموظف، يرتبط ارتباطاً وثيقاً بالنهج الأمثل الذي قد تبنّيه الشركة على مدار عدة أعوام. كذلك عملت شركة توtal بجد على تكامل أصولها. ومع ذلك، ورغم العديد من سنوات النجاح، فقد كانت إكسون موبيل تعلن دوماً أن التكامل لم يكتمل أبداً، وأن النجاح يتطلب اتباع نهج



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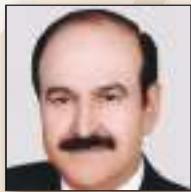
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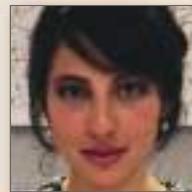
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الفعاليات» المنظمة للحدث: «إن الاكتشافات الجديدة تشير إلى أن مستقبل النفط والغاز يمكن في أعماق البحار، ما يخلق حاجة ملحة لأرضية متخصصة تجمع الخبراء من القطاع حول هدف مشترك يتمثل في الدفع قدماً بعجلة التنقيب والإنتاج البحري المستدام».

وأضاف كوزيه في معرض حديثه عن هذا الحدث الكبير: «سيشهد زوار (أديبك) هذا العام حجمه الكبير والنموا الذي حققه، ويلمسون مكانته المرموقة، فضلاً عن المنطقة المخصصة للعمليات البحرية والملاحية والمعدات الثقيلة، والتي يمكن الوصول إليها بسهولة ولا تبعد سوى ١٥٠ متراً عن مكان إقامة المعرض الرئيسي. وستتاح الفرصة أمام زوار الحدث لمشاهدة منصات النفط في محيطها الطبيعي، وحضور المؤتمر الذي سيتناول المواضيع الراهنة المتعلقة بعمليات الإنتاج البحري».

تكريم التميز واعداد قادة الغد

وتعد جوائز (أديبك) بقوة إلى حدث هذا العام، لتحتفى بالتميز والإبتكار وأفضل الممارسات في قطاع النفط، على مستويات الأفراد والشركات والمشاريع والمبادرات، وعلى الصعيدين الإقليمي والدولي. ومن المقرر تكريم الفائزين بجوائز (أديبك) خلال حفل عشاء فاخر يقام في فندق قصر الإمارات في الليلة الأولى من (أديبك).

ويستضيف (أديبك)، من جهة أخرى، مجموعة من الجلسات الخاصة بالنساء العاملات في قطاع الطاقة، في إطار فعالية «المرأة في الصناعة». وتجمع هذه الجلسات مجموعة من قادة القطاع من السيدات، بهدف تسليط الضوء على مستقبل المرأة في القطاع عبر النقاش واستعراض الصورة الشاملة لمجمل إنجازات المرأة والتحديات التي تواجهها في القطاع. ويستضيف برنامج «المرأة في الصناعة» جلسات لجان حوارية تقام على مدى يوم كامل في ٨ نوفمبر/تشرين الثاني، عشية افتتاح الحدث.

ذلك تعود إلى الحدث. للعام الثالث. فعاليات برنامج «شباب أديبك» ذائعة الصيت، التي حققت نجاحاً كبيراً في استقطاب الطلبة والجيل الشاب ولفت أنظارهم إلى قطاع النفط والغاز. وأطلق البرنامج هذا العام دعوة للمدارس المشاركة فيه لتعيين سفراء من طلبتها يمثلون البرنامج في أواسط المجتمع. ويشتمل البرنامج على جلسات تفاعلية لإشراك الطلبة ومساعدتهم في التعرف عن كثب على قطاع الطاقة وشحد مهاراتهم ذات الصلة بهذا القطاع.

لجمعية مهندسي البترول في الشرق الأوسط وشمال إفريقيا: «استطاع مؤتمر أديبك ٢٠١٥ تحطيم الرقم القياسي العالمي بعدد طلبات المشاركة بأوراق العمل والبحوث المتخصصة التي تلقاها، وهو إنجاز مهم يأتي في مرحلة شهد انخفاضاً في أسعار النفط، ويدل على أن (أديبك) أمسى واحداً من أهم الأحداث العالمية في القطاع، والتي تسعى شركات النفط الوطنية والعالمية وشركات الخدمات والشركات الصغيرة والمتوسطة إلى المشاركة فيها».

ويقدم المؤتمر برنامجاً حصرياً خاصاً بكمب بكمبار الشخصيات من أعضاء نادي الشرق الأوسط للبترول، وهو نادي لكبار المسؤولين في شركات النفط والغاز. وسيدعى البرنامج أسماء لامعة إلى المني، بينها المغامر البريطاني ومحيط الأرقام القياسية، السير رانولف فاينز، الذي وصفته موسوعة غينيس بأنه «أعظم مستكشف حي»، ليسأل الضوء على القيم المهمة المرتبطة بالقدرة على التحمل والصمود عند مواجهة التحديات، راسماً أوجهها للشبه بين الطبيعة وعالم الأعمال. وسيمنحك البرنامج الخاص بكبار الشخصيات أعضاء نادي الشرق الأوسط للبترول فرصة الاستماع إلى جون دوشنسكي، المفكر البارز المختص بالمشاركة الاجتماعية والأعمال التجارية المستقبلية، والذي سوف يعرض أفكاره في مجالات الإبتكار والقيادة والتحفيز، كأدوات لإحداث التغيير المنشود وتعزيز المشاركة في عالم الأعمال التجارية.

قطاع جديد للعمليات البحرية والمعدات الثقيلة

يقيم «أديبك ٢٠١٥» منطقة عرض جديدة متخصصة بالعمليات النفطية البحرية والملاحية والمعدات الثقيلة، تماشياً مع الاهتمام الإقليمي والدولي المتزايد بهذا الجانب، ومواكبةً للجهود المبذولة لمواصلة عمليات التنقيب والإنتاج النفطي البحري. وسيكون قسم «العمليات النفطية البحرية والملاحية» الجديد أول معرض للنفط والغاز في منطقة الشرق الأوسط يكرّس وجهة بحرية كاملة لتكون موقعاً للمنتجات والخدمات البحرية والملاحية. ويصاحب هذا المعرض الافتتاحي مؤتمر متخصص بالعمليات البحرية والملاحية يحمل الاسم نفسه، ويقام على مسرح ذي تصميم خاص مجاور للمياه، من المقرر أن يعتلي خشبة أربعون من الخبراء في العمليات النفطية البحريه لمشاركة الحضور آراءهم ومعلوماتهم.

وقال جان فيليب كوزيه، ممثل شركة «دي إم جي

(أديبك)»، من جهة أخرى، ملتقي مثالياً لأصحاب الاختصاص، سواء المستثمرين أو مقدمي الخدمات أو المقاولين أو الموردين، من أجل إقامة علاقات شراكة جديدة والبحث في الفرص التجارية المتاحة. يذكر أن أكثر من نصف المختصين في قطاع النفط والغاز الذين يحضرون (أديبك) يتمتعون بصلاحيات مشتركة أو مباشرة للشراء، وهو ما ساهم العام الماضي في إبرام صفقات تجارية كبيرة.

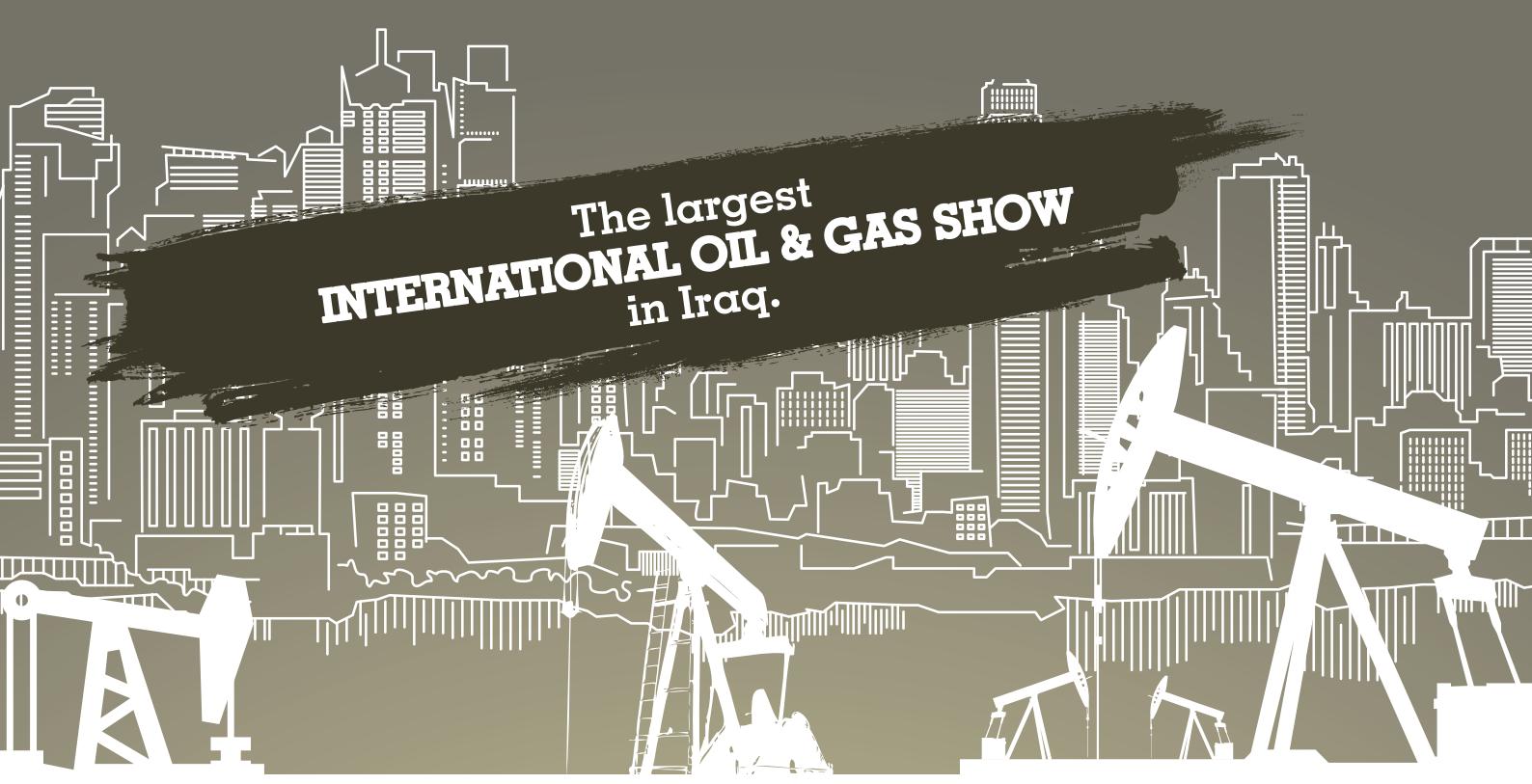
أبوظبي ملتقي قادة الفكر

يُعتبر مؤتمر (أديبك)، ببرنامجه الحافل بالفعاليات، منبراً إقليمياً رفيعاً، وهو يقدم مزيداً من الجلسات والمحاضرات هذا العام، بمشاركة ما يزيد على ٦٠٠ متحدث، وحضور سبعة آلاف موفد. ويشتمل المؤتمر على فعاليات متخصصة وأخرى عامة ضمن أكبر برنامج للمؤتمرات في تاريخه، تتناول جميعها مختلف الآراء ووجهات النظر الإقليمية منها والدولية المتعلقة بالقضايا المهمة في القطاع.

ومن المنتظر أن يُلقي الخبير العالمي البارز في مجال الطاقة، الدكتور دانييل يرغين، كلمة رئيسية في مؤتمر «أديبك ٢٠١٥». وسيعرض المؤلف الحائز على عدة جوائز، خلال كلمته المرتقبة، رؤيته بشأن التحديات والفرص المتعلقة بتلبية الطلب العالمي المتزايد على الطاقة، متناولاً التطورات الراهنة الحاصلة في موارد الطاقة التقليدية وغير التقليدية.

ويشمل برنامج مؤتمر (أديبك) على جلسات نقاش وزاريين وجلستان حواريين للتنفيذيين سوف تجمعان وزراء ومسؤولين رفيعي المستوى، وخبراء وصانعي قرار من دول عددة من أنحاء المنطقة والعالم، بُعْنية تبادل المعلومات واستعراض الأفكار والتجارب بشأن أهم القضايا التي تواجه المشهد الحالي المتغير في قطاع الطاقة. ونجح مؤتمر (أديبك) هذا العام في استقطاب ما يزيد على ألفي مشاركة بأوراق عمل وبحوث متخصصة. ويعود المؤتمر، الذي تنظمه جمعية مهندسي البترول، وفي جعبته ما يقرب من ٦٠٠ محاضرة تقنية في أكثر من ثمانى فئات رئيسية سيتم عرضها ضمن ٧٩ جلسة متخصصة على مدى أيام المعرض الأربع.

وفي هذا السياق، أعرب المهندس فريد عبدالله عن «اعجابه بالنحو الذي حققه مؤتمر (أديبك) المتخصص على مر السنين»، لافتاً إلى أن حجم المؤتمر «ينمو سنوياً بما لا يقل عن ٢٥ في المائة». وأضاف عبدالله، الذي يشغل كذلك منصب المدير الإقليمي



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الملتقى الإعلامي لمعرض ومؤتمر أبوظبي الدولي للبترول (أديبك) (٢٠١٥):

الابتكار والاستدامة ركيزتان أساسيتان في تطوير قطاع النفط والغاز

العاليون الدور القييم الذي يلعبه (أديبك) كعامل محفز للتقدم، الأمر الذي أدى إلى نمو الحدث نمواً ملحوظاً على مدى العقود الثلاثة الماضية».

قبال عالمي واسع

ويقام (أديبك) في أبوظبي، التي تعتبر من أهم مناطق إنتاج النفط في العالم، وتدعيم تنظيمه كل من وزارة الطاقة وشركة بترو أبوظبي الوطنية (أدنوك) وغرفة أبوظبي، فيما تنظمها شركة «دي إم جي للفعاليات». ويُتوقع أن يشارك في المعرض أكثر من ألف زائر، فيما يتَّطلع أن يشارك في الفعاليات المنعقدة في إطار المؤتمر سبعة آلاف موعد، وذلك استناداً على النجاح الكبير الذي حققه الحدث في دورته السابقة. وأكدت ١٥ شركة نفط وطنية، ومثلها دولية، مشاركتها في أديبك هذا العام، بينها شركات إقليمية مرموقة مثل شركة نفط الكويت، وقطر للبترول، وأرامكو السعودية، علاوة على كيانات عالمية عاملة، مثل بريتش بتروليوم (بي بي)، وإكسون موبيل، و(شل)، و(توتال).

من جانبه، قال سيف أحمد الغفلي: «إن الابتكار والإبداع يتركان بصمات واضحة على قطاع النفط والغاز، مشيراً إلى أن من أمضي وقتاً كافياً بالعمل في هذا القطاع سيكون قد شهد بنفسه التحولات التي أحدثها الابتكار فيه على مر السنين». وأضاف: «يمكِن (أديبك) أصحاب التخصص في قطاع الطاقة من النظر في القضايا الرئيسية التي تؤثر في التطور السريع الحاصل اليوم بالقطاع على المستوى العالمي. ويتيح

عدد من مراسلي وكالات الانباء والصحف المحلية والعالمية، ومختلف الوسائل الاعلامية، وحشد من كبار المسؤولين في أدنوك ومجموعة شركاتها. ويأتي تنظيم هذا الملتقى في سياق الاستعدادات الجارية لاستضافة الدورة الثامنة عشرة لأديبك، والتي من المنتظر أن تكون الدورة الأكبر في تاريخ الحدث الدولي البارز الذي يعد واحداً من أكبر ثلاثة معارض ضمن قطاع النفط والغاز في العالم، والأكبر في منطقة الشرق الأوسط وشمال إفريقيا وملتقى عالمياً يجمع المتخصصين في صناعة النفط والغاز حول العالم تحت مظلة واحدة.

الابتكار شعاراً

تقام فعاليات «أديبك ٢٠١٥» تحت شعار «الابتكار والاستدامة في عالم الطاقة الجديد»، وذلك تماشياً مع رؤية القيادة الحكيمة نحو جعل عام ٢٠١٥ عاماً للابتكار. ويجمع الحدث ألم العقول وأرفع الشخصيات شأنها من وزراء ومسؤولين حكوميين وتنفيذيين مختصين وخبراء وقادة فكر، من أجل إلقاء الضوء على القضايا الساخنة التي تدفع عجلة التحول في قطاع الطاقة، وتشمل التقنيات المبتكرة، وطرق التنقيب والاستخراج، ومزيج الطاقة العالمي المتغير، والدور الناشئ الذي تعبه موارد الطاقة غير التقليدية.

وقال على خليفة الشامسي: «ما يقدّمه (أديبك) لقطاع الطاقة؛ ملتقى عالمياً يجمع الخبراء والمختصين من أنحاء العالم من أجل تبادل المعرفة والأفكار وتطبيق أفضل الممارسات في النفط والغاز. وقد أدرك الرواد

أكَدَ القائمون على معرض ومؤتمر أبوظبي الدولي للبترول (أديبك ٢٠١٥) أن الدورة الثامنة عشرة، التي تطلق فعالياتها برعاية الشيخ خليفة بن زايد آل نهيان، رئيس دولة الإمارات العربية المتحدة، بين ٩ و١٢ نوفمبر/تشرين الثاني المقبل في مركز أبوظبي الوطني للمعارض (أديبك)، تشكل منصة مميزة لتعزيز الابتكار والاستدامة، ومنبراً للتفاعل الفني والتكنولوجي في مجال تطوير تطبيقات التنقيب والاستكشاف بقطاع النفط والغاز، والاطلاع على آخر ما توصلت إليه التكنولوجيا الحديثة في مجال حفر الآبار، وتطوير الحقول البترولية، وتعزيز انتاجية مصافي في قطاع على المستوى الإقليمي والعالمي، مؤكدين على أهمية التزام صناعة النفط والغاز بالابتكار والبحث والتطوير الذي يترتب عليه قدرة القطاع على تلبية الطلب العالمي المتامي على الطاقة، على نحو مستدام.

جاء ذلك في الملتقى الإعلامي الذي عقد مؤخراً بفندق سانت ريجيس بالعاصمة أبوظبي بحضور علي خليفة الشامسي، مدير دائرة الاستراتيجية والتنسيق لدى شركة بترو أبوظبي الوطنية (أدنوك)، رئيس معرض ومؤتمر «أديبك ٢٠١٥»، وسيف أحمد الغفلي، الرئيس التنفيذي لشركة الحصن للغاز، الرئيس المشارك لـ«أديبك ٢٠١٥»، والمهندس فريد عبد الله، النائب الأول للرئيس لأصول مشروع «شمال شرق باب» لدى شركة أبوظبي للعمليات البترولية البرية المحدودة (أدنوك)، رئيس اللجنة الفنية لمؤتمر «أديبك ٢٠١٥»، وجان فيليب كوزيه، ممثلاً عن الشركة المنظمة للحدث «دي إم جي للفعاليات». كما حضر الملتقى الإعلامي

مشروع تطوير حقل غاز شاه الإماراتي يصل إلى كامل طاقته

وصل مشروع تطوير حقل غاز شاه بدولة الإمارات العربية المتحدة إلى كامل طاقته الإنتاجية البالغة ٢٨,٣ مليون متر مكعب، وذلك وفقاً لما ذكره أحمد الغفلي، الرئيس التنفيذي لشركة الحصن للغاز، وهذه الشركة عبارة عن مشروع مشترك بنسبة ٤٠٪ بين شركة بترو أبوظبي الوطنية وشركة أوكسيدنتال بتروليوم الأمريكية، وهي تدير حقل شاه للغاز الحامض الذي يقع حوالي ٢٠٠ كم غرب أبوظبي.

يعتبر هذا المشروع طموحاً للغاية بالنسبة لدولة العربية المتحدة. فهو مصمم لتطوير الغاز الحامض جداً ومعالجته. وقد تم استخدام بعض من أكبر وحدات معالجة الأمين واستعادة الكبريت في هذا المشروع من أجل الاستخراج. ومن المحتمل أن يقوم المشروع بمعالجة ٥٠ مليار قدم مكعب يومياً، وذلك وفقاً لما أورده المسؤولون عن المشروع. وفي بدايات هذا العام، توقع الغفلي بأن يصل المشروع ل الكامل طاقته مع نهاية عام ٢٠١٥. وصرح بأن نطاق المشروع أكبر من أي مشروع غاز حامض آخر على مستوى العالم. ويحتوي الحقل على مستويات مرتفعة للغاية من كبريتيد الهيدروجين، مما يجعله مشروعًا مربحاً جداً للدولة.



مُفكرة رجال الاعمال

نوفمبر / تشرين الثاني

١٢.٩ — معرض أبوظبي الدولي للنفط
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٢٢.٢٥ — المعرض السعودي الدولي
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٢٤.٢٦ — مؤتمر ومعرض النفط والغاز
والبتروكيماويات. إنترغاز القاهرة

٢٥.٢٦ — مؤتمر الشرق الأوسط للنفط
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٣٠.١٢/٢ — معرض كردستان العراق
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٦.٨ — مؤتمر الشرق الأوسط وشمال
أفريقيا للتغور التشغيلي في قطاع النفط

Op ExMENA OpEx MENA
والغاز والبتروكيماويات. أبوظبي

٦.٩ — المؤتمر الدولي لتكنولوجيا
البترول. IPTC 2015 الدوحة

إنترتك تفوز بعقد لتفتيش الفني من شركة نفط الجنوب



حسين الأطرقجي

فازت «إنترتك»، وهي مزود رائد لحلول الجودة ل مختلف القطاعات حول العالم، بعقد لتفتيش والرقابة من شركة نفط الجنوب في العراق، وهي شركة وطنية عراقية مسؤولة عن كافة مشاريع النفط والغاز في جنوب العراق، وذلك لإجراء عمليات التفتيش والرقابة بالنيابة عنها. وقد تم توقيع الاتفاقية مؤخراً وهي اتفاقية طويلة الأجل تمتد لعدة سنوات. علماً بأن هذه هي المرة الأولى التي تعيّن فيها شركة نفط الجنوب شركة خارجية لتقعدها إليها القيام بأعمال التفتيش والرقابة، وذلك لمساعدتها على ضمان الجودة والسلامة في كافة مشاريعها المتعاقد عليها مع مختلف شركات النفط والغاز. سيشمل نطاق عمل «إنترتك» إجراء الفحوص والتفتيش والرقابة والكشف على كافة العناصر والمواد المستخدمة من قبل شركات النفط والغاز التي تشرف شركة نفط الجنوب على أعمالها.

وسيتحقق الخبراء، المتخصصون في شبكة «إنترتك» العالمية، من جودة المنتجات والعمليات في عموم سلسلة التوريد، بدءاً من تأمين المواد من مصادرها وحتى عمليات تصنيع وإنتاج تلك المكونات والقطع والمكونات المستخدمة في شتى مراحل المشاريع. وسيتم إجراء بعض خدمات التفتيش والفحوص التقنية في المصانع حتى يتم الإطلاع على طريقة إدارة عملية الإنتاج، ولضمان توافقها مع المعايير العالمية، والتزامها بالمواصفات المحددة من قبل شركة نفط الجنوب. كما سيتمكن إجراء الفحوص والاختبارات الأخرى في مختبرات «إنترتك» حول العالم. وصرح حسين الأطرقجي، نائب رئيس «إنترتك» للخدمات الصناعية في منطقة الشرق الأوسط وشمال إفريقيا وغرب آسيا قائلاً: «يسرنا أن نعمل على اختبار وفحص المواد المستخدمة في كل المشاريع التي تتضمنها شركة نفط الجنوب. وت森هم التقنية العالمية التي تتيحها (إنترتك) في أسواق وتحصصات مختلفة، مجتمعة مع خبراتها المتطورة في مجال المختبرات، في منح شركة نفط الجنوب الدعم المطلوب في عموم سلسلة نشاطاتها لضمان توفير منتجات عالية القيمة». وسوف تقدم «إنترتك» خدمات عالمية المستوى لضمان الجودة خلال الدورة الكاملة للمشروع، بدءاً من مرحلة التصميم والشراء وحتى مرحلة التركيب والتشغيل. ويساعد استخدام خدمات، مثل تلك التي تقدمها «إنترتك»، الشركات على ضمان جودة منتجاتها وإجراءاتها وأصولها، في حين تقلص من عدد المخاطر التي قد تؤثر على عملية التشغيل وعلى سلامة الموظفين والبيئة.



انخفاض إنتاج الولايات المتحدة من النفط نتيجة أنشطة الحفر المحدودة وقيود الائتمان الصارمة

الحصة السوقية التي سيطر عليها الإنتاج المنافس الأعلى تكلفة. ويجري حالياً تداول النفط عند سعر أدنى عن ٥٣ دولاراً أمريكياً للبرميل، وهو نصف سعره الذي كان قد حققه في عام ٢٠١٤. ومن المتوقع أن ينحدر الإمداد خارج منظمة أوبك إلى ١٣٠ ألف برميل يومياً في عام ٢٠١٦ . فقد انخفض الإنتاج في كل من الولايات المتحدة الأمريكية، والاتحاد السوفيتي السابق، وأفريقيا والشرق الأوسط، علاوة على جزء كبير من أوروبا. وقد تأثر الإنتاج تحديداً في الولايات المتحدة الأمريكية، وهي إحدى أكبر الموردين من خارج منظمة أوبك، وذلك نتيجة أنشطة الحفر المحدودة، وظروف الائتمان الأكثر صرامة، والتنيدة بوصول محدود للتمويل. ويأتي الطلب الأعلى على النفط من منظمة أوبك بالرغم من نمو الطلب العالمي الأضعف في المجال. وذكرت رويترز أن منظمة أوبك قد خفضت تقديراتها لعام ٢٠١٦ لنمو الطلب العالمي على النفط بمقدار ٤٠ ألف برميل يومياً إلى ٢٥ مليون برميل يومياً، مستشهدة ببطء النمو في الصين.

ومن ناحية أخرى، يواصل إمداد أوبك في الارتفاع باعتباره مصدراً ثالثياً في منظمة أوبك، وقد ذكر التقرير أن الدول الأعضاء ضخت ٢١,٥٧ مليون برميل في شهر سبتمبر/أيلول والذي بلغ، بداية من شهر أغسطس/آب، ١١٠ ألف برميل يومياً. وإذا ما تم الحفاظ على معدلات الضخ، فقد يتضح أنه يمكن أن يكون هناك ٧٥ ألف برميل هائلاً في السوق العام القادم.

شركة فلور تفوز بعقد الزور في الكويت

العقد، والبالغ سعره ٢,٦ مليار دولار في الربع الثالث من عام ٢٠١٥ . وتقود شركة فلور مشروعًا مشتركًا يُعرف اختصاراً بـ FDHJV والذي يتكون من فلور ودايو للهندسة والإنشاء وهيوندai للصناعات الثقيلة. حيث تتفق مجموعة FD HJV حزمة واحدة حالياً في مشروع الوقود النظيف لشركة البترول الكويتية الوطنية، وسوف تبدأ الأنشطة في حزم الزور، التي تم منحها مؤخراً، في وقت قريب.

وقد صرحت تاكودي هان، رئيس خط الأعمال للأكيديايات والطاقة بشركة فلور في أوروبا وأفريقيا والشرق الأوسط قائلاً: «تفخر شركة فلور بمواصلة علاقتها طويلاً الأمد مع شركة البترول الكويتية الوطنية، والتي يمتد وجودها لما يزيد عن خمسة عقود، وأن تصبح جزءاً من مشروع الزور رفع المستوى، والذي يحظى بأهمية استراتيجية. فمنذ البداية، وعلى مدار كل مرحلة من مراحل المشروع، سينصب تركيزنا على التشييد الآمن والكافء، والتکليف، وبدء تشغيل مصفاة التكرير الجديدة هذه». وسيتم تشييد مجمع تكرير الزور في موقع حقل جديد تماماً يقع في جنوب الكويت. وعند الانتهاء منه، من المتوقع أن يكون هذا المجمع الجديد أحد أكبر معامل التكرير في العالم.

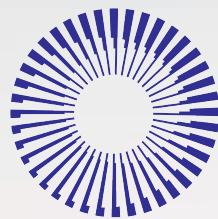
وسوف تتضمن التيسيرات في الحزمتين مجموعة متنوعة من وحدات المعالجة الأساسية، والمرافق والبنية التحتية اللازمة لمشروع تكرير نفط الزور الجديد في الكويت، والذي من المتوقع أن ينخفض إلى ٦١٥ ألف برميل يومياً. وقد حجزت شركة فلور نصيبها من

أعلنت شركة فلور، وهي شركة إنشاءات هندسية عالمية، أن فريقها في المشروع المشترك قد اختير من جانب شركة البترول الوطنية الكويتية (KNPC) باعتباره مقدم العطاء لحزمتي هندسة وشراء وتشييد (EPC).

المصفاة الجديدة ستكون واحدة من أكبر المصافي في العالم



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(سابك) تعلن عن إعادة هيكلة عملياتها العالمية لتعزيز خدماتها للعملاء



من المتضرر أن تكون إعادة التنظيم سارية المفعول في يناير ٢٠١٦

وقال البناء: «لدينا طموحات كبيرة على مستوى النمو، وتعزيز مكانتنا في السوق وفي مجال الابتكار». واختتم تعليقه، بالقول: «تهدف استراتيجيةنا العالمية لعام ٢٠٢٥ إلى أن تكون الشركة العالمية الرائدة والمفضلة في مجال الكيميائيات، عن طريق الالتزام بشعارنا كيمياً وتوافقاً. ويشمل هذا الأمر التميز في مجالات معينة مثل: تحقيق قيمة مضافة للعمالء، وحماية البيئة والصحة والسلامة، وتعزيز القدرة التنافسية من حيث التكلفة، مع تلبية طموحات مساهمينا».

حيث ذكر التقرير أنه «من المفترض أن يقلل ذلك من الإمداد الزائد في السوق، ويؤدي إلى طلب أعلى على النفط الخام المنظم أوبك، مما ينبع عنه أساسيات سوق نفط أكثر توازناً».

وقد قررت منظمة أوبك العام الماضي التصدي لزيادة الأسعار، وبدلاً من ذلك رفعت الإنتاج وسعت إلى استرداد

أعلنت الشركة السعودية للصناعات الأساسية (سابك) مؤخراً عن إعادة هيكلة عملياتها العالمية لتصبح الشركة أكثر مرنة، وتركز بشكل أكبر على تلبية احتياجات عملائها، مع تحقيق الفعالية في التكاليف. وتوقعت الشركة أن يكون هيكلها التنظيمي الجديد، والناتج عن هذه التغييرات، جاهزاً بحلول الأول من شهر يناير/كانون الثاني ٢٠١٦.

وتأتي عملية إعادة الهيكلة هذه عقب دراسة شاملة تناولت التحديات والفرص التي تواجه (سابك) في سياق تنفيذ استراتيجية الشركة لعام ٢٠٢٥. وتشمل تلك التحديات التغيرات في مشهد السوق، فضلاً عن حاجة الشركة لتعزيز جانبي التقنية والابتكار. وفي إطار سعيها لمواجهة هذه التحديات وتحويلها إلى فرص للنمو والتقدير، تعمل (سابك) على تحسين منتجاتها المختلفة، والاستثمار في الوقت ذاته في الابتكارات المطلوبة للنمو المستقبلي.

وبعد أن أعلنت (سابك) عن إعادة توزيع أعمال وحدة الكيميائيات المتخصصة بين وحدات أخرى في وقت سابق من العام الحالي، فقد استحدثت وحدة جديدة تحت اسم «المتخصصة»، والتي سُعِّنَتْ بجزء من أعمال الكيميائيات المتخصصة، وبما تبقى من حلول البلاستيكية المبتكرة، وذلك بعد أن تم إعادة توزيع أعمال وحدة العمل الاستراتيجية للبلاستيكية المبتكرة بين الكيميائيات والبوليمرات.

وفي معرض التعليق على هذه الخطوة، قال يوسف بن عبد الله البناء، الرئيس التنفيذي المكلف لشركة (سابك): «سوف تُسهم إعادة الهيكلة الجديدة في زيادة تركيز الموارد بشكل مكثف على الاحتياجات المطلوبة في كل مسار، مما يعزز ارتباط عملائنا بنا، عبر تقديم حلول أكثر تركزاً على احتياجاتهم، ويساعد (سابك) على الانطلاق إلى مستوى أعلى في إدراة منتجاتها المختلفة». وأضاف: «ستحسن هذه التغييرات من عملياتنا العالمية، من أجل خدمة عملائنا محلياً مع توفير الحلول عالمياً. وجاء تبني مثل هذا التحول نتيجة للاختلاف في أولويات التقنية الخاصة بالمنتجات الأساسية والمتخصصة. حيث سيعتمد مستقبل المنتجات الأساسية، وبشكل كبير، على الابتكار في مجال تقنيات المواد الخام المتطرفة. أما فيما يتعلق بالمنتجات المتخصصة، فهي تواجه تحديات تقنية أخرى مستقلة، بما في ذلك الحاجة إلى مواصلة السعي إلى عقد الشراكات أو الاستحواذ على التقنيات التي من شأنها أن تُشَرِّي منتجات (سابك) الحالية وتحدد خطط التطوير المستقبلية».

وأضاف البناء: «سوف تدفع هذه المبادرة بشركة (سابك) إلى الأمام لتحتل مكانة أقوى وأفضل، مما يجعلها قادرة على تحقيق الريادة العالمية في تلبية متطلبات العملاء، وتطوير الموظفين، والمشاركة في المجتمعات التي تحتضن عملياتها». وقال: «نحن ملتزمون ببناء شركة توفر للموظفين الفرصة للنمو والتطور».

توقع ارتفاع الطلب على النفط من منظمة أوبك

أفاد التقرير الشهري الصادر عن منظمة أوبك لشهر أكتوبر/تشرين الأول بارتفاع الطلب المحتمل على نفطها المقرب، وهو ما يعني ارتفاعاً يصل إلى ٥١٠ ألف برميل يومياً عن توقعها السابق.

وقد أفاد أحد التقارير الصادرة عن رويدز بأنه بناءً على تنبؤاتها، فقد يبدو أن استراتيجية منظمة أوبك فاعلة.

أفاد التقرير الشهري الصادر عن منظمة أوبك لشهر أكتوبر/تشرين الأول بارتفاع الطلب المحتمل على نفطها العام المقرب أكثر مما هو متوقع. وطبقاً لتقديراتها، قد يطلب المستهلكون ٣٠,٨٢ مليون برميل يومياً من أوبك العام



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