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Oil Review Middle East

Covering Oil, Gas and Hydrocarbon Processing

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Covering Oil, Gas and Hydrocarbon Processing

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- Oil and gas development trends in 2015
- Reducing security risks in a complex environment
- Financing oil and gas projects
- Latest developments in offshore construction
- Managing measurement uncertainty in the field
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Editor's note

While the plummeting oil price has had a devastating impact on the oil industry in certain parts of the world, Middle East oil producers are in a good position to weather the storm given their large cash reserves and the relatively low cost of production. Participants at ADIPEC in November were positive about prospects in the Middle East, with many looking to expand their presence in the region.
The huge investment programmes of the operators, the increased focus on asset protection and the need to enhance recovery and performance in increasingly challenging conditions, are creating huge opportunities for the supply of technology and services. Innovation and collaboration will be key to harnessing these opportunities.
As always we bring you news of the latest oil and gas developments as well as feature and analysis on topical issues. Please do get in touch with your feedback and any suggestions for topics you would like to see covered.

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Arabic front cover courtesy of Shell

Oil Review Middle East

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Serving the world of business

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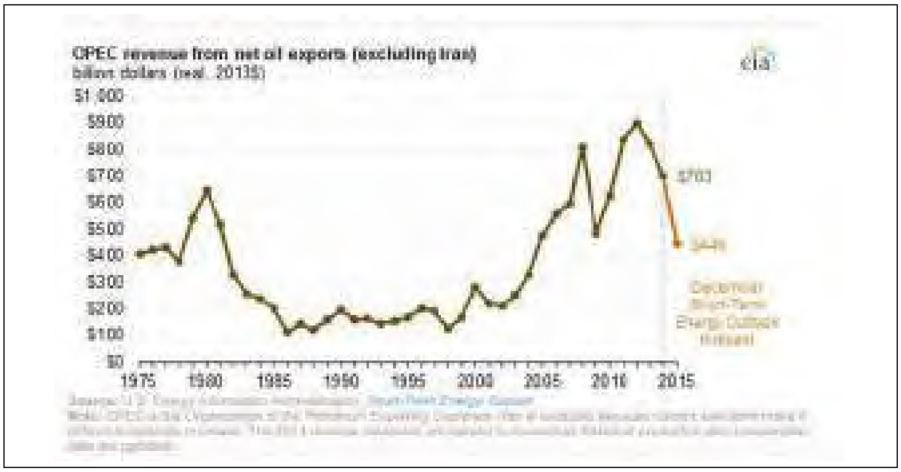
OPEC net oil revenues set to fall sharply

THE US' ENERGY Information Administration (EIA) in its latest Short Term Energy Outlook, estimates that members of the Organization of the Petroleum Exporting Countries (OPEC), excluding Iran, will earn about US$700bn in revenue from net oil exports in 2014, a 14 per cent decrease from 2013 earnings and the lowest earnings for the group since 2010. OPEC earnings declined in 2014 largely for two reasons: decreases in the amount of OPEC oil exports and lower oil prices.



For similar reasons, the EIA predicts that revenues for OPEC (excluding Iran) in 2015 will fall further, to US$446bn, 46 per cent below the 2013 level. Brent crude oil is projected to average US$68 per barrel in 2015, down from US$100 per barrel in 2014 and US$109 per barrel in 2013.

Iran is excluded in this calculation, because current sanctions make it difficult to estimate their crude oil export revenues. Iran may be taking discounts on the crude oil it exports and may not be receiving all the revenue from those sales because of restrictions on accessing international payment systems.

Prolonged periods of lower oil prices have the largest effect on OPEC countries that are more sensitive to losses in revenue, says the EIA, most notably Venezuela, Iraq, and Ecuador. Governments in these countries were already running fiscal deficits in 2013 and their sovereign wealth funds are smaller compared to other OPEC members. This implies that these countries may not be able to fill budget gaps for as long as other OPEC members.

Further revisions to future budget plans may be required in many OPEC member countries, particularly the countries cited above, because of lower oil prices and uncertainty over future global economic growth and crude oil production levels. Geopolitical risk may also be elevated because of lower government spending, the EIA states.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Energy sector trends for 2015

US CONSULTANT BOOZ Allen Hamilton recently released its Annual Energy Sector Trends for 2015.

The energy sector is undergoing a major, global transformation, and business resiliency depends on an integrated, predictive approach, says the company.

"Ensuring energy security and efficiency in MENA will continue to become more complex, with surging demand, more difficult and costly resource exploitation, competitive and regulatory pressures and new risk. Energy companies must understand local, regional and global energy landscapes and have the ability to cope with and foresee changes to succeed," said Dr. Walid Fayad, Executive Vice President with Booz Allen.

The top energy sector business trends for 2015 and beyond included:

Cyber threats - Energy companies must move beyond simply putting up electronic barriers to protect their IP, supply chain, operations and networks, and, instead, build the capability for proactive advanced threat detection across a now multi-dimensional threat surface. They also need to assess the security of third-party vendors and protect critical business assets. And business continuity and crisis management plans must include cyber incident response plans.

Regulatory balancing act - Complex and changing global and local regulations, including environmental requirements, continue to force energy companies to balance risk, cost and operational efficiencies to stay compliant. The industry must navigate an alphabet soup of regulations that demand investment in a unified compliance framework to implement a sustainable institutionalised compliance culture, especially when firms are operating in multiple geographies.

Reputation - Firms must spend more time understanding customers, investors, communities and competition to have more insight into their reputation and be better equipped to respond to events and to proactively manage risk across the enterprise.

More complexity - National oil companies (NOCs) are increasingly involved in unconventional oil and gas plays and expanding into downstream manufacturing and utility markets. Power utilities are facing growth in distributed energy resources and demand-side management projects that will impact grid operations and revenues and force new utility business models.

There will be a shift to predictive models to identify potential incidents

Health, safety and environment (HSE) gets predictive - The focus on managing and minimising HSE incidents will shift from a pure training and process approach to one that integrates predictive and preventative models. When firms apply advanced analytics techniques to historical data, they can develop predictive models that identify potential incidents before they occur.

Capital investments will get predictive, too - To prevent excessive risk-taking, cost overruns, or regulations slowing progress or capital dilution, energy companies will need to employ advanced risk analytics to analyse and quantify capital spend to effectively plan for future needs, to predict potential issues and to execute successfully.

Workforce challenges - With large capacity expansions and a significant portion of oil and gas workforces reaching retirement age over the next five to 10 years, many companies face shortages of key skills. This is prevalent among Middle East NOCs looking to digital oilfields and leaner operations as a way to increase productivity and streamline human involvement. Yet, the key to managing workforce renewals and surviving generational handoffs, and even taking competitive advantage of it, is to carefully plan for knowledge continuity as an integral part of broader corporate business continuity management plans.

Data creates opportunities and challenges - The emergence of vast amounts of new data, from smart meters to digital instrumentation, is presenting both an opportunity and a challenge within the energy industry. Many organisations struggle with how to transform data into insights and competitive advantage. Energy companies will continue to invest in enhancing the customer experiences that deliver better, faster service using mobile and social media platforms. In addition, cloud and mobile technology are helping enterprises get the most out of their joint ventures, but also they must ensure security is a top priority to reduce cyber vulnerabilities.

Risk management - Energy companies know how to manage individual components of risk related to HSE, IT, investments, regulations, and even reputation. However, those risks in total must be fully understood at the CEO and board level because the combination of a failure in one or multiple components could be devastating to a company. Energy is also a national security issue, which adds another layer of risk management for local energy companies. Having a complete picture of risks at the highest level ensures the company, and not just a department or an asset, is being well protected.

Executives' Calendar 2015

JANUARY 2015			
13-15	**Gas Arabia Summit**	DUBAI	www.theenergyexchange.co.uk
18-20	**Intersec**	DUBAI	www.intersecexpo.com
19-22	**World Future Energy Summit**	ABU DHABI	www.worldfutureenergysummit.com
FEBRUARY 2015			
15-18	**METS 2015**	DOHA	www.mets.tamu.edu
17-18	**ME-TECH 2015**	DUBAI	www.me-tech.biz
19-20	**International Gas Technology Conference**	DUBAI	www.europetro.com
MARCH 2015			
8-11	**MEOS**	MANAMA	www.meos2015.com
16-18	**Oman Refining and Petrochemical Exhibition**	MUSCAT	www.downstream-oman.com
22-26	**SOGAT**	ABU DHABI	www.sogat.org
25-27	**OMC**	RAVENNA	www.omc2015.it
APRIL 2015			
19-21	**Big Data Analytics for Oil & Gas**	DUBAI	www.oilandgasbigdata.com
21-23	**Arab Oil & Gas**	DUBAI	www.ogsonline.com
22-25	**Erbil Oil & Gas**	ERBIL	www.erbiloilgas.com
MAY 2015			
19-21	**CCPS-MEPSC**	ABU DHABI	www.mepsc.org

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

Turbomachinery symposium set for Doha return

THE THIRD MIDDLE East Turbomachinery Symposium (METS) will convene in Doha, Qatar, on 16-18 February, combining a range of educational and training courses with an industry exhibition.

Last held in March 2013, the second edition of METS attracted a total attendance of 942 with representatives from 27 countries. Along with a heavy presence from the oil and gas sector, other industries represented at the event included the chemical and petrochemicals sector, the power and water sectors, and the manufacturing, mining and metals sectors.

Among those present at the event were a mixture of top executives, including presidents and CEOs, as well as managers, specialists, engineers and technicians.

On the first day of the 2015 event a session from Siemens called 'Combustion, Fuels and Emissions for Industrial Gas Turbines' will look to raise discussions on the types of gaseous and liquid fuels that can be used in gas turbines. On the same day, Urs Baumann of MAN Diesel & Turbo Schweiz AG will present a tutorial that proposes a simplified stability check for turbocompressor rotors based on the gas swirl in the labyrinth seals.

The Exhibit Hall ribbon cutting at METS 2013, with Turbomachinery laboratory director, Dr. Dara Childs (third from left), TAMUQ dean Dr. Mark Weichold (second from right) and sponsor company representatives

The event will be organised by Turbomachinery Laboratory, part of the Texas A&M Engineering Experiment Station. Founded in 1971, the laboratory, its participating faculty and its staff look to address the needs of users and manufacturers of turbomachinery.

Visitors will be able to register for a variety of options, ranging from full symposia access, day passes, free exhibition hall passes and student passes.

To register for the event, which will take place at the Sheraton Doha Resort & Convention Hotel, or to find out more about the programme, visit: mets.tamu.edu/register.

OFG ready to begin 2015 schedule

THE 55TH EDITION of oilfield networking event OFG will take place at Ruth's Chris Steak House in Dubai on 29 January 2015.

Attendees of the first edition of 2015 of the popular 'Oilfield & Gas get-together' will get the chance to network with more than 90 decision makers from the oil and gas industry who have been attending OFG on a monthly basis.

The organisers have a programme of sponsors already confirmed for the start of 2015 who will be named shortly. Among the names to have sponsored past OFG events are Galadari, Bulwark, McDermott International and Top Oilfield.

Since its conception in October 2009, OFG has grown into the leading monthly social event for the oil and gas industry within the UAE, offering attendees the opportunity to network in an informal environment with other oil and gas professionals and suppliers.

Held at the award winning Ruth's Chris Steak House, attendees of the monthly get-together will be treated to a three-course menu featuring the restaurant's classic dishes, as well as complimentary valet parking, complimentary Internet and business centre facilities.

The next OFG event will take place on 29 January 2015 from 12 noon to 3.30pm, with entry on the door set at AED300.

For more information and how to register please contact Ruth's Chris Steak House, The Address Dubai Marina on +971 (0) 44549538, or email ofg@ruthschris.ae.

Forum to focus on latest technologies

THE MIDDLE EAST Technology Forum for Refining and Petrochemicals (ME-TECH) will look to provide a platform for the latest technologies and projects in the downstream industry.

ME-TECH 2015 will take place at Dubai's Madinat Jumeirah

Scheduled to take place on 17-18 February 2015 at the Madinat Jumeirah, Dubai, the event will look to bring together producers and suppliers in order to share and discuss the latest technological developments and projects in refining and petrochemicals.

The main themes of the conference will include project updates and case studies by major producers in the region, trends and market overviews for refining and petrochemicals, and refining and petrochemicals technologies and integration.

The conference will take place over two days with two parallel conference streams – one focused on refining and the other dedicated towards petrochemicals – and will also provide a number of networking opportunities.

ME-TECH 2015 will be followed by the Russia & CIS Executive Summit and the sixth IGTC-International Gas Technology Conference 2015 on 19-20 February at the same venue.

Oman set to raise crude oil production


Oil production in Oman is set to rise to 980,000 bpd.

OMAN HAS ANNOUNCED it will increase its oil production to an average of 980,000 bpd.

Speaking to reporters at a book launch for Petroleum Development of Oman (PDO), Salim bin Said Al Oufy, the undersecretary in the Ministry of Oil and Gas said that drilling and new technology adopted by oil producers in the sultanate will increase Oman's oil production next year.

"We are challenging our production to satisfy our demands and therefore we are targeting an oil production of 980,000bpd in 2015 from 950,000bpd now," said Salim Al Oufy.

When Oufy was asked if Oman's oil production will rise beyond 2016, the undersecretary added, "Oil and gas is still a very profitable business compared to other industries."

The undersecretary said that he expects oil producers will raise production next year in line with the economic growth of the sultanate. According to Oufy, other producers who are also operating in the sultanate include Occidental, Hunt Oil and MB Petroleum.

Rising Iraqi exports affect 2015 oil market

IRAQ'S PLAN FOR higher oil exports in 2015 is set to add to global overall supply and could deter other OPEC members from reducing their own supplies.

Iraq's government recently set up a temporary agreement with Kurdish regional authorities, planning the ground for flows of 300,000 bpd of Kirkuk crude exports to resume, on top of 250,000 bpd from the region's own fields, it revealed.

According to the government, the rise could cause unease for other members of the Organisation of the Petroleum Exporting Countries that are unable to increase exports, while also receiving lower profits for crude sales, following a 40 per cent decline in price since June.

"In purely volumetric terms, it's a rather unfortunate time for prices that this is coming on," said Eugene Lindell, analyst at JBC Energy in Vienna, who said that the oil will be a 'game changer' for the local Mediterranean crude market.

Mazarine acquires rig for Tunisia onshore drilling campaign

MAZARINE ENERGY HAS entered a drilling contract with Compagnie Tunisienne de Forage (CTF) for the CTF-4, a 2,000 horsepower onshore drilling rig, for a two-well drilling campaign in the Zaafrane permit in central Tunisia.

The Cat-1 location has been explored, geotechnical evaluation of the site has been carried out and construction of the location has begun, according to Mazarine Energy.

"The newly acquired 3D seismic looks highly promising with new prospects and leads identified," said Edward van Kersbergen, Mazarine Energy executive chairman.

"We are excited to have signed the drilling contract. This puts us in place to start the exploration campaign as soon as January 2015."

The rig is currently in Tarfa, Tunisia, around 87 km to the east of the Cat-1 location. The Cat-1 site will be drilled to a depth of 3,850 m to evaluate the Lower Ordovician Hamra and El Atchane sandstone reservoirs. If hydrocarbons are discovered in the well, Mazarine Energy plans to develop the field within two years.

OPEC oil output hits 30.01mn bpd

THE ORGANISATION OF the Petroleum Exporting Countries (OPEC) has announced that oil production of its member countries reached 30.01mn bpd in November, down 290,000 bpd from October.

According to OPEC, the November output is within a few hundred thousand barrels of the 30mn bpd ceiling that the company decided to maintain despite multiple projections at a recent meeting.

OPEC's November oil output measured 30.01mn bpd

"This is the great irony of the OPEC decision to leave its production ceiling unchanged," said John Kingston, *Platts* global director of news.

"The status of Libya remains uncertain, with enormous swings of output that are measured in the hundreds of thousands of barrels per day," added Kingston.

Output from OPEC major Saudi Arabia, which the survey estimated at 9.6mn bpd in November, has dropped by about 300,000 bpd since July 2014.

Total discovers oil and gas in the Kurdistan Region of Iraq

TOTAL HAS ENCOUNTERED oil and gas in the Kurdistan Region of Iraq, Jisik, and its the second discovery in the Harir Block, following the Mirawa-1 discovery.

According to the oil and gas exploration company, the Jisik-1 well discovered light oil of 43 API in a Jurassic carbonate reservoir. The well was tested with flow rates of 6,100 bpd anhydrous oil, without stimulation.

The Jisik-1 well discovered light oil of 43 API

"This success confirms Total's exploration strategy in Iraq. The ongoing appraisal of the discoveries made on the Harir and Taza Blocks will allow us to identify options for development," stated Marc Blaizot, senior vice-president, Exploration at Total.

"We are continuing exploration works on the Total-operated Safen and Baranan Blocks, with additional wells planned for 2015," added Blaizot.

Two other formation tests, with flow rates that measure approximately 10-15mn cfd, reported the presence of gas reservoirs together with associated condensate in the Triassic, Total revealed.

RAK Petroleum raises stake in Côte d'Ivoire field

UAE-BASED ENERGY FIRM RAK Petroleum has invested a further US$10.6mn into Block C1-27, a Côte d'Ivoire offshore field.

The company has raised its stake to 9.1 per cent following an acquisition by West African explorer Foxtrot International, of which RAK Petroleum holds a 33.33 per cent stake. Prior to the increase, RAK Petroleum held eight per cent of indirect stake in the offshore block.

Operator Foxtrot International, along with its joint venture partners, bought the shares in the block from Energie de Côte d'Ivoire, according to RAK Petroleum. Foxtrot International now holds a 27.5 per cent interest in the block.

Block C1-27 holds two of the largest gas fields in Côte d'Ivoire: Foxtrot and Mahi. According to Foxtrot International, it produces more than 70 per cent of the gas in Côte d'Ivoire from both fields and it is nearing completion of a four-year plan to develop two other discoveries, the Marlin oil and gas field and Manta gas field. The first production from the Marlin field is expected in 2015.

A company representative said, "Development of the previously discovered Marlin oil and gas field and the nearby Manta gas field is on track following the successful installation last month of the jacket over the Marlin field."

This development is a part of a four-year and US$1bn expansion programme on Block CI-27.

"Once completed, the platform, the second production platform on the block, will support development of both fields and increase deliverability from Block CI-27 commencing in 2015," the company official added.

Kurdistan Region's Shaikan oilfield output to rise

HUNGARY'S MOL GROUP has announced that the Shaikan field in Kurdistan Region of Iraq is set to see a rise in production from 24,000 boepd to 40,000 boepd.

The oil and gas explorer said that its partner and operator of Shaikan field Gulf Keystone had completed flow lines to connect the Shaikan-7, Shaikan-8 and Shaikan-10 wells to the existing production facilities.

MOL Group executive vice-president for upstream Alexander Dodds said, "I'm glad to see that production on Shaikan is going to increase significantly, achieving our initial gross target of 40,000 boepd for the block. This will support us in reaching our production increase target on group level as well as support the Kurdistan Regional Government to meet its ambitious export targets.

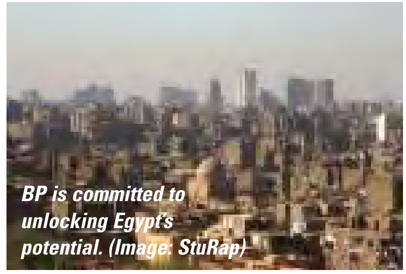
"We continue to focus our efforts to achieve volumetric increase in our assets in the Kurdistan Region of Iraq and also work together with the Ministry of Natural Resources in order to monetise production the most efficient way."

The flow lines are currently being hydro-tested and first oil is expected to flow to the production facilities by end of December 2014. An amine plant was currently being tested at the PF-2 facility with a further amine plant expected to be installed at PF-1 in early 2015.

These plants would sweeten the associated gas stream, allowing it to be used as fuel for the production facilities instead of diesel, MOL said.

A rig package was also being moved to a location in the vicinity of Shaikan-10 in order to drill Shaikan-11, an additional producer. An 11.2 km flow line to tie the well to PF-2 has already been laid, the Hungarian explorer noted.

BP plans US$1.2bn Egyptian investment to boost production


BP is committed to unlocking Egypt's potential. (Image: StuRap)

BP PLANS TO invest more than US$12bn in Egypt over the next five years and double its gas supplies to the North African nation in the next decade, according to the British explorer.

BP Egypt manager Hesham Mekawi said, "BP is committed to unlocking Egypt's oil and gas potential and to gradually double its gas supply during this decade. This will be achieved by injecting more than US$12bn in the next five years."

According to *Reuters*, most international energy firms had entered Egypt to develop energy for export, but as consumption increased and production decreased, the government diverted energy supplies to the domestic market, which hurt companies' profits.

Egypt has also planned to repay all its US$4.9bn debt to foreign oil and gas companies in six months, the Egyptian Oil Ministry said in November, a move it hoped would prompt them to boost exploration.

Along with its partner companies, BP currently produces almost 15 per cent and 30 per cent of Egypt's oil and gas respectively.

This follows news revealed in November 2014 that BP Egypt has been awarded two exploration blocks in the country for US$240mn as a result of the 2013 EGAS bid round.

Gas pipeline from Middle East to India to be built in 2015

A KEY REPRESENTATIVE from Indian firm South Asia Gas Enterprise (SAGE) has announced that the construction of a deep-sea natural gas pipeline from the Middle East to India, via Oman is likely to commence in 2015.

A 1,300km long pipeline in the Arabian Sea,it will reach depths of up to 3,400m and have an expected capacity of 31mn cu/m per day, stated a report in *Reuters*. The pipeline would be designed to transport 226bn cu/m of gas over a period of 20 years. Leading gas producers Iran, Qatar and Turkmenistan could be feedstock suppliers for the project, added SAGE officials.

The pipeline would run from the Middle East to India via Oman

Dr Herman Franssen, international gas consultant at the New Delhi-based company, revealed that the proposed venture builds on a two decade-old initiative by the sultanate to supply gas to India via a pipeline passing through the Arabian Sea. The project is likely to cost US$5mn and, according to Dr Franssen, a gas purchasing agreement with the sellers is being discussed.

"Much of the technical, economic and financial preparations are complete. We hope to commence the laying of the pipeline by 2015," stated Dr Franssen.

Gas forecast to play major role in future fuel mix

IN 2030 GAS will be a major fuel for power generation and the liquefied natural gas (LNG) market is set to remain attractive in the industry, according to new market analysis from Frost & Sullivan, titled Global Oil and Gas Outlook.

Despite economic uncertainties resulting from unrest in Africa and the Middle East, gas will continue to be an increasingly important source of fuel, according to the market insight. Furthermore unconventional oil and gas, encouraged by technological advancements across the entire value chain, is expected to play an important role in the worldwide fuel mix.

Pritil Gunjan, Frost & Sullivan energy and environmental industry analyst, said, "Investments in new technologies and resilience of the oil and gas sector have given rise to innovative exploration and production systems, such as deepwater and ultra-deepwater drilling."

Gunjan added, "Technological advancements and investor optimism have also spurred the output of unconventional 'tight oil' and shale gas."

Egypt to import six LNG cargoes from Algeria in 2015

EGYPT'S OIL MINISTRY has stated that the country will import six cargoes of liquefied natural gas (LNG) from Algeria between April and September 2015.

The import of LNG would ease the energy crunch that the country has been facing from 2014. Egypt had initially agreed to import five LNG cargoes from Algeria in 2014, stated *Reuters*. However, a source at EGAS said that Egypt had asked for more Algerian LNG supplies.

To support the process of importing LNG, Egypt has also finalised a long-delayed deal with Norway's Hoegh LNG for a floating storage and regasification unit. The firm was meant to begin operations by Q3 2014 but the project was repeatedly delayed. The expected launch date is end March 2015, which means the terminal should be in place in time to receive the first Algerian cargo.

The North African nation's steadily declining gas production and rising consumption have combined to create the worst energy crisis in decades. The government has also fallen behind on payments to foreign oil and gas companies, leaving them reluctant to make the extra investments required to boost output, said the *Reuters* report. The country with a population of 85mn relies heavily on gas to generate power for households and industry.

Egypt plans to import LNG from Algeria

Orange Business Services opens new office in Dammam

ORANGE BUSINESS SERVICES has opened a new office in Dammam, located close to Jubail Industrial City and Dahran City.

The two industrial cities are located at the crossroads of the country's petrochemicals industry and provide access to the company's extensive oil and gas base and other downstream industrial customers in Saudi Arabia's Eastern Province.

Philippe Koebel, senior vice-president of emerging markets and indirect comments, said, "Saudi Arabia is central to our strategy for the Middle East and is a major driver of the regional economy. We see unique opportunities to support the digital transformation of the country's industrial base. Our expansion here is a demonstration of our commitment to delivering bespoke, state-of-the-art ICT solutions that support the business ambitions of companies at the epicentre of the oil and gas industry."

Orange Business Services works with major petrochemical and gas companies in Saudi Arabia

The new office in Dammam city is the third in the kingdom, as Orange already operates in Riyadh and Jeddah. The new resident operations team in Dammam comprises of sales, pre-sales and customer service specialists, supported by the company's dedicated, global oil and gas and mining teams.

Orange Business Services works with major petrochemical companies in Saudi Arabia, delivering global managed video and data networks and smart city consulting services. Extended connectivity services feature satellite coverage and the installation of subsea fibre optic cables connecting remote offshore platforms.

The company has had a dominant presence in Saudi Arabia for 50 years and launched a local outlet in 2012 called Orange Business Arabia.

DNV GL and N-KOM promote LNG as fuel in maritime sector

OFFSHORE TECHNICAL ADVISOR DNV GL has signed an MoU with Qatar's shipyard Nakilat-Keppel Offshore & Marine (N-KOM) to promote LNG as fuel within the maritime and offshore industry

The MoU, which was signed in Dubai, would strengthen N-KOM's position in the areas of LNG-fuelled vessel conversions and constructions of related floating assets. N-KOM is a joint venture between Qatar Gas Transport Company and Keppel Offshore & Marine.

DNV GL is promoting the use of LNG as fuel

The new arrangement would allow N-KOM to capitalise on DNV GL's expertise in working with LNG, shipyards, ship owners and main stakeholders to develop ideas related to promoting LNG as the main fuel within the maritime and offshore industry.

DNV GL and N-KOM would cooperate on the development and building of bunker barges and coolant barges for temporary gas storage. In addition, a training programme would be conducted in the N-KOM facility on LNG carrier or LNG-fuelled vessel repairs.

The two companies have also agreed to offer project management support for conversion projects to third party shipyards.

India receives largest LNG shipment from Qatar

INDIA RECEIVED ITS largest shipment of LNG at Petronet LNG's Dahej import terminal in Gujarat. According to officials at Petronet, a Q-Max LNG vessel with a capacity of 261,000 cu/m transported cargo from RasLaffan in Qatar.

A report in *Economic Times* stated that India plans to diversify supplies and economise parcel size to meet growing energy demand. Ashok Kumar Balyan, managing director and CEO of Petronet, said, "We are glad to receive the first Q-Max LNG vessel, one of the biggest size LNG ships available today, at Dahej Terminal and expect to receive more such cargoes in future." Dahej is set to receive its 1,000th cargo in December.

In April 2014, Petronet signed a short-term contract with Qatar's Ras Laffan Liquefied Natural Gas Co to import 800,000 mt of LNG over the next year to supply gas to refineries. Petronet currently imports 7.5mn mt a year of LNG from Ras Laffan on a long-term contract that was signed in 2004.

United Safety and Al Hosn Gas launch explosion-proof vehicle

INDUSTRIAL SAFETY SOLUTIONS provider United Safety and gas development company Al Hosn Gas have released a new product called Air Qruise Electro-Ex, an explosion-proof vehicle designed for potentially toxic and flammable environments.

Saif Ahmed Al Ghafli, CEO of Al Hosn Gas, said, "We are committed to becoming the world's leading company in developing sour gas resources."

United Safety and Al Hosn launched the safety vehicle at ADIPEC 2014

The rapid advances in the oilfield technologies and processes have made sour gas development a sought-after activity, simultaneously giving rise to a host of industrial health and safety concerns. The Air Qruise TM Trooper integrates gas detection electronics, a compact air supply system and rapid deployment breathing masks. If there is a gas leak, personnel can be immediately alerted to induce damage control measures without being exposed to toxic fumes.

The Electro-Ex employs the same technology as Al Hosn's Air Qruise, but comes in a safety vehicle that ensures maximum safety during toxic releases.

Elie Daher, executive vice president and chief marketing officer for United Safety, said, "We combined explosion-proof mobility with breathing air delivery and gas monitoring systems to allow personnel access to a safe work environment."

The Air Qruise Electro-Ex can be used in chemical and petrochemical plants, upstream facilities and many other sectors with potential toxic and flammable areas.

Diversifying gas reserves

THE 10TH ANNIVERSARY of Gas Arabia Summit, scheduled to be held from 13-15 January 2015 at the Sheraton Grand Hotel in Dubai, will address the importance of diversification and innovation in achieving sustainable progress.

According to Mounir Bouaziz, vice president of Shell for the MENA region, increased global demand for energy will continue to lead to revised fuel choices and an increased level of energy-mix diversification trends.

Peter Bartlett, CEO of Bahrain Petroleum Company (Bapco), said, "In an era of rapid change in energy markets, sustainability, social responsibility and cost efficiency have never been more critical."

The gas summit plans to explore the region's supply-demand equation and the solution to potential deficits created by rising industry demands.

The supply-demand equation would determine the amount of gas required for commercial use

Hatem Nuseibeh, president of Total UAE and member of the Gas Arabia Advisory Board, stated, "There's a need to prepare for the future and ensure there is gas supply required to satisfy the growing demand in the region."

Technology has proven that there are plenty of reserves available, which could satisfy the growing demand. According to the International Energy Agency's (IEA) *2014 World Energy Outlook*, the Middle East is one of two key growth areas for gas demand. Identifying that diversification is essential, companies are seeking sustainability initiatives, strategic partnerships and technological advancement.

The Summit would feature speakers, such as Khaled Abu Bakr from TAQA Arabia, Simon Cattle of BP, Stéphane Michel from Total, Anwar Khalaf from National Oil and Gas Authority in Bahrain as well as representatives from leading gas producers, including Emirates LNG, EMGAS, Qatar Gas, ENI, and Dana Gas.

Financing solutions for the oil and gas industry

Sharply lower oil prices and escalating production costs, together with stricter lending restrictions on banks, are forcing energy companies to look at alternative ways of raising capital. Valerie Hart reviews the options.

Panel session at the Oil & Money conference in London in October 2014, co-hosted by Energy Intelligence and the International New York Times

INVESTMENT IN THE oil and gas sector is struggling to keep up with long-term energy demand and the increasing complexities of production. The big challenge for the global energy industry is to raise sufficient financing for capital investment. This has been compounded by the steep falls in oil prices since the summer, which is reducing cash flows, while, at the same time, increasing the cost of raising capital.

Cash from operations, even when oil prices were above US$100 per barrel, has been lagging behind what is needed for capital investment. As a result, there is a widening gap between revenues coming in and expenditure on capital investment and dividend payouts. Asset sales have helped close the gap, but, increasingly, more external financing and bank debt are being sought.

In the past decade, economic growth around the world has driven demand for commodities, including energy. This rising demand has led to a doubling in the oil price over the period. However, capital expenditure costs have doubled too. Today, companies are getting increasingly less return from what they spend, particularly as costs continue to escalate in developing higher levels of technology and unconventional methods of extraction. With the recent fall in oil prices, margins have been squeezed further. Increasingly, the industry is prioritising capital discipline to bridge this gap between revenues and costs.

Banks: more restrictions

Banks, generally, have been cautious since 2008's global financial crisis, and project finance has been largely absent. Bank funding in the Middle East has been predominantly regional, but has also come from Asia and Europe. However, banks' ability to lend has improved dramatically this year thanks to much lower liquidity costs following the stimulatory actions of the major central banks. Up to recently, Japanese banks were the most active international lenders as US and European banks retreated from the loans market after 2008. Japanese banks emerged relatively unscathed from the financial crisis, taking advantage of strong balance sheets to increase market share. However, this year, US and, especially, European banks have started aggressively pursuing new business. Japanese and French banks have been particularly active in the energy sector.

At the Oil & Money Conference in London in October, a discussion focused on changes in financing within the oil and gas industry today and how banks are now far more relationship-focused. Corporate margins for investment grade entities have become so slim that banks cannot make a decent return on loans alone, and need cross sales and ancillary business to make a deal worthwhile.

There are concerns that the unwinding of bank support from the European Central Bank and upcoming Basel III standards could hamper banks' ability to lend in the future. Banks will have to build large capital buffers, leading to more lender discipline and prioritisation of clients. This could create a world of client 'haves' and 'have nots'. For example, mid-cap E&P companies with a single asset development might struggle to raise bank and equity capital as a result.

Regional Middle Eastern banks, although growing, also face a more restrictive credit environment under Basel III. In addition, concentration limits imposed by the central banks in the UAE and Saudi Arabia could lead to a reduction in bank credit within the Gulf. Regional central banks are very keen to avoid the asset bubbles and risks to the banking system seen in the West and are prepared to go above and beyond externally introduced standards such as Basel III.

Under the new directives, banks could become less willing to provide long-term finance, i.e. loans of 15 to 20 years, which is consistent with the demands of large infrastructure projects, if more of their capital is tied up and they have to cover the costs. The universe of banks willing to lend longer term is likely to shrink, and borrowers, particularly for project finance, need to consider alternative long-term funding solutions.

> "The big challenge for the global energy industry is to raise sufficient financing for capital investment"

With stricter regulations and higher capital costs for banks, many projects can no longer be funded solely by traditional debt. Other sources of liquidity that have helped plug the funding gap, include export credit agencies, particularly those that can lend directly, such as the Export-Import Bank of the US (US EXIMBANK) and Japan Bank of International

Cooperation. For example, US EXIMBANK committed US$5bn to help fund last year's US$20bn Sadara chemicals project between Saudi Aramco and Dow Chemical.

Ian Catterall, head of natural resources for EMEA, Bank of Tokyo-Mitsubishi UFJ, one of the speakers at the Oil & Money Conference, told *Oil Review Middle East* how more oil majors are now turning to project finance, particularly in areas like East Africa, where they want to share the political risk. He added that many independent oil companies do not use project finance as it can be perceived to be time-consuming and restrictive. But he said that it can also be useful for less financially-strong shareholders for the discipline that project finance imposes and for its use in joint venture transactions.

Project finance in the Middle East has also begun to increase in 2014, in part due to the need for widespread infrastructure development. Government support for regional projects has been very important historically, either directly or through specialist government agencies set up for this purpose. Stella Cox, managing director of DDCAP, expects this, together with the role of export credit agencies, to be an ongoing requirement for the immediate future.

Significantly, tranches of Sharia-compliant Islamic financing within projects are becoming increasingly popular, particularly in Saudi Arabia. Islamic banks are often participating in funding major projects in parallel to conventional banks, she explained.

Focus on capital markets

"Expectations in the market now are for the focus to be very much on the capital markets, particularly in relation to project financing. We are likely to see more frequent inclusion of project bonds within wider financing blueprints of very large-scale projects," she said.

Back in 2012 the mammoth US$1.25bn project bond was included in Dolphin Energy's US$4.14bn refinancing of its Qatar gas project as part of a multi-sourced financing. (Dolphin Energy was established in 1999 by the government of Abu Dhabi to develop its gas fields. Shareholders include France's Total and the US's Occidental Petroleum). Project bonds potentially reduce a project's financing costs whilst providing attractive risk-adjusted returns for institutional investors. Since this deal, however, project bonds have been slow to take off in the Middle East as local banks have continued to remain a good source of financing.

Holding back the project finance market is the lack of a deeper pool of longer-term investors, such as pension funds and insurance companies, explained Michael Grifferty, President of the Gulf Bond and Sukuk Association. For example, last year's Abu Dhabi energy company Taqa's US$825mn project bond was 70 per cent placed in the US.

However, this is likely to change. "Project bonds will be a real focus for us in 2015. We will look for more tools, including guarantee mechanisms, which could encourage project finance, not only in the Gulf, but in less creditworthy parts of the Middle East. These areas often have very good projects but cannot achieve investment-grade ratings, particularly being at the pre-operational stage," said Grifferty. "Furthermore, if innovative guarantee mechanisms become available, these types of bond issues do not need to be restricted to mega projects."

Despite slow progress, the debt capital markets have been a welcome addition to more traditional sources of funding. It has been the third straight solid year for overall debt issuance in the region, remarked Grifferty. There is significant liquidity within local companies, sovereign wealth funds, family offices and pension funds waiting to be tapped.

"The debt capital markets have been a welcome addition to more traditional sources of funding"

A US$1.25bn project bond was included in Dolphin Energy's US$4.14bn refinancing of its Qatar gas project

Growth of Islamic bonds

Significantly, too, Islamic bonds (sukuk) increasingly are becoming a major part of the market. Sukuk provide comparable financing solutions to conventional bonds in that they help create liquidity within a financing arrangement. This is helpful in boosting confidence within the Islamic institutional marketplace, which is still far more used to the bank market, explained Cox.

Trailblazing issues included the US$2bn sukuk in 2013, which was part of the multi-sourced financing for the Sadara project, as it exemplified how capital market issuance can form an integral part of a large-scale government project financing. "There have been some very successful financings, with important sponsors, but a lot of work and time went into them. And, as yet, they haven't spun off other such deals," added Grifferty.

"Total sukuk issuance compared with conventional capital markets is still fairly small, but the potential is enormous. I think that in the same way you will see project bonds within the blueprint of the more sizeable transactions, the Islamic marketplace will seek to provide equivalent components, especially as the profile and requirements of the sector's investor group changes and evolves," said Cox.

To date, many of the large Middle East bond issuances have been dollar-denominated and listed on international markets. However, there is a drive to grow the local debt and sukuk markets, which are slowly maturing in terms of volume and diversity of issuers, investors, new structures and maturities.

Local issuance has been mostly confined to Saudi Arabia, with a small portion in Kuwait. Saudi Arabia is the only country with a decent-sized local market, with the other markets still in their infancy. But even in Saudi Arabia most of the issues are still privately placed, and the investor base lacks diversity.

Grifferty added that there is a need to provide incentives on the demand side, "Further development of the funds' industry would be a very powerful generator of demand. So, too, would regulation of local insurance companies to improve their mix of investments, as they have traditionally invested in real estate and equities."

Whereas a number of high-profile facilities have been structured to comply with Sharia law, many have actually been arranged and underwritten by conventional banks, with limited participation by wholly Islamic counterparts. This is because Islamic financial institutions, historically, have tended to buy shorter maturities to avoid balance sheet mismatches and long-term exposure to projects. Much of the sukuk issuance, as well as purchases, have been by Islamic financial institutions. Although sukuk maturities have been lengthening from the traditional five to 10 years and beyond, tenors still fall far short of the conventional market.

However, Cox added, "An interesting feature of some of the higher-profile sukuk issuances, as suggested by previous sukuk statistics, is that a significant percentage of sukuk purchases have been by conventional sector investors attracted by diversification or, in some instances, a yield enhancement over conventional bonds from the same issuer. There is still potential for significant expansion in project funding and investment by the Islamic banking community."

"The really crucial thing today is that Middle East entities are looking at debt markets, whether they issue locally or internationally; they can choose the market suited to their needs," said Grifferty. Capital markets can be used by all types of borrowers. "For instance, some of the companies which could get rated and come to market are oil and gas service companies and drillers," he added. "They could consider diversifying their financing, enabling them to borrow larger amounts and over a longer term than they perhaps are getting from their banks. We need to demonstrate that the process is not arduous even if it requires a bit more transparency and maybe some changes in the way they communicate." ■

MLPs prove increasingly popular among energy companies

AT THE OIL & Money conference, Mike Powell, managing director and co-head of oil and gas – EMEA at Barclays, discussed an increasingly popular means of raising capital for the energy industry, particularly for funding specific assets. Master Limited Partnerships (MLPs) are publicly traded partnerships that were originally developed in the US as a tax-efficient investment for retail investors. Today, institutions make up the biggest share of investors, with European interest growing significantly.

They are particularly popular with mid-stream businesses, but are becoming increasingly diverse, with some drillers and refiners now funding through them.

Shell is the first supermajor to use this financing structure, having recently launched the largest MLP to date (US$1bn), offering an initial yield of less than three per cent, the tightest pricing so far.

Powell believes this market will grow significantly as it is a way for non-core businesses to raise capital without competing with core, higher-returning ones. MLPs are popular with investors as they incorporate assets with stable, visible cash flows that are often underpinned by long-term contracts. Investors favour visible growth profiles and manageable capital expenditure.

Progress in Kuwait is hampered by the power struggle between government and parliament, says Samuel Ciszuk.

Challenging times for KPC

KUWAIT PETROLEUM CORPORATION (KPC) is, together with fellow Gulf NOCs, entering a new and challenging time of falling crude prices and increased battles for market share. This will demand flexibility on strategy, as well as tactics. Caught in a paralysed political framework between government and parliament, finding room for manoeuvre might, however, be the most pressing challenge. KPC is entering the current loose oil market of falling prices as one of OPEC's activist members from a production response point of view. Kuwait has, through its national oil company, supported Saudi Arabia's successful policy of micro-managing the oil markets in their tight phase throughout the past few years, since OPEC scrapped its individual quotas and instituted an overall production roof.

Kuwait's contribution of additional supplies, particularly from the 'Arab Spring' and onwards, was marginal compared to Saudi Arabia's use of its spare production cushion; however, it was nevertheless an important contribution, creating an activist triumvirate, together with the UAE, within OPEC ready to raise and lower oil output swiftly according to the market's perceived demand. That KPC was able to respond with additional supply in the past years is because Kuwait has for decades stuck to a policy of maintaining its own spare production capacity, to be able to lend overall clout to OPEC.

Kuwait's production capacity has, however, remained stagnant since the recovery and initial boost of projects following its invasion and liberation in 1990-91. As a consequence, its spare capacity cushion today is relatively small compared with Saudi Arabia's. This is not because KPC has failed to define new development projects or to plan for large scale EOR campaigns at its existing mature oilfields. Whole project groups, like the Northern Fields developments have been defined for years, while large-scale application of different EOR techniques at core fields like Burgan has been planned too.

> "Kuwait's production capacity has remained stagnant"

Kuwait needs to upgrade its oil and gas infrastructure

The problem is, rather, that KPC has gradually come to suffer from the same decision-making paralysis, which is afflicting most of the state and its state-owned entities. Kuwait has gradually, since its liberation, become embroiled in a power struggle between the parliament and the royal family-dominated government. The duality enshrined in the constitution could be said to have fostered this situation, together with the exception of several policy areas, like oil policy, or foreign policy, from parliament's influence. Hence, the politics of Kuwait have, particularly over the past 15 years, evolved into a constant tug of war between government and parliament, with the latter trying to wrest power from the government and the former trying to preserve its prerogatives and lead efficiently.

Challenging environment

For KPC and other state industries, working in such an environment has become very challenging. The company has seen its leadership reshuffled several times, as well as finding itself being steered by several oil ministers. Furthermore, the parliament has often tried to gain a de facto say in matters outside its jurisdiction by using its authority in other areas. During some of the most heated moments of Kuwait's politics this has meant using the prerogative to question the results of large tenders from a state budget point of view and to investigate corruption, even if it has been clear that the investigations have a purely political backdrop. The result has become a whole state sector with civil servants backing away from large decisions and a spread of the country's decision making paralysis from the government/parliament into the civil service and key state-owned companies like KPC.

Hence, the story of Kuwaiti oil projects in the past decade and a half makes for very sorry reading. Furthermore, given the years of endemic power shortages suffered in the last decade, is the failure to develop its small, but nevertheless sorely needed, gas resources. Looking further downstream, KPC has seen its once strong downstream

position starting to be eroded as its existing refineries have aged and it has struggled to lift their complexity, to the point where some facilities are no longer able to produce fuels which can meet market specifications in some more advanced core markets.

Two failed projects embody Kuwait's and KPC's downstream problems in the past 20 years. The first is the aborted K-Dow JV between KPC's petrochemical subsidiary PIC and US petrochemicals giant Dow Chemicals in 2008. The 50/50 JV involved Dow bringing its latest technologies to Kuwait to construct a large plastics facility, benefitting from the access to cheap feedstock. After the final contract had been signed, lawmakers opposed the project in what afterwards looks like mainly another attempt to strike a blow at the government. Dow had already commenced investments when the contract was cancelled and it was later awarded US$2.16bn in compensation from PIC in arbitration. Following the PIC debacle, foreign direct investment (FDI) in Kuwait understandably plummeted and the country is still struggling to rebuild its reputation.

The second project is the 615,000 bpd al-Zour refinery project, a greenfield facility which would grow the emirate's total nameplate refining capacity, while at the same time allowing for the retirement of its aged 200,000 bpd Shuaiba plant. Stitching together finance has been challenging however, as the project matured from concept to FEED in the middle of last decade, amid strong cost inflation. Being both large and complex, al-Zour saw its costs spiral from KPC's refining subsidiary KNPC's initial estimates of around US$6bn. As early as 2007 KNPC had to double its budget estimate, shortly after which the sum of the first tender round to be held came in at between US$14-15bn. Needless to say, the project drew considerable political interest by then and a retendering was forced

upon KNPC, although it still had to lift the project budget to over US$14bn. Subsequent delays and re-tenderings saw cost estimates spiral further towards US$19bn and the project was put on hold. Later attempts to restart the project repeatedly fell foul of the emirate's fractured politics, but as project costs have come down globally, it is hoped that the al-Zour refinery will be built at a cost of around US$15bn, with awards expected in the first half of 2015.

International spat

Now, however, this test case for whether Kuwait and KPC finally will be able to launch a mega project in the country, has fallen hostage to an international spat. Al-Zour is to be located in the area which formerly constituted the neutral zone between Saudi Arabia and Kuwait, but which in 1970 was divided up between the two countries. Full nationalisation of oil production was never implemented in the area, however, and the countries share the former zone's production equally.

Even though al-Zour is to be located within what is now Kuwaiti territory, it turned out some years ago that the Kuwaiti land allocation for al-Zour encroaches on land previously allocated by Saudi Arabia to US supermajor Chevron. The supermajor runs the last remaining concession in the former zone – on behalf of the Kingdom- and saw it renewed in 2009 for another 25-30 years.

Tensions have sparked ever since, with Kuwait feeling that the unilateral renewal of the concession by Saudi Arabia prolonged old structures and made it impossible to recalibrate land use in the area to modern needs. Saudi Arabia, on its side, likely feels it has acted according to norms. Chevron manages its share of the onshore 200,000 bpd Wafra field, which it is planning to expand under a large steam flood project, likely itself requiring more land use for new facilities.

Kuwait has since the 2009 awards reportedly made life somewhat difficult for Chevron by not wanting to renew work permits and by creating other bureaucratic obstacles, delaying the Wafra expansion, in the hope that the company would free up land for the al-Zour refinery.

This dispute is likely the chief cause why Saudi Arabia in October ordered the shut-in of production at the former zone's jointly operated 300,000 bpd offshore al-Khafiji oilfield – representing more

Kuwait is awarding new drilling and production contracts

than five per cent of the emirate's output.

The international spat involving al-Zour and now al-Khafiji production will complicate the emirate's project environment, particularly so close to key tender awards. Kuwait and KPC desperately need to show some progress on a prestige project following all disappointments and debacles. On a positive note, the dispute with Saudi Arabia can, however, also serve to focus minds.

Not all gloom

Even though the outlook for mega projects in Kuwait's oil sector does not look much rosier than it did one or two years ago, this should not be taken to mean that there will be an absolute lack of business opportunities. There are the normal supply and service contracts which project contractors can secure as a result of the increasing attention paid by to its upgrade and renovation needs. Also, the start-stop of large initiatives, like al-Zour and the Northern Fields project, means that there will be opportunities for project management services, as well as for supply companies and the general oil service industry.

These opportunities are, unless the political landscape shifts considerably, unlikely to match KPC's official targets but, nevertheless, they should be considerable. KPC's upstream subsidiary Kuwait Oil Company (KOC) said early December it was in the throes of awarding US$4.2bn in contracts before end-year, to drill 900 wells by 2018 and produce around 60,000 bpd from the first phase of the Lower Fars and Ratqa reservoir development. Needless to say, KOC will require the purchase of significant amounts of services and supplies for anything close to that to happen. Even if the project hits another snag, opportunities to participate in the start-up phase could be rewarding for a supplier, if not lasting. The same logic applies to the al-Zour project, or for that matter to the companies participating in the Clean Fuels project of upgrades to the two largest current Kuwaiti refineries.

The eventual solution of the spat with Saudi Arabia over neutral zone production and its possible impact on the al-Zour awards next year will be a bellwether for whether international investors will start to re-evaluate Kuwait favourably for more long-term involvement. It will also show whether KPC will be able to embark on a true modernisation effort or be forced to hibernate – from a technology point of view – for some time longer. ■

IEA warns of rising stress **in the energy system**

Global energy demand is set to grow almost 40 per cent by 2040, revealed the recent World Energy Outlook 2014 by the International Energy Agency (IEA). Over the following 26 years, renewable energy will be increasingly significant in feeding the world energy demand and the Middle East will be a major source of supply growth.

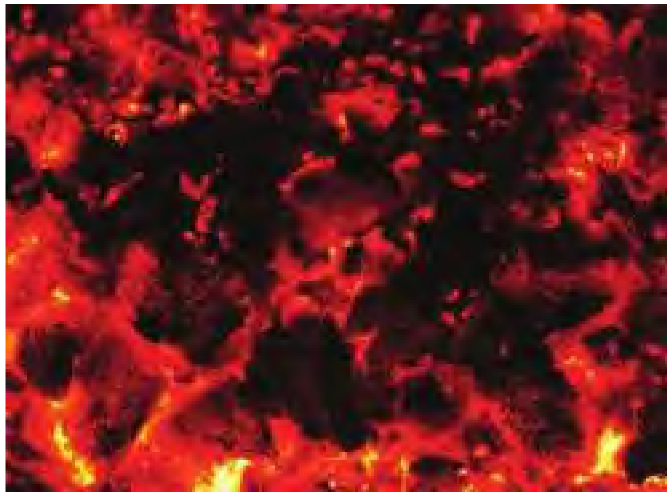
THE INTERNATIONAL ENERGY Agency's (IEA) World Energy Outlook 2014 has warned against the risk that current events distract decision makers from recognising and tackling the longer-term signs of stress emerging in the energy system.

World primary energy demand is 37 per cent higher in 2040, projects the IEA, putting more pressure on the global energy system. But this pressure would be even greater if not for efficiency measures that play a vital role in holding back global demand growth. The scenario shows that world demand for coal and oil will reach a plateau by 2040. At the same time, renewable energy technologies gain ground rapidly, helped by falling costs and subsidies. By 2040, world energy supply is divided into four almost equal parts: low-carbon sources (nuclear and renewables), oil, natural gas and coal.

"As our global energy system grows and transforms, signs of stress continue to emerge," said IEA executive director Maria van der Hoeven. "But renewables are expected to go from strength to strength and we can now see a point where they become the world's number one source of electricity generation."

Renewables are expected to account for nearly half of the global increase in power generation to 2040, and overtake coal as the leading source of electricity. Wind power accounts for the largest share of growth in renewables-based generation, followed by hydropower and solar technologies. As the share of wind and solar PV in the world's power mix quadruples, however, their integration becomes more challenging, both from a technical and market perspective.

World oil supply is expected to rise to 104 mb/d in 2040, but hinges critically on investments in the Middle East. As tight oil output in the USA levels off, and non-OPEC supply falls back in the 2020s, the Middle East becomes the major source of supply growth. Growth in world oil demand will slow to a near halt by 2040: demand in many of today's largest consumers either already being in long-term decline by 2040 (the US, European Union and Japan) or having essentially reached a plateau (China, Russia and Brazil). China is predicted to overtake the US as the largest oil consumer around 2030, but, as its demand growth slows, India emerges as a key driver of growth, as do Sub-Saharan Africa, the Middle East and Southeast Asia.



Renewables are set to overtake coal as the leading source of electricity (Photo: Mourner)

"A well-supplied oil market in the short term should not disguise the challenges that lie ahead, as the world is set to rely more heavily on a relatively small number of producing countries," said IEA chief economist Fatih Birol. "The apparent breathing space provided by rising output in the Americas over the next decade provides little reassurance, given the long lead times of new upstream projects."

Demand for gas will be more than 50 per cent higher in 2040 and it is the only fossil fuel still growing significantly at that time. The US remains the largest global gas producer, although production is set to level off in the late-2030s as shale gas output starts to recede. East Africa emerges alongside Qatar, Australia, North America and others as an important source of liquefied natural gas (LNG), which is an increasingly important tool for gas security. A key uncertainty for gas outside of North America is whether it can be made available at prices that are low enough to be attractive for consumers and yet high enough to incentivise large investments in supply.

While coal is abundant and its supply relatively secure, its future use is constrained by measures to improve efficiency and reduce CO2 emissions. In 2040 coal demand will be 15 per cent higher, but growth slows to a near halt in the 2020s. Regional trends vary, with demand reaching a peak in China, dropping by one-third in the US, but continuing to grow in India.

A critical 'sign of stress' is the failure to transform the energy system quickly enough to stem the rise in energy-related CO2 emissions (which will grow by one-fifth to 2040) and put the world on a path consistent with a long-term global temperature increase of 2°C. In the central scenario, the entire carbon budget allowed under a 2°C climate trajectory will be consumed by 2040, highlighting the need for a comprehensive and ambitious agreement at the Conference of the Parties on Climate Change (COP21) meeting in Paris in 2015. ■

Forecast for rising **global energy demand**

As the world energy demand continues its upwards climb, ExxonMobil's *Outlook for Energy: A View to 2040* reveals insights such as how fast wind, solar and biofuels will grow as energy sources and what impact the expanding middle classes will have.

Unconventional gas production in North America is predicted to nearly triple by 2040 (Photo: Bilfinger)

GLOBAL ENERGY DEMAND will rise 35 per cent from 2010 to 2040, says ExxonMobil. Growth in global middle classes, expansion of emerging economies and an additional two billion people in the world will contribute to the increase, according to its *2015 Outlook for Energy: A View to 2040*. The world will also become far more efficient in its energy use, it says. Without efficiency gains, energy demand from 2010 to 2040 would be headed toward a 140 per cent increase instead of the 35 per cent forecast.

The report projects that carbon-based fuels will continue to meet about three-quarters of global energy needs through 2040, which is consistent with credible projections, including the International Energy Agency's. The outlook shows a shift toward lower carbon fuels that, in combination with efficiency gains, will lead to a gradual decline in energy-related carbon dioxide emissions. Wind, solar and biofuels are expected to be the fastest-growing energy sources, increasing about six per cent a year on average through 2040, when they will be approaching four per cent of global energy demand.

Renewables, in total, will account for about 15 per cent of energy demand in 2040. Nuclear energy, one of the fastest-growing energy sources, is expected to nearly double from 2010 to 2040, with growth in the Asia Pacific region, led by China, accounting for about 75 per cent of the increase.

The report provides ExxonMobil's long-term view of global energy demand and supply. Its findings help guide the company's investments and business strategy. The outlook is developed by examining energy supply and demand trends in 100 countries, 15 demand sectors covering all manner of personal and business needs and 20 different energy types.

The global middle class is expected to climb from about two billion in 2010 to almost five billion by 2030, representing more than half the world's population, according to the Brookings Institution. As projected, that middle class expansion – largely in India and China – will be the largest in history and will have a profound impact on energy demand. Along with income gains, ongoing societal changes such as expanded infrastructure, electrification and urbanisation will contribute to greater energy use.

The *Outlook for Energy* identifies a significant evolution in the trade of oil and other liquids. A major shift is seen as North America will likely become a net exporter of liquids by 2020 as supplies of so-called tight oil, natural gas liquids and bitumen from oil sands increase. This is expected to open new trading opportunities as Asia Pacific's net imports are projected to rise by nearly 80 per cent by 2040. Africa's liquids exports are expected to decline as local demand more than doubles. In Latin America, growth in supplies is anticipated to outpace demand as supplies of deepwater and unconventional liquids expand.

North American unconventional gas production will nearly triple by 2040 and the region is expected to surpass the combined output of Russia and the Caspian region as the largest gas-producing area, says the report. In Asia Pacific, gas production is expected to double by 2040, driven partly by unconventional production technologies. Demand in the region is expected to climb by about 170 per cent, according to ExxonMobil, and as a result Asia Pacific will likely overtake Europe as the world's largest gas importer.

Natural gas is expected to be the fastest-growing major fuel source during the outlook period as demand increases by about 65 per cent. Half of that increase will come from Asia Pacific, led by China. Utilities and industrial operations are expected to account for about 80 per cent of the demand increase worldwide, as operators increasingly choose natural gas because of its lower emissions and versatility as a fuel and feedstock. By 2040, natural gas is expected to account for more than a quarter of global energy use, surpassing coal in the overall mix.

Demand for coal is expected to rise through 2025 and then decline as China's economic growth gradually slows and it follows the shift seen in Organisation for Economic Co-operation and Development countries toward cleaner fuels. Still, over time, global coal demand is expected to remain most prominent in Asia Pacific, primarily to support growing power-generation requirements. ■

(Left to right) HE Dr Mohammed Saleh Abdullah Al-Sada, Qatar's minister of energy and industry and Qatar Petroleum chairman; Khalid Al-Falih, CEO of Saudi Aramco; and Andrew Liveris, chairman, president and CEO of Dow Chemical Company

Connecting with the next **generation**

The Gulf Petrochemical and Chemicals Associations (GPCA) ninth annual forum, held in Dubai, saw thousands of chemical sector executives from across the globe gather to hear industry leaders discuss the current trends of the regional market, including the importance of efficiently developing the next generation of industry employees and the repercussions of falling oil prices.

INVESTING IN THE youth of the Middle East is vital to the development of the region's petrochemical industry, according to top industry executives speaking at the Gulf Petrochemicals and Chemicals Associations (GPCA) ninth annual forum, held in Dubai in November.

Taking place over three days and with more than 2,000 international and regional chemical industry executives in attendance, the GPCA annual forum welcomed keynote speeches from both Khalid Al-Falih, CEO of Saudi Aramco, and Andrew Liveris, chairman, president and CEO of Dow Chemical Company.

> "These young people are a different breed than previous generations"

Both speeches focussed on the value and importance of correctly developing the region's younger generation. Al-Falih highlighted the region's recent 'youth bulge' which, according to Saudi Aramco, means that by the end of the decade approximately 60 per cent of the company's workforce will be 35 years old or younger.

"These young people are a different breed than previous generations," he said. "Today young people have what I call a 'positive rebelliousness' hardwired into their

worldview: they think less along the lines of organisational hierarchies and more in entrepreneurial terms."

He added, "They have an appetite for risk, they thrive on rapid change and constant mobility, and many are simultaneously more sceptical and more hopeful than my generation was at their age."

Technological advancements and hyper-connectivity also play a big role in the younger generation's working style. According to Al-Falih, Saudi Aramco is looking to tap into this 'different worldview'.

He commented, "We view their potential contributions to our company as our most prized future opportunity, and [this is] why we take connecting with this new generation and directing their energies so seriously."

Similarly, Liveris highlighted the importance of creating and developing career paths for those younger people focussed on science, technology, engineering and mathematics (STEM) subjects.

"Everywhere around the world the topic of youth unemployment is central to the problems of government," he stated. "Creating these new career opportunities is all our responsibility; it is the challenge of our time."

Liveris added, "We have to do everything in our power to help utilise this wonderful talent that we have."

One example of a relevant initiative Saudi Aramco is carrying out is its Youth Leadership Advisory Board (YLAB). Consisting of 16 young employees carrying out their 18-month term, the YLAB conducts studies, provide advice and insights to management, and engages with other young employees in the changes taking place in Saudi Aramco.

Saudi Aramco's CEO commented, "We are now on our third YLAB cycle, and it has become a self-sustaining program that is both highly competitive and highly respected within the company."

Furthermore, Liveris commented on Sadara, the multibillion dollar integrated facility that is a result of a Saudi Aramco-Dow Chemical joint venture. He explained that the large petrochemicals plant is expected to be a hub for manufacturing, research, and job opportunities.

"When completed in 2015, Sadara will be run by the 4,000 Saudi men and women who will return home from different Dow facilities around the world," Liveris said.

In line with the *GCC Petrochemicals & Chemicals Facts and Figures 2013*, the petrochemicals capacity of the GCC reached 140.5mn mt in 2013, which is an 8.7 per cent increase on 2012's figures. Also, the sector experienced a 7.3 per cent growth in revenue growth from 2012 to 2013, with

The Saudi Aramco CEO highlighted the value that younger generation can bring to business

revenue figures reaching US$89.4bn.

More specifically, according to the GPCA, Qatar's petrochemical portfolio consists of 19mn mt of capacity, earning up to US$11.5bn in revenues and producing products such as fertilisers, plastics and fine chemicals.

> "One of the few certainties in today's world is energy"

The GPCA ninth annual forum was inaugurated by HE Dr Mohammed Saleh Abdullah Al-Sada, Qatar's minister of energy and industry and Qatar Petroleum chairman.

As part of the forum's plenary address, he stated that downstream projects in the Middle East were likely to be re-examined in light of the falling oil prices. He stated that the decline in barrel prices was influencing the strategic direction of the region's petrochemical and chemical industry.

"As we have all seen in the past few weeks, oil prices have reached their lowest levels in more than four years, causing concerns that current and future chemical prices would be impacted as a result," Al-Sada said.

"Downstream project economies are expected to be re-examined and reassessed, particularly as prices continue to fall and as the future forecast expects a new chapter in its history."

Other influencing factors that Al-Sada underlined included US shale gas and the pressure it has and will continue to place on the chemical and petrochemical industry in the Middle East, as well as the potential repercussions of China's growing plastic industry.

Speaking on the topic of the USA in his keynote speech, Saudi Aramco's Al-Falih said, "North American chemicals will double in the next decade, giving them capabilities to be in markets that we thought were traditionally ours."

He added, "The European petrochemical industry is closing its less efficient plants, integrating assets into cross-regional networks and altering its product portfolio."

Interestingly, Al-Falih commented that while China is pursuing coal-to-chemical opportunities, it is undergoing a relative economic slowdown, placing an emphasis on the environment and struggling with existing overcapacity.

Ultimately, the speakers underlined the ever-consistent importance of investing in the Middle East's petrochemical industry as a way of maintaining the region's economic growth.

The Qatar minister said, "The Gulf's investments in petrochemicals have a strategic importance as they help grow economies and satisfy the growing demand for [petrochemical] products."

While Dow Chemical Company's chairman, president and CEO, commented, "We know this is a pivotal region of the world, we all understand that. It's pivotal to the global economy and for geographical security."

Liveris added, "One of the few certainties in today's world is energy, that very essential ingredient for global growth and prosperity." ■

Ergil to supply floating roofs to India's Pipavav Terminal project

Floating roofs can reduce tank storage loss

ENGINEERING, CONSTRUCTION AND manufacturing company Ergil Storage Tech has been chosen by Gulf Petrochem to provide 16 pontoon-type internal floating roofs for the Pipavav Terminal project in Gujarat, India. Floating roofs help reduce tank storage loss. The pontoon-type internal floating roof consists of a series of capped hollow tubular pontoons connected to a grid of beams and top-sheet of aluminum tread plate. The design permits a vapour space between the floats and the underside of the plate. It minimises evaporation losses of stored products such as jet fuels, gasoline, diesel and fuel oil. Floating roofs also help control hydrocarbon emissions and risk of fire. Oktay Altunergil, CEO of ERGIL, said, "In the past ERGIL successfully supported Gulf Petrochem in its projects in Tanzania and the UAE. With this project, I look forward to developing business and opportunities in India."

Saudi Aramco to supply crude to Indonesia

Indonesia is hoping to modernise its refineries and increase the production of crude

SAUDI ARAMCO AND three other oil companies will be expected to supply crude to Indonesian oil and natural gas company Pertamina. China's CNOOC, Thailand's PTT PCL and a Japanese oil company will also be expected to supply crude. Ahmad Bambang, director of refining, trading and marketing at Pertamina, said, "We are looking for partners to develop refineries and that can guarantee security of supply."

In addition to striking deals with the four oil companies, Pertamina also hopes to forge a JV with Angola's Sonangol to provide 100,000 bpd of crude in January 2015.

According to Reuters, Indonesian President Joko Widodo is keen to modernise Indonesia's refineries and introduce new energy reforms. Pertamina requires an investment of nearly US$25bn to double the crude intake of at least four of its existing refineries, in order to raise its total capacity to 1.6mn bpd by 2025, added Bambang.

SABIC Polymers executive VP elected chairman of WPC

MOSAED AL OHALI, executive vice president of SABIC Polymers, has been elected chairman of the World Plastics Council (WPC). Al-Ohali said, "I am really pleased with the establishment of the Council and will work hard with the rest of my WPC colleagues to ensure its effective functioning to promote sustainability and the responsible use of plastics, and represent the industry before global stakeholders."

Mosaed Al Ohali, chairman of WPC

Al Ohali has served as the executive vice-president of SABIC Manufacturing, chief operating officer of the SABIC Europe Group and vice-president of specialty products and fertilisers. Mohamed Al-Mady, vice chairman and CEO of SABIC, said, "SABIC is well positioned to lead the WPC as we clearly understand the industry's social responsibility obligations. I look forward to the WPC engaging with global industry leaders and other concerned stakeholders to develop strategies to address the industry's emerging global challenges of sustainability and environment."

Initiated by PlasticsEurope and the American Chemistry Council (ACC) Plastics Division in Dussedorf, Germany in 2013, the WPC aims to accelerate cooperation and alignment within the plastics industry on an international level, acting to ensure the benefits of the industry and its consumers.

Studies on Kuwait refinery project making steady headway

STUDIES TO MERGE Kuwait's Al Zour Refinery and its petrochemical complex have made good progress, according to Mohammad Al-Mutairi, CEO of Kuwait National Petroleum Company (KNPC).

Al Mutairi said that KNPC's strategy is to integrate the refinery and petrochemical units, enabling access to separate LNG import facilities.

The organisation is also considering setting up a separate company that would manage the proposed combined unit.

In addition to the planned merger, Al Mutairi also revealed that bidding on the fourth of the refinery's major packages for establishing storage tanks has been closed. However, no major decisions have been taken regarding KNPC's grand projects until modern technology is made available.

Meanwhile, the proposed LNG project is still in the preliminary stage, but the capacity of the project is expected to be 278 sqm, Al Mutairi revealed.

Saudi Aramco and ExxonMobil JV completes Clean Fuels Project

SAUDI ARAMCO AND ExxonMobil's JV Saudi Aramco Mobil Refinery Company Limited (SAMREF) has completed construction of major desulphurisation facilities, including a new hydrotreater at the Yanbu refinery.

The project, which helps reduce sulphur levels in gasoline and diesel by 98 per cent to 10 parts per million, is the largest in SAMREF's history, stated officials from the Saudi Arabia oil giant.

The clean fuels project would help reduce the level of sulphur in gas and diesel by 98 per cent

Khalid Al Falih, president and CEO of Saudi Aramco, said, "Our long-term partnership benefits from the technology and innovation from both companies.

"Our refinery will continue to be an industry leader throughout the Middle East and in the global market place well into the future. It is also testimony of Saudi Arabia's long-standing role as a reliable energy supplier to key geographic areas of the world."

Darren Woods, senior vice-president of ExxonMobil Corporation, said that the company's endeavour to apply technology would help deliver world-class products to contribute to the fuels value chain. In addition, the refinery's recent Clean Fuels Project is a step ahead in the direction of meeting global energy demands.

Petrochemical industry to grow fastest in Middle East, states Frost & Sullivan report

A STUDY BY global consultancy firm Frost & Sullivan has revealed that the chemical industry in the Middle East is expected to grow at a faster pace than the global average, until 2020. The region's chemical industry was valued at US$160bn in 2013, with petrochemicals, polymers and fertilisers accounting for 60 per cent of the market.

Investments to the tune of US$77bn are being planned until 2020, with 53 per cent of total investments to be channeled into the GCC. Oil and gas production, and allied industries such as petrochemicals, refining and midstream operations, would account for 65 per cent of the total outlay, added the report.

Aside from petrochemicals, other major segments include paints and coatings, water treatment chemicals and construction chemicals. Petrochemicals and fertilisers would be the fastest growing segments, with projected CAGR of 8.3 per cent and 6.7 per cent, respectively, accounting for an estimated 75 per cent of the market by 2020.

"The Middle East, particularly the

The Middle East's chemical industry was valued at US$160bn in 2013

GCC, is diversifying into the production of value-added chemicals, extending beyond its traditional forte of bulk chemicals and petrochemicals," said Aparajith Balan, programme manager for chemicals and materials at MENA Frost & Sullivan.

"Large projects are underway for the production of specialty chemicals, including performance polymers, specialty chemicals and intermediates," Balan added.

"While the Middle East has access to raw materials, utilities and human resources, it falls short of the advanced technologies that are required to make manufacturing possible".

Growth prospects, however, remain bright for the regional chemicals industry. Value-added petrochemicals and downstream plastic conversion sectors are likely to be the key growth drivers, with both sectors positioned to benefit from large-scale investments from market participants and local governments.

Records broken at ADIPEC

The busy atrium at ADIPEC

AN ESTIMATED US$8.5 bn worth of business was generated during the 17th edition of the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) in November, breaking all its previous records, according to the organisers, dmg events.

Held under the patronage of His Highness Sheikh Khalifa Bin Zayed Al Nahyan, President of the United Arab Emirates, ADIPEC 2014 was hosted by the Abu Dhabi National Oil Company (ADNOC) and supported by the UAE Ministry of Energy and the Abu Dhabi Chamber.

Christopher Hudson, senior vice-president, Energy at dmg events, said: "Establishing this global meeting point in the region, which is one of the most important sources of oil production, further amplifies ADIPEC's influential role in the oil and gas industry. As the third largest energy event globally, and the largest in the Middle East and North Africa, ADIPEC will continue to grow, and meeting the world's energy demands through best practice will always be its primary objective."

ADIPEC 2014 has also broken its previous records in international attendance and participation. According to the preliminary figures, more than 70,000 visitors attended the 30th anniversary edition of ADIPEC this year, an increase of more than one-third compared to 2013. ADIPEC 2014 also welcomed 1,868 exhibitors, 6,323 delegates, and in excess of 600 speakers, bringing the world's decision makers, industry leaders, and experts under one roof to address the most critical issues facing the oil and gas industry.

H.E. Abdulla Nasser Al Suwaidi, director general of ADNOC, said: "It is through such initiatives that we are able to bring the best and brightest minds to share the most sophisticated technologies, latest research, and expertise. This dissemination of knowledge plays a pivotal role in the development and progress of the energy sector."

> "It is through such initiatives that we are able to bring the best and brightest minds to share the most sophisticated technologies, latest research and expertise"

This year's edition of ADIPEC hosted 16 NOCs and 17 IOCs, with 20 international pavilions, marking the largest global participation in the event's history.

Despite taking place against the backdrop of the plummeting oil price, ADIPEC was nevertheless buzzing, with exhibitors generally positive about the opportunities, and many announcing plans to grow their presence in the region. Major deals announced during the show included ADMA-OPCO contracts worth a total of US$3.5 billion to boost output from its offshore Nasr Field, awarded to Hyundai Heavy Industries, Technip and NPCC.

A strong theme emerging from the event was the importance of innovation and collaboration in a changing energy landscape. One of the highlights was an inspiring speech at the opening ceremony from Dr Michio Kaku, the world-renowned physicist, in which he discussed some of the technology advances that will transform the future of the oil and gas industry. Digitilisation of oilfields will play a critical role in the way in which the industry operates, he said, predicting a future in which intelligent wallpaper, x-ray contact lenses and 3D printing will play a role.

Satellite technology, fracking and oil field sensors that relay real-time activity were some of the other technological innovations highlighted in Dr Kaku's speech.

"Technology is transforming everything… the internet will soon be everywhere and nowhere – in intelligent wallpaper, in contact lenses, in 3D printers," he said. "In the next 10 to 15 years, the internet will be accessible through our contact lenses, allowing workers on oil fields to identify and communicate with one another.

"Looking 15 years from now, carbon sequestration is another technology currently under development. This is a win-win for both the environment and the energy sector." ■

Wintershall committed to the Middle East region

THE GERMAN OIL and gas producer Wintershall announced its commitment to the Middle East at ADIPEC 2014 with plans to reach 50,000 bpd in the region in the future.

Speaking at ADIPEC 2014, the company reaffirmed its intent to build up its business in the Middle East, particularly in its two key markets of Qatar and Abu Dhabi.

Wintershall president Rainer Seele said, "Wintershall has strongly committed itself to the region, we would like to become a sustainable and substantial operator in the region."

He added, "We have concentrated ourselves on two countries, Qatar and Abu Dhabi, and we are ready to follow a strategy to expand into other countries in the region."

In 2012, Wintershall took over the long-term exploration and development of the Shuwaihat sour gas and condensate field, located in the western region of Abu Dhabi, after signing an agreement with ADNOC.

Wintershall president Rainer Seele

Work began in 2014 on the first onshore well in the field, named SH 5, while the other two wells (SH 6 and SH 7) are expected to be drilled offshore in the coming years. The wells are set to be drilled to a total depth of approximately 4,000m.

"We have to wait until the [first] well brings result and then we are going to have a discussion with our partners ADNOC and OMV as to how we would like to proceed with the further appraisal process," Seele explained.

"I feel comfortable that we are going to see the results in 2015, so in 2015 we are going to announce how the Shuwaihat field is going to be developed in our portfolio."

Furthermore, in January 2014 Wintershall made a formal agreement with Mubadala Petroleum, headquartered in Abu Dhabi, to cooperate and work together in the Middle East and North Africa.

According to the oil and gas producer, the partnership will combine Wintershall's technological expertise, regional experience and Mubadala's skills with the aim of sourcing and implementing projects.

Parker exhibits diverse range of products

PARKER HANNIFIN, THE global leader in motion and control technologies, exhibited and demonstrated products from six product group areas that address applications and engineering requirements in the upstream, midstream and downstream sectors of the oil and gas industry at ADIPEC. With over five decades experience, Parker provides products, integrated systems and technical expertise that help ensure safe, dependable and high-performance solutions in the challenging operating environments typical of the sector.

The Parker stand at ADIPEC

Partnering with Parker Hannifin offers customers in the oil and gas market a single source of supply for innovative, state-of-the-art solutions, says the company. The six areas on the company's stand covered filtration, instrumentation, fluid connectors, hydraulics, automation and engineered materials. Parker's engineers are constantly seeking new ways to address present and future challenges such as corrosion control, materials durability and the reduction of installation time and minimising of downtime due to equipment failure.

Industry leading products exhibited included the company's new API-rated integrated valve assemblies that allow operators to enhance and simplify their 'Christmas tree' valve arrangements, and Parker's range of Rise Clamps. These light, buoyant clamps are manufactured using HPDE and can replace much heavier metal or urethane components. They are also faster and easier to assemble in the field of operation. Other products exhibited included the icountBS Plus Water Glycol Bottle Sampler, MS300 Series Moisture Sensors, and extremely efficient HDK-CNG high pressure dryers.

"The engineering challenges in the oil and gas industry are complex and overlaid with a pre-requisite for the utmost safety and reliability. At the same time solutions must be time, cost and space efficient in order to meet the commercial demands of the sector," commented Mofid Amin, general manager Middle East at Parker Hannifin. "Parker's engineering expertise, the diversity of its products and an ability to combine elements into highly effective integrated system solutions help to make us an ideal partner for those operating in this exciting, but demanding sector."

Uni-Geräte showcases cleaner air solutions

UNI-GERÄTE SHOWCASED its latest solutions at ADIPEC 2014, which it said were viable options for those intent on cleaner more environmentally-friendly equipment.

According to the German company, which specialises in supplying electromagnetic valves and electro-pneumatic valves, it has provided clients with clean solutions for more than 60 years.

A company representative said, "Environmental requirements are on the increase everywhere and the petrochemical industry is also affected: exhaust air as a by-product of the production process has to comply with clean air standards. Avoiding air pollution is high on the agenda."

The renewable energy sector holds potential for Uni-Geräte's products

Speaking to *Oil Review*, Uni-Geräte managing director Norbert Schneider commented, "Within renewable energies there is big potential for our products and technologies, which are very common in Europe for green energy."

The company highlighted its globally-utilised EVA and EPAV series are optionally supplied with explosion protection and can also be used as automatic shut-off valves for regeneration gases. A 100 per cent family-owned company founded in 1946, Uni-Geräte has established a distributor network in the Middle East over the last three years. It currently boasts representatives in the UAE, Kuwait, Oman, Qatar and Egypt, and has its sights set on developing business in Saudi Arabia.

"Our products are not something you would simply sell off the shelf or out of a catalogue, there needs to be an explanation and eye-to-eye discussion with the customer in order to understand their needs and provide the best solutions," Schneider explained.

For further information, please visit, www.uni-geraete.com.

Doosan Babcock launched Engineering Consultancy Hub in the Middle East

DOOSAN BABCOCK HAS launched an Engineering Consultancy Hub in Abu Dhabi in the latest part of its Middle East growth strategy, it announced in November 2014.

Consisting of a multi-disciplinary team of specialist engineers, metallurgists and technicians, the company claimed that the new consulting hub would provide a platform for further growth in the region.

Christopher Behan, Doosan Babcock general manager for Abu Dhabi, said, "It's been a real growth year in the UAE with a good healthy pipeline of projects and that's why we're now mobilising additional resources and building up a team."

The engineering, aftermarket and upgrade services provider predicted that it would have more than 20 industry professionals making up its Engineering Consultancy Hub team by the end of Q1 2015.

Doosan Babcock vice-president global service, Steve Hunt, commented, "This hails the beginning of a significant localisation strategy in the region, which will involve substantial local recruitment and will support our ambition to make the Middle East one of our largest operational centres and a major generator of revenue.

"We are already putting our expertise to work on delivering key projects for a number of customers across the Middle East."

The new team will focus on a number of areas, including plant integrity management, plant condition assessment, vibration, noise and fatigue management, repair and replacement strategies, specialised non-destructive testing (NDT) services, and the development and execution of specialised weld repair solutions.

While the UAE business was registered at the start of 2014, the company has worked in the oil and gas industry for approximately 35 years and has a team of more than 200 consultants and engineers in the UK.

According to the company, the new capability is the first step in its strategy to establish a global network of Engineering Consultancy Hubs.

Furthermore, having launched new offices in Dubai, Abu Dhabi, Doha, Istanbul and Hong Kong, the company is evidently investing heavily in its global expansion plans.

According to Behan, with a business in the UAE as well as Qatar, the Middle East has and is set to play a key role in the company's growth strategy.

Chris Behan, Doosan Babcock general manager for Abu Dhabi

"We currently have two businesses, but over the next five years we plan to expand into other territories as and when we see fit," he explained.

Potential markets that Doosan Babcock is considering expanding its business, while using the UAE office as a base, include Saudi Arabia, Kuwait, Oman and possibly Iraq. Behan stated that 2015 will be a year for focusing on the region and the business opportunities it holds, with a view to achieving further significant expansion.

He commented, "We see that this will become a significant portion of the overall Doosan Babcock business by 2020."

Remote solutions

TELECOMMUNICATION SOLUTIONS PROVIDER Safa Telecom showcased its newest offerings in High Throughput Satellites (HTS) during ADIPEC 2014, including the Yahclick service.

As an official service provider for the Abu Dhabi-based satellite systems company Yahsat, Safa Telecom offers Yahclick, which it states is a cost-effective telecommunications solution for fixed usage for all fixed operations onshore and offshore.

Nabil Ben Soussia, managing director at Safa Telecom Abu Dhabi

Nabil Ben Soussia, managing director for Safa Telecom Abu Dhabi, said, "We consider it [Yahclick] a game changer in the oil and gas industry."

He added, "It allows companies to think more about how to enhance their operations but also their HSE policies and welfare offer."

Safa Telecom highlighted a range of its latest solutions at the exhibition, such as its enhanced L Band solution, a mobile satellite communication solution for use on rigs and oil service boats, and its new Orion IP EDGE suited for maritime operations.

> "We consider it a game changer in the oil and gas industry"

"In addition to the satellite voice and data services we offer the industry, this year we are bringing new products and tailored solutions to our customers in the Middle East," the Abu Dhabi managing director said.

Specialising in remote and mobile communications, the company sees good business opportunities throughout the GCC as well as the Caspian Sea region and Kazakhstan, where Safa Telecoms says it provides maritime solutions for ports.

"We can see that business in the region is growing after a slowdown in previous years and we hope that the political troubles in some countries as well as the drop in oil prices will not affect the production and the plans of our customers," Soussia commented. ■

Bridging the gender gap

A survey has revealed that the majority of Middle East industry professionals agreed that the gender gap is a significant issue in the oil and gas sector.

MORE NEEDS TO be done globally to address the gender gap in the oil and gas industry, according to the Workforce Survey by OilCareers.com and Air Energi that was formally launched at ADIPEC 2014.

Titled *Women in Oil and Gas: The Diversity Challenge*, the latest Workforce Survey for H2 2014 revealed that the majority of the industry professionals they questioned, which exceeded 4,300 globally, agreed that tackling the gender gap would have a positive impact on the oil and gas industry.

Of those asked, 47.4 per cent either agreed or strongly agreed that the gender gap is a significant issue for the oil and gas industry in comparison to the 26.8 per cent that disagreed.

Mark Guest, OilCareers.com managing director, said, "As an industry we're always saying that we're facing a skills shortage, yet we have a large talent pool that we haven't developed properly. The industry as a whole probably hasn't made as much use of the talent pool as it could have done."

According to the survey, 63 per cent of employees and 71 per cent of hiring managers believed that bridging the gender gap would provide companies with access to a wider talent pool, while a third of respondents also agreed it would reduce the skills gap.

The Middle East followed a similar pattern to the rest of the world, with the majority (52.3 per cent) of those professionals asked agreeing that the gender gap is a significant issue for the oil and gas industry. While on the other hand, 26.8 per cent disagreed and strongly disagreed.

Survey results also demonstrated that the most popular solution, according to Middle East respondents, for how the industry should address the gender gap was to encourage more girls to take science, technology, engineering and mathematics (STEM) subjects at school and university.

Guest explained, "The biggest challenge is actually getting girls to take on STEM subjects at school level and make a career of it."

It is worth noting, however, that progress is being made in the Middle East to promote STEM subjects to young women during their education. In fact, according to the Workforce Survey H2 2014, the number of female applicants to STEM courses outnumbered the number of male equivalents.

Other popular options for overcoming the gender gap in the Middle East oil and gas industry included focussing on transferable skills when recruiting; putting emphasis on progression and leadership opportunities for women; and promoting flexible logistics, such as travel, shift and working patterns.

The respondents were also asked whether their company had a policy actively encouraging more women into oil and gas roles. The Middle East was the only region where more employees noted that their company did not have a policy than those that did – 41 per cent and 35 per cent respectively.

Shabana Jawaid, Air Energi UAE country manager, commented, "The survey highlighted that many people don't even know that they have policies in place to attract more women. This acts as a reminder [to companies] and almost gives a push to those companies that don't have these kinds of policies in place."

She also underlined the need for a greater focus on female role models and the many women that are currently working in the region's oil and gas sector.

"It is the responsibility of the women inside the oil and gas industry to perhaps highlight the reality of the situation and what it is like working in the oil and gas industry," Jawaid said.

"I find that people perceive the Middle East differently to what it actually is and people perceive the oil and gas industry differently to what the reality is."

The H2 2014 Global Workforce Survey, prepared by the oil and gas industry recruitment company Air Energi and OilCareers.com, questioned more than 4,300 hiring managers and employees worldwide.

Guest concluded, "We would like people to pick up on a particular statement, [which is] that hiring managers perhaps need to be continuing to think about encouraging women into the oil and gas industry." ■

Schlumberger launches SENSU system at ADIPEC

SCHLUMBERGER LAUNCHED ITS SENSU rig operation surveillance and instrumentation system at ADIPEC 2014.

At the company stand, Guillaume Hallier, product champion for real time and remote operations for Geoservices, a Schlumberger company, demonstrated the system, which provides a unique monitoring platform with real-time operational metrics and KPIs that empower the driller and wellsite team to deliver superior performance in both conventional and unconventional environments.

Schlumberger has successfully tested the SENSU system for more than 3,000 hours for Saxon Energy Services in two Omani well sites and the real-time critical rig information enabled improved drilling performance, rig operations and safety.

The embedded Schlumberger rig-state engine, unique to the SENSU system, automatically detects 17 individual rig activities, enabling real-time and automatic calculations of event metrics; maintenance measurements for critical rig component parts; and calculating various drilling and tripping KPIs in real time at the rig site, Hallier added. By reducing non-productive time (NPT) and invisible lost time (ILT), the platform enables a cost reduction in daily rig operations and optimises the well construction process. Features also include a stop/start functionality with automatic loading of sensor calibrations.

According to Hallier, the USPs of the SENSU system includes automated detection of rig activities, advanced reporting application and real-time tracking of operation metrics and KPIs.

Guillaume Hallier, Geoservices global product champion for real time and remote operations, stands next to the SENSU rig operation surveillance and instrumentation system during its launch at ADIPEC 2014

Revolutionising the use of fibre optics in oil and gas industry

OPTASENSE, A FIRST-time exhibitor at ADIPEC and provider of distributed acoustic sensing (DAS), has introduced the new technology of fibre optics, until now used in telecommunications industry, into oil and gas wells.

The DAS technology utilises fibre optic cable which acts as a distributed microphone, with high-spatial resolution over long distances. The DAS-HFP (hydraulic fracture profiling) service is used within hydraulic fracture operations where OptaSense technology not only improves the operational efficiency of hydraulic fracture stimulation but also provides a real-time monitoring capability to verify well integrity.

David Hill, CEO at OptaSense, revealed, "The idea is you install fibre optics within the well, either on casing or on the production string. Listening to the sound inside the well will give you an idea of what is happening there. When the well comes on to the production, the fibre can provide the status of the oil and gas flow. We can also evaluate the well using the same fibre and interrogation equipment. We can take images of the sub-surface, which allows us to evaluate how the reservoir is developing overtime."

The OptaSense DAS system directly measures and monitors the performance of wells from head to toe in real-time. The system also detects, localises and characterises barrier failure, apart from fluid communication behind casing, casing collapse and leaks through or between casing strings through pressure drops and temperature change, which are unnoticed by conventional monitoring methods.

Talking about the company's presence at ADIPEC 2014, Hill added that, although the UK technology company is looking towards growth in the Middle East, it had already completed a project for Petroleum Development Oman (PDO) in February 2014. PDO wanted to verify the movement of oil in an old field via steam injection. OptaSense provided a multi-well 4D DAS vertical seismic profiling (VSP) system where they installed fibre optics in eight of their wells. "This technology was used for first time in the world," the CEO noted.

According to chief executive Magnus McEwen-King, DAS was installed in natural gas pipelines in Yemen to protect the pipelines from third-party intrusions. Since then, Total has been able to defeat all threats on the pipelines. Now they have 100 per cent availability of LNG, he added.

With a reported US$24mn sales in 2013 from in and around the Middle East including the UAE where the company has been present for three years, McEwen-King noted that a lot of the work is driven out of security applications, predominantly from Iraq, but also other pipelines in the UAE.

ArcelorMittal's Jubail facility to serve MENA region's growing markets

ARCELORMITTAL'S NEW STATE-OF-THE-ART seamless tubemill in Jubail is designed to build and serve the fast growing energy producing markets in Saudi Arabia and the MENA region, according to Arnaud Jouron, vice-president and CEO, Tubular products.

ArcelorMittal Jubail is a joint venture between the steel company and the Al-Tanmiah Industrial and Commercial Investment Company of Riyadh.

At ADIPEC 2014, the specialised company presented its wide range of products and services to the oil and gas industry for upstream, midstream and downstream applications onshore.

Jouron said, "The tubular division is a huge part of ArcelorMittal. We have 25 facilities — seven in North America, three in Venezuela, nine in New York and one plant in Nigeria, South Africa and Kazakhstan each."

Talking about the facility in Jubail, Jouron stated that the location is suitable as it is central to customers in the region and adjacent to major land and sea transportation hubs.

In the regional facility, ArcelorMittal's main production consists of seamless line pipe and OCTG tubing. With a design capacity of more than 600,000 mt, ArcelorMittal Jubail also makes pipes for industrial and process purposes. The grades supplied are in accordance to API 5L.

The CEO reiterated that the Middle East is an important market for the steel firm and gave more insight on the expansion plans for the UAE.

"Having a strong customer base in the UAE, we want to set up a facility in the UAE as well and sell aggressively in that market," he said.

Looking at the kingdom's market, Jouron stressed that Arcelor Mittal would ramp up production at the existing facility and also focus more on automotive, construction and hydraulic systems.

VINCI renames Middle East subsidiary at ADIPEC

VINCI ENERGIES RENAMED its subsidiary in the Middle East Cegelec Oil and Gas to Actemium at ADIPEC 2014.

Cegelec Oil and Gas was acquired by VINCI Energies in 2010. It has now joined the Actemium brand of 300 business units and a global turnover of US$2.61bn, with US$745mn dedicated to the oil and gas industry.

According to Jimmy Neron, commercial director at VINCI Energies Oil & Gas, the strategy of VINCI Energies is to address different sectors under the Actemium brand.

"It gives us an opportunity to join a major network worldwide in 38 countries. We benefit from the strength of the network of VINCI Energies," Neron said.

Talking about the group's presence in the Middle East, Neron said that the company has been strong in the Middle East for 30 years.

VINCI Energies has operations in Abu Dhabi, Qatar, Bahrain and Saudi Arabia, and is looking to expand into Kuwait and Oman.

Neron said that they are trying to penetrate Iraq, but the unstable situation in the country has seen the group take a break in its operations there.

"We are taking time to see that operations are secure in Iraq," said Neron. "It's a huge market for us and we are keeping our eyes open."

Actemium has operations in both onshore and offshore. Onshore projects are related to brownfield sites. It also takes up modifications of existing facilities, upgrading refinery and petrochemical projects. Offshore operations usually consist of FPSO global maintenance contracts and turnkey projects.

Jimmy Neron, commercial director at VINCI Energies Oil & Gas

Speaking about ADIPEC 2014, which served as a platform for business opportunities, Neron noted that it is a good chance to showcase the company's capabilities and expertise.

"ADIPEC is helping maintain relationships with companies and contractors. We use this opportunity to communicate about our development and about our recent rebranding under the Actemium brand," he added.

Current projects of Actemium include replacement of gas turbines for ADGAS, as well as working with the likes of GASCO, ADNOC, ADCO and ZADCO. It is also looking at acquiring more projects by the end of 2015.

Neron said that Actemium will now continue to develop its brand in the oil and gas industry, while also exploring opportunities in new areas, including South East Asia and North America.

IFP Training helps Middle East strengthen its industrial skills

TRAINING PROFESSIONALS IN oil and gas technology, IFP Training Middle East has come a long way since its launch in 2011 in the region, says managing director Hervé Chauvin.

At ADIPEC 2014, Chauvin noted that IFP Training is present in Saudi Arabia where it imparts training mostly on downstream sectors for SATORP and chemical plants for SABIC.

He added, "IFP Training trains from operators to engineers from short to long-term courses."

IFP Training is a branch of IFP Energies Nouvelles, a French public sector research, innovation and training centre dedicated to developing efficient, economic, clean and sustainable technologies.

In partnership with Saudi Aramco and together with IFP School in Paris, a master of engineering degree in oil and gas surface facilities was created at the kingdom's King Fahd University of Petroleum and Minerals (KFUPM) in Dammam. The two-year course is entirely sponsored by Saudi Aramco for its workers. So far it has trained 43 engineers and the first 20 graduates received their diploma earlier this year.

The managing director said that Saudi Arabia, particularly KFUPM, has been a success story and has exhibited the perfect university-industry relationship through a very high level 'industrial liaison programme'. IFP Training also conducts study trips to France and European industrial sites to prepare participants to develop their master theses.

Stressing on regional partnership apart from Saudi Arabia, Chauvin said that the academy also works in the exploration and production domains and with companies in other GCC countries.

"We have a partnership with Hamad Bin Khalifa University in Qatar, along with Qatar Foundation. We work with Kuwait Oil Company (KOC) to train company professionals through Kuwait Petroleum Company's (KPC) training centre," he said.

"In the UAE, we have begun to work a lot, cooperating with ZADCO to train their operators and training ADNOC drilling engineers in France, for instance."

IFP Training also has many IOC collaborations that include TOTAL, which has been a partner for many years. But it currently puts emphasis on helping NOCs' nationalisation programmes by assisting in training and certifying more local trainers and creating job opportunities in the Middle East.

HB Rentals looking to expand onshore business in Saudi Arabia land assets

HB RENTALS IS looking to develop its onshore business in Saudi Arabia and the Gulf, according to Peter Armstrong, the company's VP of business development.

Speaking to *Oil Review* at ADIPEC 2014, the onsite accommodations and auxiliary equipment provider announced that while it has made progress in the offshore market, it is intent on moving forward and developing Saudi Arabia's land asset potential.

"We've made significant growth and achieved significant market share in the Abu Dhabi offshore market. We're now looking at expansion into the land market in Saudi Arabia, so we've been evaluating that market," Armstrong said.

"The land market is significant in the Middle East, but that market is predominately in Saudi Arabia."

Founded in the 1970s, HB Rentals claims to be one of the few companies that provide accommodation services for both land and offshore markets. It works in the North Sea, the Middle East, Asia, the Arctic, West Africa, and in the US, where it is heavily involved in onshore business.

Having only been actively present in the region for approximately four years, investing in Saudi Arabian land assets would allow HB Rentals to provide its full range of services in the Gulf.

Armstrong explained, "We're an integrated accommodations provider, covering both land and offshore. When we have a strong regional presence as we do in the Middle East, we would like to be able to invest in both markets, because we're equally strong in both."

Peter Armstrong, HB Rentals VP of business development

The company has a service hub in the UAE, which recently relocated from Sharjah to Abu Dhabi and includes a large capacity store and provides services to clients in the UAE and neighbouring GCC nations.

"Business is very strong in the Middle East, it's very strong globally for us," the VP of business development stated.

"Even with oil price declining as it has recently we haven't seen any decrease it terms of accommodation services."

The fact that HB Rental's manufacturing support for business in the eastern hemisphere is located in Aberdeen, Scotland, poses a challenge in terms of how fast services can be provided and projects executed.

Along with its large store of products based in Abu Dhabi, the company tackles this challenge with high levels of organisation and pre-planning, according to Armstrong.

"We do a lot of advance planning, even if we haven't won the deal yet," he explained. "When you win it then you have to execute very quickly and you've got to be ready to deliver."

Crowcon new infrared tech detects poisonous gases

GAS DETECTION SPECIALIST Crowcon has added Gas-Pro IR to its Gas-Pro range. According to the company, the product detects methane, pentane or propane using infrared IR sensor technology.

Richard Dunn, Crowcon portables product manager, said, "The Gas-Pro IR detects potentially explosive gases in conditions where a pellistor-based catalytic sensor may struggle, especially in a low oxygen environment, as pellistors need oxygen to function. The use of IR sensors significantly enhances safety and saves the cost of regular pellistor sensor replacement."

A key advantage of the IR system is its application in low oxygen environments, like in confined spaces where the movement of air or gas is naturally restricted. Another benefit is that a pellistor-based sensor may be poisoned by low levels (parts per million) of contaminants, such as silicone or lead.

Gas-Pro IR has been certified for use in hazardous areas as defined by both ATEX/IECEx and UL

Sabin Metal Corporation to mark 70th anniversary next year

SABIN METAL CORPORATION will celebrate its 70th anniversary in 2015. Comprising of five independent organisations, the global precious metals recovery and refining company dates back to the late 19th century. The group is the largest domestically-owned, independent precious metals refining organisation in North America. Included in the group are Sabin Metal Corp., touted to be the most sophisticated facility of its kind for safely processing precious metal-bearing materials; Sabin Metal West, a specially equipped facility with dual electric arc furnace (EAF) technology for sampling large lots of precious metal-bearing spent hydrocarbon and petrochemical processing catalysts. Sabin Metal Europe B.V., based in Rotterdam, and Sabin Metal Corp. (DMCC branch) based in Dubai, the UAE, are technical service divisions working with hydrocarbon, chemical, petrochemical, and nitric acid processors in Europe, Africa,and the Middle East, to recover and refine precious metals from spent catalysts and nitric acid production equipment and facilities. Lastly, Sabin International Logistics Corp. (SILC), is a licensed hazardous waste and general commodities transporter providing global transportation and logistics for spent precious metal-bearing catalysts and other materials.

Timberland PRO expands in the Middle East with specially-made footwear

PREMIUM MANUFACTURER OF industrial footwear, Timberland PRO has expanded internationally, including in the Middle East, and special adjustments have been made to the construction of footwear produced for and distributed within this region.

With 0.6 kg of Thermolite insulation and a waterproof membrane, the boot is designed to cope with the coldest and wettest conditions

The anti-fatigue technology included in Timberland PRO footwear is one of their exclusive technology platforms that combines lightweight materials in a contoured insole to provide maximum support at key pressure points and the geometric cone design collapses and rebounds to absorb shock and return energy back to the foot.

TDW's SmartPlug aids safe execution of gas valve upgrade project offshore

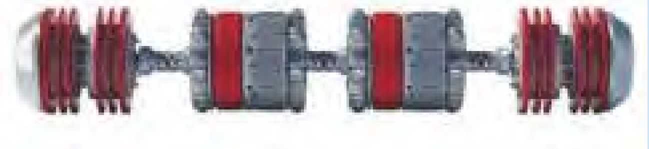
PIPELINE SERVICES SPECIALIST T.D. Williamson (TDW) has recently completed a gas valve upgrade project on a deepwater gas export pipeline offshore New Orleans in the Gulf of Mexico with its SmartPlug tool.

TDW used its remote-controlled SmartPlug to isolate pressure in specific sections of pipelines and risers so that repairs or interventions can be carried out safely.

Initially in 2012, TDW was required to isolate a 16-inch gas riser connected to a major subsea gas pipeline network in order to replace a valve. Therefore, the company carried out engineering work, assembled the pressure isolation tool and completed all factory acceptance testing (FAT) in mid-2012. Plans changed when the operator decided to postpone replacement of the single valve so that three additional valves could be installed, and a launcher extension added to facilitate inline inspection tool runs. In early 2014, TDW was advised that the planned isolation would commence in May 2014.

In order to commence operations on time, TDW re-verified the project engineering, performed additional communication and pull tests, and executed a new in-depth FAT. In addition, a comprehensive range of risk and peer reviews internally and with the client were carried out. Working in cooperation with the operator's team, 3,500 hours were invested in preparing for the isolation.

The SmartPlug tool was pigged for 18.28m into the riser toward its set location offshore. TDW used its remote-controlled SmartTrack tracking and monitoring system to track the tool's progress, control its speed, and monitor conditions in real-time. Upon reaching its set location, the tool was set into position. The same day, the isolation was confirmed and certified. The riser was securely isolated against a pressure of 1,711 psi for 79 days.

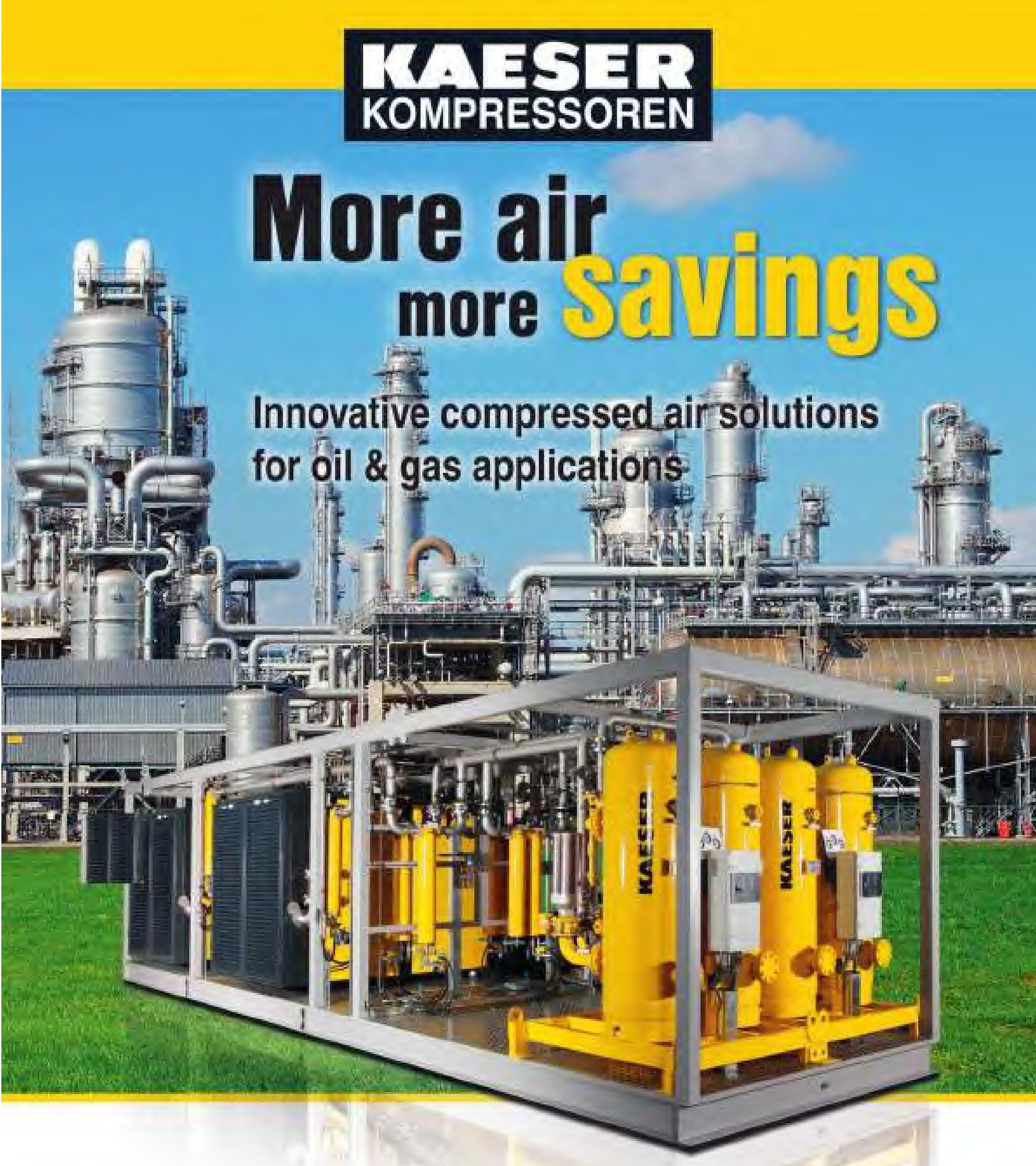


TDW's SmartPlug aids safe execution of gas valve upgrade project offshore

During the 11-week period, the three valves were replaced and the launcher extension installed, which would help enhance future inline inspections of the line. Upon completion of the project, the SmartPlug tool was retrieved intact.

Bjørn-Olav Gilje, project manager for TDW, said, "Because we worked in such close cooperation with this strategic partner, we developed an extremely high level of communication and understanding, which was essential to making the isolation a first-time run success.

"As a result, the complex valve upgrade project and launcher extension installation were completed with minimal downtime, without disrupting production or supply to millions living on the Gulf Coast. A continuous flow through the multiple downstream connections was maintained throughout the duration of the project. The fact that it was achieved safely, without affecting the surrounding environment in any way makes it all the more satisfying."


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

OCC goes from strength to strength

Oman Cement Company (OCC) continues to experience strong demand for its products and is set for expansion in 2015.


OCC's manufacturing facility

ESTABLISHED IN 1978, OCC has played a key role in supporting Oman's industrial development and diversification, its facility growing from an initial capacity of 600,000 TPA clinker to 2.4 MTPA today, in line with the increased demand for cement in the region.

"We have given new strength to the construction industry, consolidated the nation's efforts for infrastructure development and created resources to achieve self-sufficiency," says Jamal bin Shamis Al Hooti, OCC's CEO. All the raw materials required for the production are indigenous; lime stone deposits, additives, quartzophylites and ferrogenous quartzophylites are located adjacent to the plant site, while gypsum is obtained from the mines at Ghaba in Wilayat Adam. OCC has also made a significant contribution to the employment of nationals, the vast majority of the workforce being Omani.

Focus on quality and performance

Three kilns and four cement grinding mills allow flexibility to produce various types of cement. With a manufacturing facility operating on a world class quality management system to ISO 9001 and environmental management system operating to ISO 14001, OCC's products meet global standards in performance and quality and reflect the company's enduring commitment to customer satisfaction, continual improvement and providing a strong foundation for the future, according to the company. Process control is fully computerised and handled by highly qualified and experienced personnel. Manufacturing operations are environment-friendly with specialised filters being used to limit dust emissions.


Jamal bin Shamis Al Hooti, CEO, OCC

"Our customers have very strong faith in OCC products, and have always valued the fact that OCC has always stood for quality, consistency and convenience," says Al Hooti. "We realise that customer needs and expectations continually change in order to meet the challenges of business development and the changing environment. To this effect we are continually setting new objectives within the organisation, aiming at continual improvement throughout our quality system."

In 2001, OCC introduced oil well cement (OWC), a specialised cement used by crude oil producers to cement oil wells. In a short space of time, OCC established a foothold in the oil well cement market locally and internationally, with export markets now including the GCC, Iraq, Yemen, Pakistan and East Africa. Demand is high due to the booming GCC oil market, with clients including PDO, other National Oil Companies and International Oil Companies as well as the major oilfield services companies - and the company is now looking to expand further in East Africa and the Indian subcontinent.

> "In a short space of time, OCC established a foothold in the oil well cement market"

OCC is proud to stress the quality of its oil well cement, which conforms to API specifications – 10A Class-G (HSR) and Class-A (O) grades. The product was tested by cementing companies worldwide for conformity to API Spec 10. The product is easy to dispense and can result in considerable cost savings for the end-users, according to the company.

Production of oil well cement is supported by state of the art laboratory automation systems consisting of online gamma-ray analysers, x-ray spectrometers and a robotic sampler. These are interfaced with process controllers and raw mill proportioning system for kiln feed homogeneity. The raw materials are analysed at various stages of processing, and kiln feed composition is precision controlled to achieve uniform and consistent quality, batch after batch.

OCC is also experiencing strong demand for construction cement. A new grinding mill due to come onstream in 2015 will enable the company to grow its exports and capitalise on the huge infrastructure and construction developments in the region. ■

For further information see the website at: www.omancement.com


OKI
30%

Lamprell builds in the UAE for the UAE

LAMPRELL DELIVERED THE Jalilah B fast track jacket and topside to its client Dubai Petroleum Establishment (DPE), in late September. Built in the UAE for the UAE, the jacket and topside were successfully loaded out and delivered in Lamprell's Sharjah facility to the satisfaction of its client Technip, and the owners DPE. The fabrication project was awarded in December 2013 and first cut of steel took place on 5 January. Lamprell met every challenge and completed within budget and on schedule thanks to the good work between their safety, production, engineering, procurement, quality and commissioning departments.

Project safety performance was excellent with over 600,000 man-hours worked without a single day away from work case, and the project achieved the perfect total recordable incident rate of zero, which is a fantastic achievement by all involved in the project.

The Jalilah B topside being loaded out in Lamprell's Sharjah yard in late September

The Jalilah B fast track jacket sailed away from Lamprell's Sharjah facility in late September

Lamprell, a leading provider of diversified engineering and contracting services, has played a prominent role in the development of the energy industry in the Middle East for over 35 years and has established leading market positions in the construction of shallow-water drilling jackup rigs, liftboats, land rigs and rig refurbishment projects. It has an international reputation for complex process modules, jackets and topsides.

Progressing R&D, technology and innovation

A new initiative will further the commercialisation and application of innovative R&D activities in the Kingdom.

King Abdullah University of Science & Technology is one of the partners in the new venture

SAUDI ARAMCO HAS stepped up its focus on R&D, technology and innovation through its participation in The Saudi Arabia Advanced Research Alliance (SAARA), launched in early December to drive the commercialisation and application of innovative research and development activities in the Kingdom.

To mark the establishment of SAARA, a signing ceremony took place in Dhahran under the patronage of HE Ali I. Al-Naimi, Minister of Petroleum and Mineral Resources, Kingdom of Saudi Arabia. Mr. Al-Naimi said: "The establishment of the SAARA alliance is a very welcome initiative and will help stimulate continued economic growth in the Kingdom."

The Saudi Arabia Advanced Research Alliance (SAARA) is a new partner-based collaboration between six organisations that span Saudi Arabia's public and private sectors. SAARA will provide a focal point within Saudi Arabia to bring industry and academia together to find ways to translate technology and intellectual property into commercially available products and applications. The SAARA partners are Saudi Aramco; King Abdulaziz City for Science and Technology (KACST) – Saudi Arabia's national science agency and its national R&D labs; King Fahd University of Petroleum and Minerals (KFUPM); King Abdullah University of Science and Technology (KAUST); TAQNIA – the technology arm of the Saudi Public Investments Fund and a knowledge-based industries accelerator; and RTI International, one of the world's leading research institutes.

As its first action, SAARA established Technovia – a new venture dedicated to maintaining a systematic, staged process to build a pipeline of commercialisation opportunities in Saudi Arabia. Located at the Dhahran Techno Valley, and with offices in Riyadh and Thuwal, Technovia will be operated by TAQNIA and RTI, and will help to bridge the gap between R&D and industry. Technovia will work with stakeholders to prepare technologies for the strongest market entry and position them competitively for external investment and funding. It will screen ideas for those with highest commercial potential, conduct intellectual property assessment, market research and competitive analysis, develop and test prototypes and field-able demonstrations, and prepare technologies for commercial launch.

Khalid A. Al-Falih, president and CEO of Saudi Aramco, said, "Saudi Aramco is proud of its contribution to developing the Kingdom's world-class research and innovation infrastructure and we are committed to continuing to raise the bar even higher. SAARA and Technovia's focus on the rapid commercialisation of innovative technologies will have a multiplier effect, stimulating innovation, driving growth in new industrial sectors and helping to further diversify the Kingdom's economy."

Technology and R&D were also strongly emphasised by Saudi Aramco speakers at the ADIPEC conference in November. Amin H. Nasser, Saudi Aramco senior vice-president of upstream, speaking at a session on innovation and leadership, commented that resources that only a few years ago were inaccessible or unrecoverable are now being unlocked, but require much more sophisticated technology to extract and produce.

> "Technovia will help to bridge the gap between R&D and industry"

"It is crucial that we all work together to reduce costs," Nasser said, adding that advancing technology will become a driver for further developments. "We must invest in technology as an enabler of innovation."

Leaders industrywide must focus on the long view and commit to investing in technologies that will not only help the industry to survive in the future, but which will also enable it to thrive, he said.

One of the key drivers to successful R&D efforts industrywide is a commitment to research and strategic global collaboration, said Abdulaziz O. AlKaabi, chief technologist of Reservoir Engineering Technology at Saudi Aramco's EXPEC Advanced Research Center.

AlKaabi, who was part of an ADIPEC panel on research and technology development, commented that Saudi Aramco views R&D as a long-term investment. As such, technology is an integral part of the company's strategy to meet the long-term challenges. ■

ProSep builds on Saudi Aramco success

PROSEP, A HOUSTON-headquartered global company that specialises in oil, gas and water process separation technologies, is opening a new office in Abu Dhabi and expanding in the Middle East, building on its successes with Saudi Aramco in particular.

The company secured a contract with Saudi Aramco earlier this year for the supply of its patented ProSalt wash water injection and mixing system. This followed a trial by the operator which delivered dramatic results including a 40 per cent reduction in the wash-water consumption rate, from 50 gallons per minute to 30, saving more than 10mn gallons of wash water per year in one facility alone and a 60 per cent reduction in oil-in-water content from the desalter. According to Ryan McPherson, ProSep's recently appointed general manager for the Middle East, the mixers, which have been used by Saudi Aramco at various stages of the crude oil treatment process, are enabling Saudi Aramco to save more than US$4mn a year. The company is expecting further orders and has received interest from other operators and endusers in the region, with field trials set to go ahead in Qatar.

McPherson commented that the company saw good potential in the Middle East, given the scarcity of water, the growing focus on environmental legislation and the drive to employ new technology to enhance performance and improve oil recovery rates. "Some of the oil companies here have never had to deal with water production and water treatment issues before," he said.

Neil Poxon, CEO of ProSep, added, "The potential for ProSep technologies in the Middle East is significant as they are designed to address the myriad of challenges operators face in treating oil, gas and water."

The company is particularly proud of its engineering and design capability. "Our regional operations each have their own engineering capabilities and the ability to provide specialised support," said Poxon. "In each of the regions we cover we have our own process engineers, mechanical engineers, designers and draftspeople, so we are a one stop shop in terms of engineering design."

ProSep is headquartered in Houston, USA with operations in Europe, the Middle East and Asia Pacific. It delivers a portfolio of life-cycle technologies, products and services to treat oil, natural gas and produced water. This diverse offering allows operators to enhance performance, reduce costs, manage process streams and meet stringent legislative and environmental demands.

Ryan McPherson, ProSep's general manager for the Middle East

Saudi Aramco enters into new partnerships

Saudi Aramco is looking for partnerships to bring technology and job opportunities to the Kingdom

SAUDI ARAMCO HAS entered into two new partnerships to further its objectives of boosting technological development, localising content, diversifying the Kingdom's economy and creating jobs for Saudi citizens.

Saudi Aramco's materials supply division has signed a corporate procurement agreement (CPA) with Honeywell International for process automation systems and instrumentation, equipment and services. The agreement will enable Saudi Aramco and Honeywell to move beyond a transactional relationship to one in which both partners can work together to develop new technologies in the Kingdom, manufacturing industries and service provision, according to the company. Nabeel Al-Mansour, executive director of Materials Supply, said that the CPA will help Saudi Aramco achieve key components of its Accelerated Transformation Program (ATP). Under this programme Saudi Aramco aims to develop from an oil and gas company to a fully-integrated energy and chemicals company, with a focus on technology and R&D.

"We have high expectations at the corporate level of companies such as Honeywell to do more locally, both in services, employment and materials," said Al-Mansour. "Our strategic objective is to partner with strategic suppliers and those technology leaders who add strategic value to the company and the country." Vimal Kapur, president of Honeywell Process Solutions, said his company takes the responsibility of the CPA seriously.

"Your long-term requirements are well understood, to create more material manufacturing here, more training of local people and creating more skills."

Norm Gilsdorf, president of Honeywell High Growth Regions, commented, "The CPA is a benchmark to take us to the next level. We are very much committed to localisation of resources and content, bringing manufacturing, developing factories here. We are going to bring more technology here and we are going to develop more talent."

Saudi Aramco has also signed a corporate procurement agreement (CPA) with Mitsubishi Hitachi Power Systems Limited, committing them as partners in developing new technologies in the Kingdom, fostering manufacturing industries and service providers, and creating jobs for Saudi citizens.

Saudi Aramco's upstream senior vice-president Amin H. Nasser, gas operations vice-president Ahmed Al-Sa'adi, and materials supply executive director Nabeel A. Al-Mansour attended the signing, while Mitsubishi Hitachi Power Systems senior vice president Ken Kawai and a team of senior management from its Tokyo, Dubai and al-Khobar offices represented Mitsubishi Hitachi.

Saudi Aramco has relied on Mitsubishi Hitachi for years as a supplier of power systems, Al-Mansour said, but the CPA "is just one tool to enhance our strategic relationship".

"I think it is good that we have the agreement signed and sealed, and what we would like to see now is action on the ground, in localisation of facilities and services," he said.

Abdullah Al-Warthan, manager of the projects and strategic procurement department, said the CPA "is really moving our two companies forward from the tactical and transactional to a more strategic partnership. You have the technology, the know-how and the quality, and we need you to be part of the business for many years to come."

"The CPA will open a new stage of our relationship," said Kawai at the event. "In concluding this agreement we have already established a local entity in al-Khobar."

Kawai said the new entity, called MHPS-Saudi, would be able to provide comprehensive services to Saudi Aramco, including component repair, "and the education for young Saudi engineers and Saudization through technical training".

Madi Group prospers in Saudi Arabia

MADI GROUP, WHICH provides complete services for the design, supply, installation and maintenance of cooling towers, has recently completed the refurbishment of a cooling tower for SWCC to make it more energy efficient. Based in Dammam, Saudi Arabia, Madi Contracting has branches in Al Khobar, Jubail and Jeddah, as well as in India and Bahrain, and is looking to establish a presence in the UAE.

Established in 2000 as an industrial service provider for cooling towers, the company has diversified its business offering to provide products, as well as services, and is a pioneer in energy efficiency, specialising in cooling tower redesign using durable fibreglass and the latest cooling technology.

"Saudi Arabia is a big market, we are talking billions of dollars rather than millions," said Sauvesh Chaubey, head of operations at Madi Group, whose clients include Aramco, SABIC, SWCC, oil and gas companies and EPC contractors.

"Our vision is to be a one stop contracting company providing total solutions, and we are looking to set up a manufacturing unit in the Kingdom," he said.

Al Bassam Group set to 'go with the wave'

AL BASSAM GROUP is looking to 'go with the wave' as Saudi Aramco progresses towards becoming an integrated energy company through its Accelerated Transformative Programme (ATP), said Abdullah S. Al -Zahrani, general manager at TechnoServe, a subsidiary of Al Bassam Group, which provides services to the oil and gas industry.

"The Saudi market is booming and Aramco will increase its demand for materials and services," he said. Al Bassam Group is an approved supplier to Saudi Aramco and is exclusive agent for Voestalpine through its subsidiary APECO (Al Bassam Petroleum Equipment Company), which specialises in the supply and installation of equipment for the oil and gas industry.

Al -Zahrani highlights Saudi Aramco's 'big mission' to localise the industry, whereby foreign companies looking to provide goods and services to Saudi Aramco will need to do so through a local company.

Al Bassam is one of the leading trade and industrial groups in Saudi Arabia and the Gulf, with a diversified range of activities including real estate; investment; automobile; engineering; manufacturing; industrial inspection and testing services; water treatment; travel and tourism; and shipping and freight forwarding.

Showcasing solutions for the **oil and gas industry**

THE SIXTH EDITION of the Saudi Arabia International Oil & Gas Exhibition (SAOGE 2014) was held on 24-26 November 2014 at the Dhahran International Exhibition Center in Dammam, and welcomed 7,397 visitors with representation from 25 countries.

Leading the official inauguration and tour of the SAOGE 2014, was His Royal Highness Prince Saud Bin Naif Bin Abdulaziz, Governor of Eastern Province, Saudi Arabia, who officially opened the exhibition.

SAOGE was launched in November 2008 as the premier event for the oil and gas industry in Saudi Arabia, in order to meet the requirement for the largest oil producing country in the world to host its own focussed oil and gas show. The event has shown steady growth over its six editions and continues to receive increased attendance from both Saudi and international companies, offering the perfect platform to meet, network, learn and strengthen relationships.

SAOGE attracts high-level technical experts, key industry professionals, specialists and decision makers in various sectors of the petroleum industry, and maintains its position as the sole oil and gas exhibition in the Eastern Province.

Official sponsors of this year's event included Integrated Telecom, Draeger, and Atlas Copco.

More than 170 companies from 22 countries were represented, showcasing a wide range of technologies and products, with 43 per cent of exhibitors from Saudi Arabia. These included several of the leading industrial and trading companies such as Alaa for Industry (AFI), Al Bassam and Abdullah H Al-Shuwayer & Sons. Of all the exhibitors, 41 per cent were non-Saudi companies and an additional 15 per cent were from the Gulf area (excluding Saudi Arabia). Participating countries included Bahrain, Belgium, China (which had a particularly strong presence), Denmark, Egypt, Finland, France, Germany, India, Indonesia, Italy, Japan, Oman, Qatar, Russia, Taiwan, Turkey, UAE, USA and the UK.

Piero Zipoli, president of SAOGE organisers IES Srl, said, "Now in its sixth year, the Saudi Arabia International Oil and Gas Exhibition, has established itself as the 'must attend' oil and gas event in the region. The three day event is designed to bring together leading lights of the industry and provide attendees with the opportunity to build business relationships, hear about the very latest technical developments and discover new opportunities."

The busy exhibition floor at SAOGE 2014

Despite the uncertainties created by the plummeting oil price, exhibitors, many of whom are supplying or representing suppliers to Saudi Aramco, were generally positive about business prospects, noting the Kingdom's wealth, continuing industrial demands and significant number of ongoing projects as well as Saudi Aramco's US$40bn a year investment commitment.

Among the business deals announced at the event was the signature of a joint venture between international mechanical services group EnerMech with Abdullah Fouad Group (AFG), to support the growth of EnerMech's operations in Saudi Arabia.

SAOGE Awards

The Organisers of SAOGE 2014, IES and Dhahran International Exhibitions Company (DIEC) hosted a cocktail reception during which the Exhibition Awards were announced by Piero Zipoli presented to the winners by Mohammed Al Ibrahim, public relations manager of DIEC.

> "The event continues to receive increased attendance from both Saudi and international companies"

Exhibition Awards were presented to:
• Best Award for Design – QATAR PETROLEUM
• Best Award for Technical Content – SAWARY ENERGY
• Best Award for Innovation – ABDULLAH H. AL-SHUWAYER SONS GROUP OF COMPANIES

Student programme at SAOGE and Saudization

SAOGE 2014 also included the SAOGE 'Student Programme', which supports the Kingdom's Saudization plan.

Now in its fifth year, the programme aims to boost the number of Saudis working in the oil and gas sector, by encouraging and developing local students who are given direct access to key industry leaders and experts. Participation in the programme provides students with great opportunities to network and establish contacts for their future, through the SAOGE 2014 exhibition.

The Student Programme is supported by King Fahd University of Petroleum & Minerals (KFUPM) and the University of Dammam, who send a group of senior students each year. ■

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HR Forum: Oil & Gas
Date: 23-25 November 2014
Venue: Dubai, UAE

HR FORUM
OIL & GAS

Highlighting the role of HR in oil and gas strategy

Delegates pose for a group photograph following the conclusion of the second day's presentations at the HR Forum: Oil & Gas

THE GROWING ROLE human resources (HR) departments have been undertaking within the business strategies of oil and gas companies throughout the region was among the talking points at the inaugural edition of the HR Forum: Oil & Gas.

Speakers at the event, which took place in Dubai in November, also discussed the contribution HR professionals have played in staff retention and succession planning. Assisting talented staff to reach their full potential and the looming concern of the 'talent crunch' in the oil and gas industry, which has been exacerbated by many experienced workers preparing to retire from the industry in the next five to 10 years, were also on the agenda.

Delivering the first day's keynote speech, Kevin Quigley, head of the leadership development division at Saudi Aramco, spoke about generational differences between professionals working in the oil and gas sector, highlighting the need for colleagues of various ages to understand the demands and requirements of those from different generational groups.

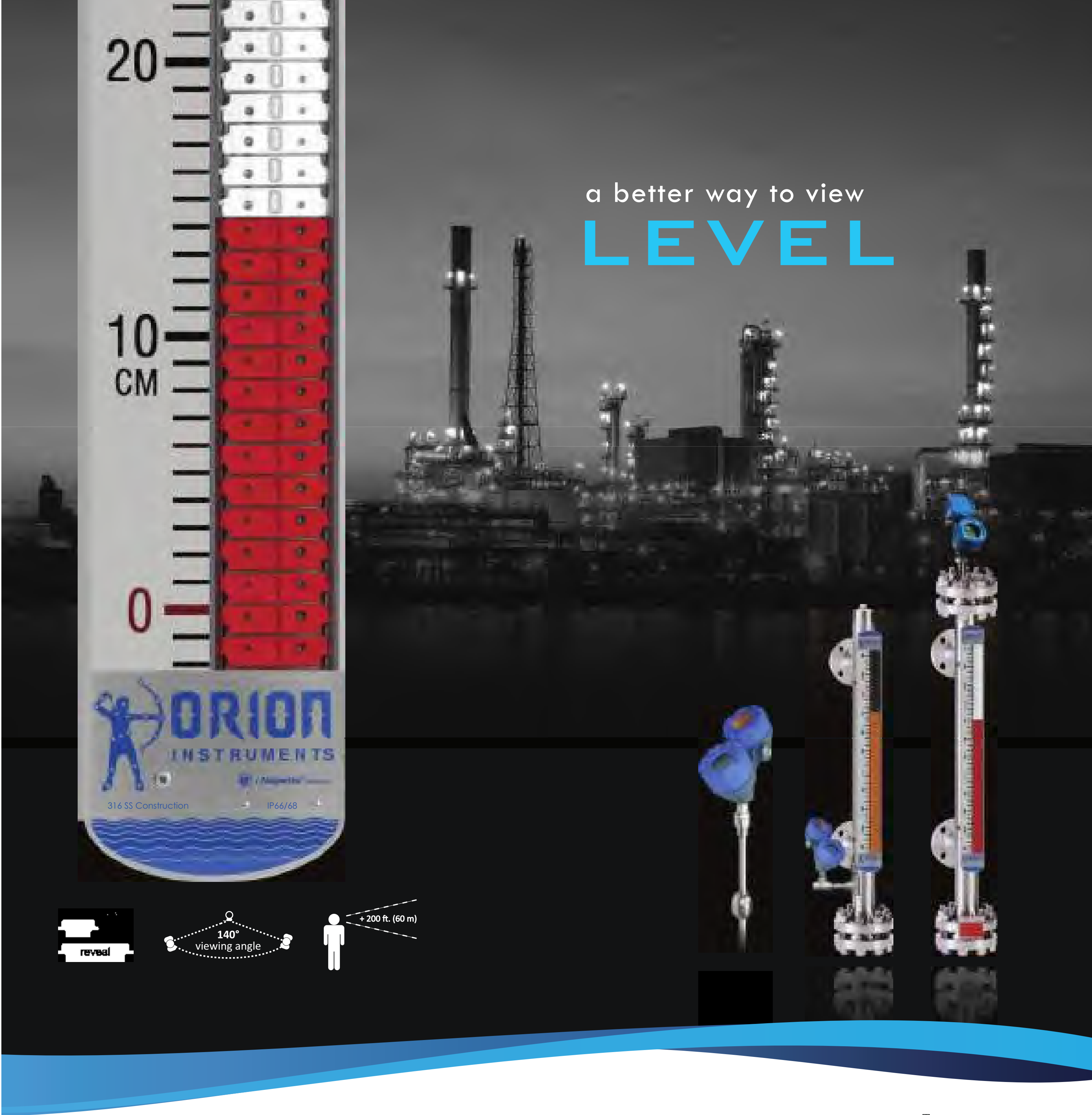
Quigley advised managers and HR professionals within the industry to provide the "right environment" for fellow staff members in which to motivate themselves, noting that the speed of technological change has enhanced the shift in the way the world is viewed by young people from Generation Y, compared to members of the baby boomers generation and Generation X.

Staff retention, training and succession planning were also discussed in detail by conference speakers on the first day, with Richard Loving, senior director - human resources at McDermott International, stating, "If you do not provide opportunities to high-potential people, they will leave."

Other speakers on Day One included Kenneth McKellar, partner - Middle East energy and resources leader for Deloitte & Touche, and Mohammad Ali Khan, capability management team leader at ZADCO.

One of the highlights of the first day saw Dr. Nadia Alhasani, director of the women's campus at the Petroleum Institute (PI) introduce three young female graduates currently working in Abu Dhabi's oil and gas industry.

Basma Ali Ahmed, petroleum engineer at Abu Dhabi Company for Onshore Oil Operations (ADCO), Heyam Al Blooshi, planning engineer at Abu Dhabi Gas Industries (GASCO) and Amena Saeed Al Shehhi, petroleum engineer at Zakum Oil Development Company (ZADCO) all shared their experiences of working in an industry traditionally dominated by male employees.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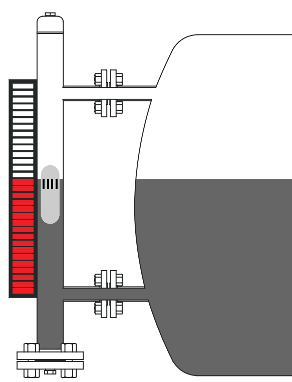


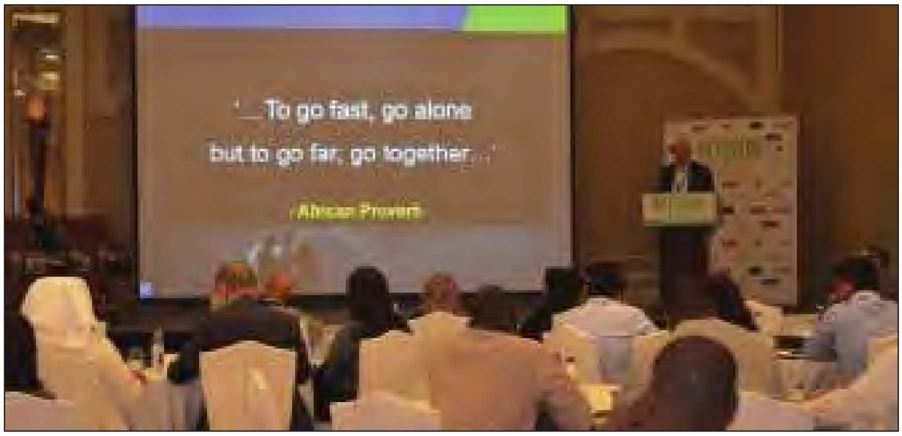
Each young engineer highlighted what they require from HR professionals to help them develop in the workplace and explained how important it was to gain experience in the field to develop the hands-on skills they will need as they look to further their burgeoning careers.

Led by chair Dr. Emma Langman, manager of human resources and performance at Kuwait Energy, the second day of the Forum featured Reliance Industries Limited head of talent management (E&P), Dr. Sunil Kumar Singh, and Marie-Claire Junge, senior manager for talent management at Mubadala Petroleum among a stellar line up of speakers.

The day started with a lively debate among delegates about competency framework development during a session presented by Ayman Meneassy, vice-chairman of United Eastern Petroleum Services.

Among the key topics touched on during the second day was onboarding, also known as organisational socialisation, which is the mechanism through which employees are integrated into a company upon joining.

Dr. Nadia Alhasani, director of the women's campus at the Petroleum Institute (PI), during a Q&A session with three female graduates of the college



Kevin Quigley, head of the leadership development division at Saudi Aramco, giving a presentation on the generational differences between oil and gas professionals

During his presentation, Reliance Industries' Dr. Singh, remarked, "Onboarding is such an important process. We cannot afford even one person to sink. Sink or swim was fine once, but you cannot do that in the modern age."

Suggesting that the appropriate time for a person to complete an onboarding period was 90 days, Dr. Singh told delegates that the process should begin before the hiring process and that the mechanism should be embedded into a company's culture. Citing the four 'I's, Singh surmised that successful and proactive onboarding consisted of 'self identity', 'role identity', 'career identity' and 'social identity' – a cycle that should remain continuous during the onboarding process.

During a presentation entitled 'Managing Talent for Better Results', Kuwait Energy's Dr. Langman remarked, "We, as HR professionals, need to make managers understand that we are not the police."

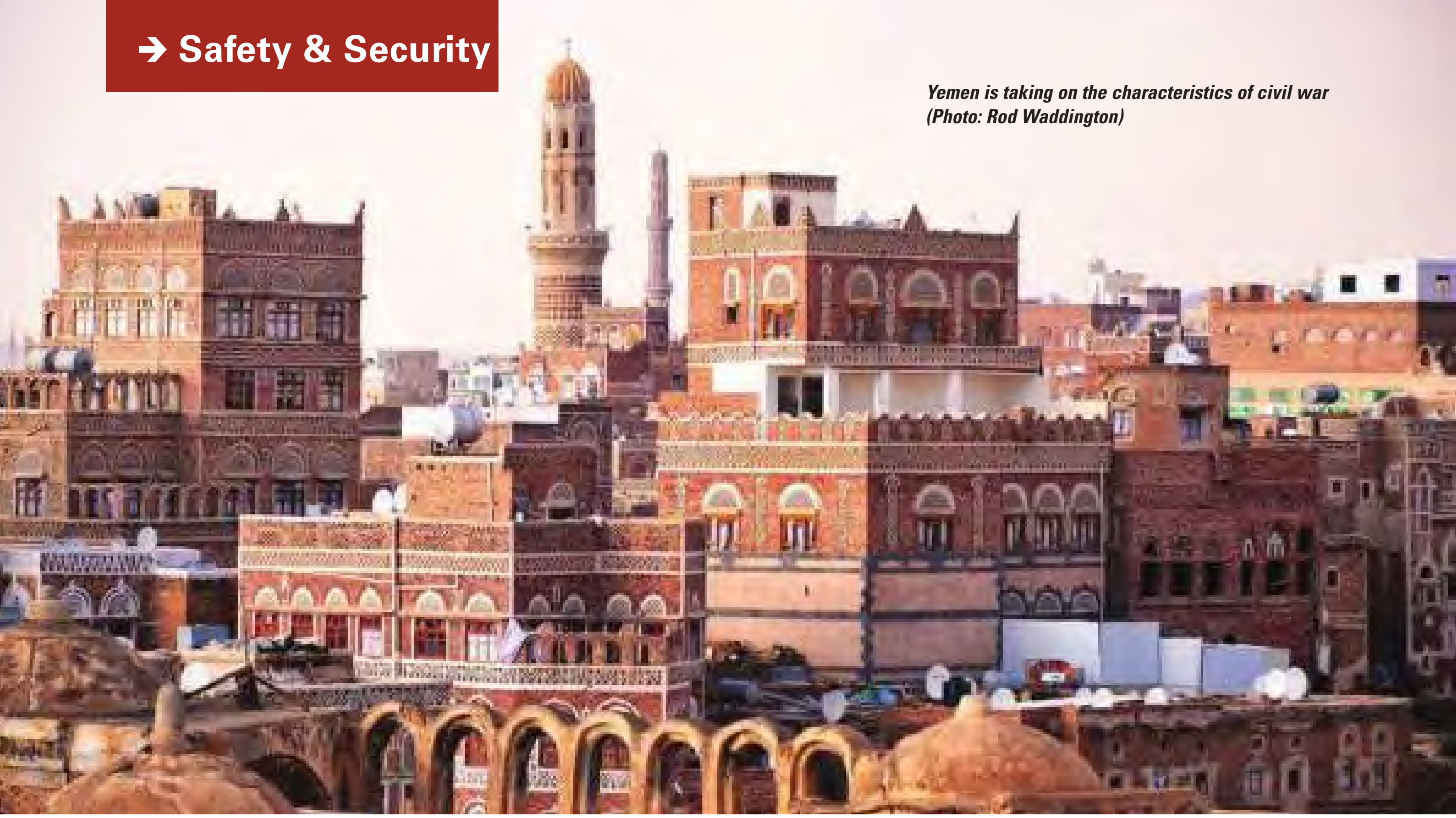
Dr. Langman added, "HR can be involved in a company's success by talking about tactical planning. Our job [as HR professionals] nowadays is to be a strategic managing partner for all of our teams."

Dr. Langman added that linking individual performance and business results was "the golden thread" that would see HR professionals become an integral part of the decision making process of a business. Speaking during the event finale was Rob Veesma, a former director of training and development at Shell who recently began a new role heading Gazprom International Training, Gazprom International's specialised training centre in the Netherlands.

Discussing the challenges facing HR professionals in facilitating the growing utilisation of virtual working, Veesma said, "Working hours are no longer 9am to 5pm and the place of work is changing.

"In HR we still have to find the answer [to the growth of virtual working], because we do not have answers to questions such as what the role of virtual leaders are."

Organised by Oil Review Middle East Events, The HR Forum: Oil & Gas took place in November 2014 at Dubai's Habtoor Grand Beach Resort & Spa. The event will return later next year. To find out more about the next edition of the conference, visit *www.hrforumoilandgas.com.* ■



Yemen is taking on the characteristics of civil war (Photo: Rod Waddington)

Adopting a local **approach**

Glen Ransom, Middle East analyst at Control Risks, outlines how companies can reduce risks in an increasingly complex environment by engaging with local communities.

IN RECENT YEARS, security and political developments across the Middle East have highlighted the growing importance of non-state actors. Militant groups' control of significant parts of certain countries, and internal conflict within others, have reduced the state's ability to assert control over the whole of its territory. The areas over which governments exert authority sometimes overlap with areas that have fallen into the hands of non-state forces, while other areas are the subject of disputes between national governments and local actors.

Such developments have created increasingly complex operating environments for international oil and gas companies. These firms now have to navigate through multiple layers of bureaucracy and maintain relationships with a variety of political actors, and their areas of operations may fall under the control of different and sometimes opposing forces. Actors at the local level – be they tribal figures, local government entities, political parties or even militant groups – are critical to ensuring a project's success and the safety of a company's personnel. Energy companies will increasingly need to understand local operating environments and engage with influential local forces if their projects are to succeed.

Increasing importance of non-state actors

Iraq and Yemen face vastly different sets of problems, yet local non-state actors have had a significant impact on the operating environments in both countries. The fracturing of state control in Iraq facilitated the offensives in mid-2014 by Sunni militant group the Islamic State (IS) in the country's north-central and western provinces. Although IS and associated groups had largely controlled the western province of Anbar since January, and, in recent years, had maintained significant influence in other predominantly Sunni Arab provinces, its offensives opened up large swathes of Iraq to competition between rival power brokers. The Iraqi government's response – through the empowerment of Shia militias, and plans to arm and train Sunni tribal groups – will further increase the importance of non-state actors.

Meanwhile, the situation in Yemen is gradually taking on the characteristics of civil war. The state has become increasingly incapable of providing security and addressing the concerns of local people, whose discontent may well have an impact on international investors' operations. Extremist group al-Qaida in the Arabian Peninsula (AQAP) poses security threats near the country's strategically significant Balhaf liquefied natural gas terminal. Tribal groups elsewhere in the country also threaten international companies' operations and the security of their personnel.

> “Iraq and Yemen face vastly different sets of problems”

Tribesmen in Marib province blew up Yemen's main oil pipeline on 26 November, thereby halting the flow of crude from the Safir fields to the Rasa Isa terminal. Unless the state is able to improve security, exert its authority and address tribal groups' grievances – all of which appears unlikely over the coming months – companies will likely face increased disruption to their operations.

Less extreme events involving non-state actors – such as bureaucratic delays, the theft of company property, denial of access, sabotage or fomenting unrest – can also be disruptive to companies' operations, and may even lead to declarations of force majeure. In November 2013, foreign employees of an oil and gas operator and a private security company based in the southern Iraqi province of Basra engaged in activities that some of the company's local employees felt were religiously offensive. This, in turn, led to violent incidents at oil and gas companies' operations in Rumaila oil field. Local interest groups – including religious, tribal and militia leaders whose opinions of foreign operators ranged from suspicious to hostile – seized on these incidents and organised large-scale protests in which demonstrators breached companies' compounds. Beyond the immediate security threats, these incidents forced companies to withdraw staff and suspend operations.

Engaging with local stakeholders

Understanding local dynamics and the interests of key stakeholders, including those with negative views of foreign operators, is vital if investors are to effectively plan operations in the Middle East and train the foreign staff whom they deploy to the region. A well-designed stakeholder-engagement strategy, coupled with attempts to understand local people's perceptions of foreign companies and nationals, will enable investors to reduce the likelihood of such events occurring and to mitigate the impact when they do.

Not all situations that arise in the region can be effectively managed. In some areas, the security risks may be too high or non-state actors may be so hostile that engaging with them is not an option. However, if a company is considering operating in such areas, it will need to develop a deep understanding of the local factors that would be likely to affect its operations so that it can decide whether the prevailing environment exceeds its appetite for risk. If it decides to proceed, such an approach will also prove beneficial throughout the project's life cycle.

The importance of local knowledge does not absolve companies of the need to monitor and understand the higher-level transnational and geopolitical events that may affect their operations. Nevertheless, local issues by their nature retain the potential to have a more immediate and disruptive impact. When companies are assessing the immediate operational and security threats to their activities, it is likely to be far more important for them to prioritise managing local relationships over engaging with national governments.

“Not all situations that arise in the region can be effectively managed”

Engaging the national-level authorities to provide security or support may prompt hostile responses from some local communities owing to longstanding grievances, ongoing disputes or perceptions that the communities will not benefit from the project. In these cases, the government's efforts may hinder the company rather than help it. In 2013, an oil and gas operator in Iraq's Kurdistan Region commissioned Control Risks to conduct a stakeholder and community assessment. This involved us carrying out more than 1,500 interviews along with qualitative and quantitative field research across the blocks where the company was planning to invest. We investigated key stakeholders and their interests in these areas, their disposition towards the company and the socio-economic conditions in which local communities were living. We identified numerous groups and individuals with positive, negative and neutral views of the company, and assessed their potential to affect its planned operations. We were able to identify the areas in which the company could most effectively engage with local communities, including through social investment plans, and we helped design the company's engagement strategies.

Oil and gas projects in the Middle East can involve significant long-term investment, and, if they are to succeed, it is vital for the companies involved to understand local communities and engage with them at an early stage. Doing so can help to shape non-state actors' perceptions before problems arise, and will enable companies to identify the sources of operational or security risks and make informed decisions about the most appropriate mitigation methods. That being said, it is never too late for investors to understand local dynamics, either as a preventive measure or as a remedy for problems that have already arisen. The key for any company is to engage often and to ensure that its understanding of the local environment remains accurate and up-to-date. This in turn should ensure that its operations remain successful. ■


Oil and gas projects in the Middle East can involve significant long-term investment

Intersec
Date: 18-20 January 2015
Venue: Dubai, UAE

intersec

Promoting security co-operation

Key security event tracks double-digit growth as appetite for protective solutions grows

TAKING PLACE AT the Dubai International Convention and Exhibition Centre in the UAE over 18-20 January, Intersec 2015 delivers a comprehensive showcase of solutions, to meet the double-digit growth of Middle Eastern and African security and safety markets.

Intersec has played a major role in the last 16 years in reflecting the security industry worldwide. The exhibition combines a strong international profile with a huge regional impact. Intersec 2014 featured 1,213 exhibitors from 54 countries and welcomed 24,615 visitors from 130 countries. For the Middle East and Africa in 2015 this key security and safety trade fair is set to feature 300 debut exhibitors, with the top 10 global security companies on board.

Expectations at the event

Global demand for security equipment is estimated to grow by seven per cent annually, reaching US$117bn by 2016, with the underdeveloped Asian, Eastern European, and Middle East & African markets leading the charge.

The 17th edition of Intersec is also setting the pace, as organiser Epoc Messe Frankfurt said it expected the event to register at least 15 per cent growth in exhibition space year-on-year. In January 2015 Intersec features more than 1,300 exhibitors from more than 50 countries, including 300 newcomers.

A range of security solutions will be demonstrated at Intersec

The three-day event focuses on the five core areas of commercial security:

- Information security
- Fire and rescue
- Safety and health
- Homeland security
- Policing.

Ahmed Pauwels, CEO of Epoc Messe Frankfurt, said, "The Middle East and Africa region continues to emerge as a key security market, and Intersec functions as the bellwether event that showcases the current trends prevailing across the globe, while presenting vital indicators of future developments in the industry.

> "The Middle East and Africa region is emerging as a key security market"

"With a footprint that spans the entire region and active participation from leading international players, Intersec is today a must-attend event for the global security, safety, and fire protection communities."

International interest

Intersec 2015 features 13 country pavilions - including Canada, China, France, Germany, Hong Kong, India, Italy, Korea, Pakistan, Singapore, Taiwan, UK and USA.

Held under the patronage of His Highness Sheikh Mansoor bin Mohammed bin Rashid Al Maktoum, Intersec is the largest and most international trade fair of Messe Frankfurt's global network of security and safety exhibitions, which includes:

- Secutech India.
- Secutech Taiwan.
- Secutech Thailand.
- Intersec Buenos Aires.
- Secutech Vietnam.
- Seguriexpo Buenos Aires.

Conference programme

The latest international trends and developments in keeping people, assets, and cities safe in the Middle East and Africa will be discussed at six conferences to take place during the event. Held in co-operation with the Dubai Police and the Dubai Civil Defence the value-added programme of conferences and workshops will cover Fire Safety, Information Security, Commercial Security, Technical Textiles, Occupational Safety and Safety Design in Buildings.

A high-powered panel of industry experts will share experiences and case studies of industry-best practice, from mitigating corporate cyber-security threats in an increasingly digital world, to protecting thousands of workers on some of the world's largest off-shore oil rigs.■

Visit www.intersecexpo.com

Dräger adds 'lifeline' communications system to safety product range

DRÄGER, THE INTERNATIONAL safety manufacturer, has launched an innovative communications system – the X-zone Com – to help offshore workers react quickly to gas leak emergencies.

The compact, portable and lightweight X-zone Com equipment can be set up on its own or as part of a network of devices, to track gas detection levels in confined spaces and other areas.

By using Dräger's X-zone gas detection instruments, workers can stay connected and informed wherever they are. In the event of gas being detected, the X-zone Com sends all data and alerts users by email, SMS and a central 'Cloud' application, meaning hazardous area monitoring can be accessed across a wider range of important channels.

The X-zone Com device

Up to 15 Dräger X-zone Coms can automatically connect to a wireless alarm-chain, which will accurately and comprehensively monitor large areas. Only one X-zone Com is subsequently required to transmit the data of the entire chain, with all important data, including the exact location of the hazard, being delivered to those responsible, in a matter of seconds.

Game-changing fire deluge safety technology

PARADIGM FLOW SERVICES, the blockage removal experts for the oil and gas sector, has introduced a groundbreaking new technology that will change the way oil and gas operators carry out fire deluge safety testing for the first time in 50 years, said the company.

Dry-Flo uses conditioned and dehumidified air to assess the functionality of deluge nozzles, with remote sensors strategically placed to pick up the air wave signatures throughout the deluge system. The Dry-Flo testing technology eliminates issues with conventional wet testing for fire deluge safety systems which can lead to blockages and cause corrosion. It is quicker to set up and complete the testing, eliminates the need to cover and protect electrical equipment and can be conducted while the deluge system is live, claimed the company. An additional benefit is a reduction in personnel required.

The data picked up from the air wave signatures is compared against hydraulic models developed by Paradigm engineers, and the sensors detect any deviations from optimum function. This can help to predict and pinpoint any issues with life-saving fire equipment and enables Paradigm to make recommendations on the best course of remediation.

AlMansoori wins HSE awards

ALMANSOORI SPECIALIZED ENGINEERING has won the prestigious Daman award for Corporate Health and Wellness, which was presented at a ceremony at the Rosewood Hotel, Al Maryah Island in late November. AlMansoori has developed a HSEQ Integrated Management System which outlines the company's Health, Safety, Environment and Quality Policy, ensuring that staff are deployed effectively at all functions and levels.

The presentation of the Daman award

AlMansoori was applauded by judges for their use of innovative initiatives designed to target the ongoing challenges of educating a multicultural workforce. The company provides a fully integrated Health Monitoring Management system which offers training and medical advice across a range of health-related topics such as ergonomics, weight loss, stress management and stopping smoking while being regularly assessed by external medical examinations and by a dedicated in-house physician.

Earlier in November, AlMansoori won the award for the best HSE initiative at the Oil & Gas Middle East and Refining & Petrochemicals Middle East Awards. This was for successfully conducting 32 well tests over 700 days for AlHosn Ga, without any failures or incidents, in over 130,000 hours worked.

SSG supplies the region's largest grommet slings

UAE-BASED SAFETY Services Group (SSG), leaders in lifting equipment engineering and turnkey solutions, has manufactured the region's largest grommet slings for Saudi Aramco.

The grommet slings, with a lifting capacity of over 4,000 metric tonnes, were fabricated at Safety Services Group's Dubai facility. Dimensions as per client specifications included 192 mm and 164 mm diameter slings in various lengths. Grommet and cable-laid slings were developed as per stringent industry stipulations to provide heavy lift slings for offshore oil drilling and rigging.

Mohamed Basheer, President, Safety Services Group, said: "The fabrication of grommet slings of this scale has never been accomplished in the region before. The job was delivered in an extremely tight time frame meeting all industrial and regulatory standards."

Safety Services Group has manufactured the region's largest grommet sling for Saudi Aramco

"As we mark our 35th anniversary this year, we have established ourselves as the market leaders in providing fast and efficient turnover of high end lifting products and services. Our specialist engineers ensure that our processes, technology, and knowledge are optimised to meet leading global standards."

Safety Services Group enjoys estimated annual revenue of AED 150 million. The Group employs over 500 qualified engineers and technicians to serve its customers across Middle East, Asia, Africa and Europe. It serves clients across diverse sectors including energy, oil and gas, marine and industrial construction.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Highlighting the need for greater focus on HSE

AT ITS FIFTH annual safety and competence conference (OSCC 2014) in Abu Dhabi in November, OPITO, the skills and workforce development organisation for the oil and gas industry, called for more effective leadership to prevent fatal accidents, lost time incidents and near-misses. The event was opened by HE Suhail Mohamed Al Mazrouei, the Minister of Energy for the UAE.

David Doig, group chief executive of OPITO, said, "The latest figures from the International Association of Oil and Gas Producers (IOGP) reveal that there were 88 fatalities in the industry across the world in 2012 with LTIs (lost-time incidents) increasing by 12 per cent. The global oil and gas industry has to change in its approach to safety and competence. Despite improvements, too many major and minor incidents and accidents are still happening." He noted, however, the marked improvement in the rate and impact of accidents in the Middle East between 2007 and 2012, according to the IOGP report.

"One factor highlighted in the IOGP report was inadequate standards," added Doig, who stressed OPITO's role in driving the implementation of common global safety standards.

"OPITO has been active in the Middle East since 2005. Our standards are being rolled out by the major employers, and we are working closely with regulators, industry and government to develop a safer workforce through changes in behaviour through our standards framework."

OSCC 2014 focused on leadership under the theme of 'Leading from the Frontline', bringing together operators, contractors and the supply chain along with regulators and training providers to debate the issues around improving safety and competency that protect the workforce and the industry's reputation. It explored the dynamic of effective leadership and change management on human behaviours in relation to safety.

"OPITO can lay the groundwork, but it is the employers themselves who will ultimately drive long-term, high-value change," commented Doig. "It takes bold and inspirational leaders to make change happen effectively, to bring people on board and make them part of that change; to ensure that they embrace it rather than fear it. New ways of doing things will only actually happen if people understand why they need to change and the benefit that change will have on them and those who work with them."

David Doig, group chief executive, OPITO

"The presentations from Shell showed how one of industry's largest and most influential companies is leading from the front-line," Doig went on. "The multinational is rolling out a global leadership programme that demonstrates a very personal approach to the safety of all its people working on any of its assets.

"The nature of our industry, which operates some of the most complex technology in some of the most hazardous areas in the world, dictates that there will always be risk. It is how we effectively prepare and support our people to reduce the risks that ultimately dictates our success."

> "The nature of our industry.....dictates that there will always be risk"

Aligning cultures, competence and communications

The need for the regional oil and gas industry to place HSE issues at the centre of planning was also addressed at a panel session at ADIPEC, with the theme 'Aligning Cultures, Communication and Competence'.

Key challenges that organisations are dealing with include the lack of experienced manpower along with the difficulty of recruiting and developing competent personnel with a strong commitment towards HSE. The panel urged delegates to share best practices among organisations on how to deal with the vast number of nationalities with distinct cultural backgrounds and differing levels of risk appreciation.

"HSE should be a core value for every company, but what does this mean? It means that the principles of HSE are passed through the entire work pyramid, from those in management to the employees doing the job in the field," said Thierry Debertrand, Senior Vice President of Health, Safety and Environment at Total E&P.

"Many companies have a top-down view, but what is even more important is a bottom-up approach," he said, highlighting the need for 'informal leaders' and two-way dialogue. ■


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Energy-saving
LED lighting

Dialight, a global supplier in LED lighting for hazardous environments, has launched a new range for the oil and gas industry that promises up to 80 per cent energy savings.

LED LUMINAIRE MANUFACTURER Dialight has introduced its ATEX certified luminaire range which, with various lumen and wattage packages, innovative levels of efficiency and carrying up to 10-year full performance warranties, it says will benefit the Middle East's oil and gas sector.

The unique range of CE-compliant LED luminaires includes products suited to a number of applications, particularly in hard-to-access and high-risk areas. They are specifically designed for use in harsh and hazardous environments where potentially explosive gases and dusts may be present, making them ideal for the oil and gas industry.

Speaking to Oil Review, Dialight's general manager for the Middle East, North Africa and South Asia Region Steve Towler said, "Dialight's LED lighting is more efficient than conventional lighting and the long-life performance eliminates maintenance costs or vastly extends maintenance schedules, whilst also reducing the health and safety risks associated with accessing hard-to-reach locations."

He added, "Certainly the oil and gas industry has embraced the products and will continue to because of the superior illumination, energy efficiency and long lasting performance. With health and safety being an imperative issue in oil and gas operations, the benefit of low maintenance and low temperature ratings on the fixtures is also extremely advantageous."

> "Many companies don't understand that you can use an LED to replace lighting in oil and gas applications"

Dialight's selection of hazardous lighting products includes the SafeSite High Bay

Working in a competitive market in which many companies still know little about LED lighting, the energy saving aspect of LED lighting is a key selling point for Dialight.

"A lot of our work is education, we're informing the client what they can do now," said Towler. "Many companies don't understand that you can use an LED to replace lighting in oil and gas applications including refineries, oil and gas platforms, drilling rigs and FPSOs."

According to the hazardous lighting company, LED lighting can save a business between 50-80 per cent in energy and, more specifically, choosing to swap high intensity discharge (HID) lamps to LED can mean a 70-80 per cent power reduction.

One way in which Dialight achieves these levels of energy saving is through heat reduction, which is also valuable when working in the Gulf's high temperatures.

"You could have 100 HID sources all hitting 400°C and it becomes very uncomfortable for staff to work," explained Towler. "Our luminaires typically get up to around 50°C, which is a massive difference in temperature."

Towler added, "The lack of heat given off by LED lighting reduces the risk of injury from contact with the lighting and the better T-rating compared to conventional lighting solutions means they are safer to use in areas where there is risk of explosion."

According to the company, demand for Dialight products is ever-growing in the Middle East Region. Approximately 80 per cent of its regional business is focussed on the oil and gas industry.

Having previously worked closely on projects with Abu Dhabi oil and gas companies, such as ADGAS and ZADCO, Dialight now sees Oman as a strong market for LED lighting and GCC countries, such as Qatar, as emerging potential business areas. Dialight boasts that another benefit of its LED lighting solutions is the considerable space and weight the lighting can save on drilling platforms.

"On an offshore platform if you reduce all your lighting maintenance you can save two beds," said Towler. "Removing two lighting guys gives them two spaces for mechanical engineering or welding etc., which as a result, improves productivity."

Towler added, "The products also have instant on/off ability, without compromising on the life of the lamp and this along with the quality of light improves productivity and the safety for the workers."

He also explained that Dialight, a global company with manufacturing plants in Latin America, the US and Europe, has the technology to reduce 50 per cent of the initial conventional lighting weight on a platform.

"We're saving tonnes of weight on a platform and that's a big deal," said Towler.

He also advised that there are also a variety of product options, including emergency, transportable and stainless steel ranges, available to meet the needs of even more oil and gas applications.

He concluded by saying, "It's great working for a company where we save customers money, energy and maintenance, while also reducing health and safety risks, there's so many benefits and there aren't a lot of products out there in any market that offer that many benefits to a client." ■

Correction: *This article originally featured in Oil Review Middle East Issue 7 2014 and included incorrect temperatures in the ninth paragraph. We would like to apologise for the error, the amended article above now includes the correct information.*

Offshore constructors bring it all together

The Gulf's waters are generally benign

Oil, gas and renewables contractors have a lot to learn from one another in the shallow waters of the Gulf.

MOVE THE CONSTRUCTION process offshore and the difficulties increase exponentially. And that means costs, manpower requirements, time and more. Whether it be a production platform, a submersible, submarine pipeline or drilling rig, every stage of the design and installation processes has to be worked out and dry-run in advance, with as much actual fabrication and assembly taking place in modular form onshore as possible.

And all as global construction resources run short as qualified operatives age and oil/gas prospecting and production take place in ever deeper and more hostile waters. Increasingly specific skills are needed for the design, fabrication, installation and maintenance of ever more complex structures. And for their ultimate decommissioning and removal, too.

Specific advantages

The good news is that Gulf operators have three specific advantages to rely on right now. First, there exists a well established onshore fabrication industry along most of the southern shore, with energy producers such as Dubai and Sharjah specialising in the rig repair and maintenance industry. With their excellent international contacts and logistics, what these yards cannot actually fix from stock they can usually obtain from overseas in a short time.

Second, the Gulf's waters are generally benign in terms of depth, expected wave height and general weather-window conditions. So operations can be scheduled 24/7. The geology is relatively stable, too, with few nasty surprises such as unstable active faults. The range of geophysical and technical prospecting data, facilities and skills available is excellent.

Third comes the fact that Gulf oil and gas prospectors and producers are benefiting greatly from the progress of offshore renewable energy programmes overseas – i.e. the wind industry in the shallow North Sea, in particular. Great advances in undersea foundation engineering have been made in recent years as a result of the explosion of windfarm construction, some of it sponsored from the UK. As a result, laying a submarine pipeline, like for the international Dolphin facility, is not unlike routing a new high-voltage powerline in much colderwaters. Determining what load the sediments can bear, for example, and making the decision about whether a costly protective trench is needed or not.

Thus, in North Africa a great deal of preliminary work has already been done for the proposed direct-current power lines needed for the HV Desertec scheme – an ambitious German-backed renewables project. This has been facilitated by the earlier studies conducted for the trans-Mediterranean gas systems based on Algerian and Libyan fields. An excellent example of the fossil fuels and renewables industries co-operating in a positive way for the benefit of all.

> “Gulf operators have three specific advantages to rely on right now”

Thorough assessment

Of course every offshore construction project is unique and has to be individually designed by teams who know the site conditions intimately; the design life for a production platform can now exceed 25 years.

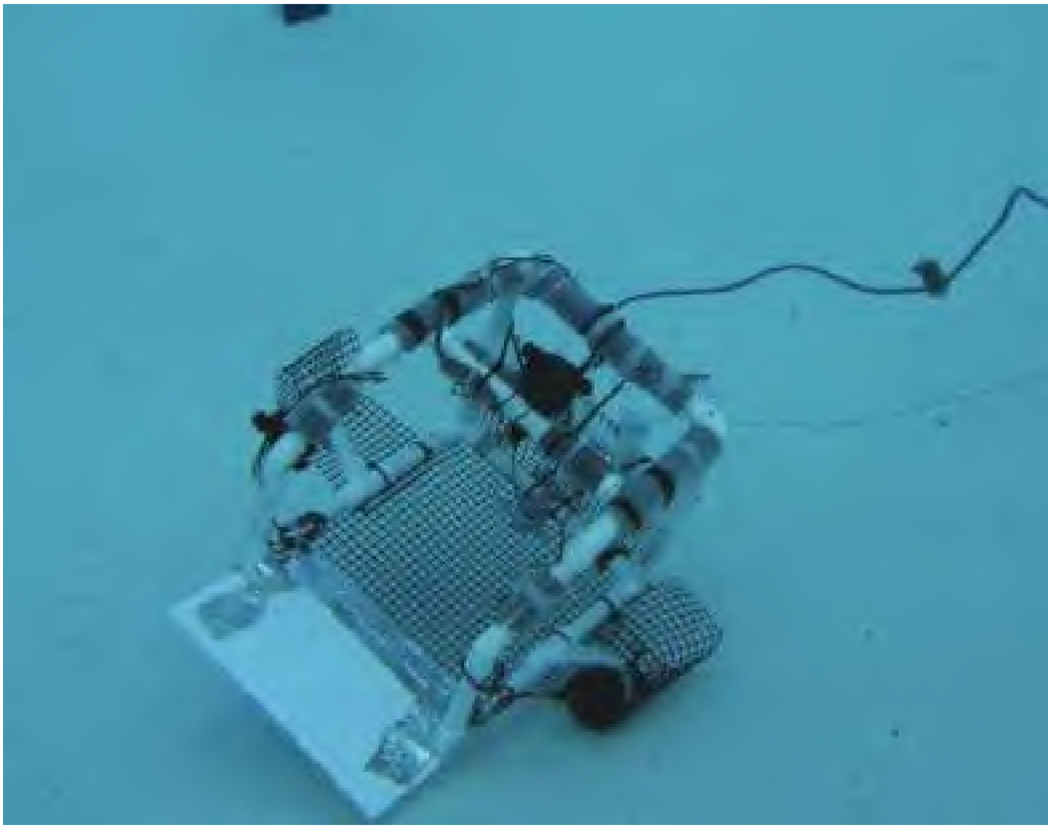
All exposures to wind, waves and currents have to be individually risk-assessed, based on the previous collection and analysis of so-called “metocean” (meteorological and oceanographic) data which includes the condition, depth and dynamic behaviour of superficial sediments, their state of consolidation, and likely current and atmospheric behaviour. Then must follow a very thorough site investigation of all potential drilling, mooring or foundation locations, all based on various geo-hazard services specifically tailored for the task in hand. Satellite-based monitoring is unavoidable these days, both for remote sensing of the properties of rival locations and accurate GPS positioning of all subsequent activities. Sediment sampling and in situ materials testing of the underlying seabed stratigraphy then follow.

Operators in all Gulf countries have access to an excellent fleet of research vessels, remotely operated submarine vehicles, sub-sea robots and rotary-wing aircraft, soon to be economically supplemented by prospecting drones as well. Once a potential site for a gravity-based structure has been identified, then full-depth samples have to be extracted and analysed from a dynamically-positioned rig, so that the underlying materials can be tested for mechanical strength and bearing capacity.

There is a similar process for all moored structures such as FPSOs, although final positioning adjustments normally have to be made.

With these preliminaries completed, the actual engineering design and fabrication processes can be started, or a choice made about an import which will usually have to be modified. Modules need to be assembled onshore and towed to a suitable crane vessel at the site for final assembly and pre-commissioning testing. In the case of the installation of a sub-sea pipeline a very detailed sequence of barge movements has to be scheduled. It all adds up to what looks very much like a miracle of logistical planning.

But to offshore construction professionals this is all in a day's work, an immaculately-scheduled sequence of complex activities in which the basics of design integrity and safety are never lost sight of for a moment. ■



Gulf countries have access to remotely operated submarine vehicles

> "It all adds up to what looks very much like a miracle of logistical planning"

World Future Energy Summit (WFES)
Date: 19-22 January 2015
Venue: Abu Dhabi, UAE

At the forefront of the global energy dialogue

WITH THE GLOBAL population forecast to increase to more than nine billion by the year 2050, placing huge strains on energy and natural resource supplies, the world must find innovative ways to drive social and economic development, whilst reducing the environmental impact.

That is the challenge the annual World Future Energy Summit (WFES), the Middle East's largest gathering on future energy, is designed to tackle. WFES leads the UAE's response to these urgent issues, challenging policy makers, thought leaders, academia and corporations from around the world to find solutions that advance the use of renewable energy and clean technology, in the pursuit of sustainable development. Now into its eighth year, the event, hosted by Masdar, has put energy diversification at the top of the region's sustainability agenda.

The Summit addresses the importance of uniting public policy, R&D and the business community to stimulate private-public partnerships, encourage entrepreneurship and accelerate action on sustainable energy deployment. Recognised as one of the world's most influential energy gatherings, WFES last year attracted more than 30,000 people from 160 countries. The event has been attended previously by heads of state from China, South Korea, Argentina, France, Germany and the United Kingdom.

The resource challenges faced by MENA countries, as populations rise and economies grow, will top the agenda at the 2015 edition. From reductions in fuel dependency, to ensuring long-term economic prosperity, the case for clean energy within the MENA region is solid. Industry analysis suggests more than US$100 bn has been allocated to its development by 2020, according to Frost and Sullivan. The Kingdom of Saudi Arabia alone has plans to invest US$109bn in the development of 54GW of renewable energy by 2032.

WFES will provide a window into MENA's thriving clean tech market, whilst showcasing clean energy hotspots further afield such as sub-Saharan Africa – a region that is home to six of the 10 fastest-growing economies in the world. Its energy infrastructure lags behind economic development and 500mn people still lack access to electricity, yet sub-Saharan Africa has the potential to generate more than 170GW of renewable energy.

From the Middle East to Africa, WFES has become central to driving the future of energy, regionally and internationally, says Naji El Haddad, show director of WFES.

"The World Future Energy Summit has built a reputation as an event that drives action. From showcasing the latest market opportunities, to commercialising technologies and applying critical thinking, the event shapes the region's future energy landscape," he said.

The WFES 2014 Opening Ceremony

"Further afield, the contribution WFES makes to the global acceleration of renewable energy is becoming evident. Its strength is in its ability to unite technology, policy, academia and investment from across the globe, to cross pollinate ideas, share learnings and move the industry forward.

"This year's event takes place at a time when the need to balance the global energy mix, address energy security and tackle the energy-water nexus, is more critical than ever," El Haddad added.

"Once again, we are looking forward to welcoming the industry's key regional and global players, including Masdar, ADNOC, BP, Shell, Total, Saudi Aramco, Dolphin Energy and others, to WFES."

The WFES conference will feature a ministerial panel on Africa's energy opportunities and a panel discussion on Saudi Arabia's ambitious vision for renewable energy. There will also be sessions on Egypt's energy needs and Morocco's transition from an energy importer to a net energy exporter, with the implementation of a robust regulatory framework and a target of 42 per cent of energy generated from renewable sources by 2020.

The rise of shale and its impact on the adoption of renewable energy, will be debated, as well as the role of cities in combating climate change, and the building of a clean energy future in the UAE.

Delegates will also hear case studies from South Africa, where incentives have created one of the fastest-growing clean energy markets in the world. In addition, they will benefit from workshops on ways to operate and optimise solar Photo Voltaic (PV) and Concentrated Solar Power (CSP) facilities. ■

Roadmap shows way ahead for renewables

Phase 1 of the Mohammed bin Rashid Al Maktoum solar park

Aided by the International Renewable Energy Agency (IRENA), a multi-institution study suggests ways to integrate national programmes for developing new sources of power within MENA.

THE ARAB REGION as a whole has many strengths to deploy large-scale renewable energy programmes – not least the necessary finance and varied energy resources.

However, renewable energy deployment has been inadequate so far to cope with the region-wide increase in demand for electrical power, which has been growing by up to eight per cent annually in some countries. With the exception of a mere handful of utility-scale projects in North Africa and the UAE, renewable energy technologies have mainly been used for purposes of research, development and technology demonstration.

This situation is now changing fast as enlightened governments have been paying growing attention to the potential for generating much more power from renewable sources. Multiple initiatives have been emerging to support the regional integration of national activities into a MENA-wide programme.

The adoption of the Pan-Arab Strategy for the Development of Renewable Energy Applications in 2013 represented a landmark in the deployment of renewable technologies from Morocco to Oman and Yemen.

Based on individual national targets the new strategy has added up to a cumulative target of increasing renewables generation in the region by 75GW (installed capacity) by 2030.

In support of this, the League of Arab States has introduced an Arab Renewable Energy Framework. This aims to create a regional system for reporting and monitoring progress, with which the Arab Ministerial Council for Electricity concurs. All parties agree that technical and financial support are needed to implement the strategy, as well as regional co-ordination at all levels to avoid wasteful duplication of effort.

The Abu Dhabi-based International Renewable Energy Agency has worked with both the League and the Cairo-based Regional Centre for Renewable Energy & Energy Efficiency (RCREEE) to help achieve the objectives by supporting all member states.

This resulted in 2014 in the appearance of the *Pan-Arab Renewable Energy Strategy: Roadmap of Actions for Implementation*, a special report published by RCREEE assisted by IRENA to guide individual countries by focusing on key regional priorities. This document, which can be read online by following the links at www.irena.org, provides a comprehensive overview of the renewable energy situation, constraints and financing possibilities right across the Arab world.

Says IRENA's Director General Adnan Amin in the introduction: "The renewable energy supply chain has the potential to drive economic diversification and create new jobs in local economies.

"The region starts to fulfil a globally important role in the renewable energy market, which will be the cornerstone of the llow-carbon green economy of the future."

A realistic set of actions is proposed for each member country of the league to help achieve its individual target. The whole roadmap is intended to serve as a regional guideline for the development of the entire Arab renewables market. It recommends specific regional co-operation activities to take place in 2015 and 2016 on a range of initiatives that can influence and expedite the readiness of individual states to prepare their national renewable energy action plans.

> "The renewable energy supply chain has the potential to drive economic diversification and ceate new jobs"

Recommendations:

- Creation of technical and financial assistance programmes to design individual national action plans.
- Development and funding of a comprehensive and holistic capacity-building project that will cover the entire renewable energy development life-cycle. This should include planning, resource assessment, feasibility studies and actual implementation.
- Exploring the potential and opportunities for renewable energy options that have been so far untapped, including use of biomass and geothermal sources and, where appropriate, various forms of hydro development
- Launching of a proposed Clean Energy Initiative in the Arab Region to integrate greater amounts of renewably-generated power within the region's various electricity supply systems
- Enhancing the administrative and spatial planning governance required for renewable development
- Creation of a framework to improve financial co-operation within the region to accelerate renewable energy deployment, and also mitigate the investment risks for both the public and private sectors
- Conduct regional studies that assess the potential for local manufacturing of equipment, training and future integration. ■

For more information visit www.rcreee.org and www.irena.org.

Addressing drilling and completion challenges

TERCEL OILFIELD PRODUCTS continues to produce innovative drilling and well construction products to cope with the requirements of drilling in increasingly challenging formations.

The company announced the release of its new Premium series Roller Cone Drill Bits at ADIPEC in November. Tercel's premium bearing roller cone bit line has – at its foundation – precision machined bearing races that are matched to provide the optimum fit and finish for extended operations, even with parameters of higher RPM (Revolutions Per Minute) and heavy WOB (Weight on Bit). The bearings are designed and machined for reliability and consistency.

The Premium Roller Cone Drill Bit

The seal system is designed to provide optimal configuration and a specially formulated extreme pressure synthetic lubricant that extends the bearing life. Specially formulated tungsten carbide hard facing is applied to all surfaces of the steel tooth cutting structure as well as on the shirttail tip and leading edge on all TCI (Tungsten Carbide Insert) and Steel Tooth premium bits to provide extra protection in challenging formations. For additional security, flat top TCIs are pressed into the gauge surface of each steel tooth cone.

Another new product is its patented MicroCORE™ Cutting System, launched in October and consisting of a revolutionary PDC drill bit design that redistributes high-energy consumption from the center of the drill bit to the more efficient areas of the cutting structure. It was developed in collaboration with international oil and gas company Total. Replacing the inefficient compression failure mechanism in the center of a traditional cutting structure, the MicroCORE system delivers more energy to the cutters, higher ROPs (Rate of Penetration) and better quality wellbores. An extensive global field test campaign has shown the MicroCORE cutting system consistently setting new benchmarks in ROP and Distance Drilled in countries across the globe.

> "An extensive global field test campaign has shown the MicroCORE cutting system setting new benchmarks"

Founded in 2010, Tercel is a globally diversified oilfield products company that has brought together a series of innovative local companies under the Tercel brand. With regional headquarters in Houston, Aberdeen, Dubai and Kuala Lumpur, Tercel has 22 sales and support offices, seven manufacturing facilities and 470 employees worldwide. With its strong customer focus, significant investments in R&D, down-hole experience and engineering expertise, Tercel offers an evolving suite of effective, innovative, and often unique products for drilling and completion, with the ability to design and manufacture dedicated products to suit specific applications. Clients include IOCs, NOCs and major oilfield service companies.

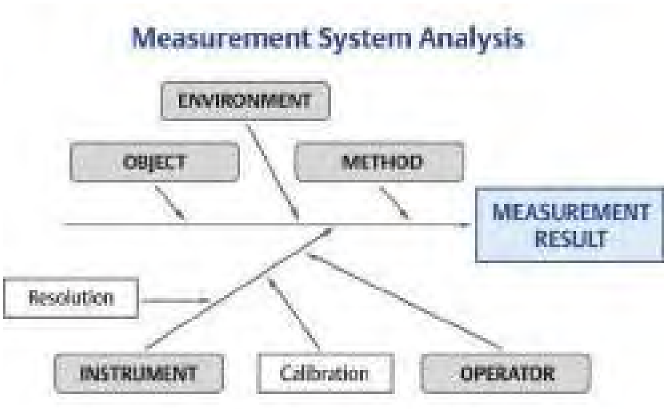
Managing measurement uncertainty

David Fisher, a flow solutions advisor for Emerson's Flow Solutions Group, discusses best practices for managing measurement uncertainty in the field.

METERING SYSTEMS RELY on multiple and complex calculations in order to produce the data required for an operator. While a flow computer delivers mass flow, gross and corrected volumes, total delivered heating value and much more, even a small error in an input can have dramatic effects on the overall measurement uncertainty. This article explores how to achieve improved measurement system uncertainty and avoid costly discrepancies by applying field-proven best practices for the meter selection, auditing, servicing, and management of metering systems.

Measurement systems

There are two basic types of measurement: static and dynamic. Static measurement can only be performed where the fluid is not in motion, such as measuring cans or storage tanks. Where fluids are in motion, known as dynamic measurement, it is not possible to stop the flow and count each individual cubic metre of product. Instead, the fluid has to be broken down to inferred increments of volume. Dynamic measurements are normally associated with production and measure mechanical force or velocity of fluids in a pipe. Accuracy of this type of measurement is not absolute as, inherent in every measurement taken, there is an associated uncertainty.



The term 'uncertainty' has a probabilistic basis and reflects incomplete knowledge of the quantity. All measurements are subject to uncertainty and a measured value is only complete if it is accompanied by a statement of the associated uncertainty. In metrology, measurement uncertainty is a series of observations of parameter, characterising the distribution of the values in statistical terms attributed to a measured quantity.

The term 'accuracy' is not an adequate statement on the quality of the measurement. For oil and gas measurement systems, the treatment of accuracy is always termed as uncertainty.

The term 'uncertainty' tends to appear in places where we would normally expect to see the word 'error', and although the two concepts are closely related, they are different.

Uncertainty, not error

Error is a comparison where the results of one measurement is evaluated against the results of another measurement that is known to be accurate and of the same parameter.

In flow measurement, we are comparing our measurement with another measurement that we have adopted as the standard. We can then state the error of our measurement in relation to that performed by the standard. Because of the limitations of measuring equipment, procedures and the possibility of human error, determining the true value is impossible.

Uncertainty is how we estimate the combined effect of all the components associated with the complete system. Each of these component errors may sometimes be positive and sometimes negative, so that we could end up with a situation where positives and negatives cancelled each other out, leaving a total of zero. As this would not be realistic, we overcome this problem by adding together the squares of the individual components error (thus getting rid of negative signs), and taking the square root of the total.

The lower the uncertainty, the lower the financial exposure.

Determination of uncertainties

Performance of the measurement-under-flowing conditions can be evaluated by making an uncertainty calculation. Many calculation procedures are available in the standards and flow measurement literature. The value of this calculation is not in the numerically "absolute", but is the examination of the significance of each variable that impacts the flow calculation and relates these to the flow measurement.

Since these effects cannot be quantified, they are minimised by recognising their potential existence and properly controlling measurement system design, operation and maintenance. The variables are minimised provided industry standard requirements are met with properly trained personnel. Without proper attention to all potential problems, a simple calculation of the equation variables may mislead a user into believing the measurement is better, or worse, than it actually is.

Applying best practices for managing measurement uncertainties

There are fundamentally two best practice approaches to ensure the lowest uncertainties in flow measurement systems:

- Ensure optimal technology selection for the objectives and application
- Ensure the flow measurement points are operated within design parameters and regularly maintained to industry norms.

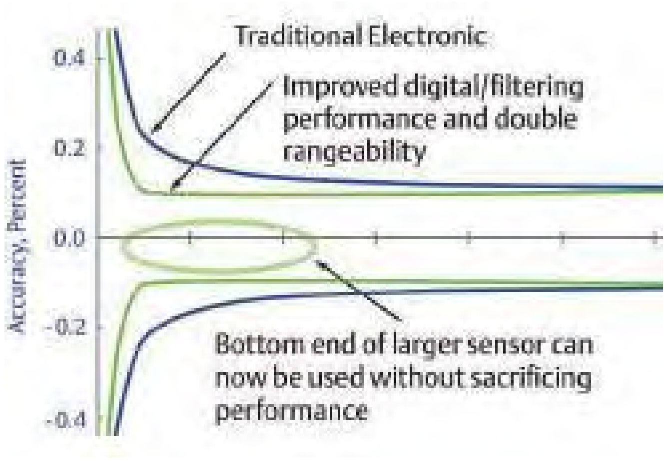
1. Flow measurement technology selection best practice

Technology selection is a critical, and yet straightforward, way to reduce risk and exposure from flow measurement systems.

Quantify and optimise installed performance to reduce process variability - Traditional, often mechanical, flow devices create complexity whereas advancements with newer technologies deliver enhanced performance. Newer technologies offer simplified designs and minimal – if any – wearing parts, helping to reduce maintenance costs and spares holding.

Select in-line devices and eliminate impulse lines - Selecting flow measurement devices that eliminate impulse lines improves reliability and reduces plugging and leaks.

Install non-mechanical flow measurement devices - Non-mechanical flow measurement devices simplify installation and minimise pressure drop. Devices such as ultrasonic meters with no intrusions are termed full-bore design or Coriolis meters with enhanced digital electronics, which take more sample readings, enable the sensor to read more accurately over a larger turndown.



Select maintenance-free flowmeters that can be retrofitted into the application - Gain reliability improvements over mechanical meters; achieve reliable and sustainable measurement, reduce OPEX and maintenance costs and effort.

Use smart diagnostics and wireless networks - Enable predictive maintenance and lower operating costs through advanced diagnostics, condition-based monitoring, online meter verification and remote monitoring to easily access meter performance.

Note: Four technologies that currently meet all the above criteria would be Ultrasonic, Coriolis, Vortex, and Magnetic flow meters.

2. Operation and maintenance to optimise measurement and minimise uncertainty

The following is considered industry best practice where organisations can maximise their measurement performance and maintain the uncertainty limit requirements.

Maintenance of meter equipment - Both the producers and consumers must have confidence that a billing meter is reading the proper delivery quantity. Equipment calibration may change over a period of time; without tests to reconfirm original accuracies of the metering systems, any statement of uncertainty is not complete.

Proving meters - If there is a desire to reduce measurement tolerances, then an actual throughput test can be run against a master meter or a prover system. The master meter should be calibrated and certified to some accuracy limit by an approved testing facility. A prover can come in many forms, but essentially involves a basic volume that has been certified.

Common Capabilities	Provers	Master
High accuracy	✓	✓
Integrated solutions	✓	✓
Compliance to Standards	✓	✓
Ease of installation		✓
Steps from Primary Standard	Tertiary	Quarternary

Utilising diagnostics - Use of diagnostics tools can facilitate reductions in re-calibration and maintenance requirements, moving away from prescriptive time-based type activities to a continuous condition-based monitoring activity, giving the operator a window into the current performance and health of their measurement systems.

Operation considerations - Recognition of operating limits must be considered for an instrument to meet its stated accuracy. A metering system, properly chosen, designed, and installed, may still fail to meet expectations if its instruments are not used to operate in their most accurate range.

Measurement system design - The ownership and responsibility for design, installation, maintenance, and operation of the measurement system of both the producer and consumer are spelled out in the standards, guidelines, and procedures.

Keeping a traceable chain - This is achieved by keeping logbooks and having each item of test equipment calibrated (i.e. re-certified) at regular intervals (normally annually) against a higher standard; this process is often referred to as calibration to a "traceable standard".

Flow measurement auditing - When money and key performance indicators are exchanged for measured material, two or more parties involved will have an agreement which includes a means of auditing the quantities obtained. Sufficient operation and maintenance records are made available to both parties to ensure that the calculated volumes can be arrived at independently. A check of the values used by the other party is made to see the agreement is reached on the volume.

Flow measurement competence - The wide range of disciplines required to maintain and operate effectively requires dedicated trained personnel experienced in the consequences of poor procedures.

Summary

Applying a best practice approach reduces exposure to measurement uncertainty caused by lack of priority and focus as follows:

- Measurement (physical) – by maintenance; management; validation; optimisation; operation
- Commercial (exposure) – by compliance; audit; mis-measurement; partners; review
- Reputation (maintain) – by responsible measurement policy.

An organisation's measurement performance can be greatly improved by addressing compliance, improvement and assurance when applying a best practice approach to flow measurement technology selection, and ensuring regular correct operations and maintenance of these critical flow measurement points. ■

Facilitating safe and reliable **plant operations**

Yokogawa is shortly to release an enhanced version of its integrated production control system.

The CENTUM VP system in operation

YOKOGAWA ELECTRIC CORPORATION has announced the CENTUM® VP R6.01, an enhanced version of the company's flagship integrated production control system, will be released in February 2015.

Founded in 1915, Yokogawa is engaged in industrial automation and control (IA), test and measurement, and other businesses segments, conducting cutting-edge research and innovation. Its global network of 86 companies spans 56 countries. The IA segment plays a vital role in a wide range of industries including oil, chemicals, natural gas, power, iron and steel, pulp and paper, pharmaceuticals and food.

R6.01 marks the first step in the development of an all-new CENTUM VP that will play a central role in Yokogawa's VigilantPlant® strategy, Yokogawa's automation concept for safe, reliable, and profitable plant operations.

Development background

Since the release of CENTUM in 1975, Yokogawa has continually strived to improve this platform by incorporating the latest technologies. In 2008, Yokogawa released CENTUM VP, the latest generation of this series. To date, more than 25,000 CENTUM series systems have been delivered around the world.

> "Plant operators can be assured of an optimum engineering environment"

For the development of the 'all-new' version of CENTUM VP, there are four innovations: hyper-intuitive operation, total automation management, intelligent plant conductor and sustainable plant. These aim to provide customers with an optimum operating environment that will improve the safety, reliability and efficiency of their operations, and bring greater synergy between control systems and devices in the field. This should significantly improve production efficiency and optimise overall maintenance of their production control systems, safety instrumented systems, programmable controllers, and all field devices, resulting in reduced costs, long-term stability of operations and optimum plant performance.

With R6, plant operators can be assured of an optimum engineering environment that spans the entire plant lifecycle, from plant design and the engineering and installation of systems and devices to the start-up of production, maintenance and renovation, says the company. It is designed to meet the most stringent industry requirements for safe and reliable plant operations and environmental protection.

R6.01 features an exciting expansion of Yokogawa's lineup of I/O devices and introduces crucial new control system components, reducing the time required to configure and install a control system.

New features

1. N-IO (Network-IO): A field I/O device with a versatile I/O module that can handle multiple types of I/O signals. It fulfills the functions of universal I/O and a signal conditioner, enabling configurable software and flexible I/O assignment. With the N-IO, it is no longer necessary to replace the I/O module, reducing the amount of rewiring that must be done when changing sensor types and/or layouts during a plant revamp. This significantly reduces the amount of work that has to be performed by plant engineers and maintenance personnel.

Yokogawa has signed OEM agreements with Pepper1+Fuchs GmbH and MTL Instruments Group Ltd, under which Yokogawa will receive baseplates and market them as its own products. These will be used in combination with the company's N-IO modules and intrinsic safety (IS) isolators procured from the two companies. This tie-up means Yokogawa is able to ensure that the N-IO conforms to the major IS regulations in Europe, Asia and the Americas.

2. FieldMateTM Validator: A software tool that is used with N-IO devices to check field device wiring and verify that the device operates correctly, without the need for the whole CENTUM system to be installed, as before.

3. Automation Design Suite (AD Suite): A first-of-its-kind integrated engineering environment that goes beyond traditional DCS engineering functionality, with an entirely new database structure that feeds standardised and consistent engineering information, maintains engineering data integrity, eliminates inconsistencies between the design information and the actual system, manages change and supports the automation lifecycle. At the same time, it facilitates the reuse of valuable engineering knowhow, both saving time and reducing cost. ■

For more information about Yokogawa in the Middle East, please visit the company's website www.yokogawa.com, or email: info@bh.yokogawa.com

Measuring water-cut through **capacitive sensors**

Robert J. Irving, vice president, AMETEK Sensor Technologies, discusses the operating principles and performance characteristics of capacitive analysers in applications ranging from custody transfer to well-testing.

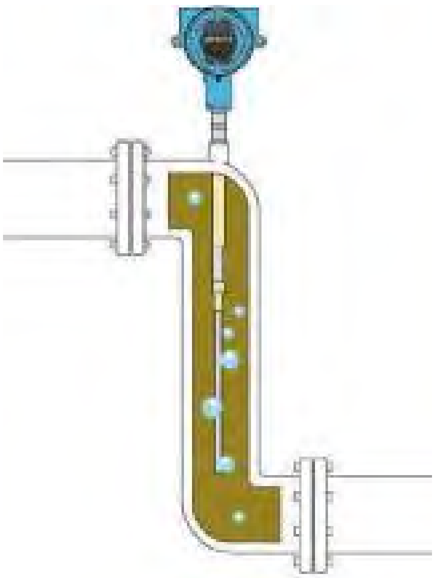
MEASURING THE AMOUNT of water in oil, or 'water-cut', is a key process control and production management variable in today's oilfields. It is also a central factor in determining just how much of those royalty-bearing fluids actually become available for sale.

Because water-cut is such a critical measurement, a number of technologies have been developed over the years to measure the composition of oil-and-water mixtures. Coriolis densitometers, microwave analysers and infrared spectrometers all have application strengths in certain niches; however, none equals the cost-effective, broad applicability of capacitance analysis to the water-in-oil mixtures most common to the oil patch.

What is capacitive analysis?

The capacitive analyser is, in effect, a concentric inline capacitor that leverages the relatively large difference in dielectric constant between oil (k 2.3) and water (k 80) to infer stream composition. The system transmits a radio frequency voltage to the sensing element and measures the capacitance between the probe and the surrounding pipe. The more water there is in the intervening fluid, the higher its capacitance.

> "Fortunately, most oilfield applications do not operate on the water-continuous side of the spectrum"



The probe of an insertion-style capacitive water-cut analyser forms a concentric capacitor with the surrounding pipe, allowing it to calculate the average composition of the entire stream

From the measured capacitance, the percentage of water in oil can be calculated based on a predictable relationship in the properties of the materials. Further, while water's dielectric constant varies little with temperature, system electronics can compensate for temperature-dependent changes in the oil-phase dielectric constant.

While this conceptually elegant approach does have limitations, it is simple, relatively inexpensive and requires little maintenance relative to other options. Additional advantages of capacitive water-cut analysers include:

- Unrivalled high temperature and pressure capabilities (up to 450°F and 1,500-psi)
- Non-epoxy coatings that are resistant to even erosive, sand-bearing mixtures
- Relative immunity to paraffin build-up
- Insertion probe assemblies that are easy to install and clean, as well as, typically, being straightforward to calibrate.

The most glaring drawback of the capacitive analyser is that the underlying physics limit it to oil-continuous mixtures. As water content in an oil-continuous mixture increases, there comes an inversion point after which the oil is dispersed in water rather than the water dispersed in oil. At this point, the fluid becomes conductive and the capacitor is effectively 'shorted out'. From a practical standpoint, this limits the capacitive analyser's range to 0-50 per cent water with light oil, and 0-80 per cent with heavy oil. Other technologies can measure over the full 0-100 per cent water range, but they are more complex, require more maintenance and typically cost three to four times as much. Fortunately, most oilfield applications do not operate on the water-continuous side of the spectrum.

Separator control and optimisation

Among the common applications of capacitive water-cut analysis in oilfield operations is the thermal separator, or 'heater treater'. This uses thermal energy in combination with chemical injection and/or high-voltage electrical fields to break oil-water emulsions. Residence time in these normally horizontal units allows the relatively dry oil and relatively oil-free water to settle into two parallel streams for further processing or storage.

For final oil-phase quality assurance, a capacitive water-cut analyser is used in conjunction with another radio frequency probe to detect the level of the electrical interface between the oil and water phases within the tank. (This electrical interface within the emulsion layer is, in fact, the same relatively sharp transition between oil-in-water and water-in-oil phases that renders capacitive water-cut analysers unsuitable for determining the composition of water-continuous mixtures). Together, these measurements provide the basis for optimal control of a well-behaved separator, meaning one with a predictably consistent emulsion thickness. The water-cut monitor dictates the level at which to maintain the electrical interface (to provide necessary oil dryness). The interface gauge, in turn, determines the position of the water-dump valve necessary to maintain the interface level at the position prescribed by the water-cut monitor. Less well-behaved emulsion layers might include a high-level interface gauge or switch to increase chemical injection, reduce throughput, or take other measures to reduce emulsion thickness.

Automated well testing

While the production separator described in the previous section might be used to continuously process the combined output of many wells across an oilfield, automatic well testing (AWT) systems are an important tool for assessing and managing the productivity of individual wells. An AWT, in contrast to a production separator, consists of a small, batch-oriented vessel that is used to sequentially test the productivity and qualitative output of dozens of wells per day.

In short, the output of a particular well is metered to the test vessel until full to a given level. Once allowed to separate, net oil is calculated by a combination of capacitive water-cut analysis of the oil phase, measurements of the water level, oil-water interface level, mass flow rate (typically measured using a Coriolis meter) into the tank, and associated temperatures and pressures. Net oil is the amount of oil produced net of its 'basic sediment and water' (BS&W) content. A very large oilfield might contain as many as 100 AWTs, each testing 20-50 wells in scheduled rotation.

The data collected by AWTs provide crucial insights into geological conditions underground and can help in the development of strategies for optimal oilfield lifecycle management.

> "The data collected by AWTs provide crucial insights into geological conditions underground"

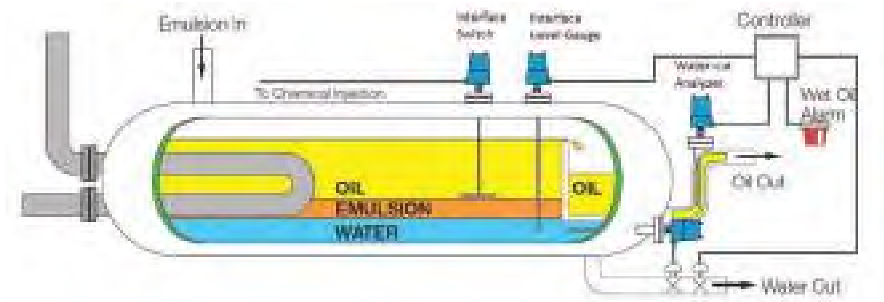
Lease automated custody transfer

The movement of oilfield production to pipelines, trucks, railcars or storage tanks often represents a custody transfer - a change in ownership or allocation that signals an exchange of currency. In larger facilities, oil typically is sold through a Lease Automated Custody Transfer (LACT) unit that measures the flow rate and composition of the crude as it changes hands. LACT units, or skids, are designed to API standards and to satisfy any additional measurement and sampling standards required by the purchaser. The value received for the crude will depend on its density, water cut (BS&W content) and volume transferred.

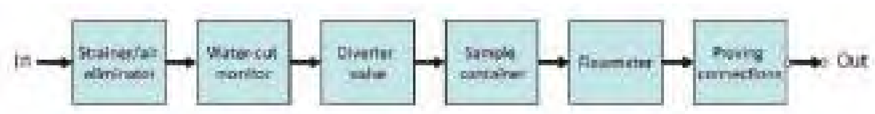
Accuracy of the volume measurement is assured by periodic validation of the flowmeter against a ±0.2 per cent accurate prover. Water content and density for compensation purposes is calculated by analysis of a continuously collected sample diverted from the primary stream. (The sample flow rate is calibrated to always be proportional to the total flow, so sample composition will accurately reflect the average stream composition).

In this application, a capacitive water-cut analyser can calculate the value of the transferred crude while policing the upper limit of the allowable water content. If the water content gets too high, it shuts down the transfer and diverts the oil back to its source for further processing.

Separation operations, automated well testing and lease automatic custody transfer are, but three of the oilfield applications for which capacitive analysis has a record of reliable, cost-effective performance. In many other situations where oil meets water, capacitive cut monitors are proving their worth as well. ■



Together with an RF interface level gauge, a capacitive water-cut monitor can provide effective control of a thermal separation unit



Simplified functional diagram of a LACT unit

Leading in human development

Bapco continues its strong focus on developing its human resources.

FOR MORE THAN eight decades, Bapco has been characterised by its efforts to upgrade the human development process and enhance HR strategies in fostering the growth of the Kingdom of Bahrain, in addition to investing hugely in qualifying the national population in line with the most advanced trends in global markets.

Ghassan Ali Al Muhanna, Bapco's general manager – human resources and administration, said, "Bapco is committed to a distinct work pattern in fostering a human development process through applying the most advanced techniques worldwide, with the aim of establishing a solid base of efficient national resources capable of fulfilling the growing requirements in the future. Bapco applies the most updated techniques to achieve this goal, including the Executive Development Programme, which prepares the future leaders of the business, in addition to organising major training courses in collaboration with the London Business School. The company's Performance Management Procedure (PMP) is another tool applied by Bapco in enhancing HR strategies, and we are proud to announce that the programme is moving ahead very confidently."

Ghassan Ali Al Muhanna, Bapco's general manager - human resources and administration

Bapco has a strong focus on advancing human development

Al Muhanna continued, "In the field of education, Bapco proudly commits itself to offering a wide range of scholarships for its nationals to obtain the best educational opportunities both inside and outside the Kingdom, in coordination with the Ministry of Education. Industrial training is also a major element which receives prime focus from Bapco for preparing qualified generations capable of meeting the needs and requirements of the labour market in the future.

> "Bapco takes great pride in the fact that we have a wide range of Bahraini women working at various levels"

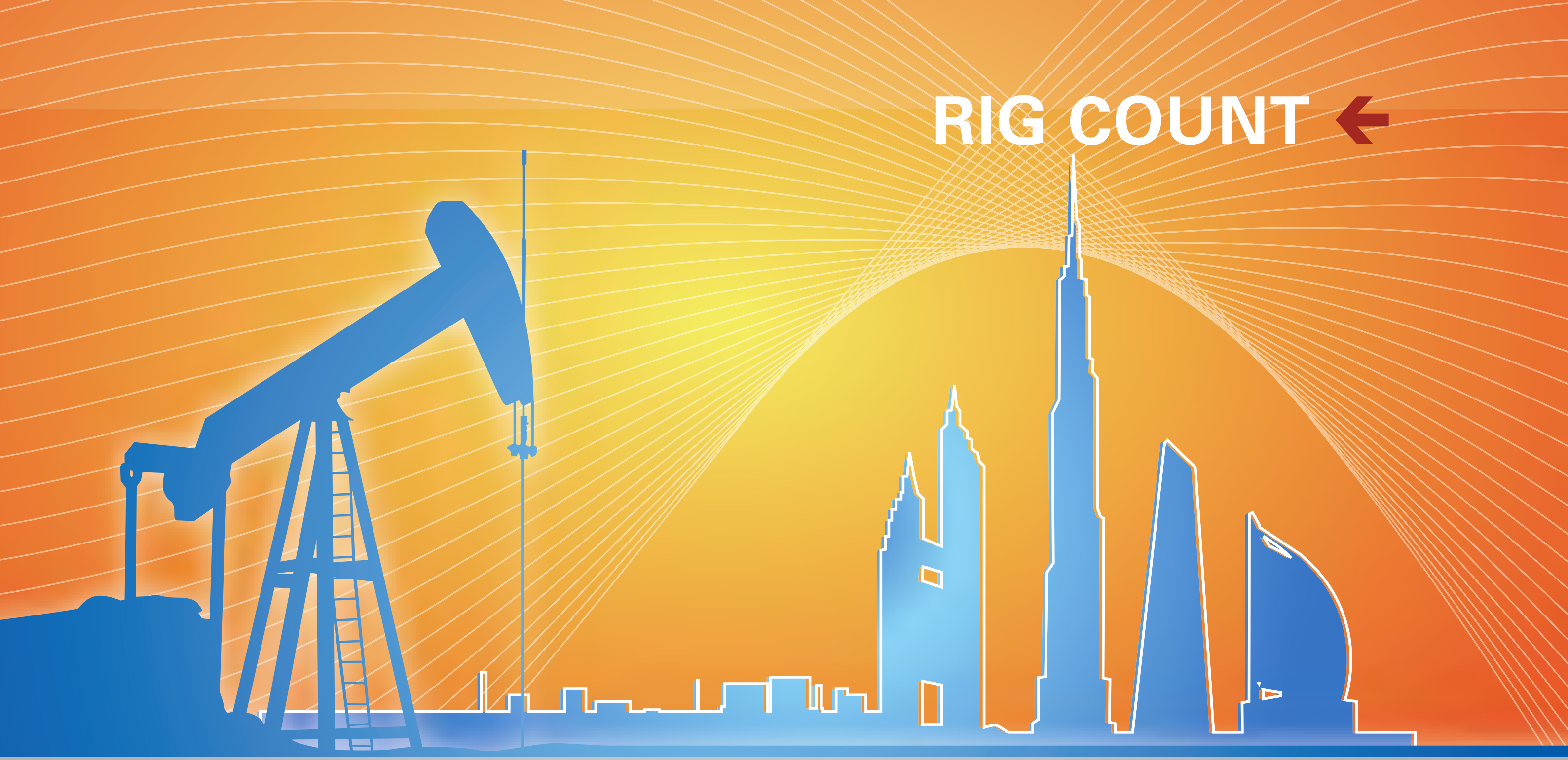
"In addition, Bapco has played an integral role in supporting the development of Bahraini women. Supporting women has been part of Bapco's mission throughout history," said Al Muhanna. "Since the introduction of scholarships for women in the 1960s, Bahraini women have played a pivotal role in the progress of the company. Large numbers of female students have received Bapco's educational scholarships, and Bapco has always endeavored to incorporate women into various administrative and technical positions to equip them to flourish in broader disciplines," he added.

"Bapco takes great pride in the fact that we have a wide range of Bahraini women working at various levels, as managers, engineers, supervisors, nurses, specialists and administrators. They provide an excellent image of Bahraini women who work hard in serving the goals of the Kingdom and the company."

"Additionally, Bapco provides them with constant training to polish their skills and knowledge. We also highlight celebrations marking Bahraini Woman Day in line with the directives of the Supreme Council for Women towards enhancing the role of women in fulfilling the growth needs of the Kingdom," he continued. "Bapco's support for women does not stop at this level. We provide key support to women in the athletic field. Female athletes of Bapco have assumed pioneering roles in fostering sports activities in the Kingdom and continue to set the trend for other organisations nationwide. Bapco's support for women is an ongoing process in appreciation of their key role as vital partners in national progress and major contributors to the future generations of the Kingdom."

Al Muhanna concluded that Bapco's Corporate Social Responsibility (CSR) philosophy reflects its commitment to the support of human development not only in the company, but also throughout the Kingdom as a whole. ■

For more information please visit Bapco's website at www.bapco.net or our account on Facebook www.facebook.com/bapco or Instagram @bapco_bh or Twitter www.twitter.com/bapco



Middle East & North Africa

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

	THIS MONTH			VARIANCE	LAST MONTH			LAST YEAR		
Country	Land	OffShore	Total	From Last Month	Land	OffShore	Total	Land	OffShore	Total
Middle East										
ABU DHABI	27	10	37	2	26	9	35	19	8	27
DUBAI	0	2	2	1	0	1	1	0	0	0
IRAQ	60	0	60	4	56	0	56	80	0	80
JORDAN	0	0	0	0	0	0	0	0	0	0
KUWAIT	43	0	43	2	41	0	41	30	0	30
OMAN	58	0	58	-1	59	0	59	45	1	46
PAKISTAN	22	0	22	3	19	0	19	21	0	21
QATAR	3	6	9	-2	3	8	11	2	7	9
SAUDI ARABIA	92	20	112	4	89	19	108	64	19	83
SUDAN	0	0	0	0	0	0	0	0	0	0
SYRIA	0	0	0	0	0	0	0	0	0	0
YEMEN	4	0	4	1	3	0	3	4	0	4
TOTAL	309	38	347	14	296	37	333	265	35	300
North Africa										
ALGERIA	51	0	51	6	45	0	45	46	0	46
EGYPT	47	6	53	0	47	6	53	47	11	58
LIBYA	7	2	9	1	7	1	8	15	0	15
TUNISIA	2	1	3	1	2	0	2	3	1	4
TOTAL	103	12	114	6	101	7	108	111	12	123

Source: Baker Hughes

Project Databank

Compiled by Data Media Systems

OIL, GAS AND PETROCHEMICALS PROJECTS - KUWAIT

Project	Facility	Budget ($ US	City	Start Date
Al Khafji Joint Operation (KJO) - Al Hout Field - Onshore and Offshore Renovation (Overview)	Associated Gas	400,000,000	Various	2010-Q4
Al Khafji Joint Operation (KJO) - Al Hout Field - Onshore and Offshore Renovation - Offshore Package	Associated Gas	200,000,000	Various	2012-Q4
Al Khafji Joint Operation (KJO) - Al Hout Field - Onshore and Offshore Renovation - Onshore Package	Associated Gas	200,000,000	Various	2010-Q4
Al Khafji Joint Operations (KJO) - Natural Gas Pipeline	Gas Pipeline	130,000,000	Various	2010-Q4
EQUATE Petrochemicals Company / Green Carbon Company - Green Carbon Project	Carbon Dioxide	100,000,000	Shuaiba	2010-Q4
Kuwait National Petroleum Company (KNPC) - Acid Gas Removal Plant	Acid Gas	522,176,000	Ahmadi	2008-Q1
Kuwait National Petroleum Company (KNPC) - Fifth Gas Train in Mina Al Ahmadi Refinery	Gas Production	2,000,000,000	Mina Al Ahmadi	2011-Q2
Kuwait National Petroleum Company (KNPC) - High Integrated Pressure Protection for Gas Units	Gas Processing	150,000,000	Mina Al Ahmadi	2014-Q2
Kuwait National Petroleum Company (KNPC) - LNG Storage & Re-gasification Services	Liquefied Natural Gas (LNG)	250,000,000	Mina Al Ahmadi	2013-Q2
Kuwait National Petroleum Company (KNPC) - North LPG Tank Farm in Mina Al Ahmadi Refinery	Oil Storage Tanks	550,000,000	Mina Al Ahmadi	2010-Q3
Kuwait National Petroleum Company (KNPC) - Sulphur Handling Facilites	Sulphur Recovery	600,000,000	Mina Al Ahmadi	2005-Q3
Kuwait National Petroleum Company (KNPC) - Sulphur Recovery Units - Mina Abdulla Refineryy	Sulphur Recovery	1,000,000,000	Mina Abdullah	2011-Q4
Kuwait Oil Company (KOC) - Booster Station 171 (BS-171)	Gas Gathering Centre	950,000,000	West Kuwait	2009-Q2
Kuwait Oil Company (KOC) - Central Gas Utilization Project	Sulphur Recovery	1,000,000,000	Wafra	2012-Q4
Kuwait Oil Company (KOC) - Construction of South East Flowlines	Flowlines	100,000,000	Southeast Kuwait	2012-Q2
Kuwait Oil Company (KOC) - Effluent Water Injection Phase I and Sea Water Injection Phase II	Water	445,000,000	Various	2009-Q4
Kuwait Oil Company (KOC) - Electrical Submersible Pumping Network	Pumping Station	230,000,000	Northern Kuwait	2011-Q4
Kuwait Oil Company (KOC) - Electrical Submersible Pumping Systems - Zone A	Pumping Station	190,000,000	Kuwait	2011-Q2
Kuwait Oil Company (KOC) - Electrical Submersible Pumping Systems - Zone B	Pumping Station	180,000,000	Kuwait	2011-Q2
Kuwait Oil Company (KOC) - Environmental Remediation	Oil Field Development	1,000,000,000	Kuwait	2012-Q3
Kuwait Oil Company (KOC) - Gathering Centres (GC) 29, 30 and 31	Gas Gathering Centre	2,500,000,000	Northern Kuwait	2011-Q1
Kuwait Oil Company (KOC) - Heavy Oil Development - Phase 1 - Package 1	Oil Field Development	2,000,000,000	Jahra	2013-Q1
Kuwait Oil Company (KOC) - Heavy Oil Development - Phase 1 - Package 2	Oil Field Development	2,000,000,000	Jahra	2013-Q1
Kuwait Oil Company (KOC) - Heavy Oil Development - Phase 1 - Package 3	Oil Field Development	2,000,000,000	Jahra	2013-Q1
Kuwait Oil Company (KOC) - High Pressure Flow lines for Jurassic Wells	Flowlines	230,000,000	Northern Kuwait	2010-Q4
Kuwait Oil Company (KOC) - Installation of South East Flowlines	Flowlines	100,000,000	Southeast Kuwait	2012-Q2
Kuwait Oil Company (KOC) - Jurassic Early Production Facility (EPF) - Phase 2	Oil Production	100,000,000	Jurassic	2008-Q4
Kuwait Oil Company (KOC) - Maintenance of Northern Crude Oil Production Facilities	Oil Production	200,000,000	Northern Kuwait	2010-Q2
Kuwait Oil Company (KOC) - Maintenance of Southern Oil Production Facilities	Oil Production	150,000,000	Kuwait South	2014-Q3
Kuwait Oil Company (KOC) - Maintenance of Western Crude Oil Production Facilities	Oil Production	200,000,000	West Kuwait	2010-Q2
Kuwait Oil Company (KOC) -	Steam Injection	4,500,000,000	Jahra	2013-Q2
Kuwait Oil Company (KOC) - Wara Oil Field	Oil Field Development	500,000,000	Southeast Kuwait	2014-Q1
Kuwait Oil Tanker Company (KOTC) - Aframax Crude Oil Tanker	Oil Storage Tanks	500,000,000	Kuwait	2011-Q1
Kuwait Oil Tanker Company (KOTC) - LPG Filling Plant	LPG Storage Tanks	200,000,000	Umm Al Aish	2006-Q1
Kuwait Oil Tanker Company (KOTC) - Very Large Crude Carriers (VLCC_s)	Very Large Crude Carriers (VLCCs)	500,000,000	Kuwait	2011-Q3
Ministry of Electricity and Water (MEW) - Al Zour North Pipelines	Water	200,000,000	Ahmadi	2010-Q3
Ministry of Electricity and Water (MEW) - Water Pipelines (Al Zour Water Complex to Mina Abdullah Complex)	Water	400,000,000	Ahmadi	2011-Q2
Petrochemical Industries Company (PIC) - Olefins III	Linear High Density Polyethylene (LHDPE)	3,000,000,000	Shuaiba	2006-Q2
United Petrochemical Company (UPC) - Purified Terephthalic Acid _(PTA) and Polyethylene Terephthalate (PET) Plant	Polyethylene	700,000,000	Kuwait	2008-Q1

Project Focus

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Project Summary

Project Name	Kuwait National Petroleum Company (KNPC) - Fifth Gas Train in Mina Al Ahmadi Refinery
Name of Client	KNPC - Kuwait National Petroleum Company
Budget ($ US)	2,000,000,000
Facility Type	Gas Production
Status	EPC ITB
Start Date	Q2-2011
End Date	Q4-2017
Location	Mina Al Ahmadi

Project Background

The Kuwait National Petroleum Company is on track to construct the fifth gas train in Mina Al Ahmadi complex. It is designed to process associated gas and condensate from KOC gathering centres in southeast Kuwait and north Kuwait oil fields. It will also be supplied with refinery gases from the acid gas removal plants at the two other refineries owned and operated by the KNPC Shuaibah refinery and Mina Abdullah refinery.

Project Status

Nov 2014	The deadline to submit bids has been extended. The new deadline to submit bids is on 25th January 2015.
Sep 2014	KNPC has floated tenders for the construction of the fifth gas train. The deadline to submit bids was on 7th December.
Feb 2014	Several pre-qualified companies were invited to submit the bids.
Dec 2013	The ITB for the EPC contract has been issued.

Contractors

Contract Type	Pre-Qualified	Bidders	Awarded
EPC	• Tecnicas Reunidas • Saipem • GS Engineering & Construction • Daelim Industrial Co., Ltd. • SK Engineering & Construction • Hyundai Engineering & Construction • Samsung Engineering Co. • Hyundai Heavy Industries • Petrofac		
FEED			• AMEC

Project Schedules

2Q-2011	Feasibility Study
3Q-2014	EPC ITB
4Q-2014	Engineering & Procurement
1Q-2015	Construction
4Q-2017	Completed

Project Scope

The scope of the scheme involves:

- Feed gas compressor
- NGL recovery
- Flare system
- Feed gas dehydration
- Fractionation & product treating unit
- Nitrogen generation & distribution system
- LPG dehydration
- Substation
- Air compression system

باستخدام الحُفر قليلة القطر، والأنابيب الملتفة في وضع الاستعداد، لمدة ١٥ عاما ولاتزال عالقة في مكانها بلا تقدم يذكر، ولكن العديد من التقنيات الأخرى تشهد بوضوح حالة من التقدم والتطور. ومن ثم فلا يوجد أحد يمكنه أن يكون في أمان من القوى التنافسية الناشئة. فقد صرح أكثر من ثلاثة أرباع المشاركين في المسح أن الضغوط من أجل التجديد والابتكار قد ارتفعت على مدار العامين الماضيين.

وقد بدأ الاستثمار في قطاع البحث والتطوير في الارتفاع في منتصف العقد الأخير بعد عقود من التراجع البطيء. وكان محركه في ذلك ـ إلى حد كبير ـ ارتفاع الأسعار، حيث وصل الإنتاج التقليدي إلى الذروة في ظل خلفية تتميز بنمو قوي في الطلب العالمي. والآن يبدو أن الأحوال متجهة نحو مزيد من التسارع. ففي العامين الأخيرين زادت ٥٩ في المائة من الشركات التي شملها المسح، من متوسط إنفاقها على البحث والتطوير، حيث قامت شركة واحدة من بين كل أربع شركات تقريبا بزيادة ذلك الإنفاق بمعدل يزيد عن ١٠ في المائة. وبالنظر إلى المستقبل، أعرب ٦٨ في المائة من المشاركين عن نيتهم في زيادة الميزانيات المخصصة للبحث والتطوير، حيث ينوي حوالي نصف العدد الإجمالي من تلك الشركات زيادة تلك الميزانيات بنسبة ١٠ في المائة على الأقل. وعلى الرغم من أن جزءاً من تلك الزيادة ربما يهدف إلى التعامل مع ارتفاع التكلفة، فإن الجزء الأكبر يمثل نموا حقيقيا في النشاط والمصالح. فعلى سبيل المثال زاد الوقت الذي تنفقه الإدارة على البحث والتطوير والابتكار في ٤٥ في المائة من الشركات خلال الأعوام الثلاثة الأخيرة، ويتوقع ٥٤ في المائة من المشاركين أن يحدث نفس الشيء في الأعوام الثلاثة المقبلة، في حين يتنبأ ٦ في المائة فقط بحدوث تراجع.

ووفقا لمن تم استطلاع رأيهم في المسح، فإن شركات النفط العالمية قد استحدثت ـ إلى حد كبير ـ أكثر التقنيات إنجازا في العامين الأخيرين (وفقا لما صرح به ٤٦ في المائة) يليها شركات التنقيب والإنتاج (٣١ في المائة). ويقف احتياج شركات النفط العالمية وشركات التنقيب إلى البحث في مناطق جديدة واستغلال احتياطيات أكثر صعوبة في الوصول إليها، وراء صدارتها لعالم الابتكار والإبداع. ومع ذلك ففي العامين القادمين، يتوقع المشاركون في المسح أن تتراجع الميزة التي تتمتع بها شركات النفط العالمية، لأن شركات أخرى بصدد جلب تقنيات جديدة. وتحديدا يرى المشاركون في المسح تزايد الدور الذي تقوم به شركات النفط المحلية، حيث يتوقع ثلثا الأشخاص، الذين تم استطلاع رأيهم، أن شركات النفط المحلية سوف تزيد من إنفاقها على قطاع البحث والتطوير بشكل كبير، مما يدعم سعيها لتحقيق نمو عالمي أكبر، ورغبة في زيادة تشغيلها مثل شركات النفط العالمية.

الاسترجاع المعزز للنفط سيكون له أثر كبير خلال الأعوام المقبلة

قطاع النفط والغاز لا يزال شديد المحافظة

في حين أن قطاع النفط والغاز قد أصبح أكثر رغبة لتبني حركة تغيير كبيرة، فإنه ظل متأثرا بالأفكار المحافظة إلى حد كبير. وتحديدا فإن المهارات الجديدة المطلوبة مجتمعة، مع المخاطر التي يمكن أن تجلبها التقنيات الجديدة، مثل ما يحدث في حالة توقف التشغيل، تجعل الغالبية العظمى من الشركات تُحجم عن أن تكون أول من يتبنى تلك الابتكارات والتجديدات الجوهرية. وبدلا من ذلك يصف ٥٦ في المائة من المشاركين أنفسهم بأنهم «سريعو الاتباع» حيث يقومون بإجراء تغييرات بمجرد أن يُثبت الآخرون جدارتها وقيمتها، في حين يعتبر ربع المشاركين فقط أنفسهم من «المستخدمين الأوائل». ومن الأمور ذات الأهمية أن تأخر الانتشار يعد عائقا رئيسيا كبيرا في طريق التقدم، حيث يؤدي إلى تباطؤ التسويق التجاري للأفكار الجديدة. وبدرجة كبيرة يعود هذا إلى الصعوبات المتعلقة بإجراء الاختبارات في ظروف مناسبة وواقعية. ويذكر أكثر من واحد من كل خمسة (٢١ في المائة) أن ذلك بمثابة الصداع الأكثر إزعاجا لهم في التعامل مع متطلبات ضمان الجودة ذات الصلة بالتوزيع والانتشار.

وبالنظر إلى حلقة الوصل التي تربط ما بين الابتكار والميزات التنافسية، لا يكون من المدهش أن مَن شاركوا في المسح صرحوا بأنه في العامين الماضيين كانت البحوث الداخلية الاتجاه الأكثر انتشارا في تطوير الابتكار والإبداع (وفقا لما صرح به ٥٩ في المائة من المشاركين). ورغم أن هذا سوف يظل النموذج الأكثر شيوعاً وانتشاراً في العامين القادمين (٥١ في المائة)، تتطلع الشركات إلى توزيع النفقات وتقليل مخاطر التطور والتقدم. وتحديدا، فإنه من المنتظر أن يصبح تنفيذ عمل مشترك مع شركاء خارجيين أكثر شيوعا وانتشارا. وينبغي أن يؤدي هذا إلى المزيد من التغير السريع. وفي حين أن الشركات التي تُقيِّم مستوى الابتكار لديها بأنه «ناجح بشدة» تعتمد على البحث والتطوير الداخلي إلى حد يشبه ما تقوم به نظيراتها من الشركات الأقل نجاحا، فإن تلك الشركات تكون أيضا أكثر استعدادا لعقد شراكة مع الآخرين في سعيها نحو تحقيق النجاح.

يمكن تنزيل «تقرير الرادار بشأن تقنية النفط والغاز ٢٠١٤» الذي أصدرته شركة لويدز ريجستر إنرجي عن طريق الرابط:
www.lr.org/technologyradar.

قطاع النفط والغاز يقود حركة التقدم التكنولوجي

شركة لويدز ريجستر إنرجي تُجري مسحاً تُقيِّم فيه تأثير الابتكار والاستثمار على قطاع النفط والغاز العالمي.

ربما يتصدر التكسير الهيدروليكي، أو ما يعرف اختصارا بتقنية التكسير، العناوين الرئيسية بتأثيره الثوري على إنتاج الطاقة في الولايات المتحدة، ولكنه ليس سوى جزء صغير فقط من التحول التكنولوجي الراهن في قطاع النفط والغاز العالمي، وفقا للمسح الذي تم إطلاقه في بداية عام ٢٠١٤، وتم نشره في ٣٠ سبتمبر/أيلول الماضي. وبما أن تراكمات الهيدروكربون سهلة الاستخراج آخذة في النفاد، فإن الشركات المبتكرة تتطلع بشكل متزايد إلى مناطق حدودية أكثر وعورة للاحتفاظ باحتياطيات مؤكدة وزيادة المنتج النهائي، وكأنها بشكل جماعي تدفع عقارب الساعة إلى الوراء للعودة إلى مرحلة «الذروة النفطية». ومما عزز من هذا الإجراء ثبات أسعار النفط المرتفعة لفترة طويلة، حيث كان ذلك أيضا محركا ودافعا أساسيا نحو موجة واسعة من التجديد والابتكار نجحت في دفع القطاع إلى صدارة التقدم والتطور التكنولوجي على المستوى العالمي.

ويعد هذا بمثابة تحول عكسي لمرحلة طويلة الأجل من التراجع التي كانت بدورها القوة المحركة للتقدم في مجالات متنوعة، مثل علم الآليات (الروبوتيكس) والميكنة وتحليل البيانات وتكنولوجيا النانو. يضاف إلى هذا أن الحلول التكنولوجية مطلوبة لمعالجة ارتفاع النفقات وتداعي البنية التحتية بسبب الشيخوخة والمتطلبات التنظيمية الصارمة وتغير مصادر الطاقة ونقص المهارات. وإذا وضعنا ذلك في الاعتبار فإن شركات اليوم لم يتبق لها خيار سوى التجديد والابتكار. إن أي تحول مستمر تقوده التكنولوجيا في قطاع يحفل بقرارات استثمارية طويلة الأجل ونفقات رأسمالية مرتفعة، سوف يكون غير متوقع ومعقداً، وسوف يكون دائما ـ إلى حد ما ـ مرهونا بأسعار النفط المستقبلية المتوقعة. والتقرير الماثل بين أيدينا، الذي أعدته شركة لويدز ريجستر إنرجي بناء على مسح شمل أكثر من ٢٥٠ شخصية من كبار المسئولين التنفيذيين في مجال الصناعة وإجراء مقابلات تفصيلية متعمقة مع العديد من رؤساء الشركات،

أرامكو السعودية دشنت مؤخرا مركز أبحاث جديداً في هوستون

ينظر فيما يخص أوجه التطور والتقدم المحتملة الماثلة قدما، إلى جانب التغيرات المحتملة في طريقة تعامل القطاع وموقفه من مسألة الإبداع والابتكار.

النتائج الرئيسية

وفقا للمشاركين في المسح، فإن هناك مجموعة متنوعة من التقنيات تبدو موضوعة خصيصا لكي يكون لها تأثيرٌ كبيرٌ في السنوات القادمة، بما في ذلك العديد من التقنيات ذات الصلة، بمد أجل الأصول القائمة مثل تقنيات الاسترجاع المعزز للنفط والغاز. وفيما يتعلق بالتأثيرات قريبة المدى، تأتي الميكنة على رأس القائمة بما في ذلك التشغيل بتقنية التحكم عن بعد، والتشغيل تحت سطح البحر، حيث تسعى الشركات للتعامل مع البيئات الوعرة التي تشكل تحدياً كبيراً. ومن المتوقع أن يكون لتقنيات الحفر بدرجات الحرارة العالية، والضغوط المرتفعة، وعمليات التكسير متعدد المراحل، تأثيرٌ كبيرٌ. ولكن من المتوقع أيضا أن تنتشر هذه التقنيات بشكل كامل بحلول عام ٢٠٢٠، إضافة إلى العديد من التقنيات الأخرى. ومن الأمور المتساوية في الأهمية الاستخدام الأكثر فاعلية للبيانات وأجهزة الحاسب. فقد اتفق ٥٨ في المائة من الأشخاص الذين شملهم المسح، على أن الكثير من الإنجازات المستقبلية ستتضمن «البِت والبايت بدلا من المكونات الصلبة والأجهزة». وإضافة إلى ذلك، بداية من عام ٢٠٢٥ وما بعده، سوف ترتبط التجديدات الأكثر توقعا، والتي ينتظرها الناس بشغف، بآليات التشغيل تحت سطح البحر.

وأوضح الأشخاص الذين أجريت معهم المقابلات، أنه غالبا ما تكون الابتكارات التي تستخدم مجموعة متنوعة من التقنيات الجديدة أو التقنيات القائمة مجتمعة، هي التي تؤدي إلى إحداث التغيرات الأكثر دراماتيكية. ومع ذلك القدر الكبير من التكنولوجيا التي من المحتمل أن تجتاح العالم في العقد القادم، فإن الشركات الكبرى في عالم الغد سوف تكون على الأرجح هي تلك التي تتمكن من العثور على أكثر الطرق فاعلية للمزج فيما بين التقنيات المختلفة لإضافة المزيد إلى حزمة من الأدوات واسعة النطاق.

زيادة معدلات الابتكار والتجديد

أعربت الغالبية العظمى (٧٣ في المائة) من المديرين التنفيذيين الذين شملهم المسح، عن اعتقادها بأن معدل الابتكار في القطاع يشهد حالة من التزايد والنمو. ولكن هذا الكلام ليس حقيقيا في كل مجالات القطاع. فعلى سبيل المثال، ظلت تقنية الحَفر

العراق يعقد اتفاقا نفطيا مع إقليم كردستان

الاتفاق سيسمح لإقليم كردستان بتصدير مزيد من النفط

وقعت الحكومة العراقية مؤخرا اتفاقاً مع إقليم كردستان العراق لمساعدة الإقليم على زيادة صادراته من النفط. ووفقا للاتفاق الجديد، الذي سيدخل حيز التنفيذ في الأول من يناير/كانون الثاني ٢٠١٥، سوف يُسمح لإقليم كردستان العراق ببيع ٣٠٠ ألف برميل يوميا لتركيا من حقول محافظة كركوك عبر خط أنابيب النفط الذي يجري في الأراضي العراقية، إضافة إلى ٢٥٠ ألف برميل يوميا من حقول النفط في الإقليم ذاته. وسوف تتولى بيع الخام شركة تسويق النفط العراقية في الإقليم (SOMO). وبحسب ما صرحت به وزارة المالية العراقية، سوف يقوم إقليم كردستان العراق، في المقابل، بدفع حصة تقدر بنحو ١٧ في المائة من عائد مبيعات النفط الخاصة بالإقليم إلى الحكومة الفيدرالية، كما يُنتظر من الحكومة العراقية دفع مليار دولار أمريكي لحساب الرواتب والمعدات لقوات الأمن الكردية المعروفة باسم البيشمركة. وصرح مسعود حيدر، عضو البرلمان العراقي، بقوله: «هذا الاتفاق يعد نصرا لجميع أبناء الشعب العراقي. ولا يوجد طرف خاسر في هذا الاتفاق، فالكل فائزون». وأضاف نيكولاي ملادينوف، مبعوث الأمم المتحدة إلى العراق، أنه يتطلع إلى تنفيذ الاتفاق بأسرع ما يمكن. وعلق بقوله «لا يمكننا التوصل إلى اتفاقيات تخدم مصالح العراق والشعب العراقي إلا فقط من خلال الحوار الصريح والمباشر». وقالت حكومة إقليم كردستان العراق إنها تحتاج إلى أموال للوفاء بمطالبها الأمنية المتزايدة، وكذلك من أجل دفع رواتب موظفي القطاع العام وتمويل مشروعات تطوير البنية التحتية التي تحتاجها بشدة.

هيئة المنطقة الاقتصادية الخاصة توقع اتفاقية حق انتفاع مع مصفاة الدقم

وقعت مؤخرا هيئة المنطقة الاقتصادية الخاصة، بالدقم، اتفاقية تمهيدية بنظام حق الانتفاع مع شركة مصفاة الدقم والصناعات البتروكيماوية في عُمان. ووفقا لما نشرته جريدة «مسقط ديلي»، تسمح الاتفاقية للشركة بالدخول إلى موقع المشروع، الذي يغطي مساحة ٩٠٠ هكتار، لإجراء دراسات ميدانية إلى جانب أعمال إعداد، وتمهيد الموقع لأجل تشييد المصفاة المقترحة. يُذكر أن شركة مصفاة الدقم والصناعات البتروكيماوية قد تأسست في عام ٢٠١٢ بالشراكة بين شركة النفط العمانية وشركة الاستثمارات البترولية الدولية (آيبيك) المملوكة لحكومة أبوظبي. وتعد المصفاة أحد أبرز مشروعات الصناعات الثقيلة التي سيتم تنفيذها بهيئة المنطقة الاقتصادية الخاصة، بالدقم، ومن المتوقع أن تكون لديها الطاقة الاستيعابية لمعالجة ما يقرب من ٢٣٠ ألف برميل يومياً من مختلف خامات النفط. واكد يحيى الجابري، رئيس مجلس إدارة هيئة المنطقة الاقتصادية الخاصة، بالدقم، أهمية هذه الاتفاقية التي تعتبر إيذانا بانطلاق الصناعات الثقيلة بالدقم. وأضاف أن مصفاة الدقم سوف تكون أحد محركات النمو للمنطقة الاقتصادية الخاصة، بالدقم، فيما يتعلق بالصناعات البتروكيماوية. كما أوضح الجابري أن «المشروعات البتروكيماوية سوف تتطلع إلى الاستفادة من منتجات المصفاة، كما أن وجود المصفاة سيساهم في تنمية هيئة المنطقة الاقتصادية الخاصة، بالدقم، وفي تنفيذ العديد من المشروعات الصغيرة والمتوسطة».

ووفقا لتصريحات الجابري، فإن هناك طلباً متزايداً على الصناعات الثقيلة، وتسعى الهيئة إلى توفير البنية التحتية المناسبة التي تحتاجها الشركات والمشروعات العاملة في القطاع. وقال جاكوبس نيوفينهايز، مدير مشروع شركة مصفاة الدقم والصناعات البتروكيماوية، إن الشركة ستبدأ في طرح العطاءات للمصفاة بحلول النصف الأول من عام ٢٠١٥.

مفكرة رجال الأعمال:

يناير/كانون الثاني

١٣ ـ ١٥ القمة العربية للغاز ..... دبي
١٨ ـ ٢٠ مؤتمر ومعرض الأمن الداخلي ـ إنترسيك ٢٠١٥ ..... دبي
١٩ ـ ٢٢ القمة الدولية لطاقة المستقبل ..... أبوظبي

مارس/آذار

٨ ـ ١١ معرض نفط الشرق الأوسط ـ ميوس ٢٠١٥ ..... المنامة
١٦ ـ ١٨ مؤتمر ومعرض عُمان للتكرير والبتروكيماويات ..... مسقط
٢٢ ـ ٢٦ معرض التقنية المتقدمة للنفط الحامض والغاز ـ سوجات ..... أبوظبي

أبريل/أيار

١٩ ـ ٢١ مؤتمر البيانات الكبيرة ـ بيج داتا ٢٠١٥ ..... دبي
٢٢ ـ ٢٥ معرض إربيل للنفط والغاز ..... إربيل


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الوكالة الدولية للطاقة تصدر نظرتها الجديدة على الطاقة في العالم

ساهمت الأحداث، التي وقعت في العام الماضي، في نشر حالة من عدم اليقين طويلة الأجل فيما يخص قطاع الطاقة في العالم، وذلك بحسب ما يقوله تقرير الوكالة الدولية للطاقة المعروف باسم «نظرة على الطاقة في العالم» الصادر في عام ٢٠١٤. ويحذر التقرير من خطر مبعثه أن الأحداث الراهنة تشتت انتباه صانعي القرار عن التعرف على مؤشرات الضغط طويلة الأجل، التي تظهر في النظام العالمي للطاقة، ومعالجتها.

وفي السيناريو الرئيسي، الذي تتخيله «نظرة على الطاقة في العالم ٢٠١٤»، سوف يزيد الطلب العالمي الأولي على الطاقة بنسبة ٣٧ في المائة، مما يضع مزيدا من الضغوط على النظام العالمي للطاقة. وهذه الضغوط ستكون أشد بكثير إذا لم يتم تطبيق إجراءات وتدابير تتميز بالكفاءة، وتقوم بدور حيوي في كبح جماح النمو في الطلب العالمي. ويظهر من السيناريو أن الطلب العالمي على اثنين من أنواع الوقود الأحفوري الثلاثة، وهما الفحم والنفط، سيصل إلى مستوياته القصوى بحلول عام ٢٠٤٠ رغم أن هذا الطلب العالمي فيما يخص نوعي الوقود سالفي الذكر سوف يكون ناتجا عن اتجاهات متباينة تماما عبر البلدان المختلفة. في الوقت ذاته، سوف تتمكن تقنيات الطاقة المتجددة من اكتساب أرض جديدة بشكل سريع، يساعدها في ذلك انخفاض التكلفة وتراجع الدعم (الذي قدرت قيمته بحوالي ١٢٠ مليار دولار أمريكي في عام ٢٠١٣). وبحلول عام ٢٠٤٠ سوف تنقسم إمدادات الطاقة العالمية إلى أربعة أجزاء متساوية تقريبا وهي: المصادر قليلة الكربون (مثل الطاقة النووية وأنواع الطاقة المتجددة) والنفط والغاز الطبيعي والفحم. كذلك سترتفع إمدادات النفط العالمية بمعدل ١٠٤ ملايين برميل يوميا في عام ٢٠٤٠، ولكن ذلك يتوقف بشكل أساسي على الاستثمارات في منطقة الشرق الأوسط. وفي حين أن إنتاج النفط المحدود في الولايات المتحدة سوف يصل إلى مرحلة الثبات، كما ستتراجع إمدادات النفط القادمة من الدول غير الأعضاء في منظمة الأوبك في عشرينيات القرن الحالي، سوف يصبح الشرق الأوسط المصدر الرئيسي لنمو الإمدادات وزيادتها.


ينتظر لتقنية الطاقة المتجددة أن تكتسب أرضا جديدة على نحو سريع

وسوف يتباطأ نمو الطلب العالمي على النفط حتى يصل إلى ما يقرب من درجة التوقف بحلول عام ٢٠٤٠. وبحلول ذلك العام أيضا، سيكون الطلب على النفط. حينئذ. لدى كثير من كبار المستهلكين في الوقت الحالي، إما قد ظل في حالة من التراجع طويل الأجل (مثل الولايات المتحدة والاتحاد الأوروبي واليابان)، أو يكون قد وصل بشكل أساسي إلى مرحلة من الثبات والاستقرار (مثل الصين وروسيا والبرازيل). وفي عام ٢٠٣٠ تقريبا سوف تتخطى الصين الولايات المتحدة، بوصفها المستهلك الأكبر للنفط، ولكن في حين أن الطلب الصيني على النفط سوف يشهد حالة من التباطؤ، ستبرز الهند كمحرك أساسي لنمو الطلب وزيادته، وهو الدور ذاته الذي سوف تقوم به مناطق أخرى؛ مثل الدول الأفريقية في جنوب الصحراء الكبرى ومنطقة الشرق الأوسط وإقليم جنوب شرق أسيا.

وكما صرح فاتح بيرول، كبير المحللين الاقتصاديين للوكالة الدولية للطاقة: «فإن وجود سوق للنفط تتمتع بإمدادات جيدة على المدى القصير، لا ينبغي أن يغطي على التحديات التي تتربص بنا مستقبلا، لأنه من المنتظر أن يعتمد العالم. بشكل أكبر. على عدد صغير نسبيا من الدول المنتجة. أما فترة التقاط الأنفاس الواضحة، التي سوف تنشأ بسبب زيادة الإنتاج في الأمريكتين على مدار العقد القادم، فلا تقدم سوى قدر قليل من الطمأنينة إذا وضعنا في الاعتبار مدة التنفيذ الطويلة للمشروعات الجديدة في مراحل الإنتاج المبكرة». كذلك سوف يزداد الطلب على الغاز بنسبة تزيد عن ٥٠ في المائة في عام ٢٠٤٠، وهو الوقود الأحفوري الوحيد الذي سوف يظل ينمو ويزيد بشكل كبير في تلك الفترة. وتظل الولايات المتحدة المنتج الأكبر للغاز على مستوى العالم، رغم أن الإنتاج سوف يصل إلى مرحلة من الثبات والاستقرار في أواخر الثلاثينيات من هذا القرن عندما يبدأ إنتاج الغاز الصخري في التراجع. وتبرز منطقة شرق أفريقيا، إلى جانب قطر وأستراليا وأمريكا الشمالية وغيرها من البلدان والمناطق، كمصدر مهم للغاز الطبيعي المسال الذي يعد أداة متزايدة الأهمية لضمان الأمن فيما يتعلق بإمدادات الغاز. ومن بين أوجه عدم اليقين الرئيسية، فيما يخص الغاز خارج أمريكا الشمالية، مسألة ما إذا كان من الممكن توفير ذلك الغاز بأسعار منخفضة بشكل يكفي لجذب الزبائن والمستهلكين من ناحية، ومع ذلك تكون مرتفعة بما يكفي لتحفيز ضخ استثمارات كبيرة في توريد الغاز من ناحية أخرى.

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