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Oil&Gas MIDDLE EAST

NEWS, DATA AND ANALYSIS FOR THE MIDDLE EAST'S ENERGY PROFESSIONALS

March 2016 • Vol. 12 • Issue 03

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CLEAR VISION

Soon-to-be Occidental CEO, Vicki Hollub, says the company is committed to the United Arab Emirates, and is eyeing other GCC opportunities

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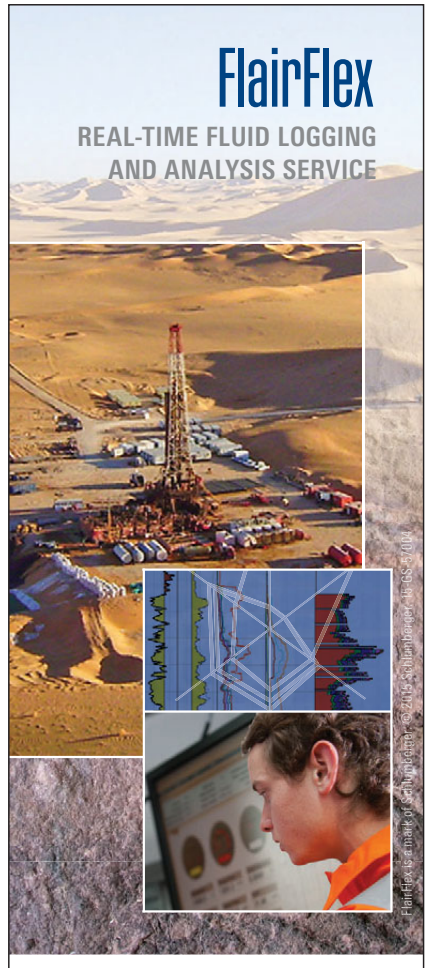

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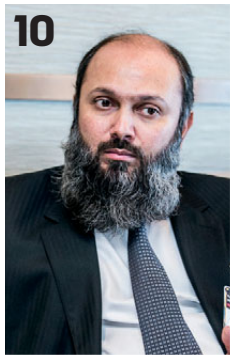

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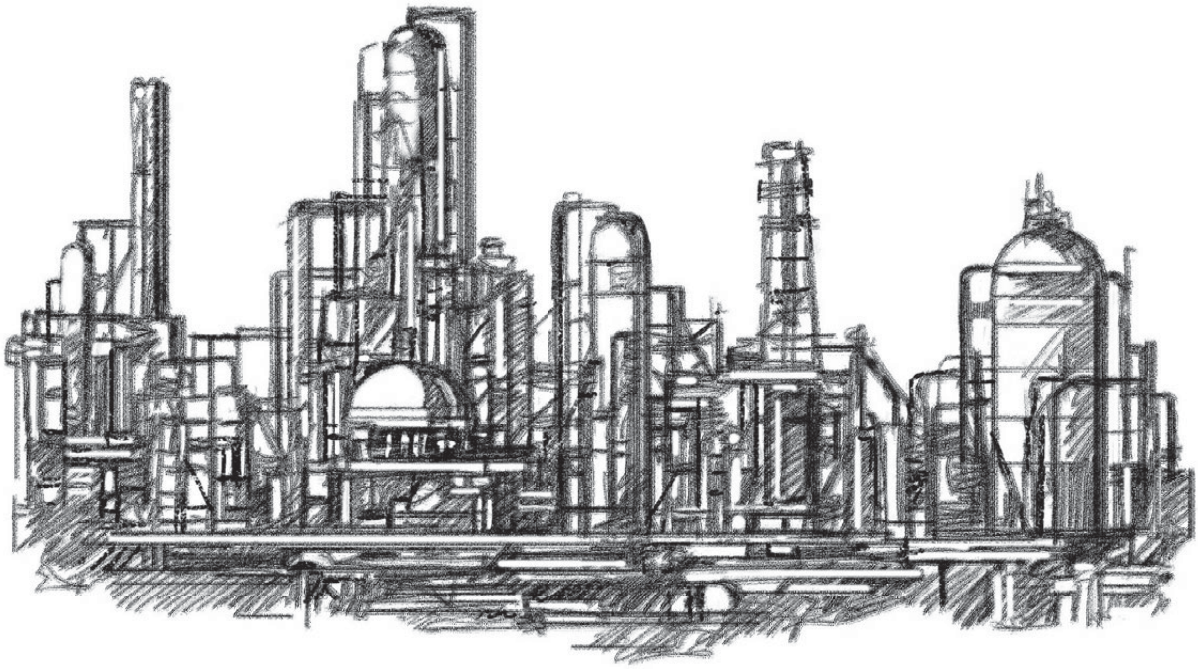

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Plotting the way to a safe future

High standards of health and safety have not been allowed to fall by the wayside, despite challenging times

THIS ISSUE: Health & safety is the name of the game this month, while Vicki Hollub, Occidental Petroleum CEO, is our cover star.

Back when I lived in the UK, I used to hear the expression 'safe as houses' a lot. It apparently alludes to the solid nature of investing in property, but over the years it has become a catch-all to describe something that is safe or reliable.

Now, of the many people who the Oil & Gas Middle East and wider energy team spoke with when putting together our annual HSSE Special, nobody uttered the phrase. But there was a common consensus that health and safety standards are higher in the energy industry than perhaps in other business sectors in the GCC.

What I found particularly encouraging was that while times are undoubtedly tough, vast investments are still being made to improve health and safety practices, properly train staff, and develop cutting edge health and safety technology.

I think it is a necessary and well-thought out approach; despite the falling oil price, the industry remains the leading revenue driver for many nations in the region, and it is imperative that leading professionals can still be attracted to work here.

Marquee projects – and be assured this is still the region when it comes to world-class projects and developments in oil and gas – demand the very best in manpower, technology and expertise. But all of the above is null and void if health and safety standards and practices are not world-class, too.

The GCC has always been and remains invested in the oil and gas industry for the long-term, and rightfully sees itself as a world leader. It is pleasing to see that even in a downturn, health and safety remains an absolutely integral part of its offering.

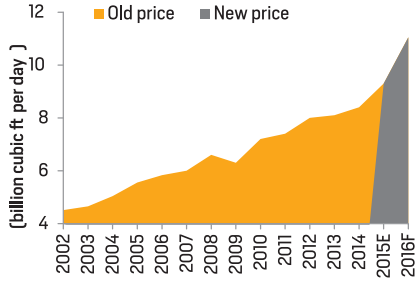
I speak from experience in this area; I would say the most hardly fought categories in last year's Oil & Gas Middle East Awards was for our Health & Safety products and initiative accolades, and we fully expect to see the same again this year (speaking of which, we'll soon be announcing the categories for this year's event – so keep your eyes peeled).

Many high-profile people in the industry have told me that the absolute number one priority for them is the health and wellbeing of their workers. One CEO told me that oil prices may go up and down, but that the most important thing will always be that people are safe and can return home to their family at night. Opinions on the future of the industry – in the short-term at least – may vary, but I think we can all agree on that.

Safe as houses.

James Henderson
Oil & Gas Middle East, Editor
james.henderson@itp.com

Saudi sales gas production expected to rise in 2016



Source: Saudi Aramco and Jadwa Investment

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Audited by: BPA Worldwide.
Audited Average Monthly Circulation: 8,291
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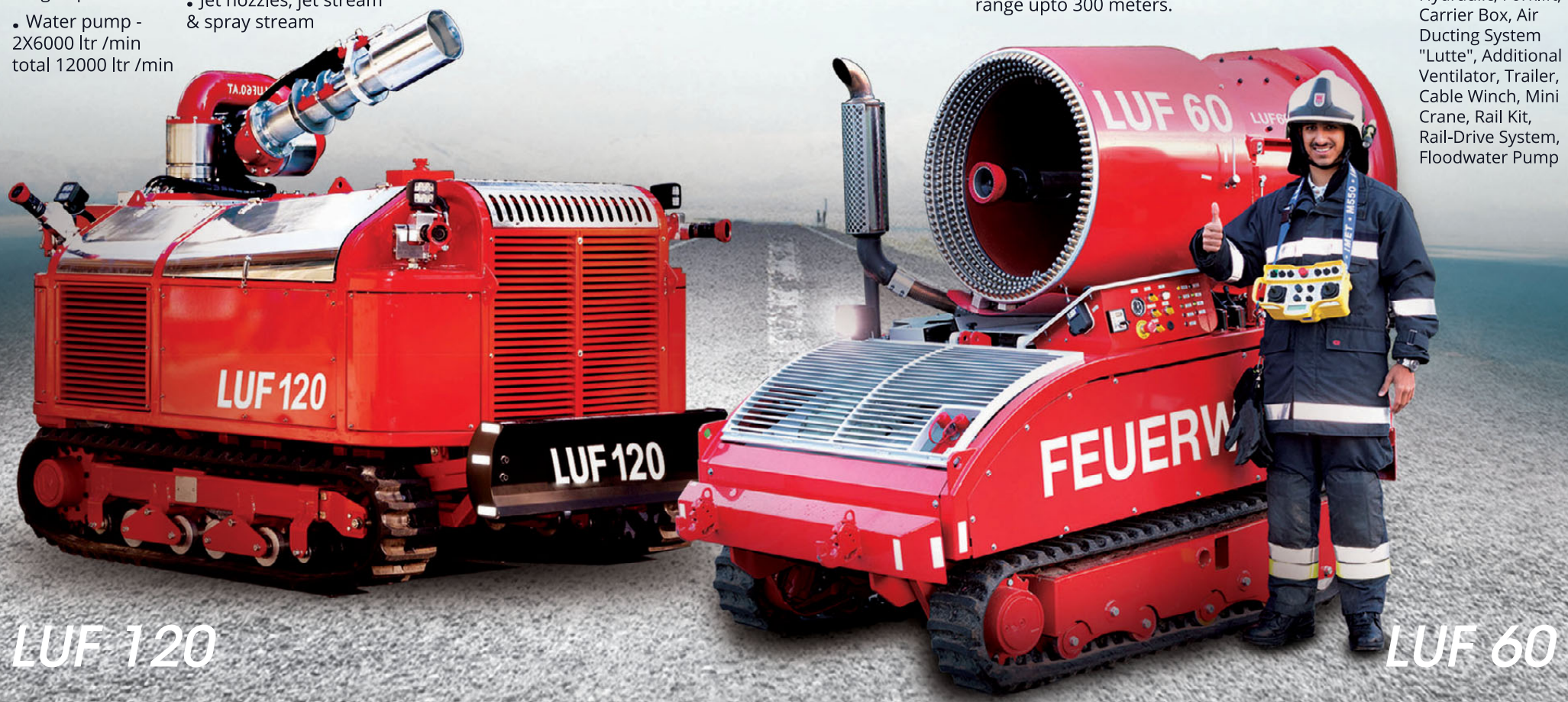

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A merging market?

Pinsent Masons report sheds light on M&A appetite globally

Having enjoyed nearly five years of continuous upward movement in the oil and gas sector, with prices anchored mainly above $100 per barrel, the oilfield services industry is now adjusting to a volatile outlook where 'lower for longer' is becoming a reality.

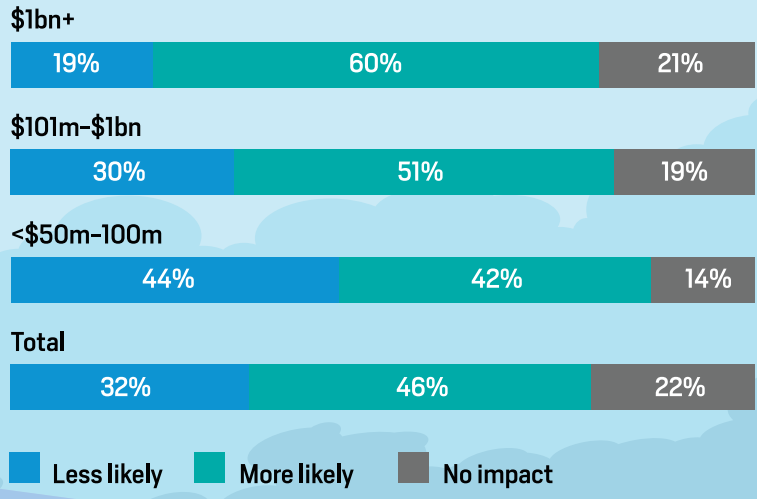
Significant changes have taken place in technology and engineering, as well as on the political and economic front, over the past decade. Drilling technology and capability has developed significantly. Wells now reach further horizontally and vertically – going deeper under water than ever before. Energy supply and demand patterns have shifted across the globe. OPEC is no longer the only producer on the block, and the International Energy Agency (IEA) is not just an organisation of energy consuming countries, with North America now an exporter.

Amid the uncertainty in the outlook for oil and gas prices, a 'low for longer' environment is on the cusp of driving transformative changes for players across the board. The overarching sentiment among industry professionals is that consolidation will take place in the oilfield services sector in 2016. This sentiment is reflected in the 86% of respondents who expect global oilfield services M&A activity to increase over the next 12 months – out of those, 30% expect a significant increase. A vast majority, 74%, expect much of the activity to be driven by cross-border deals into new territories.

Nearly half of our survey respondents say the drop in oil prices has made them more acquisitive. While expansion into new geographies appears to be a strong driver for corporates, respondents are more hesitant when it comes to sector diversification with many concentrating on improving their existing lines of business,

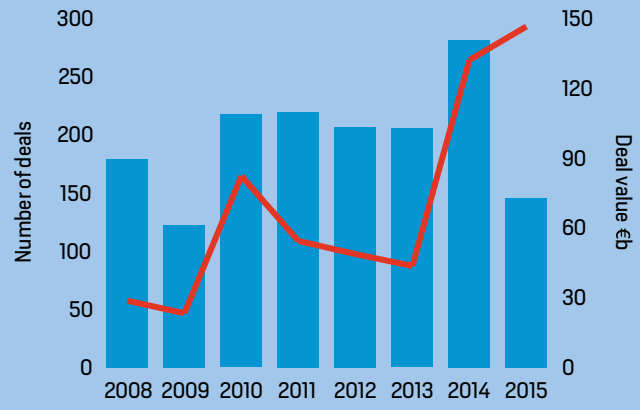
Source: Pinsent Masons

HAS OIL PRICE FLUCTUATION MADE YOU MORE OR LESS LIKELY TO CONSIDER ACQUISITIONS? (BY REVENUE)



Most attractive segments

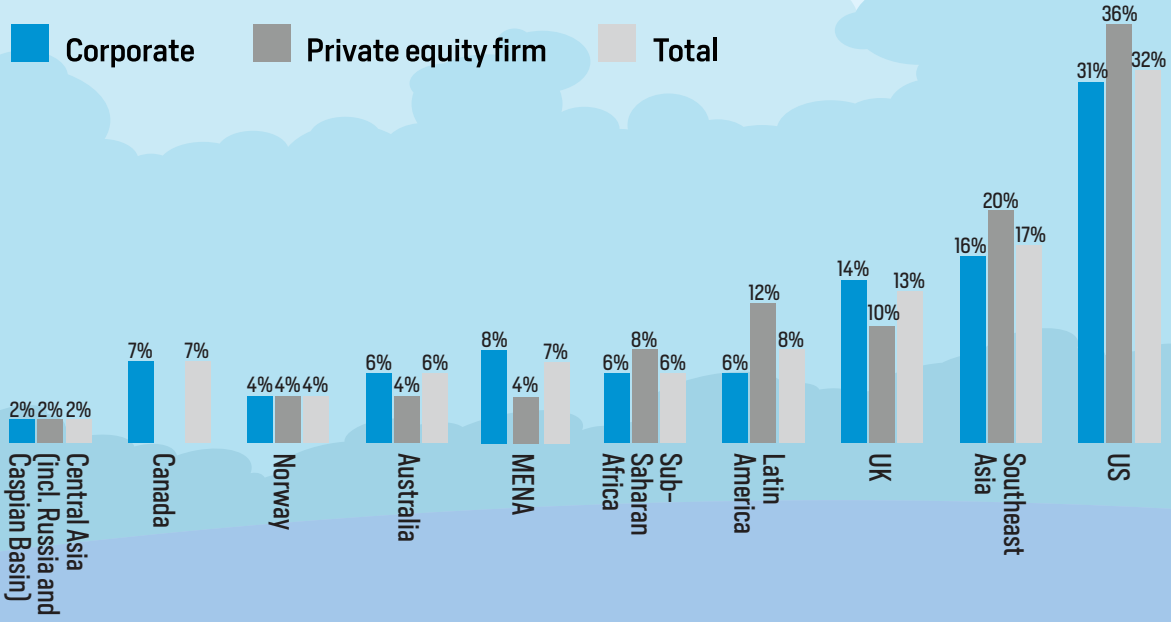
1. Offshore/ subsea technology (47%)
2. Rigs/drilling equipment (33%)
3. Fully integrated business (27%)



70%

said their organisation is actively considering an acquisition within the next 12 months

IN WHICH REGION WILL COMPANIES SEE THE MOST OPPORTUNITY FOR ACQUISITIONS OVER THE NEXT THREE YEARS?



Most attractive features of targets

1. Strong order book/ pipeline (43%)
2. Political stability (13%)
3. Strong balance sheet (12%)

96% say UKCS will recover to 'peak' levels of profitability, with a quarter expecting it within three years

74% pinpointed expansion of overseas operations as the main driving force behind deal activity, with...

...70% expecting opportunism around distressed assets to drive deals and 60% eyeing technology-driven consolidation

86% of respondents expect oilfield services M&A to increase in the next 12 months, 30% anticipating major surge

67% of respondents said the UK would be likely to yield opportunity for buyers over the next three years

Respondents revealed that Singapore, Mexico, Indonesia, China and Nigeria are the most attractive emerging markets

Factors most likely to jeopardise deals

3. Weak or unclear order book/ pipeline (18%)
2. Lack of transparency in bidding environment (18%)
1. Denied or delayed regulatory approval (23%)

Source: Pinsent Masons

LNG IMPORT DEAL

What's cooking between Qatar and Pakistan?

Senior Pakistani stakeholders tell ***Indrajit Sen*** what the 15-year LNG supply deal with Qatar means for the energy-craving nation and how Islamabad plans to boost exploration and production to meet energy requirements

A file photo of Pakistan's strategic Gwadar port.

So then, a long-term natural gas deal between Qatar and Pakistan now seems to be in place, after more than a year of dilly-dallying. As per the agreement signed between the two nations, Qatargas will supply the Pakistan State Oil Company Limited (PSO) with up to 3.75mn tonnes of liquefied natural gas (LNG) a year for 15 years, according to Pakistan's Minister for Petroleum and Natural Resources, Shahid Khaqan Abbasi.

As part of the deal, which has been valued at a total of $16bn, Qatar is to meet about 20% of the energy-starved South Asian country's gas requirements, and the first cargo is expected to dock at a Pakistani port as early as this month.

Soon after the formal agreement was sealed on February 10, during Pakistani Prime Minister Nawaz Sharif's visit to the Gulf state, Abbasi told the Pakistani media that the deal was a 'game-changer' for his country, and that it would help save the country a billion dollars annually, once effective. From his side, Saad Sherida Al-Kaabi, chairman of Qatargas' Board of Directors described the agreement as 'a very important milestone in Qatar's standing as a reliable energy supplier as it marks the first direct long term agreement between the two companies'.

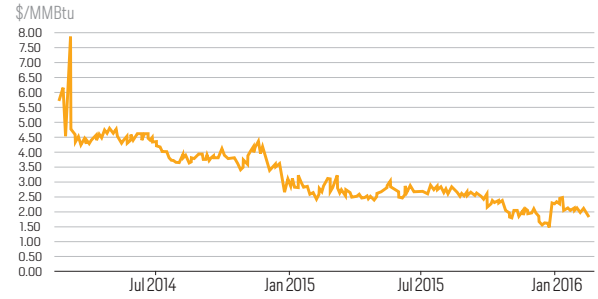
Speaking to *Oil & Gas Middle East* on the sidelines of the 7th Gulf Intelligence UAE Energy Forum in Abu Dhabi in January, when negotiations between Qatar and Pakistan was (still) in its advanced stages, a couple of senior Pakistani officials expressed optimism about the (then upcoming) LNG deal and revealed certain behind the scenes details and discussions in Islamabad in the run up to the deal.

"In terms of LNG supplies, almost two years back, when we started a new administration in Pakistan (led by PM Sharif), one of our main focus was how to diversify getting energy into the country," Jam Kamal Khan, Minister of State for Petroleum and

3.75M

Qatargas will supply up to 3.75mn tonnes of LNG per year during the contract.

Natural gas spot prices



Importing countries now eager to import gas at spot prices

Natural gas prices have plummeted since June 2014, from a high of $7.9 per million British thermal units (MMBtus) to $1.76/MMBtu in late February 2016. Considering the dramatic fall of spot prices of gas, countries importing LNG are now keener on settling deals on a spot market rate, rather than a fixed rate for a longer term. India recently modified its LNG contract with Qatar's RasGas to revise gas prices. Pakistan is yet to disclose the pricing structure of its LNG deal with QatarGas.

Source: Natural Gas Intelligence; EIA

↑ Jam Kamal Khan, Pakistan's Minister of State for Petroleum and Natural Resources

Natural Resources, and Abbasi's deputy, told this publication.

"So we initiated a plan of building a terminal facility. In one year's time we made a terminal," Khan said in reference to the Floating Storage and Regasification Unit (FSRU) at Elengy LNG terminal at Port Qassim in Pakistan's largest city Karachi, the country's first ever import terminal. In April 2015, the terminal received its first commissioned LNG cargo vessel from Qatargas. "In the same year, we had to foresee how to secure our volumes of supply," he said, looking back at the time when PSO had entered into a spot buying deal with Qatargas, and was eyeing a deal to buy 1.5mn tonnes of LNG annually, with scope for the volume to increase over time.

"Then we started considering three strategies. The first one was going for a long-term contract with any of the sovereign oil and gas producing countries, at a government-to-government level. The second strategy was to go for an open bid supply from the market, which was again going to have a mid-range time period of three to five years. And then we had a plan of buying from the spot market too," Khan revealed.

"We eventually went with a government-to-government deal with Qatar; Qatargas to be specific. Our talks and negotiations are very much in the final stages, and most probably in a few weeks' time, we do expect to see signatures on the final deal," Khan predicted almost a month before the deal.

Although not much details or figures have been made known by the parties about the pricing structure of the gas deal, *Reuters* quoted a government official in Islamabad saying that Pakistan had secured the LNG deal 'at a competitive price'. "Due to the drop in oil prices, we were able to secure a very viable deal. It has been a very favourable deal to Pakistan," the official was Continued on page 12>>

M&A

THREE THINGS YOU NEED TO KNOW...

1 Qatargas will supply the Pakistan State Oil Company Limited (PSO) with up to 3.75mn tonnes of LNG a year for 15 years. As part of the deal, which has been valued at $16bn, the first cargo is expected to dock at a Pakistani port as early as this month.

2 Pakistani government took a three-strategies approach. The first one was going for a long-term contract with a country, at a government-to-government level. The second was to go for an open bid supply from the market. The third was to buy gas from the spot market.

3 Pakistan is bidding for a second floating LNG terminal near to the one in Karachi, to be operational by mid-2017, and the process of pre-qualifying the bidders has begun. Authorities are mulling another terminal in the Gwadar port area.

Continued from page 11>> quoted as saying. In January, Pakistan backed out of a nearly $1bn deal to buy LNG from Royal Dutch Shell after receiving a lower price quote from Qatar, *Reuters* reported, citing its sources.

"The price structure has not been disclosed yet because of some clauses of non-disclosure in the agreement. It will be out soon," Khan said. "We are looking at a long-term agreement with Qatar, so obviously the price structure would be a bit different. Spot prices tend to vary a lot, so we are not relying on that," he said.

So why was Pakistan so keen on importing its much-needed LNG from Qatar, especially when Islamabad is already in talks with its neighbours Iran and Turkmenistan for building gas pipelines to buy gas? "I am very optimistic about the deal for the sheer reason that we have a natural alliance between Qatar and Pakistan. There's a tremendous relationship between both the countries. Qatar is the nearest source of LNG supply to our country, so there were no two ways," Zahid Muzaffar, chairman of the state-owned Oil & Gas Development Company Ltd. (OGDCL), and an advisor to the Petroleum and Natural Resources Ministry, said.

"For LNG, you need to have a firm supply and from the region, somewhere close by from where you can import LNG in the fastest possible time. That is why the preferred supplier was Qatar because it is in the region and close by," Muzaffar told *Oil & Gas Middle East*.

Pakistan is in the process of bidding for a second floating LNG terminal or FSRU near to the one in Karachi, to be operational by mid-2017. "We are getting our second terminal and are in the process of pre-qualifying the bidders soon. But that is not enough for us. We are looking at building at least two more terminals," Muzaffar said.

↑ Zahid Muzaffar, chairman of the state-owned Oil & Gas Development Company Ltd. (OGDCL)

According to Khan, authorities are mulling another terminal in the strategic Gwadar port area in the southwest, and is in government-to-government basis talks with the China for getting a subsidiary company of the state-owned China National Petroleum Corporation or CNPC, on board for the project. Also in the planning stages, the minister said, was a pipeline project to deliver LNG from Gwadar to Karachi, also the financial hub of the country.

Pakistan – home to about 190mn people and growing – has over the recent years been suffering from severe electricity shortages, affecting not only the teeming millions of households, but also its industrial and other operations. Despite primarily being a natural gas producing nation, possessing fields with high reserves, the country has been unable to meet the gas requirements of its populace and industries, particularly the power sector, which relies on gas to produce 35-40% of the country's total electricity.

"We are having a two-pronged strategy: We are planning on importing gas and at the same time we are very much focussed on developing the resources that we have in Pakistan. In that order, we have a very good structure in what we have explored in Sindh and Punjab, and we are vigorously exploring Balochistan and Khyber Pakhtunkhwa. A lot of discoveries are taking place in these provinces, but we are looking for big discoveries like the one which was done years back in Sui, Balochistan," Khan said.

"We haven't discovered anything big in Sindh or Punjab at the moment. However about 65% of Pakistan's landmass has not been explored or surveyed at all. There is a big potential and we are very optimistic that we might find good reserves of oil and gas," he said.

Muzaffar mentioned OGDCL, which is a Pakistani government-mandated exploration and production company, has 'significant assets in the upstream sector', and has joint ventures with international companies like Italy's ENI, OMV, Hungary-based MOL Group, Chinese Group UEPL, BHP Billiton and Tullow Oil, PEL and Kuwait's Kufpec, the only GCC-based company operating in Pakistan.

As the Pakistani government embarks on its 'aggressive exploration' campaign, it has plans to offer open bids to lure international oil and gas companies. The minister told the magazine that the government allocated 40 blocks last year through open bids, and this year intends to tender for about 20 more blocks all over Pak, revealing that "a lot of these blocks will be in Balochistan, Punjab, Sindh and Khyber Pakhtunkhwa, as well as some offshore blocks."

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UPDATE

Coming up:

Saudi Arabia and Russia agree to freeze oil production

Saudi Energy Minister, Ali Al-Naimi said other measures could be considered in coming months


Ali Al-Naimi.

WHAT WILL THIS MEAN FOR THE OIL & GAS INDUSTRY?

While the announcement was not one of cuts, a pledge to freeze prices should shore up the oil price, in the short-term, at least.

Top global oil exporters, including Russia and Saudi Arabia have agreed to freeze output to tackle a global glut.

However key stakeholders at the meeting said the deal was contingent on other producers, with Iran absent from the meeting and planning to ramp up shipments.

The Saudi, Russian, Qatari and Venezuelan oil ministers visited Doha for a previously undisclosed meeting - their highest-level discussion in months on joint action to help prices recover from their lowest in more than a decade.

The Saudi Minister, Ali al-Naimi, said freezing production at January levels was an adequate measure and new steps to stabilise the market could be considered in the next few months.

He said he hoped other producers would adopt the proposal, while Venezuela's Oil Minister Eulogio Del Pino said more talks would take place with Iran and Iraq

"[It is] not quite a production cut but the news will be a welcome respite for Saudi and other Gulf nations, who had been reeling from the oil price plunge since June 2014," Muhamad Fadhil, regional manager for ICIS MENA, told *Oil & Gas Middle East*.

"High cost producers such as Venezuela and Nigeria will also be breathing a sigh of relief at least for now," Fadhil said.

Other analysts seemed more optimistic about Saudi Arabia's influence over global oil and gas producing countries in getting them to at least freeze their oil output.

"Although Saudi may have now agreed to freeze its oil production at January levels it would still take other OPEC and Non-OPEC producing countries to reduce production for an overall balance in supply and demand," Amrik Sembi, head of Liquid and Bulk Commodities, at OpenLink, commented on the news.

Iran has pledged to raise supply by 500,000 barrels per day in the months to come, as it looks to regain market share lost after years of international sanctions, which were lifted in January.

The Doha meeting came after more than 18 months of declining oil prices, knocking crude below $30 a barrel for the first time in over a decade.

The slump has been longer and deeper than anyone predicted, and the mood may be shifting among producers that have been determined to defend market share rather than prices. At time of press, oil prices wavered around $34.

QUOTE: "HIGH COST PRODUCERS SUCH AS VENEZUELA AND NIGERIA WILL BE BREATHING A SIGH OF RELIEF AT LEAST FOR NOW."

BP and Oman Oil ink pact to develop Khazzan Phase II

Agreement will add over 1,000km² to the original 2,700km² Block 61

GAS Britain's BP and partner Oman Oil have signed an agreement to develop a second phase of the Khazzan natural gas field, taking the estimated investment in the project to $16bn, the company said.

The agreement with the government of Oman will add more than 1,000km² to the original 2,700km² Block 61, which is expected to start delivering gas in late 2017, BP said.

The second phase is expected to come on stream in 2020, and together they are expected to produce 1.5bn cubic feet (bcf) of gas per day, the oil major said in a statement, equivalent to around 40% of Oman's current total domestic gas production.


Khazzan.

BP is the operator of the block, with a 60% interest, while Oman Oil holds 40%. The agreement was signed by Dr. Mohammed bin Hamad al Rumhy, Oman's Minister of Oil and Gas, Bob Dudley, BP group CEO, and John Malcolm, executive managing director of Oman Oil E&P.

2020

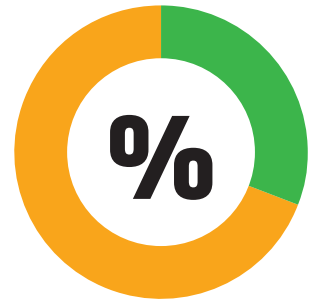
OOCEP plans to boost oil production to 200,000bpd by 2020

70MN

cubic feet per day OOCEP's gas output in 2015 will fall short by

SPOT POLLS

WILL NATURAL GAS PRICES RECOVER IN 2016 AS INVESTMENTS IN NEW CAPACITY ARE SHELVED, GAS DISPLACES COAL-FIRED POWER PLANTS IN THE US AND CHINA AND THE EU DIVERSIFIES ITS SUPPLIER BASE AWAY FROM RUSSIA?



Yes – 31%
No – 69%

Source: *Gulf Intelligence*

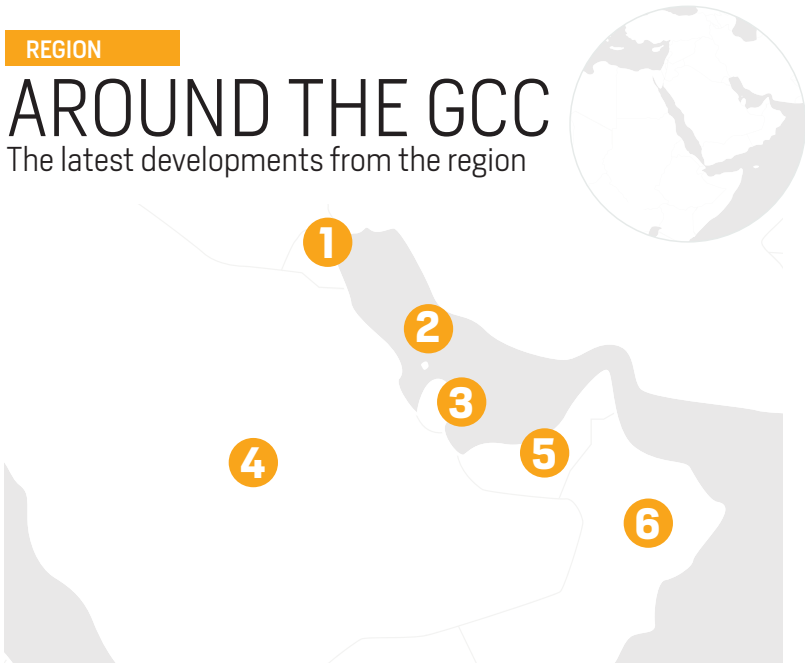
Lifting spirits

Nakilat-Keppel Offshore & Marine, the joint venture shipyard between Qatar's Nakilat and Keppel Offshore & Marin, has successfully delivered its first liftboat unit, Al Safliya, to Qatari rig operator Gulf Drilling International in a safe and timely manner without any lost-time incident.

REGION

AROUND THE GCC

The latest developments from the region



1. KUWAIT

Oil prices could reach a range of $50 to $60 a barrel by mid-2017, according to Kuwait Petroleum International (KPI) CEO, Bakheet al-Rashidi. "The global oil market is going through a correction and we have reached the bottom, *KUNA*, the official state news agency, quoted him as saying. Al-Rashidi told *KUNA* that the oil price drop was the result of market oversupply and slow demand from Asia.

2. BAHRAIN

Tatweer Petroleum has launched three major projects including a one-megawatt (MW) solar power plant. Dr Abdul Hussain bin Ali Mirza, Minister of Energy and chairman of Tatweer Petroleum, officially inaugurated three facilities at various Tatweer Petroleum locations within the Bahrain Field, including a High Volume Lift System together with the new Aruma extra heavy oil pilot.

3. QATAR

Qatar Petroleum (QP) on Monday said it has agreed to buy a 30% stake in three deep-water offshore leases in Morocco from Chevron Morocco Exploration, a subsidiary of Chevron Corporation. The sale will reduce Chevron's stake in the offshore leases to 45%, while Morocco's Office National Des Hydrocarbures Et Des Mines will retain a 25% holding. Chevron will remain the operator of the deep-water leases.

4. SAUDI ARABIA

Saudi Aramco and German specialty chemicals company Lanxess will be launching their new joint venture on April 1. The JV will be called Arlanxeo and manufacture a new product range of performance elastomers. Lanxess and Aramco signed an agreement in September last year to create a 50:50 joint venture for the development, production, marketing, sale and distribution of synthetic rubber.

5. UAE

The UAE's state-owned Abu Dhabi National Oil Co. or ADNOC plans to start a new liquefied natural gas floating import terminal (FSRU) in the second half of this year, three LNG industry sources told Reuters. The floating import terminal is being supplied by US gas shipping company Excelerate Energy, the sources said. One of the sources told *Reuters* that the terminal's import capacity will be about 1mn tonnes per annum.

6. OMAN

GE Oil & Gas has signed a long-term, multi-million dollar contract with Petroleum Development Oman (PDO) which is coming into effect in Q2, 2016. Joining hands with its local partner Edgo, this is GE's first ever contract awarded by PDO for the provision of integrated reciprocating rod pump equipment (RRP) and related services. As part of the deal, GE Oil & Gas will provide a wide range of specialised equipment.


Iran is set to pump harder than ever.

Iran aims to boost output by 160,000 bpd

PRODUCTION Iran aims to boost its crude oil production capacity by 160,000 barrels per day following the completion of expansion projects at its North Azadegan and Yadavaran oilfields, a senior Iranian oil official was quoted as saying.

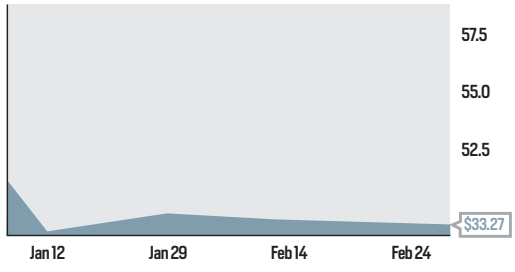
The two oilfields are both operational and ready to be officially inaugurated after the February 26 parliamentary elections, Abdolreza Haji-Hosseinnejad was cited as saying by Iran's oil ministry news agency Sana on Saturday.

Haji-Hosseinnejad is head of Iran's Petroleum Engineering and Development Company (PEDEC).

North Azadegan can produce 75,000 bpd and Yadavaran 85,000 bpd, he said. The gas section of Yadavaran oil field is waiting for LNG facilities to become productive, he added.

DATA SNAPSHOT

BRENT CRUDE OIL PRICE



The oil price bounced to above the $35 a barrel mark in the month, but fell away to below $34.

Source: oil-price.net

Oman Oil restructures into 4 units

Changes come as part of firm's plans for expansion and improving efficiency

CORPORATE The Oman Oil Co (OOC) will be restructured into three divisions as part of plans to improve efficiency and support expansion.

The new structure will see one unit consolidate OOC's domestic investments and look into selling some of the smaller assets, according to the CEO.

OOC has invested some $24.4bn in companies within Oman as of 2013, with investments in the Sultanate accounting for 65% of total spending.

Exploration and production activities, also known as 'upstream', will come under a second division, while a third unit will handle oil and gas infrastructure.

OOC has invested some $24.4bn in companies within Oman as of 2013

A fourth division will be responsible for Oman's Duqm Port project in the south of the sultanate which includes a terminal, a refinery and a petrochemical complex.

WHAT WAS THE PURPOSE?

The new structure, which has already been approved, will see one unit consolidate OOC's domestic investments and look into selling some smaller assets.

IN BRIEF

• **Librestream has won a contract to** provide the collaborative video camera technology for Petroleum Development Oman using Cisco networking products. PDO will use Librestream's Onsight rugged smart camera devices and Inmarsat BGAN services in the field to access it on their desktop computers.

• **Dolphin Energy has announced that it has** production reached 6tn standard cubic feet (scf), a milestone since the company started operations in 2007. The Dolphin Gas Project achieved full output in February 2008 and since then it has been delivering 2bn scf of gas per day to the UAE and Oman.

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Dana Gas sees Q4 2015 profit on Pearl Petro arbitration gain

Dana Gas earned a net profit of $134.2mn in the three months to December 31

A TURNAROUND

Dana Gas reported falling profits in the first and second quarters and a loss in the third quarter of 2015, hit by oil prices.

PROFIT The United Arab Emirates-based energy firm Dana Gas swung to a $134.2mn profit in the fourth quarter of 2015, as a one-time contribution from an arbitration process helped offset the global downturn in energy prices.

Dana Gas made a net profit of $134.2mn in the three months to December 31, compared with a loss of $4mn in the prior-year period, *Reuters* calculated, based on the firm's full-year earnings statement in lieu of a quarterly breakdown.

Dana Gas reported falling profits in the first and second quarters and a loss in the third quarter of 2015, hit by oil prices. Its chief executive officer, Patrick Allman-Ward, warned in November after reporting the third-quarter loss that the final three months of 2015 would be 'similarly challenging'.

However, the company said in a statement that it received cash later that month from RWE settling an arbitration which transferred a 5% interest in Pearl Petroleum Company.

ONLINE

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HITS OF THE MONTH

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2 Oman's National Gas Company fires CEO over bribery

3 Fire under control at Kuwait oil well site: KUNA

4 S&P says Qatar 'stable'; ratings at AA/A-1

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Oil&Gas MIDDLE EAST

35%

NORWEGIAN OIL FIRM STATOIL HAS SIGNED A FARM-IN AGREEMENT WITH TULLOW OIL TO ACQUIRE A 35% INTEREST OFFSHORE URUGUAY

$1.3BN

NORWEGIAN OILFIELD SERVICES FIRM AKER SOLUTIONS HAS SIGNED A FIVE-YEAR DEAL WITH FRONTICA TO STREAMLINE ITS STAFFING SERVICES, CONSULTANCY PROJECTS AND BUSINESS SUPPORT SERVICES DEPARTMENTS, IN A DEAL WORTH UP TO $1.3BN.

24%

PA RESOURCES AB HAS SIGNED AN AGREEMENT TO SELL ITS PORTFOLIO OF NORTH SEA ASSETS TO OMANI COMPANY PETROGAS E&P. THE SALE INCLUDES THE COMPANY'S 24% INTEREST IN LICENSE 12/06 IN DENMARK

$588MN

AMERICAN OIL AND GAS MAJOR CHEVRON CORPORATION HAS REPORTED A LOSS OF $588MN FOR Q4 2015.

$4.2MN

UK COMPANY BRISTOW GROUP HAS INVESTED $4.2 MILLION IN UNMANNED AERIAL TECHNOLOGY FIRM SKY-FUTURES

$5.2BN

IN 2015, THE OIL MAJOR POSTED AN ANNUAL LOSS OF $5.2BN, COMPARED TO THE $8.1BN PROFIT THE OIL MAJOR RECORDED IN THE PREVIOUS YEAR.

Aramco, Mitsubishi Hitachi deal done

MHPS will undertake maintenance of its equipment installed at Aramco facilities

SERVICE DEAL Saudi Aramco Gas Operations has agreed long-term service deal with heavy industrial gas turbine supplier, Mitsubishi Hitachi Power Systems Ltd. (MHPS).

The agreement between the two companies will provide field maintenance, monitoring and extensive technical support of gas turbines by domestically sourced maintenance, parts management, parts supply and repairing of machinery.

Aramco said the agreement would create 'local jobs'.

MHPS will undertake maintenance of their equipment installed at Saudi Aramco facilities, including generators and all auxiliary systems under the partnership of its operating facilities.

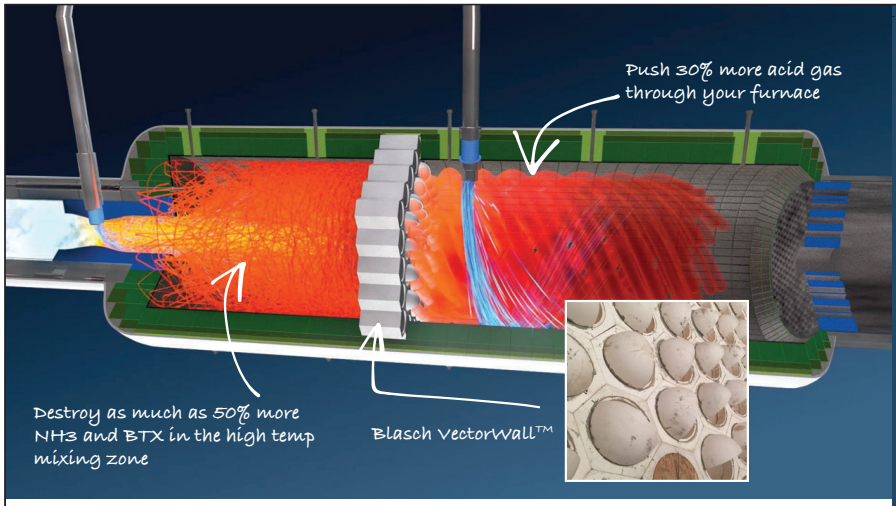
This includes management of Saudi Aramco's fleet of MHPS gas turbines and spare parts sharing, covering the gas turbine generator and auxiliaries, including storage, inventory management, and logistics by MHPS.

WHAT WAS THE DEAL ABOUT?

MHPS will provide field maintenance, monitoring and extensive technical support of gas turbines by domestically sourced maintenance, parts management, parts supply and repair.

UPCOMING EVENTS
INDUSTRY CALENDAR

- SPE Women in Leadership Symposium: Exceeding Expectations – 8–9 March
  Jumeirah at Etihad Towers, Abu Dhabi – Conference
- SOGAT – 20–24 March
  Beach Rotana , Abu Dhabi – Conference & Exhibition
- SPE Petroleum Economics Workshop: Planning for Profitability through Oil and Gas Price Cycles – 13 – 14 April
  The Address Dubai
- 17th Annual Abu Dhabi International Downstream – 8–10 May
  Abu Dhabi – Conference



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Using big data to survive the oil price slump

Understanding and utilising data can help companies in the oil and gas industry get through a difficult period

About the author:
Vinodkumar Raghothamarao is the Oil & Gas Big Data Expert for Epicor Software in the Middle East.

Like any other major industry, the oil and gas sector is embracing initiatives to help ease its way through the rapid digital transformation that is defining the 21st century landscape.

Harnessing the latest technology helps oil and gas companies to gain strategic insight, which in turn can help them to proactively respond to crucial industry challenges and act with more prudence in their decision-making.

One challenge currently faced by key industry players is big data. How can the oil and gas giants analyse the vast amount of data in their business systems? And how can they deploy information-led technologies to deal with market fluctuations based on this data?

Simply put, big data is a compilation of the data gathered from both traditional (structured data) and digital (unstructured data) sources from within and outside an organisation.

It refers to all the data that resides in a company's business systems, as well as the plethora of data coming from the web and social networks — sources of information that have to be sifted through and analysed before any meaningful action can take place.

Big data can play a role in softening the impact of low oil prices.

To better understand the fundamental role of big data in the industry, let us take a closer look at the impact of low oil prices, a major issue to recently hit the oil and gas industry.

Sliding oil prices have particularly impacted the GCC region. According to an industry report, the GCC economies are expected to grow by just 3.7% in 2016 — lower than previous years.

Oil companies across the region have taken essential steps, including downsizing, to mitigate the impact of falling prices and globally, projects worth around $200bn were cancelled in early 2015 due to the oil price slump.

When faced with information about price fluctuations, it is the rigorous analysis of this complex data that can help companies make better decisions and implement the correct strategy to


Sophisticated analytics tools can be used to support project planning.

respond to the effects of market fluctuations. Introspection and a thorough review of operational inefficiencies are also a must.

Based on data analysis, operators may need to reduce their capital expenditure, look at alternative development tools, re-tender projects in order to cut down costs, and push back investment where possible.

Manpower reduction, lower expenditure on non-critical field maintenance and the adoption of best-in-class supply chain strategies may also help oil and gas businesses to streamline their operations. By using big data analysis to calculate what efficiencies need to be made, businesses can optimise production and reduce operational costs by the necessary levels, in order to survive the tide of low crude oil prices.

To help deploy the above strategies, oil companies are turning to data tools such as sensor networks, algorithms, mobile technology and computing. They can use analytics to fully understand labour rates, competition and market trends, especially important given the volatility in oil prices.

Major players can exploit big data to streamline their operational costs and use it to help them anticipate bit-wear, optimise rig utilisation, and improve recovery factors. The information can also determine how best to simulate a specific oil well, calculate the optimal water injection rate, and predict mechanical equipment failures across an oil field.

With plunging oil prices, large companies are using big data to manage risks, cut costs and increase revenues.

Deploying a robust enterprise resource planning (ERP) system helps the oil and gas giants to collate pertinent, timely information and standardise the processes so that the collected data is consistent. In an industry with so many units dispersed geographically, an enormous number of wells and complex supply chain demands, the standardisation which ERP provides plays an important role.

Additionally, strong ERP technologies for oil and gas firms offer a powerful yet easy way to manage project portfolios.

Using the right software, they can support project governance and financial planning by analysing costs and scheduling the impacts of mitigation scenarios, model risks, and determining the most-likely completion times.

Big data's role in softening the impact of the oil price slump is just one aspect of how high-volume and high-velocity information assets can help the industry. Sophisticated analytics and forecasting tools can be used to produce data-driven decisions for higher profitability.

After all, the intelligence provided by this massive aggregate of information could mean the difference between profit and loss.

Have your say:
contact james.henderson@itp.com

NOCs look to price formation and hedging

Among Middle East producers, the business culture has historically focussed on strong customer relations and security of demand, says Paul Young

About the author:
Paul Young is the head of Energy Products at the Dubai Mercantile Exchange.

NOCs in the GCC are getting more involved in pricing.

Oil pricing is usually never far behind the headlines when it comes to the world of hydrocarbons, but in the three-and-a-half-year period between the start of 2011 and mid-2014 when prices consistently above $100 per barrel were considered the new normal, pricing was largely relegated to a mere footnote in the financial bulletins.

Now oil markets are back at levels not seen since the early part of the century prices are once making headlines, impacting everything from the economic survival of shale producers in the US to the national budgets and geopolitics of the Middle East, price formation and transparency are coming under close scrutiny, particularly as producers look at hedging opportunities to mitigate losses as a result of potential price swings in the coming months and years. Benchmark crude grades with an attached futures contract offer the greatest hedging opportunities for oil producers and of around 200 types of crude oil that can be classified as significant streams or blends, only three of those make the criteria – Brent in Europe, WTI in the Americas and the newest addition to that very select group, Oman, serving the Asian and the Middle East markets. The flagship Oman futures contract on the Dubai Mercantile Exchange (DME) was launched in 2007, joining the more-established Brent and WTI. The DME was conceived to offer a viable Middle East/Asia contract for trading and risk management opportunities and leverage on the terrific economic growth throughout the region. While a futures contract is not a guide or forecast to what will happen in future, it will allow buyers or sellers to lock in prices at a future date, or fix a buy/sell price through the options mechanism.

For example, a canny shale producer that locked in five years' worth of production in 2014 against WTI at an average futures price of $80 a barrel would be in a much better position to ride out the storm until the oil markets rebalance and begin a steady price recovery, which can be anticipated due to the cyclical nature of the business.

Oman's Ministry of Oil and Gas took the landmark decision in 2007 to migrate all of its oil pricing to the DME — the first government anywhere in the world to fully price its oil revenues against an index derived from a futures Exchange.

This switch by the MoG cemented Oman crude as the most important benchmark grade for the Middle East and Asia, while also helping to make Oman one of the most popular crude grades among customers. Among the Middle East producers the business culture has historically focused around strong customer relations and security of demand, leaving price formation to others and selling on an Official Selling Price (OSP) which is calculated against underlying physical prices generated by media companies that specialise in commodities reporting.

National Oil Companies (NOCs) in the region had made little contribution to underlying prices in the past but a number are now taking a far greater role in the pricing mechanics of the industry. Oman has been the leader in that respect with the formation of Oman Trading International which takes hedging activity and trading positions across the barrel, ranging from crude oil, refined products and petrochemicals.

More recently, Saudi Arabia is making headwinds in the refined products markets with the formation of Saudi Aramco Products Trading Company, while Qatar's Tasweeq is taking a much more market-focused view of its trading activities. In fact Qatar was the first Middle East producer in 2012 to use oil futures options to hedge against price volatility.

Since its launch the Oman futures contract has enjoyed an average yearly growth of 25% in average daily volume terms (ADV) and last year reached the nine billion barrel mark in terms of barrels of Oman crude traded on the Exchange during the last eight and half years, and offers enormous potential as the oil benchmark of choice in the coming years.

A significant ingredient for Oman's success as the most prominent benchmark grade in Asia has been the sharp increase in production and exports over recent years, which has enabled the DME contract to deliver between 15 and 22mn barrels of Oman crude every month via the DME's delivery mechanism. Over 30 customers typically lift physical Oman crude via the Exchange delivery mechanism every month, shipping the oil to refineries across Asia. Oman crude production recently hit one million barrels per day, making it by far the largest benchmark crude grade anywhere in the world.

While DME Oman is for now the little brother of the more established Brent and WTI contracts, Oman will continue its rise and establish a place as one of the world's top commodity benchmarks. NOCs will be a significant part of that success story.

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INTERVIEW

Pushing forward

Stuart Bell, managing director of Dron & Dickson Electromechanical Contracting LLC, shares his experiences of establishing and growing successful companies in the Middle East.

INTERVIEW: JAMES HENDERSON

I grew up in Kent, Isle of Sheppey in the UK where at the age of 16, I was given the opportunity to undertake an apprenticeship with Weidmüller UK Ltd, an electrical equipment supplier to the oil and gas industry.

The three year apprenticeship gave me exposure to all parts of the company, but it was the sales and marketing department that inspired me to focus on the oil and gas industry due to the challenging role which gave me the opportunity to travel and meet people.

The role was diverse as it was technology focussed, and I found winning orders exciting. The marketing manager took me under his wing and helped me develop the skills required to succeed in the industry. After the apprenticeship, I was responsible for supporting the sales team from the UK headquarters in Kent with product and market information to help achieve sales targets.

> "THERE IS NO DOUBT THAT THE INDUSTRY HAS CHANGED SINCE I FIRST JOINED."

In 2006, Weidmüller expanded its oil and gas division into the Middle East. I was part of the team which established the division and achieved year on year growth through strong business relationships, understanding local cultures and customs, and being able to react to the local needs quicker than if we were based in Europe.

The diverse network of key contacts, partners and sponsors I built up during my time with Weidmüller has given me invaluable insight into different cultures and ways in which to do business.

Having established Weidmüller's Middle Eastern presence, I was well placed to do the same for Dron & Dickson when the company acquired Abu Dhabi-based Totus Energy in 2012. This acquisition allowed us to extend our offering across the UAE.

> "THE MIDDLE EAST HAS FELT THE PINCH TOO, HOWEVER WE BELIEVE THIS HAS GIVEN US THE SCOPE TO GROW."

Since then, our turnover has doubled and we relocated to a new, larger base as a result of the growth we achieved. Recruitment and the development of our people has been a priority, allowing us to undertake larger and more challenging jobs in the region.

The Middle Eastern market is striving for excellence in competency and safety. At Dron & Dickson, the competency of our personnel remains high on the agenda, which is why we have invested in our local workforce in line with the UK's stringent industry standards, as well as migrating the company's high levels of competency and expertise to the Middle East. We feel this area is key to the growth of our market share in this region, and we aim to expand on this over the coming years.

There is no doubt that the industry has changed in many ways since I first joined. Most prominently, the astounding advances in technology. There are few industries that are constantly adapting, changing and innovating, which is what makes the oil and gas industry so unique and exciting.

We can't ignore however, that the energy industry has been, and is currently going through, a very challenging time. The sharp fall in oil prices globally has created uncertainty for many companies and people.

The Middle East has felt the pinch too, however we believe this has given us the scope to grow with the focus now on investing in maintenance rather than securing new projects.

WHAT ELSE DO YOU NEED TO KNOW ABOUT STUART?

Outside of his business interests in the oil and gas industry, Stuart counts animal welfare and civil rights among his passions.

Vicki Hollub will become the most influential woman in the oil and gas industry when she takes over as CEO of Occidental Petroleum in May. In a bleak period for the sector, how will the future boss of one of America's biggest energy firms cope with the challenges ahead?

STEPPING UP TO THE PLATE

WORDS: ED ATTWOOD

As a proud native of Birmingham, Alabama, Vicki Hollub's original ambition was to put her mineral engineering degree to good effect in the many coal mines that surround the Yellowhamme State's largest city.

"Then I went into a coal mine and decided that this was not something I could do long term," Hollub smiles wryly. "A little later, I went out onto a drilling rig. It was really exciting, and I thought this was something I would like to do."

That decision, made 35-odd years ago, could prove crucial to the fortunes of one of America's largest and most venerated oil and gas firms. In May, Hollub will take over as chief executive of Houston-based Occidental Petroleum Corporation — best known as Oxy — in the process, becoming arguably the most influential woman in the global energy industry.

An Oxy lifer, and current president and chief operating officer, she will become only the third person to lead the firm since 1990. Founded in 1920, in California, the company elected Armand Hammer president and CEO in 1957. During Hammer's tenure, Oxy quickly expanded overseas, a policy that continued under chairman and CEO Ray Irani, who took over 25 years ago. Under current chief executive Steve Chazen, Oxy has focused on its domestic business, especially in the

➔ Occidental Petroleum employs approximately 38,000 employees and contractors worldwide.

Permian Basin, where it is the largest oil producer, as well as its assets in the Middle East and Latin America, and associated chemicals, midstream and marketing businesses.

Right now, of course, Oxy is grappling with the predicament facing everyone else in the energy industry — an oil price that has fallen nearly 75% since a peak of $115 in 2014. In its most recent quarterly result, the firm reported a loss of $2.6bn, compared to a $1.2bn profit during the same period a year before.

That bottom-line figure, however, masks a push towards efficiency that has been the envy of many companies in an industry that has grown fat on plus-$100 oil. Oxy's capital spending has been pulled down, while it has also managed to boost production, by 16% in the third quarter. Its chemicals business also saw a useful 29% bump in pre-tax core profits.

"It's only about 15 years ago that we were at a $40 oil price, and our cost structure worked in that environment," Hollub says. "So we've got to get back to the point where we as a company can manoeuvre in a lower price range.

"We don't want it to be as low as $30. I don't know of anybody or any countries that will work at $30 so we've got to get higher than that."

Oxy has employed various methods to reduce outgoings. In some areas, it has reduced drilling costs by up to 45%, thanks to a proprietary drilling programme. The firm is also looking at data analytics to help reduce fees for both drilling and managing a well when it is completed. But the company's restructuring plans also include exiting from non-core assets.

One of those has been Oxy's interest in the Bakken shale formation, in North Dakota. The firm sold its assets there to a private equity fund for a reported $500m. The oil price downturn has been particularly tough on the US shale industry, whose recent performance is thought to be one of the reasons why OPEC has pushed to maintain its policy of keeping production high. However, as Hollub points out, the American shale industry has proved to be far more resilient than OPEC policymakers may have first thought.

> "SO I'M TRYING TO GET US TO THE LEVEL WHERE WE CAN ACCELERATE, AND THIS WILL GIVE US MORE OPPORTUNITIES WORLDWIDE"

"It's tough to tell a company in Texas that somebody's about to force them out of business — they just won't do it," she says. "So as prices have gone down, companies have gotten better at what they do. There's been a shift in the way shale players do their business — we're continuing to learn more about how to do it.

"But I think, over time, if prices stay this low, certainly [shale oil] production from the Permian Basin and the US will continue to decline. We didn't see a lot of decline initially because there was the lag of getting some of the shale wells completed that had already been drilled.

"But we expect to see by the end of this year, maybe first quarter next year, continued decreases in production, more significant than we've seen thus far."

That being said, the CEO-designate also points out that the Permian Basin, where Oxy has 1.9 billion barrels of reserves that it will develop through its enhanced oil recovery (EOR) operations — a process that would take 22 years at the current pace — will remain front and centre for the company.

Hollub is also betting on the improvement of

$4.3BN

OCCIDENTAL PETROLEUM CORP'S TOTAL CASH ON ITS BALANCE SHEET IN THE THIRD QUARTER OF 2015.

current EOR technology, enabling drillers like Oxy to get a larger percentage of oil out of their wells.

"Right now, we get about 65-70% of the hydrocarbons in the ground," she says. "I believe there's still opportunity to get more than that... to get CO2 to go where it hasn't gone before. If we can get 70%, why can't we get 80%?

"And then, since recoveries from unconventional reservoirs range from about 4-11 percent, there's got to be opportunities there too. So I think over time the industry will figure out how to get more hydrocarbons from the ground in unconventional fields. If they do, that 1.5bn acres we have in the Permian will be all the more valuable."

Another useful source of cashflow is the Middle East, where Oxy's fortunes are split by operations

Hollub has a track record of efficiently and profitably growing Oxy's oil and gas business.

The Houston-based company is one of the largest US oil and gas firms

in the UAE, Qatar and Oman on the one hand, and Libya, Iraq and Yemen on the other. Last year, the firm completed the multi-billion-dollar Al Hosn sour gas project in Abu Dhabi in conjunction with state oil company ADNOC on time and on budget. Delivering a billion cubic feet of gas per day, the project, in which Oxy has a 40% share, is one of the UAE's largest. The Texas firm has also worked with Mubadala to develop the Dolphin Gas Project, which pipes natural gas from Qatar to the UAE and Oman.

In addition, Hollub says, Oxy is also conducting a technical evaluation with ADNOC on the Hail and Ghasha fields, with the plan being to eventually deliver more gas to Abu Dhabi. The two firms are spending $500mn on running seismic surveys, drilling appraisal wells and and conducting engineering surveys on the two sites.

"We are processing evaluation wells and then we'll get to the point where we'll be able to hopefully finish the evaluation within the next year or two. And then hopefully start development," she says.

Some media reports have suggested that the low price environment may encourage companies like Oxy to sell off assets in the Gulf. Earlier this month, Royal Dutch Shell pulled out of the $10bn Bab sour gas project deal with Abu Dhabi, citing technical difficulties and high costs. But Hollub says Oxy's commitment to the UAE is as strong as ever.

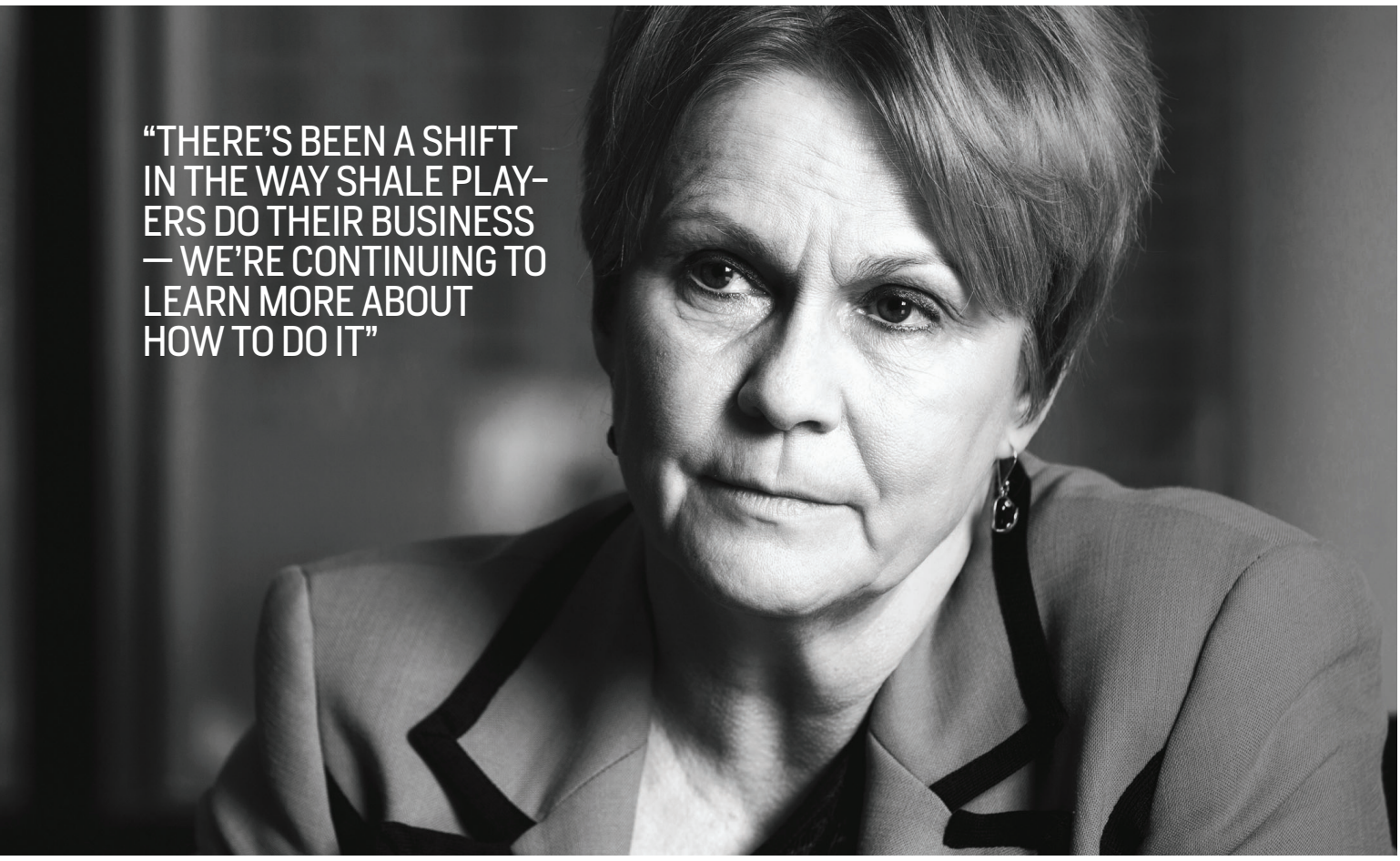
$1BN

OCCIDENTAL PETROLEUM CORP'S OPERATING CASH FLOW FOR THE THIRD QUARTER OF 2015.

"I guess with all of this you can probably take it to mean that we like being in Abu Dhabi, we have a lot of trust and respect for both our partners that we've been with on these projects," she says. "We've been here for 40 years and we want to continue."

The CEO-designate also says that she would "like to see additional opportunities in Oman and Qatar" but when it comes to the rest of the region, the story is very different. In Yemen (the Masila/Ma'rib-Shabwah Basins), Iraq (the Zubair field) and Libya (the Sirte Basin), Oxy is in the process of exiting its assets, due to instability in those states.

"In Iraq, we have a strategy as per a procedure



core areas [the UAE, Qatar and Oman], so we're going to stay very disciplined about that."

The carefully considered transition plan put in place by Oxy means that many of Hollub's long-term plans for the firm are already being put in place. In terms of strategic changes, those are perhaps best characterised as organic growth built on the back of increased technical proficiency. She also is adamant that Oxy will continue to pay dividends to shareholders (it has raised them for 13 years in a row) — a policy that has helped keep its stock relatively buoyant compared to its peers.

"It's not like we're going to get to May 2 and suddenly the world is going to change, every decision is mine and I can do what I want to do," she says. "Because I've pretty much had the support of the CEO to do all that now — not only to do it now but to get his good ideas on top of that.

"People often ask me: 'Well, what are you going to do different than what Steve Chazen did?' What he did, really, was build our domestic business. We didn't have that before him. He built that portfolio... built the company through M&A [mergers and acquisitions].

The Al Hosn Gas Project is producing 1bn cubic feet of natural gas per day.

"What my goal, my vision, is, is to take the portfolio he has put together and accelerate development. Not only to accelerate it, but do it better, take it to the next technical level. We have always been considered one of the best, if not the best, EOR [enhanced oil recovery] companies, but why can't we do that better? So I'm trying to get us to the level where we can accelerate, and this will give us more opportunities worldwide."

The plummeting oil price has led to a number of restructurings and bankruptcies in the US oil industry, while some reports have suggested that the sector is ripe for M&A activity. However, the only recent significant bid — Anadarko's failed plan to buy out Apache Corporation in November last year — resulted in the former's stock tanking by 4% in one day. Given Oxy's balance sheet, relatively low debt and assets, it has often been touted as a potential takeover target.

Perhaps unsurprisingly, Hollub disagrees. "The interesting thing is through these extreme drops, we've outperformed all of our peers except Total, probably because of the strength of the dollar, and Concho [Resources], probably because somebody thinks Exxon is going to buy them," she says. "So the multiple on our stock is high enough that we're so valued by our investors that I don't think Exxon Mobil or Shell or anybody could afford to buy us, really.

"WHAT I'M TRYING TO DO IS PREPARE FOR THE WORST CASE, BUT BE FLEXIBLE ENOUGH TO TAKE ADVANTAGE IF PRICES DO START TO RECOVER"

"It's really hard to get the necessary synergies you need when you merge two large companies. What we're looking for in this type of environment is opportunities where people maybe shed assets that aren't really a good fit within their portfolio, but might be a better fit within ours."

If the Oxy board wanted a steady hand at the tiller, it looks like they have one in the firm's assured new CEO. And as for how the oil price story is expected to develop throughout 2016, Hollub says she isn't making any projections.

"What I'm trying to do is prepare for the worst case, but be flexible enough to take advantage if prices do start to recover," she says. "That's how we're setting our strategy.

"We've got to increase the value of our company, and in the near term it will come from more resources production. Then over time, it will shift back to mostly EOR growth from the Permian — with the icing on the cake coming from the projects we have here in the Middle East."

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HSSE remains vital in oil & gas

Revenues might be down, but health and safety issues are more important than ever. ***Adrian Gannon*** elaborates

About the author:
Adrian Gannon is the senior technical safety engineer for Xodus Group, and is based in Dubai, UAE

There is no doubt that the sustained low oil price has had an effect on the industry, it is hoped that cost cutting regimes will not had a negative effect on safety. Analysts point out a range of other negative and some positive effects that the current trends are having. For those who work in the oil and gas industry the negative effects of the market are apparent however the industry and the culture that has developed maybe more resilient than we give credit. Xodus recently completed a safety climate survey as part of a safety culture program on behalf of an oil and gas operator in the Middle East (operator will not be named for confidentiality reasons). The results of this survey indicated that the situation was not as bleak as we would have imagined, in fact the results of the study were very positive showing both an improved safety culture over a five year period and a favourable benchmark against international good practice.

Methodology

The survey was completed using an online survey platform and was therefore able to be shared with staff in various locations so long as they had access to a compute with internet facilities. The survey consisted of 25 questions that were completed by over 800 personnel and resulted in a completion rate of approximately 97%, the completion rate alone was very impressive indicating that those who were invited to participate gladly participated. A range of demographic questions were used including length of service, age, nationality and employment status (contractor or staff). The survey did not identify any significant demographic influences on culture.

Results

Survey data identified two features:

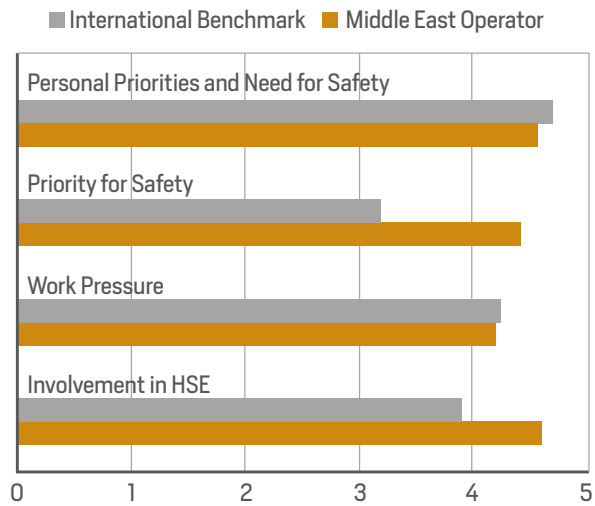
- The operator compared positively to an international benchmark
- There was a noted improvement since the last study was carried out (2010).

The benchmark data used was the safety climate and risk on offshore oil platforms on the Norwegian continental shelf. When results were analysed across four categories the analysis demonstrated that the Middle East operator performed favourably when compared against the international benchmark, results are displayed in the graph below.

This operator also completed a study in 2010, again the results compared very favourable with the 2015 study. Nine questions were repeated from the 2010 survey and appeared again in the 2015 survey. There was an overall improvement in the safety culture in the five year period, assuming that the last survey was undertaken by a similar group of respondents.

Conclusion

The industry can take satisfaction from the results of the safety climate survey. Although culture is a long and enduring state the climate at the time of the study appears very positive. Although this is just an isolated study it demonstrates that the values that have developed in this organisation over a substantial period of time are not that easily eroded and are able to endure the current challenge the industry is facing.



WORDS: INDRAJIT SEN

TRAINED WORKERS KEY TO A HEALTHY INDUSTRY

Oil and gas companies in the GCC are reaping the rewards of training and equipping the local workforce, thereby lessening their reliance on foreign talent

Gone are the days when the Middle East, despite being the largest oil producing region in the world, overwhelmingly relied on Western training and foreign workers to operate its oil and gas industry. Along with making huge strides in adopting technologies that have helped oil and gas companies increase production levels, the industry has also made significant advancements in raising its overall health, safety, security and environment (HSSE) levels.

In an era of 'Saudisation', 'Qatarisation', 'Emiratisation' and 'Omanisation', not only have regional countries begun training and deploying the national workforce in the energy sector, but have also realised how crucial the consistent imparting of skills and training is to maintain and even improve the HSSE standards of the oil and gas segment. Industry players sing in chorus about how skill levels are benefitting from these nationalisation programmes.

"There is a perception that perhaps the Middle East is not as skilled as other major producing regions," Andy Ryan, VP Middle East and Central Asia, of newly-formed recruitment and consultancy firm Airswift, commented. "However, the national oil companies (NOCs) have been partnering with the international oil companies for many years now, and this has resulted in a significant experience and knowledge transfer – bolstering the skills of the national workforce."

"The specialist skills that operators cannot find locally are usually sourced through expatriates. However, in the current environment, NOCs are taking a cost-conscious approach to skills development, which includes accelerating the upskilling of their internal workforces. We are seeing this strong focus on nationalisation across the Middle East, especially in areas such as Saudi Arabia and Iraq. By concentrating on upskilling the national workforce, companies are enabling themselves to meet stringent local content targets," Ryan said.

Tom Christensen, managing director, EMEA - Oil & Gas, of EPC contracting company Black & Veatch in fact goes on to say that the number of expatriate workers in the GCC is dwindling. "The Middle East has an abundant and well established workforce. However there is still a need for expat supervision and top level management. Over time the need for expats is diminishing as local professionals are trained and developed. This is a natural progression and healthy for companies and countries."

"Developing domestic engineering and construction resources is central to enabling long-term sustainable development. Fostering a skilled indigenous workforce has benefits beyond creating employment opportunities and reducing the reliance on imported expertise. Using local professionals can also enhance project outcomes," Christensen says of the merits of nationalisation schemes.

↓ Raju Venkat, vice president – Partnerships and Business Development, Atlas Knowledge.

Raising HSSE standards

The regional oil and gas industry has, ever since the advent of the fossil fuels-led boom, been known to offer challenging conditions for workers. The labour force is often exposed to hazardous environments which can include anything from working in temperatures of about 50°C, to operating in desert and arid topographies with little or no water availability, to drilling oil in risky offshore platforms and rigs. In such a scenario, training the workers to help them attain highly professional capabilities, in order to prevent loss of life and injuries, becomes critical.

"Companies invest significant resources in making people aware of the various risks and hazards in the workplace. In order to reduce the risk of incidents, there has to be an understanding of the difference between compliance and competence when it comes to effective workforce development," Raju Venkat, vice president - Partnerships and Business Devel-

↑ Engineers listen as they are talked through their training programme.

opment, Atlas Knowledge Group, told *Oil & Gas Middle East*. "To be competent an organisation or individual must have sufficient knowledge of the tasks to be undertaken and the risks involved. They must have the experience and ability to carry out their duties in relation to the project, to recognise their limitations and take appropriate action to prevent harm to those carrying out construction work, or those affected by the work."

Ryan of Airswift agrees saying that climatic conditions probably pose the most daunting challenges for oil and gas sector workers in the region. "In all Middle Eastern countries there is one prominent environmental risk factor – the weather. We ensure all of our employees on the ground are trained to spot and treat potentially fatal conditions, such as heat stroke, that are caused by the elements," he says.

"At Airswift, we undertake a thorough desktop risk analysis of a country before sending any employee into what could be a potentially be a high-risk area. We renew this assessment every six months to ensure the safety of our employees and contractors. In countries such as Iraq, our contractors also undergo security training to prepare for any potential incidents," he adds explaining the company's strategy.

Christensen shares an interesting account of the HSSE practices Black & Veatch follows: "To promote a culture of working and living safely, we encourage our professionals to think about safety one task and one day at a time. We believe that success begins with what is referred to as a 'Zero Injuries Today' plan. Success comes when that plan is widely embraced by skilled craft, supervisors and office personnel."

"We start from a simple question, 'Can you finish your shift today without being injured?' 100% of the time, everybody raises their hand. It is important to have an achievable, realistic goal. That goal has to be something that people can easily understand, but more importantly, achieve. New professionals go through an intensive safety training programme prior to even going to a job site. This training is regularly updated and refresher training is held annually," he comments.

> "THE OIL AND GAS INDUSTRY WILL EXIST FOR GENERATIONS TO COME AND A LACK OF INVESTMENT IN SKILLS NOW WILL WITHOUT A DOUBT LEAD TO AN IMBALANCE IN SUPPLY AND DEMAND OF SKILLED PEOPLE IN THE FUTURE."
> DAVID DOIG, GROUP CHIEF EXECUTIVE, OPITO

The blow of oil prices

It is no wonder that the present downturn in global oil and gas industry, caused by crude oil prices trading at around $30 a barrel, has impacted companies across the board. Major producers, especially in the Middle East, have been cutting down on operational costs in a bid to stay afloat as they continue to pump hard. The NOCs have reportedly been hacking their budgets allocated to any and every aspect of operation that does not help them produce more oil or gas for less; skills and training included.

"Historically skills and training budgets are a soft target for cost reduction, however the smart employers do not follow this path. Failing to invest in skills development and the safety of the workforce is a very short term gain that will bring significant pain in the medium and long term," David Doig, group chief executive at OPITO, told Oil & Gas Middle East. "The oil and gas industry will exist for generations to come and a lack of investment in skills now will without a doubt lead to an imbalance in supply and demand of skilled people in the future."

Stuart Douglas, regional sales manager – Middle East, of IT services provider Petrotechnics, is in agreement saying: "In today's low oil price

↑ Tom Christensen, managing director, EMEA – Oil & Gas, Black & Veatc.

↗ David Doig, group chief executive at OPITO.

→ Stuart Douglas, regional sales manager – Middle East, Petrotechnics.

environment every budget is being reviewed and this includes skills development and training. However, our experience of previous downturns shows the companies who take a medium to long-term approach to HSE and training outperform their short-term focussed counterparts. Our 'best in class' customers tend to use operational excellence and process safety management as a means of better identifying where they need to invest in training as they drive towards improved cost efficiency."

Venkat of Atlas shares his perspective on the question from a more economics perspective. "The oil prices are not a simple supply and demand equation. The global markets are experiencing a glut in supply as the global slowdown impacts on consumption while carbon free economies put more pressure on the industry. Most industries have looked to innovate to achieve cost efficiencies and economies of scale but the oil industry has been slow adopting a lean sigma principle. In some countries, spend or budgets are being reviewed, revised and in some instances put on hold," he says.

He also offers his take on how oil and gas companies will eventually come to attach more importance to training their labour force, as a means to save (and even earn) more. "Due to the high-risk nature of the sector however, safety will always be afforded great importance and priority. The market will continue to grow and the industry will continue to change and evolve, the focus for organisations will be to continue to invest in order to meet the required skills and knowledge to keep their workforce safe," he says.

Demand for training

Despite the economic slump, industry experts insist workforce training is high on the agenda of major companies in the region, and see that as their way to maintain HSSE standards which play a big role in reflecting the overall image of the company's operations. Certain existing and new training and certification courses, they say, thus remain quite popular in the region.

Doig talks about the courses by OPITO, which has been instrumental in setting training standards globally. "Basic survival training and H2S training are both prominent in the region and we have seen significant growth in these

→ The writing's on the wall.

10% LOSS

IOCS AND NOCS LOSE 10% OF THEIR PRODUCTION CAPACITY DUE TO OPERATIONAL INEFFICIENCY

areas over the last 10 years but there is still not enough of this training being carried out. We have seen the emergence of more technically focussed training, such as basic hydrocarbon processing, electrical, mechanical and instrument maintenance in recent years; and we are also seeing growth trends in other emergency response training as defined within the OPITO Emergency Response Framework; for example specialist fire teams, managing major emergencies, coxswains and helicopter landing officers, etc."

→ Andy Ryan, VP Middle East and Central Asia, of newly-formed recruitment and consultancy firm Airswift.

The region is a mix of greenfields and brownfield developments. Broadly speaking, in greenfield and steady state operations the focus is in areas such as permit to work systems, gas testing,

manual handling, working at heights and H2S awareness and knowledge. In brownfields, as assets age there is also a demand for programs such as mechanical joint integrity, small bore tubing and asset integrity.

"There is a requirement in Qatar for multinationals entering the country and indigenous workers to have a standard baseline of knowledge and that is evident in the uptake of the internationally recognised OPITO International Minimum Industry Safety Training (IMIST) which forms part of the screening process," Venkat says. "There is also a requirement for [knowledge of] a basic level of English."

Christensen believes behavioural pattern of workers is also fundamental in shaping workers' mindsets to operate in the industry. "The region's leading organisations are increasingly looking to behavioural H&S programmes, in our instance this is the Zero Injuries Today programme. Some of the region's leaders are also seeking to become beacons of best practice, so there is a growing interest in attaining international standards for H&S and environmental performance, such as ISO 14001 and OHSAS 18001."

Given the sustained demand among companies to hone the skillsets of their workforce, experts remain optimistic about the future of skills and training in the region. "In the Middle East, we still believe there will be a strong demand for training and certification. However, the training mix that is needed may change, because of the NOCs' strong focus on upskilling and nationalising their workforce. With that being said, there are still significant opportunities in the region for expatriate skills and we believe this will continue," Ryan concludes.

→ Realistic training is important in the overall HSSE picture.

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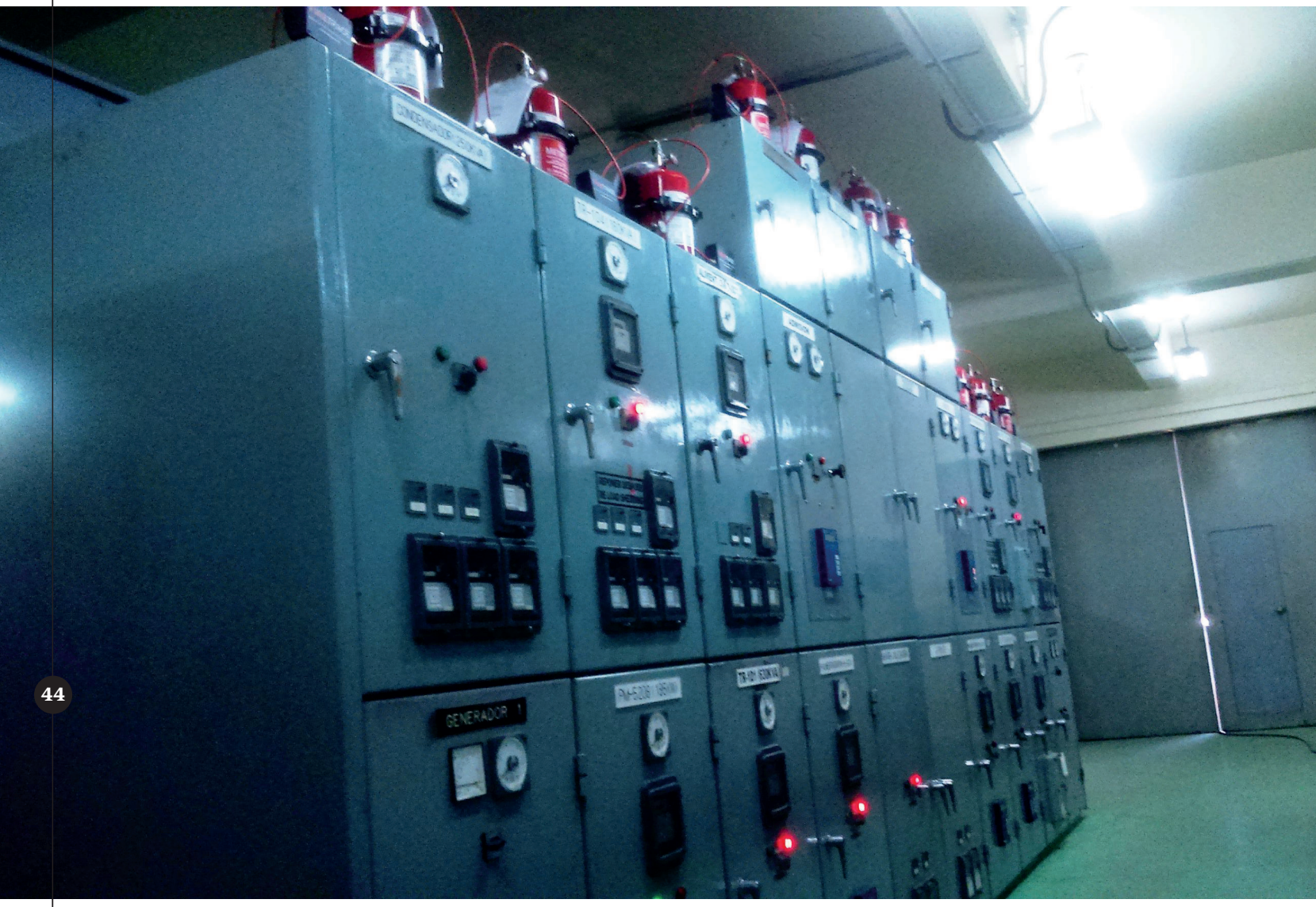

WORDS: INDRAJIT SEN

GCC INVESTS IN SAFE AND SECURE FUTURE

As the region's oil and gas industry strives to improve upon its HSSE standards, companies across the spectrum are increasing spend on various aspects of security equipment, making it a potentially lucrative market for manufacturers and suppliers

The Middle East has, over the years, been known to all and sundry as not just the biggest oil hub in the world, but also for having an established oil and gas industry that can boast of safe and secure operations. Considering that the GCC owns some of the busiest oilfields and offshore drilling rigs, and pumps about 19mn barrels of oil per day, it reports negligible incidents of onsite accidents, fire outbreaks and oil spills.

Major regional players – primarily the National Oil Companies (NOCs) – have traditionally allocated sizable chunks of their budget in securing their daily operations and maintaining overall health, safety, security and environment (HSSE) standards. Spending big on security equipment being among that.

"Our experience in the GCC region shows that oil and gas companies are very safety conscious," Dr. Liane Smith, managing director of British asset integrity company Wood Group Intetech, says. "We recently visited an operator's office in the region that had safety statistics and signs on every floor of the building. This awareness is prevalent across the GCC, where many organisations have a significant focus on safety across the business."

Industry experts also feel that securing oil and gas operations is a dynamic process and regional companies must continue to strive towards attaining excellence in HSSE standards. "Safety is a prime concern in the industry, but as in all things there is always room for improvement or better ways of doing things," Scott Starr, marketing director of US-based Firetrace International, told *Oil & Gas Middle East*.

Speaking of safety and security in the oil and gas sector, the first aspect that comes to mind is fire protection systems (FPS). Fossil fuels being highly flammable commodities, the risk of fire outbreaks are high and the global energy sector has suffered numerous such deadly accidents that have amounted to both loss of life and operations. "There are a multitude of flammable fuels and materials and ready ignition sources at every oil and gas operation. A fire of any size is always a serious situation in such a setting. Detection and suppression of a fire in its earliest, or incipient, stage stops small fires from growing large enough that they can threaten lives and property," Starr says.

↗ Dr. Liane Smith, managing director of British asset integrity company Wood Group Intetech.

> "OUR EXPERIENCE IN THE REGION SHOWS THAT OIL AND GAS COMPANIES ARE VERY SAFETY CONSCIOUS. WE RECENTLY VISITED AN OPERATOR'S OFFICE IN THE REGION THAT HAD SAFETY STATISTICS AND SIGNS ON EVERY FLOOR OF THE BUILDING."
> DR. LIANNE SMITH

He claims Firetrace International has sought to address this particular challenge of fire security. "Firetrace systems detect and suppress fires automatically and can be installed in remote or hard to reach areas, providing an extra margin of safety for O&G workers by extending the capabilities of fire suppression into the microenvironment areas where it starts rather than taking a macro approach to detection and suppression," he says.

Starr explains the workings of his company-manufactured FPS equipment's working: "Firetrace pre-engineered systems suppress small fires automatically before they can grow, and Firetrace engineered total flooding systems can protect entire rooms or other large spaces containing high asset or mission-critical equipment necessary to maintain the safety and security of oil and gas operations. Firetrace utilises a pressurised polymer tube for detection that is ideal for the oil and gas market as it is quite resilient and very tolerant of dirt, grime, oils, and vibration; a benefit that any other detection method struggles to match."

Tech Navio, a London-based research firm predicts the global FPS market in the oil and

gas industry to grow steadily at a Compounded Annual Growth Rate (CAGR) of close to 4% during the 2016-20. One of the primary drivers for the growth of this market is the stringent regulatory framework set up by the government, the report says. These regulatory frameworks and standards state that every direct oil and gas operators should allocate a certain share of their overall investments in fire safety. As per these standards, the establishment of a health and safety department in every oil and gas facility is mandatory to analyse and prevent fires during onshore and offshore activities, Tech Navio says in its report.

Dubai-based FPS products and services provider NAFFCO, which has recently formed a specialised oil and gas division, has been actively marketing its exclusive series of inergen gas (a type of inert gas) cylinders that offers specific advantages to oil and gas facilities. Rajendran Ekambaram, senior operations manager – Fire Engineering, at NAFFCO, explained the merits of the equipment to *Oil & Gas Middle East*, during the Intersec industrial security exhibition in Dubai in January.

"Now how do you design an inergen gas cylinder for an application in an oil and gas project? The standard thumb rule goes in accordance to the volume and weight (in kilogrammes) of gas required. But we don't do that; we insist on central banking. When you have a central banking system, you distribute the gas through pipelines to various rooms that need to be protected. This becomes cost-effective, yet the standards are maintained. This system can surely be installed at oil rigs (and other similar platforms)," Ekambaram, who is heading Dubai-based NAFFCO's year-old Oil, Gas & Power division, elaborated.

Wood Group Intetech's iWIT Well Integrity Toolkit software can be used for well management (below) ↓

> "EVERY ASPECT OF SAFETY AND SECURITY IS IMPORTANT IN MAINTAINING A LOW-RISK WORK ENVIRONMENT FOR OIL AND GAS PERSONNEL, BUT FIRE REMAINS A CONCERN."
> SCOTT STARR, MARKETING DIRECTOR, FIRETRACE INTERNATIONAL.

Safety and security in the oil and gas industry's operations is not just about installing adequate FPS equipment; it certainly transcends that to include other aspects of security, experts maintain. "Every aspect of safety and security is important in maintaining a low-risk work environment for oil and gas personnel, but fire remains a primary concern due to the devastating consequences that it can have on equipment and personnel," Starr says.

According to Smith, Wood Group Intetech's products warn operators about the true condi-

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CAP001	Long String	Abandoned	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
CAP011	Long String	Oil Producer					Pass	Pass	Pass	Pass
CAP021	Long String	Oil Producer	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
CAP031	Long String	Oil Producer		Pass			Pass	Pass	Pass	Pass
CAP041	Long String	Oil Producer				Fail	Pass	Pass	Pass	Pass
CAP051	Long String	Oil Producer	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
CAP061	Long String	Oil Producer	Pass	Pass	Fail	Fail	Pass	Pass	Pass	Pass
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↑ Rajendran Ekambaram, senior operations manager – Fire Engineering, at NAFFCO.

↗ Scott Starr, marketing director of US-based Firetrace International.

tion of their assets, enabling them avoid potential risks such as corrosion damage or hydrocarbon leakage. By providing companies with advanced warning about the potential hazardous status of their assets, they can take preventative action to reduce the likelihood of a major incident, she says.

She talks about Wood's Electronic Corrosion Engineer (ECE) as a tool for the quantitative estimation of corrosion rates and the selection of materials for oil and gas production systems and processing facilities. "In the current environment, with reduced resources, operators need to plan optimised risk-based inspection schedules and this can only be achieved if the potential form of corrosion is known," she says. ECE has been deployed across Oman and the UAE, she reveals.

Smith also makes a mention of her company's iWIT Well Integrity Toolkit software that can be used for well management, and provides high-level visibility of a well's integrity status; an indicator that is perceived to be critical for preventing incidents. "Both of these systems (ECE and iWIT) can identify the problems that present the greatest risk to the organisation, ensuring that budget is focused on the wells or assets that need attention, and therefore mitigating the risk of a potential major incident," she claims.

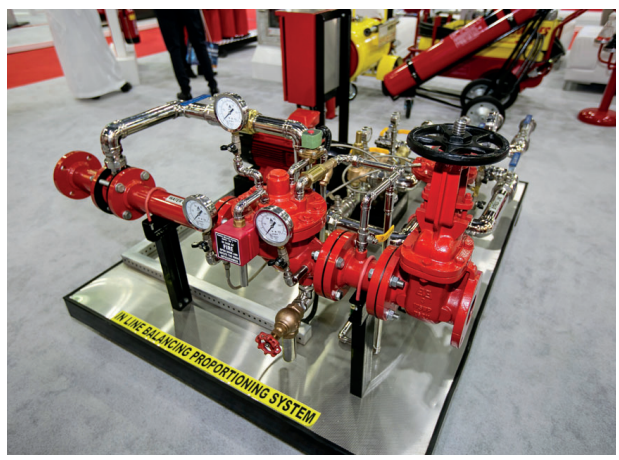
Times are tough for the Middle East's oil and gas industry as crude oil prices – currently wobbling between $30-$35 a barrel – show no imminent signs of recovery. In such a scenario, when the region's major oil producers are striving to 'do more with less', it would hardly come as a surprise if the NOCs or even the IOCs operating in the region decide to slash spending on FPS and other operational security aspects. Industry playsay this is absolutely not the case.

"We at NAFFCO believe in cost-reduction. However cost-reduction does not necessarily mean diluting our client's budgets. It means value engineering and we are strong in engineering. So we want to utilise our engineering expertise for our clients to offer economical and safe services, without diluting the standards," Ekambaram says of NAFFCO's business strategy in developing security equipment.

"With the price of crude's tumble from just a year ago, margins are becoming very tightly squeezed for even the most efficient producers. As margins drop, even small interruptions cause significant impacts upon the bottom line. While the easiest reaction would, of course, be to reduce spending on safety systems, with the current economic situation those investments have never been more critical," Starr believes.

Smith is of the opinion that no company can completely avoid critical expenditure on aspects such as HSE. Some level of expenditure will always be necessary, and if invested correctly it will prove to be cost-effective and bear fruit in the medium to long-term.

She cites an example of an operational security product to prove her point: "Well integrity management software, for example, gives operators a real-time picture of all aspects of well operation. Users of this type of software can identify immediately when a well goes out of its safe operating envelope and alert the relevant personnel, so that potential problems do not become dangerous incidents. Taking this type of mitigating action will avoid unforeseen costs for operators at the same time as providing a substantial barrier to improve operational safety."



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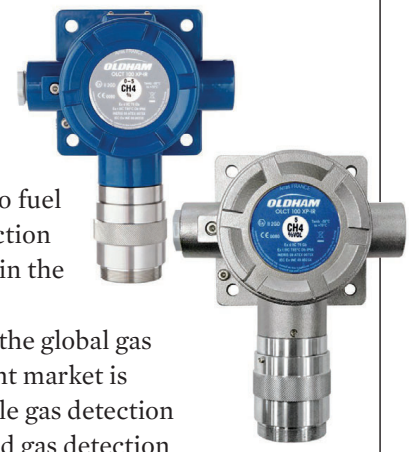
WORDS: JAMES HENDERSON

TRACKING DOWN THE GAS

The consequence of gas leaks can be catastrophic, taking both a human and financial toll. As such, gas detection is a critically important facet of a well-rounded approach to effective health and safety



→ OLCT 100 is a 4-20 mA analog gas transmitter by Oldham.

While hitting gas is usually an overwhelmingly positive thing in the oil and gas industry, there are other scenarios where gas can be unwelcome at best, and fatal at worst. Explosive gas leaks are an ever-present risk that has to be managed.

Any leak has the potential to accumulate into dangerous clouds that can ignite when they reach a certain concentration. It is for this reason that the market for gas detection technology and equipment is set to grow rapidly in the coming years.

A Transparency Market Research's featured report deduced that the global gas detection equipment market will expand at a 5% CAGR during the forecast period from 2014 to 2022. In 2013, the global gas detection equipment market was worth $2.1bn and by 2022, the market is projected to be worth $3.3bn.

It noted that the rising use of wireless gas detection equipment is projected to propel the global gas detection equipment market in the coming few years. Factors such as the growing concern for occupational safety and health and safety regulations will also fuel the global gas detection equipment market in the foreseeable future.

By product type, the global gas detection equipment market is divided into portable gas detection equipment and fixed gas detection equipment. The fixed gas detection equipment segment stood out as the dominant sector in the global gas detection equipment market in 2013 and held a market revenue share of 58.4%. The portable gas detection equipment sector is driven by the rising preference for portable, flexible equipment for gas leak detection, particularly in areas that are confined, the report added.

Specifically, regions such as the Middle East, Asia Pacific, and Latin America are projected to witness robust growth in the coming few years. The Middle East and Africa market is projected to grow significantly in the global gas detection

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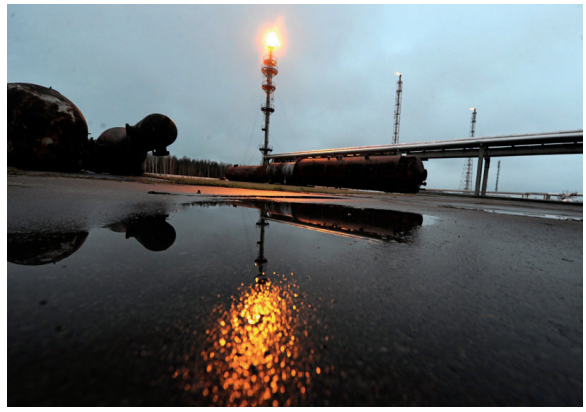
"INTERNATIONAL OIL AND GAS OPERATORS ARE REALLY CONCERNED ABOUT THE SAFETY. THEY ARE TAKING ALL NECESSARY ACTIONS TO ENSURE THAT THEIR PEOPLE AND INFRASTRUCTURE ARE SAFE IN THE CASE OF A MAJOR EVENT,"
ROMAIN VEROLLET, BERTIN TECHNOLOGIES.



↗ Gas detection systems are designed for both personnel safety and environmental protection.

→ Petrofac recently awarded a contract to Bertin Technologies to install a pioneering gas tracking system at Aramco's Jazan refinery.

↘ MultiRAE is an advanced portable chemical detector.

equipment market as countries such as Iraq, the United Arab Emirates, and Saudi Arabia are driven by the rising demand from the oil and gas industry in this region.

Certainly a huge number of portable gas detection systems have been launched into the GCC market recently, and a number of noteworthy contracts have been awarded.

In February, Petrofac awarded a contract to Bertin Technologies, a subsidiary of CNIM group, to supply, install and commission a pioneering gas leak tracking system, Second Sight, at the Saudi Aramco owned Jazan refinery.

Second Sight is an infrared gas imaging camera that automatically detects the presence of gas cloud at a distance up to several hundreds of meters and provides a real time visualization of the gas cloud motion as a coloured overlay.

Speaking to *Oil & Gas Middle East* from the company's base in France, Romain Verollet, head of Product Management, explained the technology in more detail, saying: "It offers more robust monitoring of the assets when used with the conventional gas detection system.

The technology provides the operator with the localisation of gas leak on a plant map and indicates in real-time the motion of the explosive cloud of butane, propan or LPG. It is composed of multiple Second Sight infrared gas imaging camera that detect automatically gas cloud at a long distance."

Having just secured an international contract that will see Bertin Technologies working with two of the industry's blue-chip organisations, Verollet is in a strong position to speak about what it is that operators and service companies look for when choosing which gas detection systems to implement.

"International oil and gas operators are really concerned about the safety," he says. "They are taking all necessary actions to ensure that their people and infrastructure are safe in the case of a major event. The operators have a plan to reduce the risk associated to their daily operations and one of the risk is to be facing a major gas leaks over a site. For this, gas detection systems needs to provide a measurement of gas leak as soon as possible, so that gas detection systems provide a full monitoring of the situation to handle. So the objective is double, gas detection systems ensure safety and is indicating the potential environmental toll related to the gas leak."

Neil Quadros, field marketing specialist for Rockwell Automation, says that international oil and gas operators have a number of requirements when it comes gas detection equipment and technology.

"One of the main demands is that the products or technology are highly reliable and available, and for some specifications, the customer will ask for Safety Integrity Level-3 (SIL) rated systems. Customers also want to be sure that the gas detection applica-

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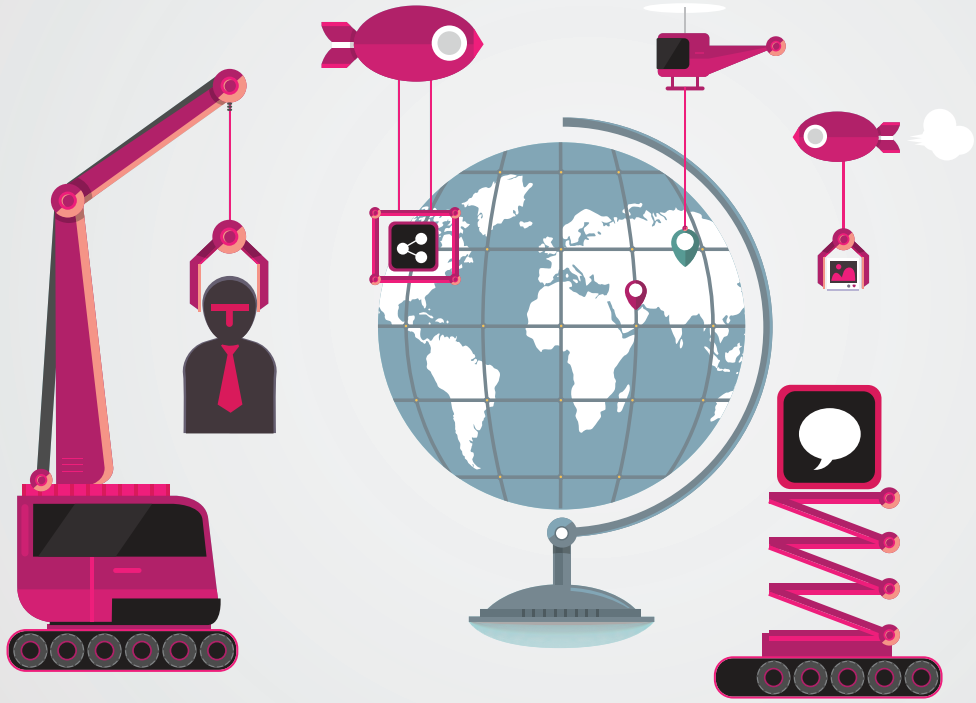

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↑ The latest technologies on the market are equipped to provide gas leak detection in real time.

$3.3 BLN

THE GLOBAL GAS DETECTION EQUIPMENT MARKET IS PROJECTED TO REACH OVER $3 BILLION BY 2022.

↗ Romain Verollet is head of Product Management at Bertin Technologies.

→ Honeywell Analytics' Touchpoint Pro and Touchpoint Plus deliver up to 64 channels of gas detection.

tions they use are SIL-rated, as well.

"Customers also want the flexibility to communicate to external systems like distributed control systems, as well as making sure that the detectors are capable of remote calibration."

As ever, technological advancements are driving improvements in health and safety, and the gas detection market is no different.

Explaining how technology in this field has developed, Quadros says: "In the past, the only option was to use point gas detectors, which meant you needed a large number of detectors to cover a large area. But, over the years, Open Path gas detectors have come into play. With these type of detectors, a large area could be covered using just a few of these type of detectors.

"Also, depending on the application, gas leaks can also be detected using thermal imaging cameras. Although this technology is currently available, it has not yet been certified for use as the only method of gas detection that can be present in a plant. You can use these cameras as a supplement to other means of gas detection."

Picking up on the theme of recent trends and developments, and the impact technology is having on gas detection systems and applications, Verollet comments: "Detection of gas from long distances is a recent development that is now mature enough to enter in industrial sites.

"When used in combination with conventional fire and gas system, it offers remote operation. It presents an image and video format, giving the personnel overall information on the situation to handle. Time spent on inspection are undoubtedly reduced by using infrared gas imaging to pinpoint the leak.

"In addition, the detection technology is changing in finding alternatives to point detection with traditional method. Utrasonic, infrared, laser are few of technologies available for strengthening the information on potential leaks.

"When taking into account wind speed, wind directions, equipment layout, and the fact that point detector only detects one specific gas, there is a need to double check the gas detection conventional system," he concluded.

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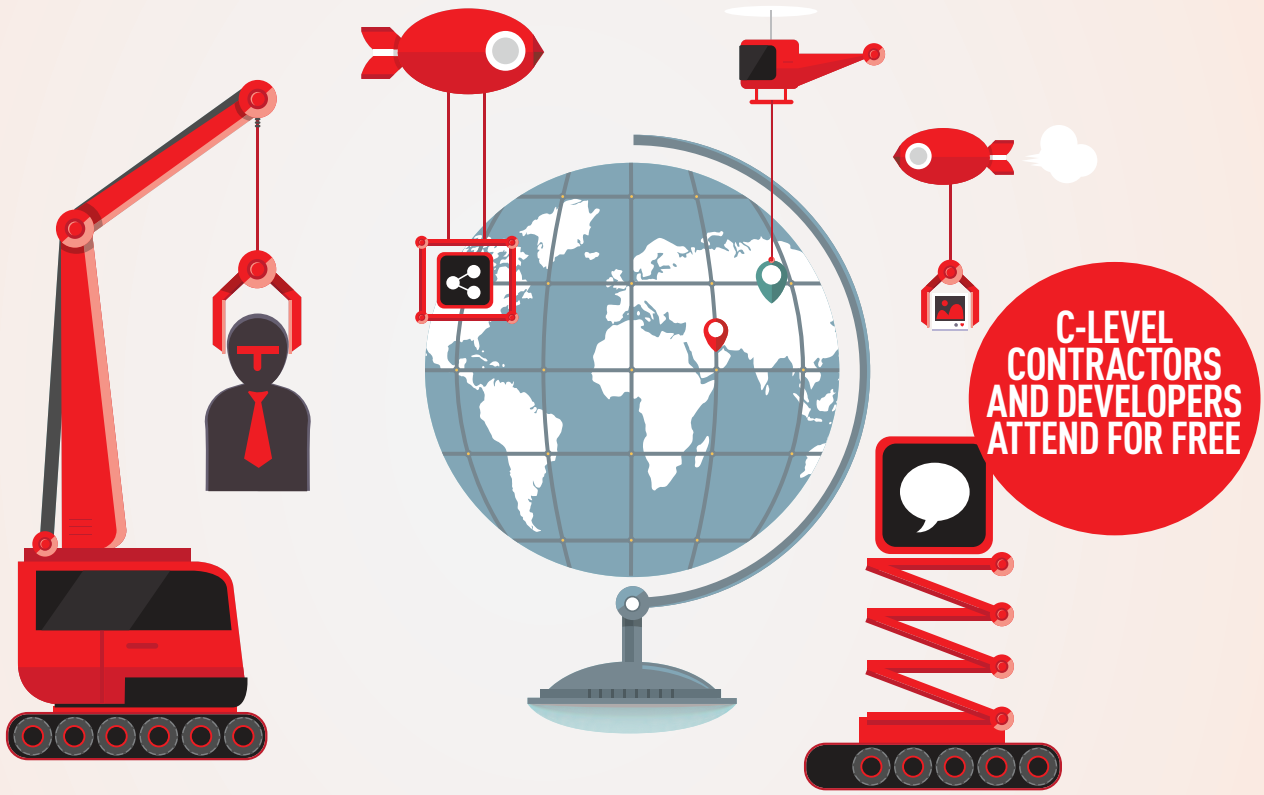

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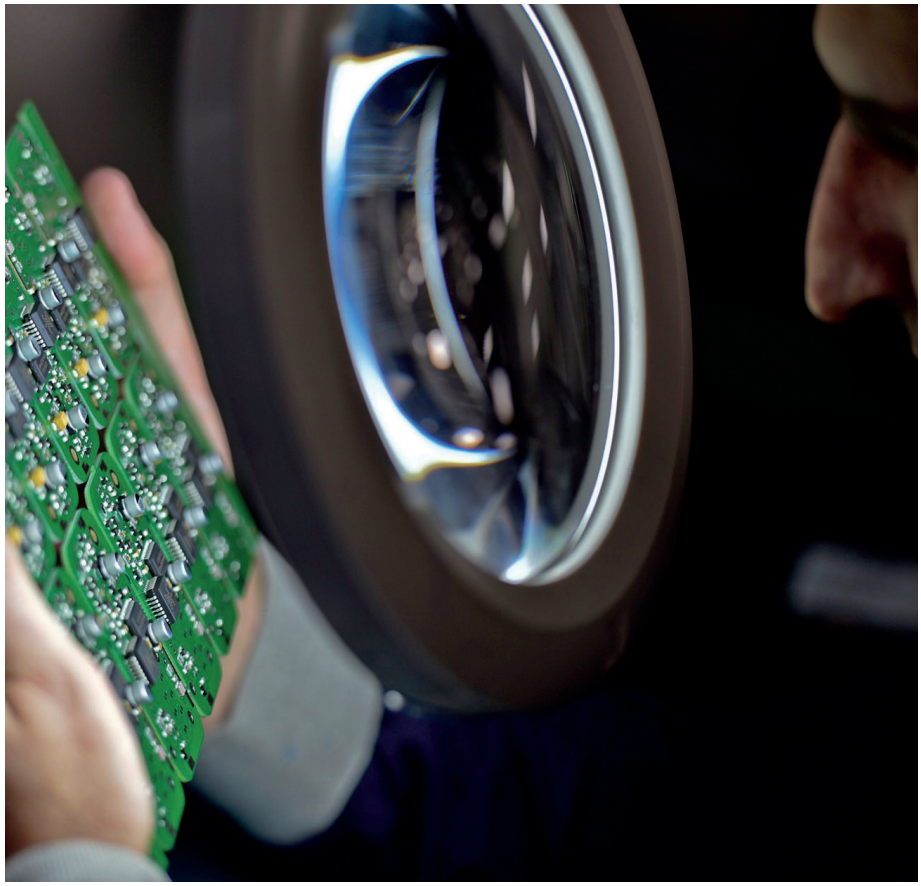
Intrinsically safe systems



IS TECHNOLOGY In the marine and oil and gas sectors, UK-based Apollo Fire Detectors Ltd has provided a range of analogue addressable and conventional intrinsically safe (IS) systems for cargo and passenger ships, ferries and military vessels, as well as offshore facilities. IS technology was first introduced into fire detection equipment in the early 1980s, but it was not until July 2003, and the introduction of the ATEX (Atmosphere Explosive) Directive, that the use of IS equipment for certain hazardous environments became compulsory. Apollo says it is dedicated to ensuring the safety of its IS technology, with all equipment rigorously tested in the company's Electro-Magnetic Capability (EMC) and fire test laboratories. Apollo also follows a production protocol ensuring that all IS devices are tested.

THREE REASONS TO BUY

Sharjah-based Betec Cad's team talks about the company's offshore fire and ventilation dampers for the oil and gas sector

1 WEATHER RESISTANT

Betec Cad manufactures offshore fire and ventilation dampers (OFVD) which can be utilised in oil and gas HVAC applications, where abnormal ambient temperature conditions like -40°C to +100°C exist. Offshore or marine fire divisions are classified as 'A' or 'B' which relate to temperature limits that must be adhered to.

2 TESTED AND APPROVED

These dampers are designed and manufactured in accordance to SMACNA , NFPA and SOLAS technological data in the interest of improving safety for public benefit. These dampers are put through rigorous testing procedures such as UL, AMCA and BS international standards and are classified as CLASS 1 dampers.

3 FOR DYNAMIC AND STATIC

Betec Cad's fire and smoke dampers operate as an integral part of engineered smoke management system for building controls. They are suitable for both dynamic and static systems. The gas tight fire dampers are designed to isolate sections of a ventilation system with a very high level of sealing.

Plant temperature monitoring system

Eaton claims the system analyses conditions and helps in reducing the risk of plant shutdowns

MONITORING Eaton has launched the first diagnostic system that provides permanent temperature monitoring of the critical areas of switchgear systems. Building on its low-voltage switchgear expertise, the power management company is helping reduce the risk of plant shutdowns through continuous temperature monitoring of vital system components and the generation of alerts in the event of imminent system overload. The system analyses behaviour in various operating conditions, generating valuable information on switchgear capacity. Using this information, system upgrades can be implemented at significantly less risk. The diagnostic functions include, for example, parameter checks as well as the generation of trend analyses.

REASONS TO HAVE:

- Analyses switchgear behaviour
- Consists of autonomous temperature sensors
- Temperature readings every 10 minutes
- Uses special firmware to display the thermal behaviour of the switchgear
- Data stored and displayed graphically
- Can be connected to SCADA systems
- Alarm messages sent when needed
- Can provide temperature measurement and data transfer with just 50 A of current
- System is completely maintenance-free and is ideal for places such as busbar compartments

SELL IT TO ME

***Eaton claims its MTL Tofino** appliance is cost-effective and helps companies protect its plants from cyber attacks*

PROTECTION: Recently released by power management company Eaton, Tofino is a next generation security system designed to provide the oil and gas alongside other industries with a cost-effective protection that is highly effective and quick to install. It supports all popular industrial protocols with the Firewall Loadable Security Module (LSM) which compares network traffic against a set of rules. Tofino also includes the EtherNet/IP Enforcer LSM for deep packet inspection of EtherNet/IP (CIP) communications.

HIGH-TECH FEATURES: The MTL Tofino security system was designed with the highest level of network security, keeping process automation applications in mind. The 9202-ETS MTL is exceptionally easy to install compared with alternative systems and includes the latest configurator software to protect industrial networks from cyber security vulnerabilities and attacks. This maximises plant uptime and process availability, along with protecting the network from external attacks. It also delivers defence in depth for a wide range of DCS, PLC, SCADA, networking, and automation systems.

FIREWALL: It supports all popular industrial protocols with the Firewall Loadable Security Module (LSM) which compares network traffic against a set of rules. The new release includes the EtherNet/IP Enforcer LSM for deep packet inspection of EtherNet/IP (CIP) communications. Tofino can also be configured remotely with the Netconnect LSM, providing further flexibility to the user. Further LSM's can also be specified such as the Modbus enforcer and OPC enforcer LSMs providing deep packet inspection for these key industrial protocols and the Event Logger LSM logs security events and sends alarms. The LSMs are available pre-installed or can be purchased separately.

DEFENCE: The 9202-ETS MTL security appliance delivers defence in depth for a wide range of DCS, PLC, SCADA, networking, and automation systems. As it does not have its own IP address, it sits as an invisible device on the network and is designed to stop threats without disrupting the critical process application.

AUTOMATION: The Tofino system includes a number of templates for use with a wide range of automation protocols to further ease installation. In addition, it provides a number of rules and a test mode, so users can check the proposed configuration will not interfere with the operation of the plant before putting the security appliance into operation.

RESISTANT: The 9202-ETS MTL security appliance has a rugged hardware design suitable for use in harsh and hazardous environments. It has a robust metal housing for DIN rail mounting, -40ºC to +70ºC operating temperature ratings together with Class 1 Division 2 and ATEX Zone 2 hazardous area approvals. This ensures it will give years of reliable service, providing secure networks with security zones as per NERC, ANSI/ISA, and IEC standards.

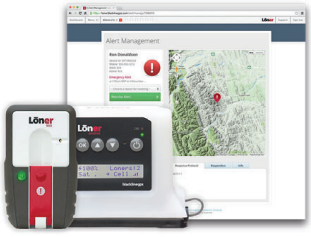
Ingersoll Rand, Famco's tie-up working well

Famco sees demand rising for Ingersoll Rand's MR150 Man Rider winch, loaded with features, in the market

MAN RIDER Oil and gas industrial services provider Ingersoll Rand has recently tied-up with Famco, part of Dubai-based conglomerate Al-Futtaim Group, to sell its personnel lifting product - the MR150 Man Rider – in the local market. The MR150 has built-in safety mechanisms, including a slack line prevention system and an emergency lowering system, as well as a number of intuitive design elements that help rig workers protect themselves and co-workers during operation. The MR150 is fitted with stainless steel components and marine-grade paint to reduce corrosion and withstand harsh environments. One of the significant safety features of the Man Rider is that if the winch line gets caught or snagged, the slack line prevention system on the MR150 immediately shuts down operation of the winch, stopping the winch from turning out more line and helping to prevent the rider from falling. The slack arm sits only four inches from the winch drum, providing more clearance for equipment above and reducing the footprint the winch takes up on the deck of the rig, where space is at a premium.

SELLING POWER

Canadian pipeline company orders Blackline's 'Lone Bridge' worker safety monitoring technology



THE DEAL: Blackline Safety Corp. (TSV VENTURE: BLN) recently announced that a prominent Canada-based pipeline company purchased over $440,000 in Loner Bridge Systems and services to monitor their lone workers.

EFFECTIVE TECHNOLOGY: Blackline's broad Loner safety monitoring portfolio empowers organisations in all industries and geographic locations with real-time safety incident awareness, delivering help within minutes instead of hours or potentially days later. Targeting every industry, employee role and location, the Loner solutions are promoted through Blackline's offices in Canada and the United Kingdom and sold through a growing network of international distributors. Loner products alert monitoring personnel of a safety incident, locate the employee and empower the most efficient emergency response – alert, locate.

HOW IS BUSINESS FOR BLACKLINE?

Although energy sector commodities have softened over the last year, Blackline has received several orders from top-tier upstream and mid-stream organisations since the beginning of Q4 2015.

PRODUCT FOCUS

Bahrain-based Sprung Structures offers immediate, cost-effective construction for the oil and gas industry

An optional fibreglass insulation package provides an energy-efficient structure that can be utilised for a wide range of climate controlled applications. Sprung Structures are engineered to withstand extreme wind loads.

Each Sprung Structure is manufactured from quality products and material, and tested using strict performance measures. The products meet the requirements of most building codes and standards.

Sprung Instant Structures manufactures clear-span tensioned membrane structures up to 60m-wide by any length. This innovative re-locatable building solution utilises architectural membrane panels placed under high tension within a non-corroding aluminium substructure.

With a specialised high strength aluminum alloy, the company claims its substructures have an unlimited lifespan.

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Packers Plus takes risk out of HPHT wells

Completion technology lowers operational risk when drilling in challenging formations

DOWNHOLE TECHNOLOGY 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 or breakdown pressures.

Rock temperatures above 149°C and pressures above 10,000 pounds per square inch (psi) are 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 inside the wellbore. The HPHT capability of this system makes it ideal for deep wells with long laterals and tight stage spacing.

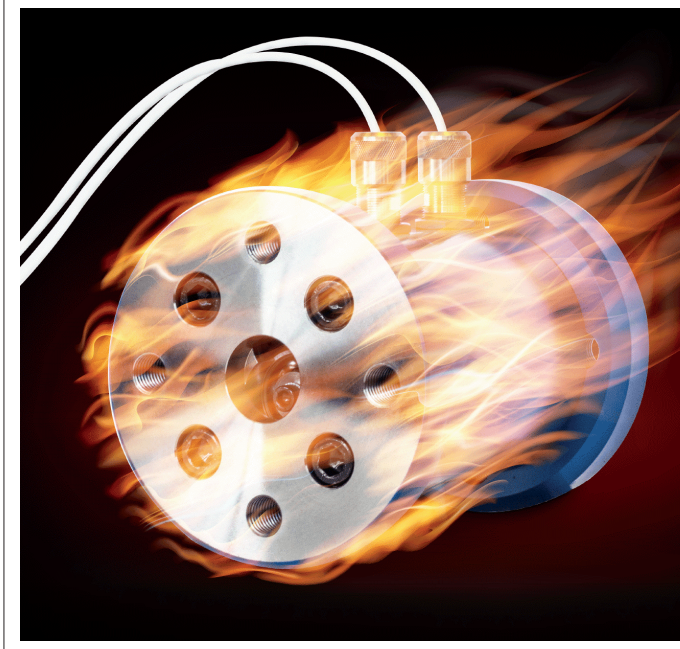
Packers Plus says that the product's HPHT capability was what an operator in Oman was looking for. The operator was working in the Khazzan oilfield and required a completion system with equipment rated for a 15,000 psi working pressure.

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 8 month-long feasibility study. The Titanium XV tools were successfully tested within just 6 weeks of the project start date. Since 2011, Packers Plus has completed over 215 wells using Titanium XV systems, amounting to over 4,050 stages.

High temperature sensors

Kral launches 'economically priced' OMP flowmeters with high temperature sensors of up to 200°C



SENSOR Austria-based Kral has recently launched its new range of flowmeters, that are used for lubricating liquids and are fitted with high temperature sensors. The basis for accurate measurement is a core competency: the production of measuring screws and measuring housings to very low tolerances. Sensors limit the maximum operating temperature while the flow volume and direction of flow are registered by means of spindle rotation. In addition to the available standard model for temperatures of up to 125°C, the economically priced OMP series is now also available with high temperature sensors for up to 200°C. For applications requiring up to 250°C, the OMG series is still in the lineup. KRAL Volumeter deliver precision of ±0.1% of the measuring value.

REASONS TO HAVE:

- Customised for fuel consumption measurement application including booster module and burner/boiler.
- Flow range from 0.3 to 525 l/min.
- Standard model for temperatures of up to 125°C available
- Maximum operating temperature model for 200°C available. For applications requiring up to 250°C, the OMG series is in the lineup.
- Maximum design pressure 40 bar.
- Accuracy of ± 0.1%.
- PNP output.
- Standard with hybrid bearings. Robust and long life.

Clothing the workforce

Oil & Gas Middle East speaks to Magus International's general manager, ***Lisa Harwood***, about the demands for HSSE clothing in the GCC

↑ Lisa Harwood is the Dubai-based general manager of Magus International

What HSSE clothing and equipment does Magus specialise in, and what are some of its most popular products?
Magus International represents a vast range of personal protective equipment (PPE) and clothing, catering to both general and specialist applications. We currently represent over 40 globally recognised brands who are all experts in their field. The most popular product ranges for the oil and gas sector is our flame retardant (FR) clothing by Workrite, hazmat/chemical/gas protective clothing by Respirex, gas detection equipment by RAE Systems and fall arrest Systems by Capital Safety. However, safety helmets (Scott), breathing apparatus (Scott), safety glasses (Bolle), gloves (Polyco) & footwear (Cofra) are also big sellers.

Who are some of the companies in the GCC you supply/what are some of your major contracts?
We supply to Saudi Aramco, Saudi Electric, ADNOC Group, Sabic affiliates, Aramco refineries and Samref to name a few. The FR clothing contracts for Saudi Electric and Samref are a couple of the largest we supply.

What particular challenges do you face when designing/manufacturing clothing and products for the Middle East, compared with other regions?
We do not design or manufacture PPE or clothing ourselves; however, we work closely with our suppliers who support us in terms of product solutions. Due to the climate, the main challenge for this region is manufacturing products which offer a good level of wearer comfort whilst conforming to the relevant safety standards. Wearer comfort is essential to ensure employees use their PPE and clothing correctly. Heat stress is a serious health risk to workers in high temperatures and needs to be minimised through product design wherever relevant.

How much is product design in the oil and gas industry driven by legislation, compared with feedback from customers?
Ultimately, product design is driven by legislation and the requirement to conform to the relevant safety standards. However, as innovators within the industry, our brands are continuously working within these parameters to improve both the design and the materials used. R&D not only focusses on improving the technical standards but also on improving wearer comfort, value for money and durability. Customer feedback is an essential part of this process.

How would you typify the demands of oil and gas customers in the Middle East when it comes to clothing and equipment?
The oil and gas industry in the Middle East has historically maintained high standards of health and safety policies. The industry typically demands high quality and high performing products from globally respected brands.

→ The Respirex GTB suit

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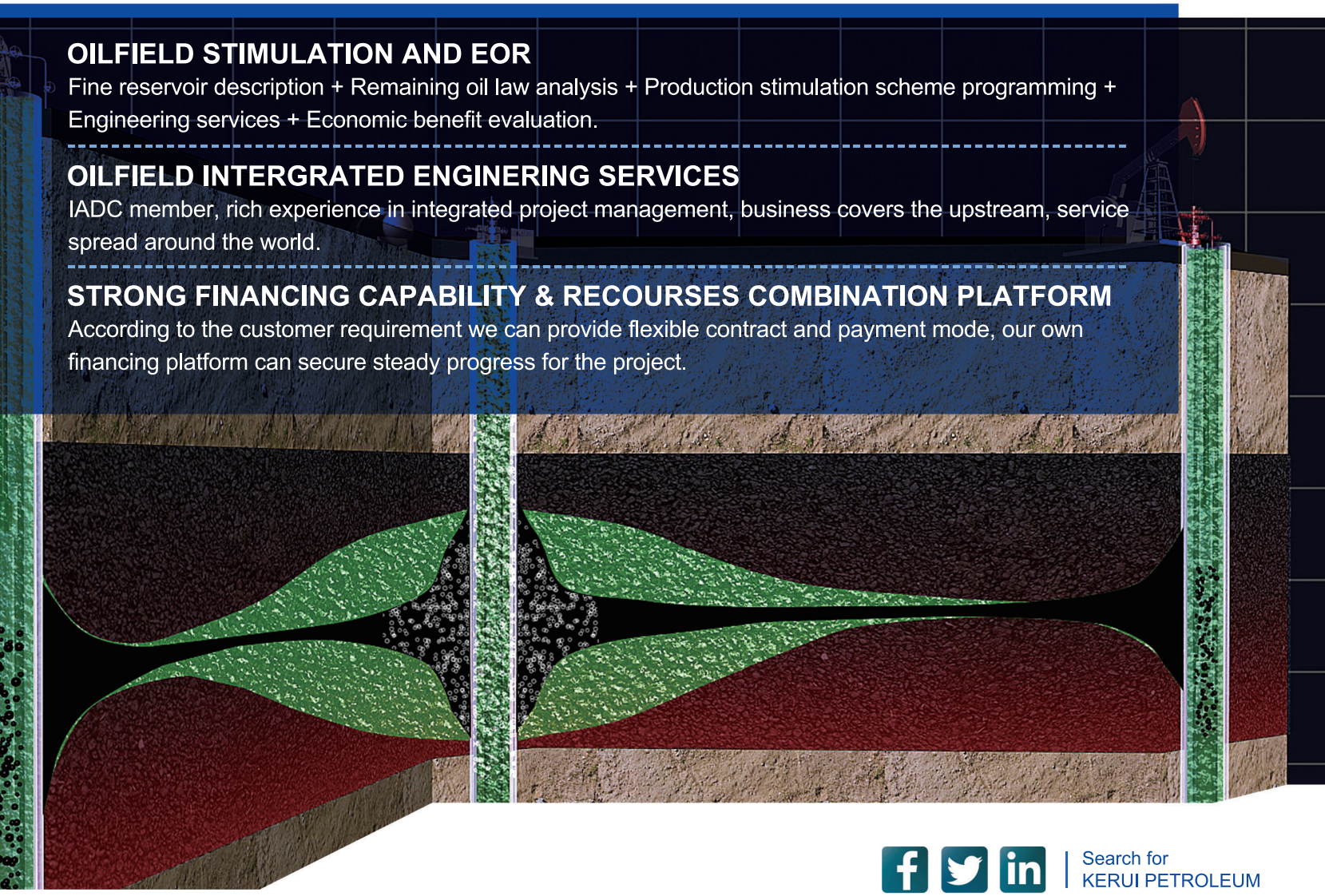

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Now in its 12th year, the SOGAT exhibition and conference is widely recognised as the leading event of its kind in the region

WORDS: JAMES HENDERSON

↑ Delegates from all over te world are confirmed to attend.

Now in its 12th year, the Sour Oil and Gas Advanced Technology (SOGAT) event has established itself as the foremost occasion of its kind in the GCC.

In this region the sour gas production activity is driven by the demand for gas which is projected to double over the coming years in order to meet the power and infrastructure requirements against the background of developing more energy efficient technologies for sour gas separation, selective sweetening processes, exotic material selection and improved field safety management standards.

Subsequently the UAE, in particular, is becoming the centre of international sour gas conditioning and despite oil price fluctuations sees no serious downturn in technical activity.

For example the Habshan V plant, which is part of Abu Dhabi's Integrated Gas Development, is currently processing one billion cubic feet a day (bcf/d) and the aim is for processed gas to rise to 1.75 bcf/d by 2017. Also the Shah sour gas field, with an H2S content of 23% and 10% CO2, is targeting production of 540 million scf/d of sales gas, requiring it to process almost 1 bcf/d of gas and is now operating at full capacity.

Hail is another potential sour gas project in Abu Dhabi, currently under review. It is expected to produce 400-600 million scf/d of sales gas.

The H2S content of this offshore field is 15%, which is lower than the onshore fields, but the offshore location, albeit in shallow water, may increase production costs.

The Shuwaihat field, involving Wintershall, is also creating strong interest and reserves are estimated between 28 to 85 bcm. The North Field is the largest gas field in the world at 1500 tcf and straddles Iran and Qatar. South Pars is on the Iranian side and in spite of delays caused by international sanctions, Iran has been steadily progressing through the 29 project phases, all of which involve gas and condensate recovery.

On the Qatari side of the North Field, gas is

brought ashore to the massive complex at Ras Laffan. Gas production will rise to 2.2mn tonnes a year (t/a) by 2018 as more gas is processed. The new Barzan gas project is designed to provide gas for domestic use with Train 1 commissioned and Train 2 due to start up this year. Total sales gas output at capacity will be 1.4 bcf/d.

In neighbouring KSA, Karan is the first non-associated sour gas development. The gas is produced offshore and pumped for processing onshore at the existing Kursaniyah gas plant. Additionally the Wasit gas plant has been built to process gas from the offshore Arabiyah and Hasbah sour non-associated gas fields. Total gas processing capacity is 2.6bn scf/d to produce 1.75bn scf/d of sales gas. H2S content averages 4-8%, and the sulphur recovery section includes four SRUs with a total capacity of 2,400 t/d (800,000 t/a).

The Kashagan project is set to restart production in 2017. ↓

450 PLUS

SINCE 2004, SOGAT HAS ATTRACTED MORE THAN 450 PARTICIPANTS FROM AROUND THE WORLD EVERY YEAR

Start-up began in 2015 with full overview production expected this year. Fadhili is another sour gas processing plant, designed to process additional gas from the Kursaniyah and Hasbah fields and the $6.5bn gas plant will have a capacity of 2.5bn bcm.

Oman has two major sour gas processing projects. One is at Yibal Khuff Sudair and is a deep oil and associated sour gas deposit beneath an existing field, with an H2S content of 3%.

An 85,000 t/y sulphur recovery plant is due for completion, and commissioning of the gas project is expected in 2019. The other project is the Rabab Harweel Integrated Project.

KOC still has plans to develop very challenging contaminated gas reserves from Jurassic formation in Northern Kuwait. Internationally other sour gas exploration activities are ongoing in Central Asia, particularly in Uzbekistan with the impending construction of the Kandym Gas Processing Plant.

The long awaited Kashagan project in Kazakhstan is expected to restart production in 2017 as the gas leaks from the sour gas pipelines are finally eradicated.

Also sour gas activities in China are ongoing in the Yuanba and Chuandongbei Gas Fields and the Gorgon and Janz-I0 Gas Fields off the coast in Western Australia with their reserves of 40 tcf are

SOGAT schedule
Beach Rotana Hotel, Abu Dhabi
March 20–24, 2016

March 20
SOGAT Workshops
Sulphur Recovery
Sour Oil & Gas Process Optimisation
Dehydration of Natural Gas

March 21
SOGAT Workshops
Sulphur Recovery
Sour Oil & Gas Process Optimisation
Dehydration of Natural Gas
Managing BTX in Lean Acid Gas Implications along the Sulphur Supply Chain in Future Market Conditions and Potential Solutions

March 22-24
12th International SOGAT Conference March 22–24
SOGAT Exhibition

Platform for business

A large number of exhibitors have been confirmed for the event, with companies hopeful of making new contacts, understanding industry trends and potentially paving the way for new business.

Euro Support will be one of the firms with a presence at the event, and its sales manager, Bob van de Giessen, is looking forward to showcasing the firm's gas catalyst equipment.

"We want to reach a wide range of potential clients at SOGAT, as well as meeting other members of the sulphur recovery industry to discuss what the industry is moving towards.

"The company is very proud to present the latest development in the area of low temperature tail gas catalysts, namely, the first titania based tail gas catalyst for the highest performance at the lowest temperatures."

Speaking to *Oil & Gas Middle East*, Jeff Bolebruch, senior market manager at Blasch Ceramics, said the company would be exhibiting its VectorWall furnace management system, which is designed to increase capacity in existing reaction furnaces.

"We're just getting started and our hopes are that the new users of our products will be there to hear and see more about what we have to offer, and we hope they bring their friends, as well.

"We think that anything that reduces operating costs and increases yields will be of interest, especially in this economy."

Nick Coles is the conference director of Dome Exhibitions.

expected to produce 15.6 t/y of LNG.

The technologies involved in sour field management and production are always progressing and the latest developments across the whole management spectrum including observations on capturing CO2 from sour gas processing facilities for use in EOR will be included in the SOGAT Conference Programme.

Also within this programme, the well-known coverage of technical developments with papers from operators will be encouraged as ever together with a specialist panel session on Emergency Response Planning with a particular focus on RPE to enhance personnel safety.

Also, the SOGAT 2016 Programme will include a Poster Session. As usual practical workshops on topical issues in these areas will be presented in the first two days of SOGAT 2016 and the International Advisory Committee are planning workshops on: Sulphur Recovery; Sour Oil & Gas Process Optimisation; Dehydration of Natural Gas; Managing BTX in Lean Acid Gas; and Implications along the Sulphur Supply Chain in Future Market Conditions and Potential Solutions.

The SOGAT Exhibition will see the world's leading vendors and suppliers returning again and so SOGAT 2016 will continue its well-known trend and reputation, as the international event that provides a one stop review of all the latest developments in Global Sour Hydrocarbon and Sulphur Management.

For more details, including the full conference programme, please visit sogat.org

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WORDS: INDRAJIT SEN

BAHRAIN SHIFTS GEARS IN NEW ERA

After having ended its lavish subsidies on fuel prices in January, the Kingdom, realising its limited oil and gas production potential, looks at more realistic ways to diversify its economy

It had to happen sooner or later and it came about in January. The Kingdom of Bahrain, after having held fort for longer than its heavyweight GCC peers the UAE, Saudi Arabia and Qatar, decided to end subsidies on fuel prices with which (like all other GCC states) it had been aiding its nationals and residents for decades.

The state news agency *BNA* carried a statement from Bahrain's Cabinet saying it had decided to set the new price for super fuel at 160 Bahraini fils ($0.424) per litre from 100 fils, while the price for regular fuel would be raised to 125 fils per litre from 90 fils, effective immediately.

Ghassan Alakwaa, energy research analyst at APICORP.

Some Members of Parliament refused to enter the parliamentary chamber and stood outside, a day after the decision was passed, in protest, according to local media reports. The session had to be cut short as the chamber requires a minimum of 21 MPs to be present for meeting to proceed, according to a report by the *Gulf Daily News*. A panel has also been proposed to question Energy Minister Dr Abdulhussain Mirza and Finance Minister Shaikh Ahmed bin Mohammed Al Khalifa over the issue, the report added. "MPs want the government to realise that they are not puppets and should have a say in what should be done to tackle the financial crisis," services committee chairman, Abbas Al Madi, told the local newspaper.

The removal of fuel subsidies would have negligible impact, if not prove beneficial, to consumers in Bahrain (the UAE reducing fuel prices every month to date now being another) in the short to medium term, as global crude oil prices – to which domestic rates have been synced – are expected to trade between $30-$40 in the foreseeable future.

However, the decision to terminate fuel subsidies directly reflects the blows the Kingdom's exchequer has received in recent months, due to low oil prices. The fiscal deficit for both 2015 and 2016 is estimated to be around $13.5bn, according to government officials. "The Bahraini government decided to put in place plans to phase out fuel subsidies to both align with GCC efforts and relieve some fiscal pressure given that the majority of the government's revenue [about 86% according to an estimate] comes from its oil and gas industry," Ghassan Alakwaa, energy research analyst at APICORP, says.

The 2015-16 budget plan approved in May 2015 envisaged spending of $9.47bn in 2015, down from an originally planned $9.83bn in 2014. Spending was projected to be at $9.86bn in 2016. The deficit was forecast to climb to $4bn both for last year and this year, from an originally planned $2.42bn last year.

Malaysia-based RAM Ratings had downgraded Bahrain's sovereign rating on the global scale

"BAHRAIN'S FUEL SUBSIDY RATIONALISATION IS TIMELY AND NECESSARY TO ADDRESS ITS FISCAL CHALLENGES, WHICH STEMS FROM A SHARPLY REDUCED FISCAL REVENUE"
ESTHER LAI
HEAD OF SOVEREIGN RATINGS, RAM RATINGS

↑ Bahrain has suffered as a result of the falling oil price.

to gBBB2(pi) from gBBB1(pi) in 2015, mainly premised on the country's projected sharp fiscal deterioration which would see its fiscal deficit widened to 12.6% of GDP in 2015 (3.6% deficit in 2014), while the Kingdom's debt load increased further to 57.1% of GDP (43.8% in 2014).

"Bahrain's fuel subsidy rationalisation is timely and necessary to address its fiscal challenges, which stems from a sharply reduced fiscal revenue [from hydrocarbons] and expenditure that remains elevated. We see this as an incremental step towards fiscal consolidation, given that subsidies comprised 25% of the government's budget for 2016," Esther Lai, head of Sovereign Ratings at RAM Ratings, says.

"Moreover, Bahrain's very limited fiscal reserves are unable to provide sufficient buffer to withstand such fiscal deterioration."

Oil and gas output scenario

Given its geographical area, Bahrain has limited oil and gas reserves, although it has done well over the decades to economically prosper on those limited resources (it was the first country in the GCC where oil was discovered in the early 1930s). Bahrain's oil and gas industry – which is run primarily by the state-owned Bahrain Petroleum Company (Bapco) and Bahrain National Gas (Banagas) – produced around 50,000 barrels per day (bpd) in 2015 according to official estimates, although output is expected to rise to about 100,000 bpd by 2020.

In 2015, Energy Minister Mirza said that 618.44mn barrels were available at the Bahrain Field – the country's largest - after 17.5mn barrels were produced in 2014. Bahrain also shares the production of the 300,000 bpd-capacity Abu Safah offshore field with neighbour Saudi Arabia.

Furthermore, the minister said that there was 10.65tn cubic metres of gas available with his country, with around 530bn cubic metres (bcm) produced in 2014 and averaged 1.7bn cubic feet (bcf) per day in 2015.

"The Kingdom of Bahrain does not export or import natural gas. The local production of natural gas is used to fuel domestic industries, through Banagas – the main distributor and supplier of

gas in Bahrain – which distributes gas to such manufacturers as Bapco, ALBA and GARMCO among others," Majdi Khalaf, managing director and CEO of Bahrain-based First Equity Energy told *Oil & Gas Middle East*.

→ Pain at the pump? Subsidy cuts are yet to translate to siginificantly increased fuel costs.

Japanese engineering firm JGC recently won a $355mn contract to design and build a mid-sized gas plant for Banagas. The facility will recover for export liquefied petroleum gas and naphtha from associated gases released when extracting crude oil. The plant, slated for completion by September 2018, will be about 20km south of the capital city of Manama and have a daily processing capacity of 350mn cubic feet (mcf).

However, Khalaf said: "The Kingdom seeks to increase production or to import gas to drive the economic development process in Bahrain and to maintain a growth rate of 4%. Therefore, Bahrain needs larger quantities of natural gas. To meet this demand, Bahrain is in serious negotiation with Russia to distribute LNG in the region."

His comments apparently point to media reports last year that Bahrain was mulling to award a $400mn contract to build a floating gas terminal off the country's northeast coast. Energy Minister Mirza said the Liquefied Natural Gas (LNG) terminal will be constructed near near Khalifa Bin Salman Port and is expected to be operational and able to receive deliveries of LNG by ships by Q1 2018.

↖ Majdi Khalaf, managing director and CEO of Bahrain-based First Equity Energy.

↑ Muhamad Fadhil, regional manager for ICIS MENA.

← Ehsan Ul-Haq, senior oil market consultant at London-based KBC Energy Economics.

> "THE KINGDOM SEEKS TO INCREASE PRODUCTION OR TO IMPORT GAS TO DRIVE THE ECONOMIC DEVELOPMENT PROCESS IN BAHRAIN AND TO MAINTAIN A GROWTH RATE OF 4%. THEREFORE, BAHRAIN NEEDS LARGER QUANTITIES OF NATURAL GAS."
> MAJDI KHALAF
> CEO, FIRST EQUITY ENERGY

"We are going to award the contract for constructing a floating terminal in the sea to receive LNG next month," Mirza had told the local press in October. "This will allow us to import 400mcf of gas per day with flexibility to expand it to 800mcf 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."

Bahrain's downstream capacity far outweighs its upstream. The Kingdom imports 230,000 bpd of oil from Saudi Arabia's Ras Tanura oilfield – through a pipeline – to be refined at the country's main refinery at Sitra, the Bahrain Refinery. Since 2014, Bahrain has been planning to build a new oil pipeline with Saudi, to import crude oil for its refinery, although various aspects of the project are yet to be finalised. The two GCC states plan to build a new 115km-long pipeline, with a carrying capacity of 350,000 bpd to replace the ageing 230,000 bpd pipeline.

"The estimated cost of this project is about $300mn. The new pipeline is 100km longer than the old one and is away from residential areas, which were uninhabited when the old pipeline was first built. The new pipeline was built to ensure the safety of residents and to allow for urban expansion," Khalaf said.

The project also has a strategic significance, not only in terms of replacing the old pipeline (which had less capacity and higher maintenance costs), but also to increase the export capacity from 230,000 barrels per day to 350,000 barrels per day.

The new pipeline, expected to be operational by 2018, will enable Bapco to expand the processing capacity of the Sitra refinery – which currently refines 267,000 bpd – to 367,000 bpd, as it steps up oil imports from its larger neighbour Saudi Arabia.

615 MILLION

ESTIMATES PEG BAHRAIN'S OIL RESERVES AT APPROXIMATELTY 615MN BARRELS.

Changing gears towards downstream

Experts agree that Bahrain, due to its limitations on oil production, has been focussing more on strengthening its downstream capabilities, and heavily relies on Saudi Arabia for importing oil for its refineries.

"Bahrain has only (about) 615mn barrels of oil reserves. Therefore, the potential to increase output is limited. However, its investment in the refining sector accounted for more than 60% of its total export revenues in recent years. BAPCO is modernising its refining sector in order to produce low diesel fuels," Ehsan Ul-Haq, senior oil market consultant at London-based KBC Energy Economics, told *Oil & Gas Middle East*.

"Building new refineries is part of a wider initiative to integrate the crude, refining and petrochemical industries to create more value added. As well as increasing the availability of feedstock, the use of refined products provides opportunities to produce more sophisticated petrochemical products that are essential to extend the value chain," Alakwaa said.

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→ Bahrain Energy Minister Dr Abdulhussain Mirza.

Bahrain is highly reliant on its neighbour Saudi Arabia. ↓

> "THE LACK OF INVESTMENT IN UPSTREAM VENTURES IS LINKED TO THE LOWER PROSPECTIVELY OF BAHRAIN'S ACREAGE. THEREFORE, IT IS NOT A STRATEGIC DECISION FOR BAHRAIN TO DIVERSIFY AWAY FROM THE UPSTREAM."
> WOOD MACKENZIE

Along with Bapco, the Gulf Petrochemical Industries Company (GPIC) too is at the forefront of petrochemical and downstream initiatives in the country. "Bahrain will look to bolster its downstream capacities over time as a means to diversify its economy. It remains unclear how long the oil downtrend will continue for, so moving downstream is a step in the right direction. Bahrain needs to look no further than Saudi Arabia, who had for years developed its downstream initiatives to great success," Muhamad Fadhil, regional manager for ICIS MENA, told this magazine.

Senior analysts at global consultancy firm Wood Mackenzie also agreed, telling *Oil & Gas Middle East* in a statement: "The expansion on the downstream side is directly linked to lack of upstream production/reserves growth. The lack of investment in upstream ventures is linked to the lower prospectively of Bahrain's acreage. Therefore, it is not a strategic decision for Bahrain to diversify away from the upstream. The (production) prospect is low and the country's reserves continue to decline."

"The refinery is actually quite a competitive asset and will be even more so once expanded. The Middle East will be a major exporter of oil products going forward and the expansion of Bahrain's refinery will ensure that it can compete successfully with similar export orientated facilities elsewhere (SATORP, Yasref, Ruwais etc)," the Wood Mackenzie analysts stated.

Given Bahrain's limited hydrocarbon endowment, the country is one of the earliest among the GCC economies to have embarked on economic diversification. The non-energy sector now comprises around 80% of the country's GDP, with healthy growth momentum in manufacturing and services-related industries. "Services industries such as social and personal services, transport and communication and hotels and restaurants are supported by strong tourist demand from Saudi Arabia. That said, low oil prices could still affect consumption and investment sentiments, given the non-hydrocarbon sectors linkages to the energy sector and government spending decisions," Lai of RAM Ratings said.

In an earnest bid to diversify the economy to gradually reduce its reliance on energy revenues, Bahrain had launched its Economic Vision 2030 in 2008. Wood Mackenzie analysts say the diversification strategy now assumes a crucial role as oil production, along with the revenues generated by it, continue to decline.

"Bahrain aims at reducing reliance on oil revenues and inefficient spending, developing high potential sectors, attracting investment to diversify the economy, driving growth in the private sector, increasing productivity and creating an attractive living environment for Bahrainis."

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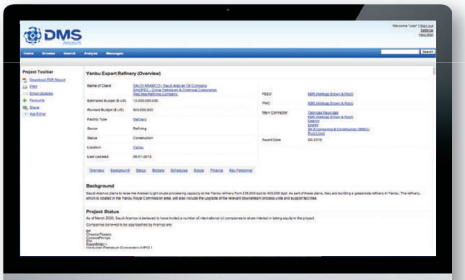
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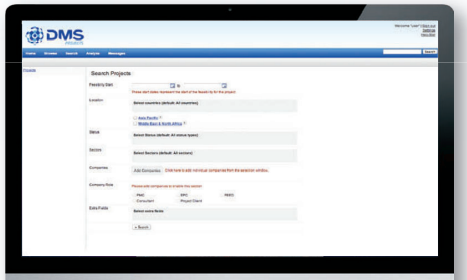
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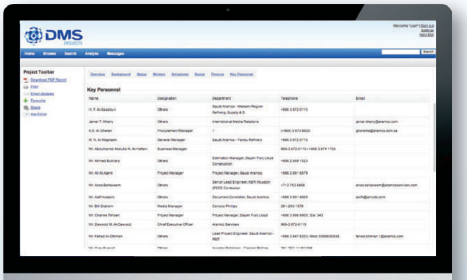
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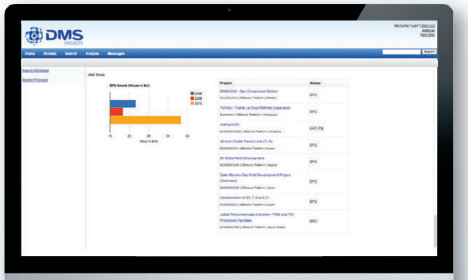
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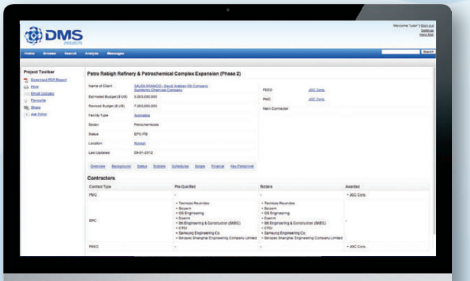
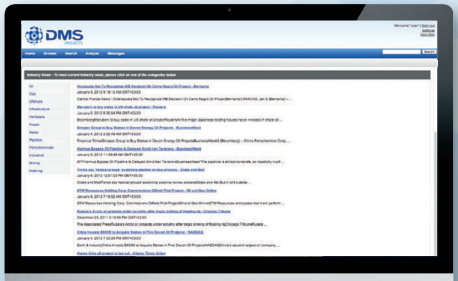

Bidders List


Industry News

KEY FEATURES

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

NEW FEATURES

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

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INDUSTRY INNOVATIONS

Machinery Health Monitor

ASSET MONITORING Emerson Process Management's CSI 6500 Machinery Health Monitor now has an IEC 61508:2010, Safety Integration Level (SIL) certification, Level 1, making it suitable for use in delivering reliable protection monitoring in such environments as steam and gas turbines in power plants, critical refinery assets, nuclear industry critical assets, and other safety-critical applications. The CSI 6500 provides insight into the health of critical assets with both protection and prediction in a single chassis.

NEW LAUNCHES

A round-up of some of the best releases this month

COMBUSTION AND SAFETY ANALYSER

The new E-Instruments' E900-C Combustion Gas & Emissions Analyzer is suited for maintenance and emissions compliance testing for Engines, Boilers, and other combustion applications. Now available with field replaceable sensors for easy replacement to eliminate 'downtime' and costly repair charges. This unit comes with memory and software at no charge. The E900-C includes features like field-replaceable sensors, CO sensor (0-8000 ppm), CxHy hydrocarbon (LEL) safety sensor, memory and software, Bluetooth wireless communication, and O2, CO, CO2, CxHy detection, rechargeable battery and AC charger standard, and comes with a calibration certificate for proof of accuracy.

GAS DETECTORS

Simtronics is pleased to announce that its GD10P and GD10PE infrared gas detectors are now certified SIL 2 and SIL 3 capable. The GD10P series detectors are 4-20 mA analog Point Infrared combustible gas transmitters with long life and very low maintenance. The Simtronics GD10P detector is the benchmark for combustible gas detection on offshore installations. The GD10P comes with 5 years' warranty on the complete transmitter and a 15 year warranty on the IR Source. The GD10P has been designed with features that provide an effective response to the detection of gas hazards in a wide range of industrial environments from boiler plant rooms to offshore petrochemical installations.

DATA LOGGING MONITOR

E-Instruments has launched its new Automatic Data Logging feature for the new E4500 Portable Emissions Analyser. The E4500 is a new hand-held industrial combustion gas and emissions analyser that is a valuable tool designed for emissions monitoring and maintenance and tuning of combustion processes including boilers, burners, gas and diesel engines, turbines, furnaces, kilns, heaters, and laboratory analysis. User can select an exact number of data points for a given time interval. The E4500 offers up to 2,000 tests, for example it save s data every 15 seconds with a 30 minute test for a total of (120) test points. The E4500 also features up to four gas sensors.

PDO signs MoU for ethics, governance

OCCGS to provide training, advisory services in corporate governance

CSR ACTIVITY Petroleum Development Oman (PDO) has signed a co-operation agreement with the Oman Centre for Corporate Governance and Sustainability (OCCGS) to ensure the Company and its contracting community continue to operate to the highest performance and ethical standards. Under the terms of the Memorandum of Understanding (MoU), OCCGS will provide training, development and advisory services in corporate governance and sustainability. The agreement was signed by PDO managing director Raoul Restucci and OCCGS executive director Sayyid Hamid bin Sultan Al Busaidi. OCCGS will provide support and advisory services in the preparation of policies and manuals relating to corporate governance and sustainability. The organisation will also provide governance training for PDO staff and contractors, while offering administrative technical consultations, research and studies in this area.

THREE REASONS TO BUY

Magnetrol's Pulsar model R96 non-contact radar transmitter delivers accuracy

1 ACCURATE MEASUREMENT

The Pulsar Model R96 non-contact Radar transmitter is virtually unaffected by the presence of vapours or air movement within a vessel's free space. The dual-wire, loop-powered, 6 GHz Radar transmitter measures a wide variety of liquid media in various conditions.

2 HI-TECH FEATURES

The PULSAR Model R96 offers performance features, including signal processing for accuracy and reliability, a measurement range of 40m, advanced diagnostics with automatic waveform capture and data logging, and a powerful device type manager (DTM).

3 IMPROVED VERSION

This new radar transmitter joins Magnetrol's Eclipse Model 706 Guided Wave Radar transmitter to offer process industries a complete portfolio of advanced radar technologies for level control solutions. It also comes with features such as SIL 2 suitability.

SELLING POWER

Abdulsalam Al-Matrouk, KOC on his company opting for Cisco services for high-security network

WAS KOC'S NETWORK LESS SECURE?

The number of devices and applications accessing Kuwait Oil Company's network both inside and outside our firewall has been growing steadily, thereby creating more attack vectors for hackers to exploit.

WHY WAS CISCO SELECTED?

Cisco's broad set of solutions covering the broadest set of attack vectors, leveraging both global and local intelligence, met our company needs perfectly. Cyberattacks are getting increasingly sophisticated and discreet and are driven by financial or political gain. The good news is that the oil and gas organisations like ours can put measures in place to counter attacks.

WHAT IS CISCO PROVIDING?

The Kuwait Oil has installed Cisco Network Admission Control (NAC), a powerful, easy-to-deploy admission control and compliance enforcement component of the Cisco TrustSec system. Also integrated into the Kuwait Oil Company's network will be the Cisco Identity Services Engine, which helps conquer enterprise mobility challenges and safeguard the evolving network, making it secure for use.

Successful jackup operation

WEG helps client Paragon Offshore execute a safe operation in the North Sea

OPERATION NORTH SEA Paragon Offshore, a provider of offshore drilling units, turned to technology manufacturer WEG to replace the electric motors driving its B391 jackup rig in the North Sea. WEG supplied Paragon with 58 highly reliable and energy efficient W22 motors to ensure a smooth and safe jackup process even in aggressive marine environments. This challenge adds to the aggressive environmental conditions in which jackup oil rigs like Paragon's B391 operate. When it came to replacing the motors driving the three 110m-long jackup legs of its B391 rig – which is designed to reach drilling depths of 6,000m – Paragon decided to partner with WEG. WEG inspected the old motor equipment in its workshop facilities in Belgium while the rig was docked in the Keppel Verolme dry dock in the Netherlands. Paragon Offshore has now successfully placed the B391 rig in the North Sea off the Humberside's coast (UK).

HIGHLIGHTS OF THE OPERATION:

- Paragon Offshore turned to global drive technology manufacturer WEG to replace the electric motors driving its B391 jackup rig in the North Sea.
- WEG supplied Paragon with 58 highly reliable and energy efficient W22 motors to ensure a smooth and safe jackup process.
- WEG inspected the old motor equipment in its workshop facilities in Belgium while the rig was docked in the Keppel Verolme dry dock in the Netherlands.
- To ensure a long life span in the adverse North Sea environment, WEG adapted its W22 motors to include special features for use in marine applications.
- Paragon Offshore has now successfully placed the B391 rig in the North Sea.

PRODUCT FOCUS

TP Link's Talon AD7200 multi-band Wi-Fi Router offers industrial wireless technology

TP Link says the AD7200 Multi-band with 4-Stream technology delivers up to 7200Mbps Wi-Fi speeds over 2.4GHz (800Mbps), 5GHz (1733Mbps), and 60GHZ (4600Mbps) bands

MU-MIMO technology enables Wi-Fi for every device with multi-user support

60GHz band allows users to stream 4K HD movies in minutes and instantly share thousands of files and photos over an interference-free connection

Powerful 1.4GHz dual-core CPU to enjoy high-speed connections without interruption

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For more information visit: http://www.tp-link.ae.

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HUNTINGDON FUSION TECHNIQUES' WELD PURGING

HFT manufactures tailor-made Argon Gas Feed Hose assemblies

Huntingdon Fusion Techniques' (HFT) Argon Gas Feed Hose assemblies with leak-tight fittings to attach immediately to their Argweld range of Inflatable Tube and Pipe Weld Purging Systems at one end and to the gas source at the other. A selection of leak-tight end fittings are provided for attaching an argon gas regulator to at one end and a 12 mm quick connect fitting as standard at the other end, which joins up with all HFT Argweld Weld Purging Systems.

SAMPLE CYLINDER SERVICES

Intertek enhances cylinder services for clients' cost-savings

Intertek has enhanced its sample cylinders services to provide significant cost savings for clients. Sample cylinders are used by offshore chemists to transport crude oil, gas and water samples from offshore to onshore laboratories for testing. Intertek has invested $250,067 in 200 high-pressure cylinders to meet an increased demand for analysis services. Fifty cylinders will be specially coated to allow effective transportation of samples containing mercury and hydrogen sulphide.

Emerson training centre in KSA

US tech firm breaks ground on Dhahran technology and training centre

HOW WILL THE CENTRE HELP?

The 11,370 sqm facility will provide services and support to the oil and gas, mining and other process industries.

WHAT WILL THE CENTRE HOUSE?

It will house offices, training facilities, a service and light manufacturing workshop, and testing laboratories.

WHEN WILL THE FACILITY BE READY?

The facility is scheduled for completion in May 2017.

TRAINING Emerson Process Management broke ground on the site for its new technology development, customer training, and project support facility in Dhahran Techno Valley in Saudi Arabia on January 11. The 11,370sqm facility will provide services and support to the oil and gas, mining and other process industries across the Kingdom, equipped with resources and capabilities to develop automation solutions, deliver lifecycle services, and train local talent. It will house offices, training facilities, a service and light manufacturing workshop, and laboratories focussed on control systems, flow metering technologies, and research and development (R&D). The facility is scheduled for completion in May 2017. "Emerson is recognised for innovation and continues to lead by investing in engineering and technology development," Dr. Halim H. Redhwi, chief executive officer of Dhahran Techno Valley, said. "The new centre in Dhahran Techno Valley will help shape the next generation of Saudi talent and bring economic returns for the Kingdom, especially in the petroleum and minerals sector." Dave Tredinnick, president of Emerson Process Management Middle East and Africa, said.

ACTEON FIELD LIFE SERVICE

Company hopes service will help combine CAPEX and OPEX

Subsea services company Acteon has launched a new service offering to directly address the demands and changing conditions of the global oil and gas industry. Acteon Field Life Service (FLS) offers a 'joined-up' approach to the capex and opex challenges presently being experienced by the industry. By bringing together the specialist skills and technologies of Acteon's individual branded service companies, Acteon FLS will provide a broader and more flexible capability to address multi-faceted projects and customer-specific demands. "Our industry, like many others that have already been transformed, requires radical change with the adoption of new operational and commercial models. There is a clear need for standardisation and repeatability driven by 'fit for purpose' specification, skilled resource sharing, informed condition maintenance management and efficient asset utilisation. Acteon FLS is a step down this road," said Acteon FLS president Paul Alcock. Acteon FLS can focus on a client's desired performance outcome, Alcock claims.

New RC range of hydraulic compactor attachments

Chicago Pneumatic has launched a new range of rig-mounted hydraulic compactor attachments

COMPACTION Chicago Pneumatic's RC range includes five new models, for use on carriers with an operating weight of 1–40 tonnes, offering robust performance, high efficiency and easy maintenance for demanding applications including slope, trench and waste compaction, side development and piling. All models within the RC range are designed for instant use, with no special installation required, and combine high compaction frequency with high vibrating force to enable operators to make quick work of most compaction jobs. To reduce stress on the compactor during operation, the housing is offset by 15º. This provides better force distribution across the plate, in addition to reduced wear and tear. All models come equipped with integrated flow rate and pressure controls. This ensures operator safety and also saves time when the compactors are used on different carriers. The use of solid rubber isolators also provides excellent shock dampening of return vibrations.

Air Energi, Swift merge; form recruitment firm

Airswift, the new company, will have 57 operating locations and employ over 800 people globally

WORKFORCE SERVICES US-based Air Energi Group Limited and UK-based Swift Worldwide Resources Limited have merged to form Airswift Holdings Limited, a $1.2bn turnover company specialising in global workforce services for the energy, process and infrastructure industries. The transaction was structured as an all-stock merger backed by Swift and Air Energi's private equity backers. Airswift will be led by new CEO, Peter Searle.

PRODUCT FOCUS

Huntingdon Fusion Techniques HFT's PurgEye 100 can help in eliminating the post-weld cleaning expenditure

Comes with leak-tight push buttons, auto calibration features a vacuum-sealed leak-tight probe assembly, wrist/neck strap.

The newly-designed, extra-long life sensor allows the user to continue to use the monitor for up to 18 months before the low-sensor indicator appears on the screen. The user still has adequate time to obtain a new sensor.

The PurgEye® 100 has a clear, easy to read LCD screen, offering a 24mm high display, which is about 41% larger display than used previously. The display also shows a low battery icon.

The Weld Purge Monitor was invented by HFT in the 1970s and over 40 years of design and manufacturing fine-tuning has gone into it.

WHERE CAN I BUY IT?

For more information visit www.huntingdonfusion.com

SELL IT TO ME

Rockwell Automation's new PlantPAx System Release

INCREASED AUTOMATION PRODUCTIVITY: To provide operators with reliable and accurate system configuration, the PlantPAx system now includes expanded estimation, design and development guides. The updated documentation and design capabilities help dramatically increase automation productivity; decrease the time required to deploy a maintainable and modern system; and reduce life-cycle costs. New pre-built control strategies developed within the Rockwell Automation library of process objects provide a consistent user and maintenance experience.

IMPROVED USER EXPERIENCE: Leveraging network improvements and built-in mobility, the PlantPAx system delivers an improved, reliable user experience. Expanded industrial Ethernet switches support Layer 3 topologies, enhancing scalability for a variety of applications. Smaller control systems can now be integrated into larger enterprise networks with a common, fully supported network infrastructure. The network switches include embedded Cisco technology to integrate and translate operations technology (OT) and information technology (IT). This makes it easier for process operators to configure and manage system networks. The PlantPAx system also now includes a mobile component that enables users to create displays and interact with process data across any HTML5-compliant mobile platform. The software is responsive to the user's specific device, allowing operators and plant managers to access and view performance metrics and data analytics in their preferred format.

ENHANCED CONTROL: New built-in control features – such as integrated PlantPAx model predictive control (MPC), alarm management and batch management – now operate in a common environment, helping to improve plant efficiencies and operational performance. Control-based PlantPAx MPC provides the ability to predictably manage external and complex process disturbances, and maximize process performance up to process constraints. This allows continuous improvements within the process while reducing waste and variability. The updated system also leverages the recently introduced batch application toolkit to help reduce the risk, time and cost of implementing batch control systems. Containing documentation, application examples and sample code, the toolkit gives engineers a starting point to build and maintain a consistent batch control system. It also provides flexibility to customize system elements for increased functionality.

Bibby Offshore helping save costs

UK-based offshore services firm develops vessel sharing option for clients

COST-EFFECTIVE Bibby Offshore has developed a vessel share option for clients, which has the potential to provide the subsea industry with significant savings through encouraging collaboration, cost-efficiencies, as well as providing increased productivity.

The Unlocking Subsea Productivity (USP) concept focusses on a vessel share agreement, with collaboration from several clients, to deliver a single linked campaign workscope that addresses each client's individual demands.

To demonstrate the real savings available to clients, a simulation campaign was generated using eight previous campaigns completed by Bibby Offshore which were reconstructed and analysed in order to quantitatively demonstrate the potential savings arising from USP.

The simulation model calculated an average saving of $327,427 per client, based on an overall project duration of 54 days reducing to 41 days. This resulted in an overall cost saving of over $2.5mn to be shared amongst the example clients.

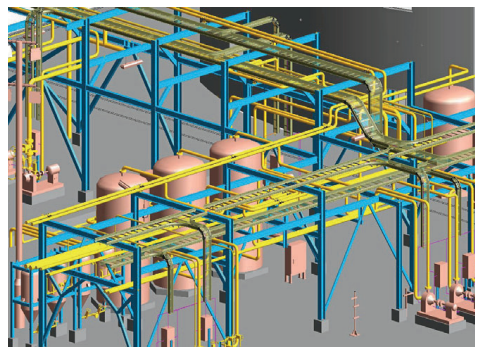
WHAT, ACCORDING TO BIBBY, WAS THE LOGIC BEHIND THIS OFFERING?

- As per Vikki Thom, subsea business manager at Bibby Offshore: "USP was developed with our client's needs and the future of the industry in mind. The model is aimed at reducing costs associated with mobilisation periods whilst also distributing further cost savings for individual clients, helping to ensure a reduction in non-productive time and an increase in overall work time."
- "With the industry currently facing unprecedented challenges due to the continued low commodity price, the future of the North Sea is more testing than ever. The USP proposal provides an efficient model for a cohesive approach to project delivery and provides a viable alternative to deferring work schedules."

AVEVA SUPPORTS FABRICOM ON BROWNFIELD PROJECT

AVEVA laser and 3D design software useful for offshore revamp

AVEVA has announced that Fabricom Offshore Services, a leading provider of engineering, procurement, construction and project management services to the oil and gas industry, is using AVEVA software for the brownfield modification of GDF Suez's Cygnus Platform in 2016. Using both LFM Server and AVEVA Laser Model Interface, Fabricom can economically capture the asset's as-built configuration into the AVEVA 3D design environment. AVEVA's 3D design modelling software will enable Fabricom to more easily create an accurate and complete 3D design to improve operation and maintenance efficiency for the platform for many years into the future.



'World's first' hydraulic pipe recovery tool

Churchill Drilling Tools has launched its HyPR HoleSaver in the Middle Eastern market

Stuck pipe situations cost operators hundreds of millions of dollars a year in non-productive time. Churchill Drilling Tools claims that its HyPR cuts that cost significantly by enabling operators to free pipe in just a few hours, as opposed to using traditional methods, which can take several days. Nicholas Kjaer, general manager of Churchill's Dubai office, said: "This is an exciting time for the company and our clients, as we continue to expand our global offering and make the HyPR tool available to the Middle East region for the first time. The tool has already been recognised by the oil and gas industry for its ability to deliver ground-breaking time savings for operators." HyPR was developed following extensive collaboration between Churchill Drilling Tools, deepwater Gulf of Mexico drilling teams in 2013. Since then the tool has experienced rapid up-take having been deployed by major operators in Houston, Aberdeen and Norway. The HyPR tool offers the simplest method to recover the drill pipe rapidly and to begin side-tracking right away. It also delivers a clean cut for operators wanting to maximise BHA recovery options.

ON THE MOVE

Marzieh Shahdaei
Deputy Oil Minister
Islamic Republic of Iran

Iran's Oil Minister Bijan Namdar Zanganeh appointed Marzieh Shahdaei as Deputy Oil Minister and Head of Iran's National Petrochemical Company Shahdaei, who replaced Abbas Sheri Moqaddam, was the director for projects at the NPC. Shahdaei, now the Islamic Republic's first woman Deputy Oil Minister, already served as member of the NPC board of directors.

Nader Al Fardan
director – Gas Business, ENOC & General Manager of EMGAS
Emirates National Oil Company (ENOC)

The Emirates National Oil Company (ENOC) announced the appointment of Nader Al Fardan as director – Gas Business, ENOC & General Manager of Emirates Gas (EMGAS). In his new role, Fardan will spearhead EMGAS' management, playing a strategic role in driving the company's expansion plans at home as well as abroad.

Mike Jardon
Chief Executive Officer
Expro

UK-based Expro has announced the appointment of Mike Jardon as chief executive officer, succeeding Charles Woodburn. Jardon joined Expro in 2011 as chief operating officer, after holding senior roles within Schlumberger's wireline, completions, well testing and subsea businesses, and at Vallourec & Mannesmann, where he led the organisation's commercial activities across North America.

Neil Wilson
Country Manager – Qatar
Links Group

UAE-based Links Group has announced the appointment of Neil Wilson as country manager for Qatar. Wilson brings to Links Group over 13 years of experience gained from senior positions across the Middle East, America, Europe and Far East. Wilson is tasked with developing Links Group's business in Qatar, as well as oversee the company's day-to-day operations. A member of Her Majesty's Diplomatic Service serving in Iran and Saudi Arabia, Wilson's last job was in the UK where he was involved in a ministerial-led international research programme.

Ahmed Aboulfotouh

General manager, AlMansoori Specialized Engineering

Appointment of the Month

AlMansoori Specialized Engineering has appointed Ahmed Aboulfotouh as a general manager for AlMansoori Production Services. Aboulfotouh has more than 29 years of experience in the oil and gas industry and has served in several senior management and leadership roles in numerous international organisations in Egypt, Pakistan, UAE and Libya. Before joining AlMansoori, he has worked as the Testing & Production Services Regional Manager, Middle East and North Africa at Weatherford International. Aboulfotouh holds a mechanical engineering degree from Alexandria University in Egypt. In his new role at AlMansoori, he will be responsible for managing performance (Financial, HS&E and Operational) and setting strategies for business development and growth of services. "The current challenging market will provide a fantastic opportunity for him to utilise his leadership and strategic planning skills and we look forward to seeing the results of his work," Ibrahim Al Alawi, deputy CEO, AlMansoori, said.

JOBS

NOTICE BOARD

The latest jobs available in the oil and gas industry

PETROCHINA , UAE
Executive, Fuel Oil Operation (Marine)
PetroChina International Middle East is looking for an executive, to be based in the UAE, to manage the company's full spectrum of cargo trading and marine fuel oil operations.

NAAS GROUP, FUJAIRAH
HSE Officer
Naas Group is looking for an HSE officer, to be based in the emirate of Fujairah, with HSE experience in the UAE's oil and gas industry. Candidates with tanker experience and residing in the UAE have an added advantage.

GLOBAL ENGINEERING PROJECTS, QATAR
Senior Manager – Production
The candidate will be in charge of all manufacturing and maintenance activities in SQCD (Safety/Quality/Cost/Delivery) domain at the Ras Laffan Site; will report to the general manager.

Change of guard at ADNOC; new Director General named

CAREER NEWS

NEW DG His Highness Sheikh Khalifa bin Zayed Al Nahyan, President of the UAE recently issued an Emiri decree appointing Dr. Sultan Ahmed Al Jaber as director-general of Abu Dhabi National Oil Company (ADNOC), the official *WAM* news agency reported. Al Jaber is also chairman of renewable energy firm Masdar, Abu Dhabi Ports Company, Abu Dhabi Media Investment Corp and Sky News Arabia. In addition, he serves as chief executive officer of energy at state-run Mubadala. He replaces Abdullah Nasser Al Suwaidi who was appointed director general of ADNOC in 2011 and oversaw the renewal of the emirate's biggest onshore concessions last year. 'Dr Al Jaber spearheaded the launch and establishment of Masdar in 2006 and continues to drive the company's strategic direction as it takes on an increasingly prominent role in global effort toward advancing renewable energy and clean technology', according to Masdar's website.

AL JABER ALSO LEADS MUBADALA, MASDAR, ABU DHABI PORTS COMPANY, ABU DHABI MEDIA INVESTMENT CORP AND SKY NEWS ARABIA

BP promotes McKay to deputy Group CEO; to be London-based

PROMOTION BP has announced the appointment of Lamar McKay to the new position of deputy group chief executive. McKay, currently chief executive of BP's Upstream segment and a 35-year veteran of BP, will be based in London and take up the role following a suitable handover period. McKay will be succeeded by Bernard Looney in the Upstream segment. In addition to assuming some duties currently as BP's group CEO, McKay's responsibilities will include strategy and long-term planning, safety and operational risk, technology, and corporate governance – including ethics and compliance. BP America will continue to report to him.

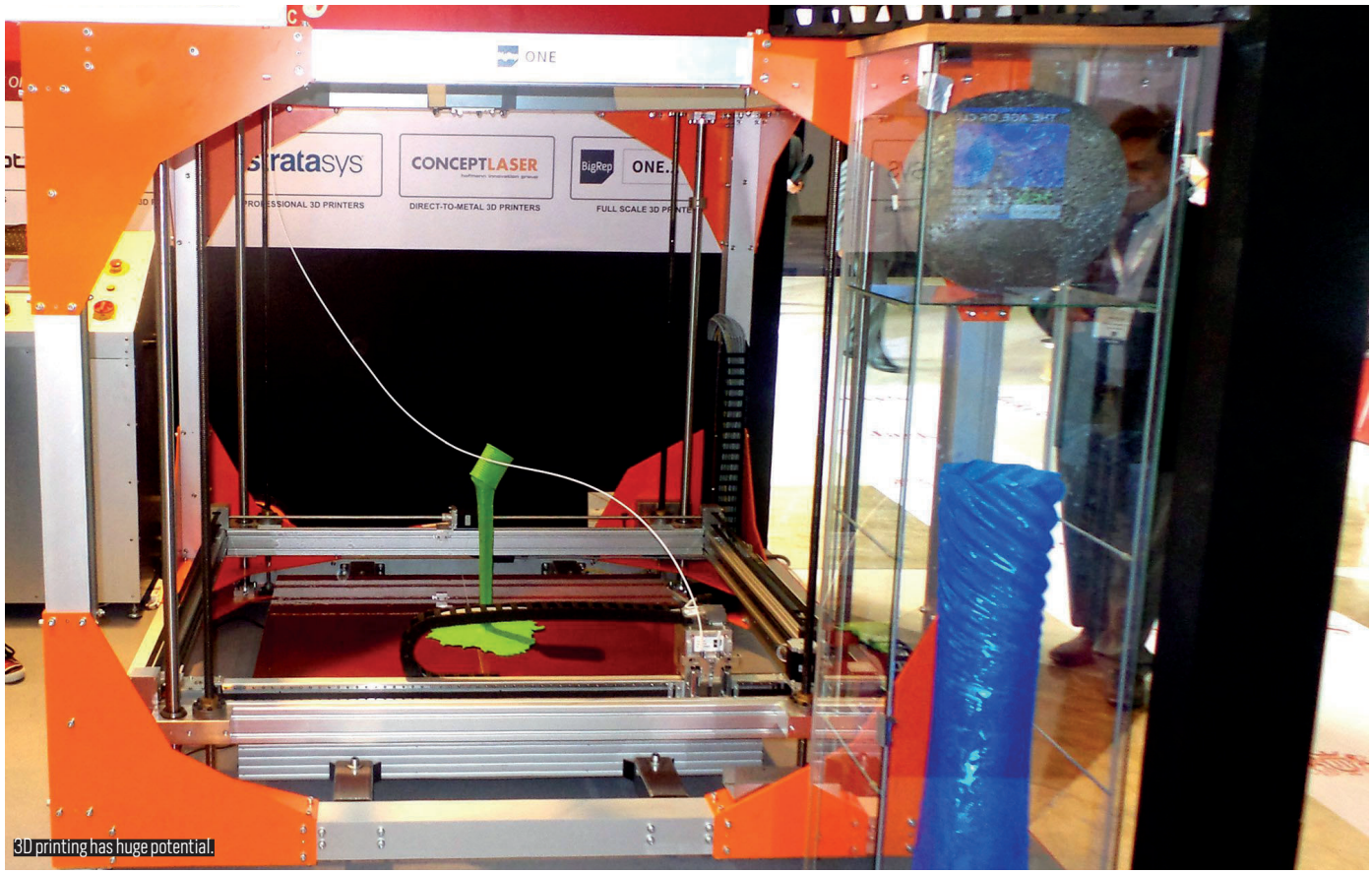
Glasspoint hires Omani firm Sustainable Square for CSR drive

CSR GlassPoint Solar, makers of solar steam generators for the oil and gas industry, recently announced a strategic partnership with local Corporate Social Responsibility (CSR) and sustainability experts, Sustainable Square Oman. Sustainable Square will work with GlassPoint to establish its social investment strategy and launch new programmes for Oman. Led by Omani entrepreneur Shaima Al Lawati Sustainable Square will provide GlassPoint with the support and insight to enhance the positive impact it brings to the country. Lawati and her team have developed successful CSR initiatives for global businesses in Oman and the GCC.

OPINION

3D printing making a mark in oil & gas

The impact of 3D printing will require oil and gas CIOs to provide the flexibility needed to foster innovation and collaboration



3D printing has huge potential.

About the author
Morgan Eldred is a research director for Gartner's Upstream Oil and Gas Industry Advisory Services.

The concept of 3D printing maximises the potential of industries that operate on a massive scale by reducing prototyping lead times and cost. It therefore comes as little surprise to learn that use cases for 3D printing by the oil and gas (O&G) industries are proliferating. Gartner predicts that by 2019, 10% of all O&G, as well as oilfield service, companies will be using 3D printers for the production of parts and equipment used within operations.

While 3D printing technology is not yet ready to replace large-scale industrial fabrication of equipment for O&G firms, it does offer value-add potential in the near and long terms. For the near term, 3D printing offers value by significantly reducing the time required for prototyping, producing, reworking and redesigning components.

Longer term, 3D printing is positioned to play a key role within the upstream O&G supply chain by transforming how components of a wide range of equipment are produced. The use of 3D printing will create significant value, particularly in locations where the supply of ordinary parts is limited, or where shipping and customs clearance for parts are likely to cause time delays.

O&G industry use cases for 3D printing are developing rapidly in several areas. These include conceptualisation, prototyping, manufacturing, augmented

manufacturing, on-demand manufacturing and alternative design. There is great promise for the use of 3D printing in manufacturing short-run parts or for the actual production of parts used in drilling. Upstream O&G companies are becoming increasingly aware of 3D printing's value, and are beginning to expand its use in their R&D activities, as are oil and gas operators, oil field service companies and OEMs - all of which have begun to increase their investments in 3D printing.

As upstream O&G companies find 3D-print-based solutions to industry-specific problems, CIOs and other IT leaders must play central roles in determining how innovative ideas can be transformed into business opportunities. While engineering and operations counterparts will make the 3D print technology decisions, IT leaders and their staff will be responsible for supporting those decisions with a robust and secure IT infrastructure.

At the same time, concerns over intellectual property confidentiality and security, especially within the engineering domains, remain a drag on 3D printing's progress. O&G companies, like other users of 3D designs, need to manage the intellectual property issues associated with 3D printing with great care. They are entering uncharted territory when it comes to intellectual property and design risks. Licensing and manufacturing stipulations for legally and safely reproducing parts using 3D printing are in their embryonic stages. Senior managers are only now beginning to address these issues.

Take for example the opportunity to use 3D printing to manufacture replacement parts on-site, which is particularly attractive in remote O&G drilling locations. This could lead companies to fall foul of patent and other legal issues surrounding the duplication of parts without permission or without proffering payment. Additionally, O&G firms need to ensure that every 3D-printed part meets the manufacturer's quality and performance specifications, particularly for critical components being produced or repaired at remote drilling locations. With increasing adoption of 3D printing, intellectual property issues will undoubtedly loom large in the future. O&G, as well as oilfield service, companies must enable intellectual property protection, especially within the engineering domains. CIOs and other IT leaders will need to address issues such as preventing intellectual property theft and counterfeiting, ensuring the durability and high performance of 3D-printed parts and enabling collaboration and involvement of enterprise architects with engineering and operations personnel to implement security best practices.


Morgan Eldred

Ultimately the impact of 3D printing on IT architecture will be substantial, requiring O&G CIOs to provide the flexibility needed to foster innovation and collaboration while enabling access control and security. The use of 3D printing will not only improve existing business processes and products, it will also lead to innovation and, possibly, the creation of new products, new business models and new ways of competing. Beyond concerns over protecting their own and others' patents, companies must also consider how to securely manage 3D designs and print files, especially in the engineering domain.

The geographically dispersed nature of the upstream O&G industry can also create challenges in terms of where and how to store data - which can include 3D printing data - as well as with industry and governmental standards for the transporting or sharing of data. Using 3D print service bureaus with regional or multinational facilities can help alleviate some of these issues and facilitate timely delivery of a broad range of 3D printing technologies while not requiring investments in multiple and geographically dispersed in-house devices.

SAUDI ARAMCO

Saudi Aramco – Expansion of Khurais Oilfield

Background

The Khurais oil field is located adjacent to the Ghawar oil field, one of the world's largest, in the Eastern province of Saudi Arabia. The objective of the Khurais expansion programme is to increase production capacity at the Khurais Central Processing Facilities (CPF) by 300,000 barrels of oil per day (bpd) from its current capacity of 1,200,000 bpd, as well as to enhance production from the Mazalij and Abu Jifan fields by installation of a satellite Gas Oil Separation Plant.

Project Timeline

FEB 2016 - Saudi Aramco has moved the project into the construction stage as the kingdom state oil producer requests contractors to accelerate construction contractors to speed up the execution of the project.

NOV 2015 - Saipem completes engineering work in the project, while Abdulrahman M Al Shalawi Est. expects to complete the site preparation work in late 2015.

SEP 2015 - The project is expected to be delayed from the originally planned time frame of 2017 and the start-up date is now unclear.

JUN 2015 - The project is anticipated to move forward with the construction of the main processing facilities once detailed engineering is concluded.

APR 2015 - Client has confirmed project is still ongoing as planned but has slowed down due to the market fluc-tuation.

MAR 2015 - The client is in discussions with Saipem in regards to lowering project costs. Aramco is expected to announce financial changes to the project by June.

JAN 2015 - The client has slowed down the construction phase to better manage the cash flow due to continued fall in oil prices. Completion date extended to 2019.

NOV 2014 - The below contractors are in negotiations with the client for the below packages:

- Mazlij-Abu Jifan pipeline – Saudi KAD Construction
- Seawater pipeline – HAK Group

NOV 2014 - Saipem officially signed the contract with Saudi Aramco to commence the EPC works.

OCT 2014 - Saipem has been awarded a $2 billion EPC contract for the main processing facilities at Khurais.

SEP 2014 - Saipem has emerged as the favorites for the central processing facilities while CCC is the front run-ner for the seawater and Mazlij-Abu Jifan pipeline package.

SEP 2014 - Aramco is still locked in final negotiations with the four bidders. An award is expected in early October 2014.

SEP 2014 - Aramco has short-listed four bidders for the EPC contract. They are:

- Consortium of Foster Wheeler Milan and Hyundai Engineering & Construction
- Daelim Industrial
- Saipem
- Tecnicas Reunidas

AUG 2014 - Contractors that have submitted bids for the two pipeline packages are:

- Al-Rashid Trading & Contracting
- C.A.T Group
- Consolidated Contractors Company
- Dutco McConnell Dowell

Project Scope

The scope of the scheme involves the installation of crude handling, stabilisation, and gas compression facilities as well as pipelines and offsites and utilities.

The client plans to add 300,000 bpd to the field's current capacity of 1.2 million bpd. Khurais is located adjacent to the Ghawar oil field, which is one of the world's largest oil field. It began operations in 2009 and produces 1.2 million bpd of light Arabian crude, 320 million cubic feet per day (cfd) of gas and 80,000 bpd of natural gas liquids (NGLs). The current Khurais Program involves the development of the Lower Fadhi field which includes the construction of new processing facilities like a new gas-oil separation plant (GOSP), a crude stabilisation unit and a gas train will be installed at the khCPF to handle an additional capacity of 143,000,000 standard cubic feet per day (scfd) of associated gas and 34,000 bpd of NGL.

To provide treated seawater injection for reservoir pressure support, two gas turbine driven pump trains will be installed, along with a 165-MW co-generation unit to optimize energy efficiency and render the plant partially self-reliant with power.

The expansion at Khurais will ease production at other oil fields and will not increase the kingdom's 12.5 million bpd capacity.

Drilling work for 310 wells, initially scheduled to take three years, was completed 10 months early through a combination of innovative engineering and operations methods.

Project Finance

Saudi Aramco is the client of the project.

FAST FACTS

Name of Client SAUDI ARAMCO – Saudi Arabian Oil Company
Estimated Budget ($ US) 3,000,000,000
Revised Budget ($ US) 2,500,000,000
Facility Type Oil & Gas Field
Sector Oil
Status Construction
Location Eastern Region
Project Start Q3-2013
End Date Q2-2020
Last Updated 17-02-2016
FEED Foster Wheeler
Main Contractor Saipem Consolidated Contracting Company (CCC)
Contract Value ($ US) 2,000,000,000
Award Date Q4-2014

- HAK Group
- Saipem
- Saudi KAD Construction
- Tekfen Holding

AUG 2014 - Companies that submitted bids are as follows:

- Daelim Industrial
- Foster Wheeler Milan
- GS Engineering & Construction
- Hyundai Engineering & Construction
- JGC Corporation
- Saipem
- Tecnicas Reunidas

AUG 2014 - Aramco has received bids for five EPC packages:

- Central processing facilities expansion
- Mazlij-Abu Jifan pipeline
- Offsites and utilities
- Seawater pipeline
- Site preparation

JUL 2014 - Additional pre-qualified companies that are expected to submit bids are:

- JGC Corporation from Japan
- Saipem from Italy
- Tecnicas Reunidas from Spain

JUL 2014 - Some of the pre-qualified companies that are expected to submit bids are as follows:

- Daelim Industrial from South Korea
- Foster Wheeler from Italy
- GS Engineering & Construction from South Korea
- Hyundai Engineering & Construction from South Korea

JUN 2014 - Aramco has floated tenders for five EPC packages:

- Central processing facilities expansion
- Seawater pipeline
- Mazlij-Abu Jifan pipeline
- Offsites and utilities
- Site preparation

The deadline to submit the technical and commercial bids is 5 August 20

MAY 2014 - The client is currently doing engineering designs on the project.

APR 2014 - Aramco is in the process of pre-qualifying contractors for the project. They have also revealed that the project will be split into several packages.

DEC 2013 - Industry sources have revealed that Foster Wheeler will be responsible for the FEED, equipment and material specifications, development of a cost estimate, and procurement assistance for long-lead items.

SEP 2013 - The number of man hours expected for FEED works is approximately 500,000. This will equate to an engineering, procurement and construction (EPC) phase that will be worth about $3 billion when it is tendered.

AUG 2013 - The tenders for the EPC contract is likely to be released in the second quarter of 2014 and the EPC contract is likely to be awarded in July 2015. The project is expected to be operational in late 2018.

AUG 2013 - US firm, Foster Wheeler has been awarded the front-end engineering and design (FEED) contract. The design work is likely to begin in September 2013 and will last for a year.

Ongoing and upcoming projects

Information is supplied by DMS Projects

GCC GAS - FEB 2016

Project	Country	City	Facility	Budget	Status	Completion Date
AD+A2:G44CO - Bab Gas Compression Project (Phase 2)	U.A.E.	Bab	Gas Production	500,000,000	Construction	2015-Q4
ADCO - Nitrogen Gas Injection (NGI)	U.A.E.	Abu Dhabi	Gas Production	50,000,000	Construction	2015-Q3
ADCO- Bab TH-F Peripheral Development	U.A.E.	Abu Dhabi	Nitrogen	400,000,000	FEED ITB	2017-Q4
ADCO- Bu Hasa Shuaiba South- Gas Lift Network	U.A.E.	Abu Dhabi	Gas Network	800,000,000	Engineering & Procurement	2018-Q1
ADGAS - Das Island - Fuel Distribution Sulphur Recovery (Phase 4)	U.A.E.	Abu Dhabi	Oil & Gas Field	491,000,000	FEED	2018-Q1
ADGAS - Das Island Flaring & Emission Reduction (Package 2 & 3)	U.A.E.	Das Island	Gas Production	100,000,000	Construction	2018-Q1
ADGAS - Das Island Pentane Storage Facility	U.A.E.	Das Island	Gas Storage Tanks	65,000,000	Construction	2015-Q2
ADGAS- Integrated Facilities Project (IGD-S) Expansion Phase 4	U.A.E.	Abu Dhabi	Gas Field Development	1,057,000,000	EPC ITB	2017-Q3
ADGAS- Integrated Gas Development (IGD) - Expansion (Overview)	U.A.E.	Abu Dhabi	Gas Field Development	1,057,000,000	Engineering & Procurement	2019-Q1
ADGAS- Integrated Gas Development (IGD) - Expansion (Phase 1)	U.A.E.	Abu Dhabi	Gas Field Development	1,057,000,000	Construction	2017-Q3
ADGAS- Integrated Gas Development (IGD) - Expansion (Phase 2)	U.A.E.	Abu Dhabi	Gas Field Development	1,057,000,000	EPC ITB	2019-Q1
ADMA OPCO- Nitrogen Plant Upgrade	U.A.E.	Abu Dhabi	Nitrogen	55,000,000	Design	2017-Q1
ADMA-OPCO - Das Island Flares Modifications - Revamp Project	U.A.E.	Das Island	Gas Processing	50,000,000	Construction	2015-Q2
ADMA-OPCO - Nasr Full Field Development - (Overview)	U.A.E.	Nasr Field	Oil Field Development	3,500,000,000	Construction	2018-Q4
ADMA-OPCO - SARB Offshore Oil Field Development - Package 2	U.A.E.	Abu Dhabi	Oil & Gas Field	500,000,000	Construction	2016-Q4
ADMA-OPCO - SARB Offshore Oil Field Development - Package 3	U.A.E.	Abu Dhabi	Gas Pipeline	300,000,000	Construction	2015-Q3
ADMA-OPCO - SARB Offshore Oil Field Development - Package 4	U.A.E.	Abu Dhabi	Gas Processing	500,000,000	Construction	2017-Q3
ADMA-OPCO - Zakum Facilities for 4 Gas Injectors	U.A.E.	Abu Dhabi	Gas Production	100,000,000	Construction	2016-Q1
Al Khafji Joint Operations (KJO) - Natural Gas Pipeline	Kuwait	Various	Gas Pipeline	130,000,000	Construction	2015-Q2
Bahrain LNG WLL - Liquefied Natural Gas Receiving and Regasification Terminal	Bahrain	Hidd	Liquefied Natural Gas (LNG)	660,000,000	Engineering & Procurement	2018-Q3
Banagas - Central Gas plant 3	Bahrain	Sitra	Gas Treatment Plant	600,000,000	Engineering & Procurement	2018-Q2
Banagas - Fuel Pipelines and Storage Facilities Expansion	Bahrain	Sitra	Gas Storage Tanks	80,000,000	EPC ITB	2017-Q4
Borouge - Borouge III - Flare Gas Recovery	U.A.E.	Abu Dhabi	Gas Processing	150,000,000	Construction	2015-Q3
BP - Block 61 - Khazzan and Makarem Gas Fields Development	Oman	Oman	Gas Field Development	24,000,000,000	EPC ITB	2022-Q1
BP - Block 61 - Khazzan Gas Fields Development - Phase 1 - Central Processing Facility	Oman	Al Dahirah	Gas Processing	1,200,000,000	Construction	2017-Q2
BP - Block 61 - Khazzan Gas Fields Development - Phase 1 - Overview	Oman	Al Dahirah	Gas Field Development	15,000,000,000	Engineering & Procurement	2018-Q4
BP - Block 61 - Khazzan Gas Fields Development - Phase 1 - Package 1	Oman	Al Dahirah	Gas Field Development	1,500,000,000	Construction	2018-Q4
BP - Block 61 - Khazzan Gas Fields Development - Phase 1 - Package 2	Oman	Al Dahirah	Gas Field Development	700,000,000	EPC ITB	2017-Q3
Dana Gas - Zora Gas Field	U.A.E.	Sharjah	Gas Exploration	100,000,000	Construction	2016-Q4
Emirates LNG - Fujairah LNG	U.A.E.	Fujairah	Liquefied Natural Gas (LNG)	3,000,000,000	EPC ITB	2016-Q3
GASCO - Abu Dhabi Sales Gas Network- Compression Station	U.A.E.	Abu Dhabi	Gas Pipeline	900,000,000	EPC ITB	2018-Q2
GASCO - Black Powder Management	U.A.E.	Abu Dhabi	Gas Pipeline	44,000,000	Construction	2017-Q4
GASCO - Habshan to Ruwais - 16 inch Condensate Replacement Pipeline	U.A.E.	Abu Dhabi	Gas Pipeline	90,000,000	Construction	2015-Q4
GASCO - Integrated Gas Development (IGD) - Expansion (Onshore Pipeline)	U.A.E.	Abu Dhabi	Gas Production	12,000,000,000	Engineering & Procurement	2016-Q4
GASCO - Yas - Mina Zayed Gas Pipeline	U.A.E.	Abu Dhabi	Gas Processing	45,000,000	Construction	2015-Q1
GASCO- Gas Turbine Replacement (Phase 1 - Asab & Buhasa)	U.A.E.	Abu Dhabi	Gas Processing	130,000,000	FEED	2017-Q4

Project	Country	City	Facility	Budget	Status	Completion Date
GASCO- Habshan 5 - New Compression Train	U.A.E.	Abu Dhabi	Gas Processing	800,000,000	EPC ITB	2018-Q1
GASCO- HP Connection- New NGV Filling Stations (Phase 2A)	U.A.E.	Abu Dhabi	Gas Pipeline	10,000,000,000	EPC ITB	2018-Q1
GASCO- Taweelah Compression Station	U.A.E.	Abu Dhabi	Gas Processing	700,000,000	FEED	2018-Q4
Kuwait Gulf Oil Company (KGOC) - Central Gas Utilization Project	Kuwait	Wafra	Gas Processing	1,000,000,000	FEED	2018-Q1
Kuwait National Petroleum Company (KNPC) - Acid Gas Removal Plant	Kuwait	Ahmadi	Acid Gas	522,176,000	Construction	2016-Q1
Kuwait National Petroleum Company (KNPC) - Fifth Gas Train in Mina Al Ahmadi Refinery	Kuwait	Mina Al Ahmadi	Gas Production	2,000,000,000	Engineering & Procurement	2017-Q4
Kuwait National Petroleum Company (KNPC) - LNG Import and Regasification Terminal	Kuwait	Al Zour	Liquefied Natural Gas (LNG)	333,000,000	EPC ITB	2018-Q4
Kuwait National Petroleum Company (KNPC) - LNG Storage & Re-gasification Services	Kuwait	Mina Al Ahmadi	Liquefied Natural Gas (LNG)	250,000,000	Construction	2016-Q2
Kuwait National Petroleum Company (KNPC) - Mutla Ridge Project	Kuwait	Mutla Ridge	Oil Storage Tanks	1,000,000,000	Feasibility Study	2019-Q4
Kuwait National Petroleum Company (KNPC) - Sulphur Handling Facilites	Kuwait	Mina Al Ahmadi	Sulphur Recovery	600,000,000	Construction	2015-Q3
Kuwait National Petroleum Company (KNPC) - Sulphur Recovery Units - Mina Abdulla Refinery	Kuwait	Mina Abdullah	Sulphur Recovery	1,000,000,000	EPC ITB	2018-Q2
Kuwait National Petroleum Company (KNPC) - Sulphur Recovery Units - Mina Al Ahmadi Refinery	Kuwait	Mina Al Ahmadi	Sulphur Recovery	50,000,000	EPC ITB	2018-Q2
Kuwait Oil Company (KOC) - Booster Station 171 (BS-171)	Kuwait	West Kuwait	Gas Gathering Centre	950,000,000	Construction	2015-Q4
Kuwait Oil Company (KOC) - Manifold Gathering System - Gathering Centers (GC) 29, 30, 31	Kuwait	Northern Kuwait	Gas Gathering Centre	2,500,000,000	Construction	2017-Q4
Kuwait Oil Company (KOC) - Replacement of HIC Affected Equipment in Gathering Centres 3,4,7,8 & 21	Kuwait	Ahmadi	Gas Gathering Centre	50,000,000	Construction	2015-Q2
MASDAR - Carbon Dioxide Capture and Storage - Phase I (Mussafah Steel Rolling Mill)	U.A.E.	Abu Dhabi	Carbon Dioxide	280,000,000	Construction	2016-Q1
MASDAR - Carbon Dioxide Capture and Storage - Phase I (Overview)	U.A.E.	Abu Dhabi	Carbon Dioxide	2,500,000,000	Construction	2016-Q1
NOGA - Gazprom - Liquefied Natural Gas (LNG) distribution centre	Bahrain	Various	Liquefied Natural Gas (LNG)	600,000,000	Feasibility Study	2018-Q2
NOGA - Onshore Deep Gas Exploration	Bahrain	Various	Gas Exploration	200,000,000	Engineering & Procurement	2015-Q4
Oman Gas Company - Murayrat PLS Upgrade	Oman	Adam Ad Dakhliya	Gas Processing	100,000,000	Engineering & Procurement	2017-Q4
Oman Gas Company - Muscat Gas Network	Oman	Muscat	Gas Network	100,000,000	FEED ITB	2020-Q1
Oman Gas Company - Oman - Iran Subsea Natural Gas Pipeline	Oman	Sohar	Gas Pipeline	600,000,000	Feasibility Study	2018-Q4
Oman Gas Company - Salalah Loopline	Oman	Salalah	Gas Pipeline	70,000,000	Engineering & Procurement	2017-Q2
Oman Gas Company - Salalah LPG Extraction	Oman	Salalah	Liquefied Petroleum Gas (LPG)	100,000,000	FEED	2019-Q2
Orpic - Liwa Plastics Industries Complex (LPIC) - NGL Extraction Units	Oman	Sohar	Natural Gas Liquefaction (NGL)	800,000,000	Engineering & Procurement	2019-Q1
Oryx GTL - Expansion of Gas To Liquids Plant	Qatar	Ras Laffan	Gas to Liquids (GTL)	1,500,000,000	Feasibility Study	2019-Q4
PDO - Amal Steam Phase 1C Surface Facilities	Oman	Amal Oilfield	Gas Field Development	80,000,000	EPC ITB	2018-Q1
PDO - Ghaba North Gas Field Re-Development	Oman	Northern Oman	Gas Field Development	250,000,000	Engineering & Procurement	2016-Q1
PDO - Khulud Tight Gas Development Project (KLD)	Oman	Kauther Field	Gas Field Development	100,000,000	Feasibility Study	2021-Q4
PDO - Rabab-Harweel Integrated Plant (RHIP)	Oman	Harweel	Gas Processing	3,000,000,000	Construction	2018-Q4
PDO - Saih Nihayda Condensate Stabilization Plant	Oman	Saih Nihayda	Gas Treatment Plant	100,000,000	Construction	2016-Q3
PDO - Saih Rawl Depletion Compression Phase II	Oman	Saih Rawl	Gas Processing	250,000,000	Construction	2015-Q3
PDO - SRCPP & SNGP Condensate Recovery Maximisation	Oman	Saih Nihayda	Gas Processing	300,000,000	Engineering & Procurement	2015-Q4
PDO - Yibal Depletion Compression - Phase 3 (Y3DC)	Oman	Yibal	Gas Processing	300,000,000	Construction	2016-Q4
PDO - Zauliah Gas Plant Project	Oman	Al Wusta	Gas Processing	110,000,000	Construction	2016-Q1
PDO - Zauliyah Gas Compression Project - Phase 3	Oman	Al Wusta	Gas Processing	58,200,000	Construction	2015-Q3
Qatar Petroleum (QP) - Air Compressor Replacement at Mesaieed Refinery	Qatar	Mesaieed	Gas Processing	50,000,000	Construction	2016-Q4
Qatar Petroleum (QP) - Bi-directional Pipeline Between KM and KS	Qatar	Doha	Gas Pipeline	80,000,000	Construction	2015-Q3
Qatar Petroleum (QP) - Vapour Recovery System at Multi Product Berth	Qatar	Mesaieed	Gas Processing	50,000,000	FEED	2017-Q2
RAK - Block 8 Oil & Gas Field Development	Oman	West Bukha	Gas Field	45,000,000	Construction	2015-Q4

Project	Country	City	Facility	Budget	Status	Completion Date
RasGas – Qatar Barzan Gas Field Development Project (Overview)	Qatar	North Field	Gas Field Development	10,300,000,000	Construction	2021-Q4
RasGas – Qatar Barzan Gas Field Development Project – Offshore – Phase 2	Qatar	North Field	Gas Field Development	700,000,000	Engineering & Procurement	2019-Q4
RasGas – Qatar Barzan Gas Field Development Project – Offshore – Phase 3	Qatar	North Field	Gas Field Development	300,000,000	Engineering & Procurement	2023-Q4
RasGas – Qatar Barzan Gas Field Development Project – Onshore – Phase 1	Qatar	North Field	Gas Field Development	1,700,000,000	Construction	2016-Q1
RasGas – Qatar Barzan Gas Field Development Project – Onshore – Phase 2	Qatar	North Field	Gas Field Development	2,000,000,000	Feasibility Study	2019-Q4
Saudi Aramco – Arabiyah and Hasbah Gas Field Development	Saudi Arabia	Arabiyah	Gas Field	3,000,000,000	Construction	2019-Q1
Saudi Aramco – Dow – Ras Tanura Gas Plant (Overview)	Saudi Arabia	Ras Tanura	Gas Field	4,000,000,000	EPC ITB	2019-Q4
Saudi Aramco – Duba-1 Gas field	Saudi Arabia	Red Sea	Gas Field	25,000,000,000	Feasibility Study	2016-Q3
Saudi Aramco – Fadhili Gas Plant (Overview)	Saudi Arabia	Eastern Region	Gas Field	5,000,000,000	Engineering & Procurement	2021-Q1
Saudi Aramco – Fadhili Gas Plant – Main Processing Facilities (Package 1)	Saudi Arabia	Eastern Region	Gas Treatment Plant	2,500,000,000	Engineering & Procurement	2021-Q1
Saudi Aramco – Fadhili Gas Plant – Offsites & Utilities (Package 3)	Saudi Arabia	Eastern Region	Gas Field	2,000,000,000	Engineering & Procurement	2021-Q1
Saudi Aramco – Fadhili Gas Plant – Sulphur Recovery Unit SRU (Package 2)	Saudi Arabia	Eastern Region	Gas Treatment Plant	2,500,000,000	Engineering & Procurement	2021-Q2
Saudi Aramco – Liquefied Gas Station For Shadqam & Al Othmania Gas Plants	Saudi Arabia	Abqaiq	Natural Gas Liquefaction (NGL)	74,000,000	Engineering & Procurement	2018-Q3
Saudi Aramco – Liquefied Natural Gas (LNG) Receiving Terminal	Saudi Arabia	Jeddah	Liquefied Natural Gas (LNG)	1,000,000,000	Feasibility Study	2017-Q3
Saudi Aramco – Master Gas System Expansion (MGSE) (Overview)	Saudi Arabia	Various	Natural Gas Liquefaction (NGL)	4,050,000,000	Construction	2020-Q1
Saudi Aramco – Master Gas System Expansion (MGSE) – Phase I	Saudi Arabia	Various	Gas Pipeline	1,650,000,000	Construction	2020-Q1
Saudi Aramco – Midyan Gas Processing Plant	Saudi Arabia	Tabuk	Gas Processing	800,000,000	Construction	2016-Q2
Saudi Aramco – Unconventional Gas Program – Tight Gas Production Systems A and B	Saudi Arabia	Turaif	Tight Gas	3,500,000,000	Engineering & Procurement	2020-Q4
Shell – Pearl GTL Scheme – Onshore & Offshore Facilities	Qatar	Qatar	Natural Gas Liquefaction (NGL)	20,000,000,000	Construction	2019-Q3
Takreer- Hamriya Jetty and Pipeline Network Project – Marine Works 2	U.A.E.	Hamriyah	Oil Storage Tanks	250,000,000	Construction	2014-Q4
Tatweer Petroleum – Central Gas Dehydration Facilities	Bahrain	Awali	Gas Processing	100,000,000	Engineering & Procurement	2018-Q3
VOPAK HORIZON – Fujairah Oil Terminal Expansion (Phase 7)	U.A.E.	Fujairah	Gas Storage Tanks	200,000,000	Engineering & Procurement	2015-Q2
ZADCO – Upper Zakum Full Field Development – 750 Project – Surface Facilities – EPC 1	U.A.E.	Zakum	Oil Field Development	1,300,000,000	Construction	2017-Q4
ZADCO – Upper Zakum Full Field Development – 750 Project – Surface Facilities – EPC 2	U.A.E.	Zakum	Oil Production	4,200,000,000	Construction	2017-Q4
ZADCO- 750 West Region- Capacity Expansion & Sulphate Reduction Plant- EPC 3	U.A.E.	Zirku	Oil & Gas Field	300,000,000	EPC ITB	2019-Q1

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Project	Country	City	Facility	Budget	Status	Completion Date
ADCO – Bab Far North CO2 Injection Pilot Project	U.A.E.	Bab Habshan	Oil Field Development	305,000,000	Construction	2016-Q4
ADCO – Mender Field Development	U.A.E.	Abu Dhabi	Oil Field Development	200,000,000	Construction	2018-Q3
ADCO – Nitrogen Gas Injection (NGI)	U.A.E.	Abu Dhabi	Gas Production	50,000,000	Construction	2015-Q3
ADCO – North East Bab (NEB) – (Al Dabbiya) ASR	U.A.E.	Abu Dhabi	Oil Production	2,500,000,000	FEED	2020-Q1
ADCO – North East Bab (NEB) – Phase 3 (Al Dabbiya)	U.A.E.	Abu Dhabi	Oil Production	2,500,000,000	Construction	2017-Q4
ADCO – North East Bab (NEB) – Phase 3 (Rumaitha-Shanayel)	U.A.E.	Abu Dhabi	Oil Production	2,500,000,000	Construction	2017-Q4
ADCO – Rumaitha North CO2 Injection Project	U.A.E.	Rumaitha	Oil Field Development	500,000,000	Construction	2016-Q4
ADCO – South East Asset- Sahil Field Development – Phase 2	U.A.E.	Abu Dhabi	Oil Field Development	800,000,000	Construction	2019-Q1
ADCO- Bab Integrated Facilities Project- Expansion	U.A.E.	Bab	Oil Field Development	3,000,000,000	EPC ITB	2020-Q1
ADCO- Bab TH-F Peripheral Development	U.A.E.	Abu Dhabi	Nitrogen	400,000,000	FEED ITB	2017-Q4
ADCO- Fujairah MOT – Hydraulic Pressure Recovery System Turbine	U.A.E.	Fujairah	Oil Field Development	800,000,000	FEED	2017-Q1
ADCO- Qusahwira Field Development – Phase 2	U.A.E.	Abu Dhabi	Oil Field Development	900,000,000	EPC ITB	2018-Q3
ADCO- South East Asset- Tie-in Project	U.A.E.	Abu Dhabi	Oil Field Development	650,000,000	Construction	2018-Q1
ADGAS – Das Island – Fuel Distribution Sulphur Recovery (Phase 4)	U.A.E.	Abu Dhabi	Oil & Gas Field	491,000,000	FEED	2018-Q1
ADMA OPCO – Nasr Full Field Development – Phase 2 (Package 2 – Platforms)	U.A.E.	Abu Dhabi	Oil Field Development	20,000,000,000	Engineering & Procurement	2018-Q4
ADMA OPCO – Nasr Full Field Development – Phase 2 (Package 3)	U.A.E.	Abu Dhabi	Oil Field Development	200,000,000	Engineering & Procurement	2018-Q4

Project	Country	City	Facility	Budget	Status	Completion Date
ADMA OPCO– Nasr Full Field Development – Phase 2 (Package 1 – Wellheads and Pipeline)	U.A.E.	Abu Dhabi	Oil Field Development	900,000,000	Construction	2018-Q4
ADMA OPCO–Umm Shaif Oil Network Expansion	U.A.E.	Abu Dhabi	Oil Field Development	300,000,000	EPC ITB	2019-Q4
ADMA–OPCO – 100 MBD DAS Facilities Upgrade Project	U.A.E.	Abu Dhabi	Oil Field Development	48,000,000	Construction	2014-Q3
ADMA–OPCO – Das Island Flares Modifications – Revamp Project	U.A.E.	Das Island	Gas Processing	50,000,000	Construction	2015-Q2
ADMA–OPCO – Nasr Full Field Development – (Overview)	U.A.E.	Nasr Field	Oil Field Development	3,500,000,000	Construction	2018-Q4
ADMA–OPCO – SARB Offshore Oil Field Development – Package 2	U.A.E.	Abu Dhabi	Oil & Gas Field	500,000,000	Construction	2016-Q4
ADMA–OPCO – SARB Offshore Oil Field Development – Package 3	U.A.E.	Abu Dhabi	Gas Pipeline	300,000,000	Construction	2015-Q3
ADMA–OPCO – SARB Offshore Oil Field Development – Package 4	U.A.E.	Abu Dhabi	Gas Processing	500,000,000	Construction	2017-Q3
ADMA–OPCO – Umm Al Lulu Field Development – (Overview)	U.A.E.	Umm Al Lulu	Oil Field Development	2,500,000,000	Construction	2018-Q1
ADMA–OPCO – Umm Al Lulu Field Development – Package 1	U.A.E.	Abu Dhabi	Oil Field Development	2,500,000,000	Construction	2018-Q1
ADMA–OPCO – Umm Al Lulu Field Development – Package 2	U.A.E.	Abu Dhabi	Oil Field Development	2,500,000,000	Construction	2015-Q4
ADMA–OPCO – Umm Shaif Infield Pipelines Replacement	U.A.E.	Umm Shaif	Oil Field Development	500,000,000	EPC ITB	2015-Q4
ADMA–OPCO – Zakum Facilities for 4 Gas Injectors	U.A.E.	Abu Dhabi	Gas Production	100,000,000	Construction	2016-Q1
ADMA–OPCO– Lower Zakum – Oil Lines Replacement (Phase 1)	U.A.E.	Zakum	Pipeline	950,000,000	Construction	2016-Q4
ADNOC & EMARAT – Fujairah Terminal Expansion Phase 3	U.A.E.	Fujairah	Oil Storage Tanks	40,000,000	Feasibility Study	2018-Q4
ADNOC – Dalma Field	U.A.E.	Abu Dhabi	Oil Field Development	800,000,000	FEED ITB	2020-Q4
ADOC – Hail Offshore Oilfield	U.A.E.	Abu Dhabi	Oil Field Development	500,000,000	Engineering & Procurement	2018-Q3
ADOC – Mubaraz Field Expansion	U.A.E.	Abu Dhabi	Oil Field Development	500,000,000	FEED ITB	2017-Q4
BAC – Bahrain International Airport Modernization Program – New Aviation Fuel Farm & Fuel Hydrant	Bahrain	Muharraq	Oil Storage Tanks	200,000,000	EPC ITB	2017-Q4
Bapco – Offshore Blocks	Bahrain	Various	Exploration	80,000,000	EPC ITB	2020-Q2
BPGIC – Fujairah Oil Terminal (Phase 1 & 2)	U.A.E.	Fujairah	Oil Storage Tanks	200,000,000	Construction	2017-Q1
Fujairah Port – Port Facilities Expansion	U.A.E.	Fujairah	Oil Storage Tanks	100,000,000	Construction	2015-Q4
GASCO – Integrated Gas Development (IGD) – Expansion (Onshore Pipeline)	U.A.E.	Abu Dhabi	Gas Production	12,000,000,000	Engineering & Procurement	2016-Q4
GASCO – Yas – Mina Zayed Gas Pipeline	U.A.E.	Abu Dhabi	Gas Processing	45,000,000	Construction	2015-Q1
GASCO– Integrated Gas Development – Expansion (42 Inch Pipeline)	U.A.E.	Abu Dhabi	Oil Field Development	12,000,000,000	Construction	2018-Q4
Gulf Petrochem – Oil Storage Terminal Facility at Fujairah – Phase 2	U.A.E.	Fujairah	Oil Storage Tanks	300,000,000	Feasibility Study	2016-Q4
Hydrocarbon Finder – Block 7 Onshore Exploration and Production	Oman	Al Wusta	Exploration	50,000,000	Engineering & Procurement	2019-Q1
IPIC – Fujairah Refinery (EPC 1 & 2)	U.A.E.	Fujairah	Refinery	3,500,000,000	EPC ITB	2018-Q4
Kuwait National Petroleum Company (KNPC) – Discharge of Treated Effluent	Kuwait	Various	Pipeline	100,000,000	Feasibility Study	2018-Q4
Kuwait National Petroleum Company (KNPC) – Mutla Ridge Project	Kuwait	Mutla Ridge	Oil Storage Tanks	1,000,000,000	Feasibility Study	2019-Q4
Kuwait National Petroleum Company (KNPC) – New Depot At Matlaa	Kuwait	Northern Kuwait	Oil Storage Tanks	500,000,000	EPC ITB	2019-Q4
Kuwait Oil Company (KOC) – Jurassic Early Production Facility (EPF) – Phase 2	Kuwait	Northern Kuwait	Oil Production	100,000,000	EPC ITB	2017-Q3
Kuwait Oil Company (KOC) – Jurassic Oil and Gas Field Development	Kuwait	Northern Kuwait	Oil & Gas Field	1,300,000,000	EPC ITB	2018-Q2
Kuwait Oil Company (KOC) – Kuwait Environmental Remediation Program (KERP) – North Package	Kuwait	Northern Kuwait	Oil & Gas Field	100,000,000	Construction	2021-Q4
Kuwait Oil Company (KOC) – Kuwait Environmental Remediation Program (KERP) – Overview	Kuwait	Kuwait	Oil & Gas Field	3,000,000,000	Construction	2021-Q4
Kuwait Oil Company (KOC) – Maintenance of Northern Crude Oil Production Facilities	Kuwait	Northern Kuwait	Oil Production	200,000,000	Construction	2015-Q3
Kuwait Oil Company (KOC) – Maintenance of Southern Oil Production Facilities	Kuwait	Kuwait South	Oil Production	150,000,000	EPC ITB	2017-Q3
Kuwait Oil Company (KOC) – Maintenance of Western Crude Oil Production Facilities	Kuwait	West Kuwait	Oil Production	200,000,000	Construction	2015-Q2
Kuwait Oil Company (KOC) – Offshore Exploration of Kuwait Bay and Divided Zone	Kuwait	Various	Oil Field Development	900,000,000	Engineering & Procurement	
Kuwait Oil Company (KOC) – Operation and Maintenance of Wara Pressure Facilities	Kuwait	Southeast Kuwait	Oil Field Development	500,000,000	EPC ITB	2017-Q3
Kuwait Oil Company (KOC) – Ratqa Lower Fars Heavy Oil Development – Phase 1	Kuwait	Northern Kuwait	Steam Injection	4,500,000,000	Construction	2019-Q2
Kuwait Oil Company (KOC) – Soil Remediation Services – Lot A	Kuwait	Kuwait	Oil & Gas Field	100,000,000	Construction	2017-Q3
Kuwait Oil Company (KOC) / Exxon Mobil Corporation – Ratqa Lower Fars Heavy Oil Handling Facilities – Drilling Package	Kuwait	Jahra	Oil Field Development	500,000,000	Construction	2018-Q2

PROJECTS

Project	Country	City	Facility	Budget	Status	Completion Date
Kuwait Petroleum Corporation (KPC) – Northern Oil Field Development	Kuwait	Northern Kuwait	Oil Field Development	900,000,000	EPC ITB	2017-Q1
Masirah Oil Ltd – Block 50 (Masirah Bay Offshore) – Exploration	Oman	Masirah Basin	Exploration	25,000,000	Engineering & Procurement	2016-Q1
MOG – Block 54 Onshore Exploration and Production	Oman	Al Wusta	Exploration	50,000,000	Engineering & Procurement	2020-Q3
MOG – Block 55 Onshore Exploration and Production	Oman	Al Wusta	Exploration	45,000,000	Engineering & Procurement	2019-Q1
MOG – Block 56 Onshore Exploration and Production	Oman	Adam Ad Dakhliya	Exploration	20,000,000	Engineering & Procurement	2020-Q4
National Shipping Company of Saudi Arabia (Bahri) – VLCC Construction	Saudi Arabia	Various	Very Large Crude Carriers (VLCCs)	1,000,000,000	Construction	2017-Q4
OOCEP – Block 60 Concession – Onshore	Oman	Oman	Oil & Gas Field	1,100,000,000	Engineering & Procurement	2020-Q4
Orpic – Long Residue (LR) Line at Mina Al Fahal Refinery	Oman	Batinah	Pipeline	100,000,000	FEED ITB	2017-Q2
OTTCO – Ras Markaz Crude Oil Park – Crude Storage Facility	Oman	Duqm	Oil Storage Tanks	80,000,000	FEED	2019-Q4
PDO – Amal Steam Phase 1C-2	Oman	Amal Oilfield	Oil Field Development	300,000,000	EPC ITB	2019-Q1
PDO – Yibal Khuff Sudair Field Development	Oman	Northern Oman	Oil Field Development	3,000,000,000	Engineering & Procurement	2019-Q1
Primestar Energy – Prime Tank Terminal & Jetty Pipeline	U.A.E.	Fujairah	Oil Storage Tanks	165,000,000	Construction	2014-Q3
Qatar Petroleum (QP) – Bul Hanine Redevelopment (Offshore)	Qatar	Bul Hanine	Oil Field Development	11,000,000,000	EPC ITB	2028-Q1
Qatar Petroleum (QP) – Wellhead Scada & Cathodic Protection (Dukhan Field)	Qatar	Dukhan	Oil Production	200,000,000	Construction	2016-Q4
Qatar Petroleum – Al Shaheen Offshore Field Development Plan	Qatar	Qatar	Oil & Gas Field	500,000,000	Construction	2016-Q4
Sabic – Oil-to-Chemicals Plant	Saudi Arabia	Yanbu	Oil Production	30,000,000,000	Feasibility Study	2020-Q4
Sadara Chemical Company – Jubail Petrochemicals Complex – Refinery Tank Farm Package	Saudi Arabia	Jubail	Oil Storage Tanks	500,000,000	Construction	2016-Q4
Saudi Aramco – Al Muajjiz Crude Oil Terminal Rehabilitation (Tank Farm)	Saudi Arabia	Yanbu	Oil Storage Terminal	200,000,000	Construction	2016-Q4
Saudi Aramco – Annual Onshore Maintain Potential Program (MPP)	Saudi Arabia	Red Sea	Maintenance	5,000,000,000	Engineering & Procurement	2021-Q2
Saudi Aramco – Expansion of Khurais Oilfield	Saudi Arabia	Eastern Region	Oil & Gas Field	3,000,000,000	Construction	2020-Q2
Saudi Aramco – Jizan Export Refinery – Site Preparation	Saudi Arabia	Jizan	Oil Production	1,000,000,000	Construction	2017-Q3
Saudi Aramco – Safaniyah Oil Field (Phase 2)	Saudi Arabia	Safaniyah	Oil & Gas Field	500,000,000	Feasibility Study	2016-Q3
Saudi Aramco – Shaybah Arabian Light Crude Increment Program	Saudi Arabia	Shaybah	Oil Field Development	50,000,000,000	Construction	2016-Q1
Saudi Aramco – Southern Area Oil Operations (SAOO)	Saudi Arabia	Southern Region	Oil Field Development	55,000,000	Engineering & Procurement	2017-Q1
Sharafco – Hamriyah Free Zone – Storage Terminal	U.A.E.	Sharjah	Oil Storage Tanks	100,000,000	EPC ITB	2016-Q1
Takreer – Abu Dhabi International Airport Expansion – Aviation Fuel Depot	U.A.E.	Abu Dhabi	Oil Storage Tanks	200,000,000	Construction	2016-Q3
Takreer – Ruwais Refinery Expansion (Overview)	U.A.E.	Ruwais	Refinery	10,000,000,000	Construction	2015-Q3
Takreer- Hamriya Jetty and Pipeline Network Project – Marine Works 2	U.A.E.	Hamriyah	Oil Storage Tanks	250,000,000	Construction	2014-Q4
Takreer- Ruwais- LPG Recovery	U.A.E.	Ruwais	Refinery	40,000,000	FEED ITB	2019-Q3
VOPAK HORIZON - Fujairah Oil Terminal Expansion (Phase 7)	U.A.E.	Fujairah	Gas Storage Tanks	200,000,000	Engineering & Procurement	2015-Q2
VTTI – Fujairah Terminal	U.A.E.	Fujairah	Oil Storage Tanks	120,000,000	Construction	2016-Q2
ZADCO – Umm Al Dalkh ESP Installation – Package 2 (Phases 3, 4 and 5)	U.A.E.	Umm al Dalkh	Sub Sea Cable	650,000,000	Construction	2016-Q4
ZADCO – Umm Al Dalkh Full Field Development (Overview)	U.A.E.	Umm al Dalkh	Oil Field Development	650,000,000	Construction	2017-Q2
ZADCO – Upper Zakum Full Field Development – 750 Project (Overview)	U.A.E.	Zakum	Oil Field Development	15,600,000,000	Construction	2017-Q4
ZADCO – Upper Zakum Full Field Development – 750 Project – Surface Facilities – EPC 1	U.A.E.	Zakum	Oil Field Development	1,300,000,000	Construction	2017-Q4
ZADCO – Upper Zakum Full Field Development – 750 Project – Surface Facilities – EPC 2	U.A.E.	Zakum	Oil Production	4,200,000,000	Construction	2017-Q4
ZADCO – Zirku 7th Crude Oil Storage Tanks	U.A.E.	Abu Dhabi	Oil Storage Tanks	30,000,000	Construction	2016-Q1
ZADCO – Zirku Facilities Capacity Enhancement	U.A.E.	Zirku	Oil Field Development	400,000,000	EPC ITB	2017-Q3
ZADCO- 750 West Region- Capacity Expansion & Sulphate Reduction Plant- EPC 3	U.A.E.	Zirku	Oil & Gas Field	300,000,000	EPC ITB	2019-Q1

Note : The above information is the sole property of DMS Projects

Source: dmsprojects.net


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ABOUT THE INTERVIEWEE:
Sriram is solely responsible for diversifying the Betec Cad group's international business. He has over 20 years' of experience in HVAC Manufacturing/ Operations Management in the manufacturing industry.

Sriram C.M.P, director of Betec Cad Industries

FIVE MINUTES WITH...

Oil & Gas Middle East delves below the corporate strategy to understand what really makes the industry's leaders tick

0.00

Could you briefly talk about your main fire safety products and services for the oil and gas industry?
Betec Cad manufactures specialised Stainless Steel UL classified Motorized Fire Dampers and Fire Smoke Dampers having 3 hour fire rating as per UL 555 / UL 555S standard, meeting NFPA standard requirements. Betec Cad also manufactures Stainless Steel Tunnel Ventilation Damper (Fire Damper / Fire and Smoke Dampers) having 3 and 4 hours of fire rating/integrity as per BS 476 part 20-22 standard, to meet high end applications in the oil and gas sector.

1.05

Highlight your company's achievements in 2015 in terms of contract wins?
Betec Cad secured some major contract wins last year to work on projects such as the Khazzan Refinery in Oman, Yanbu III, Power and Water in Saudi Arabia, the Qatar Petroleum District, the Jeddah south central power plant and IWPP, Mirfa in Abu Dhabi, the Midfield Airport Project in Abu Dhabi, the North gate mall in Qatar, the Shuqaiq steam power plant, the Biskra power plant in northeastern Algeria, the Baraka Power Plant in Abu Dhabi and the Volante Tower in Dubai.

2.55

Which are the markets you are trading in and who are your major clients?
Some of the key sectors we are engaged with include HVAC (heating, ventilating, and air conditioning) for the commercial, residential and industrial segments, oil and gas, onshore and offshore, metro rail projects, road tunnels and airports. Some of our main clients with whom we actively work with include the likes of the ADNOC group of companies, Saudi Aramco, Qatar Petroleum, Petrofac, KNPC, Petronas, the Habtoor Leighton Group, DOOSAN, Hyundai, Samsung, LG, DEWA, ADWEA, SEWA, FEWA, Lamprell, Simoda and Dragon Offshore.

What are your plans for 2016? How do you wish to expand?
We intend to introduce new high-end products in the market such as tunnel ventilation dampers, UL classified fire-rated doors, oil and gas dampers, marine dampers for offshore, isolation dampers for the nuclear sector and blast-resistant dampers for military and armoured applications. In terms of expanding, venturing and establishing in regions like South East Asia, Africa, CIS countries and the Asian markets is our key goal.

3.35

"THERE ARE A GOOD NUMBER OF FIRE AND SAFETY STANDARDS. THE IMPORTANCE OF THESE STANDARDS ARE THAT THEY SHOULD STRONGLY SPECIFY THE NEED FOR CERTIFIED/TESTED PRODUCTS TO BE USED."

4.10

What is your opinion about fire safety standards in the regional oil and gas industry? How can it be improved?
The importance of code and standards are that they should strongly specify the need for certified/tested products to be used. Betec Cad's Motorized Fire Damper and Motorized Smoke Dampers are designed and manufactured in accordance to NFPA and SMACNA technological data and fire safety standards and are built and tested by international testing authorities.

RSK
IRAQ

ENGINEERING, SCIENCE AND TECHNICAL SUPPORT SERVICES

RSK HAS TWO NEW SERVICES IN IRAQ. Its vacuum excavation unit is now up and running and, together with its air lance technology, complements the company's range of utility mapping and service avoidance services.

Piloted by RSK's experienced operators, an unmanned aerial system (UAS) has also taken to the air in Iraq to support topographical and 3D mapping surveys, and tasks such as flare stack inspections.

RSK has established remediation, site investigation, waste management and ISO IEC/17025 accredited laboratory capabilities in Iraq.

Other turnkey environmental services include

- contaminated land remediation
- environmental impact assessments
- geotechnical investigations
- geoenvironmental assessments
- accredited soil and chemical laboratory testing
- topographical and geophysical surveys
- soil treatment, including bioremediation
- waste management.

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