

Petroleum Today

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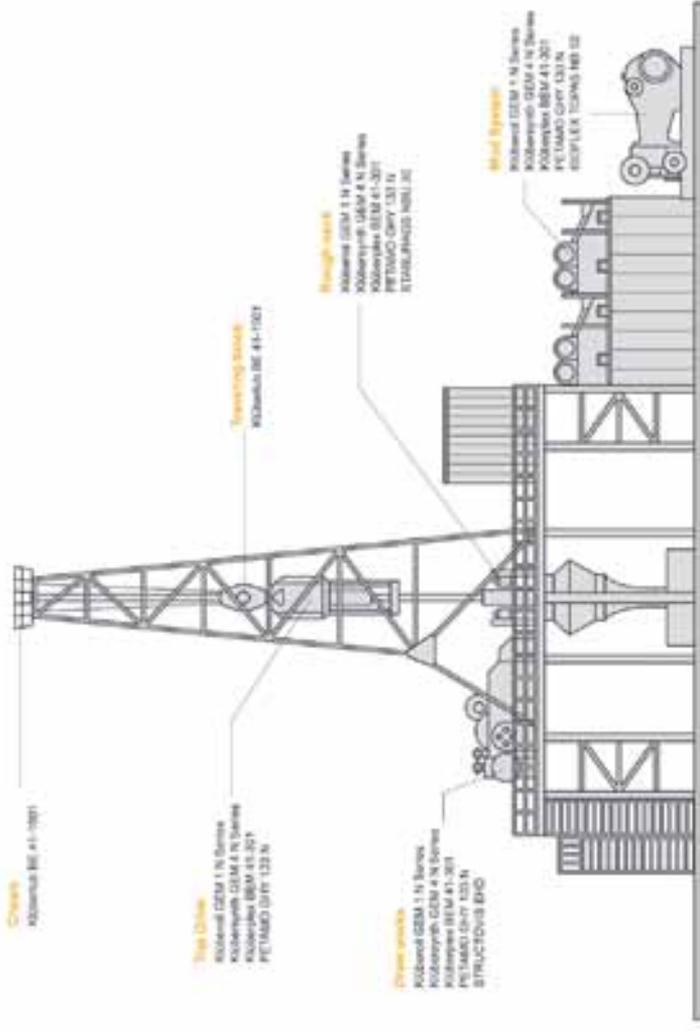
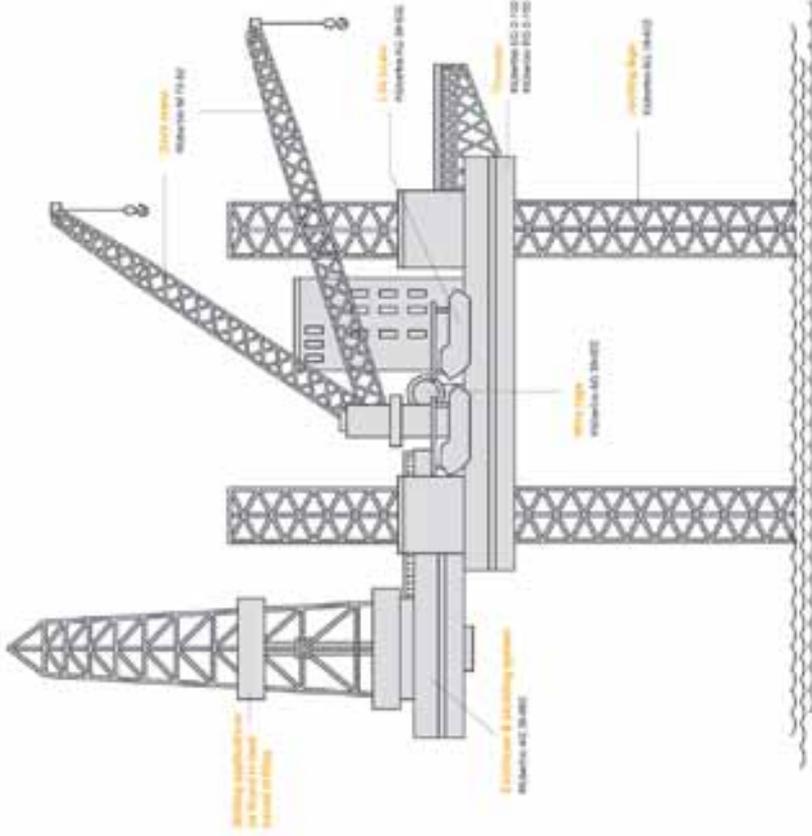
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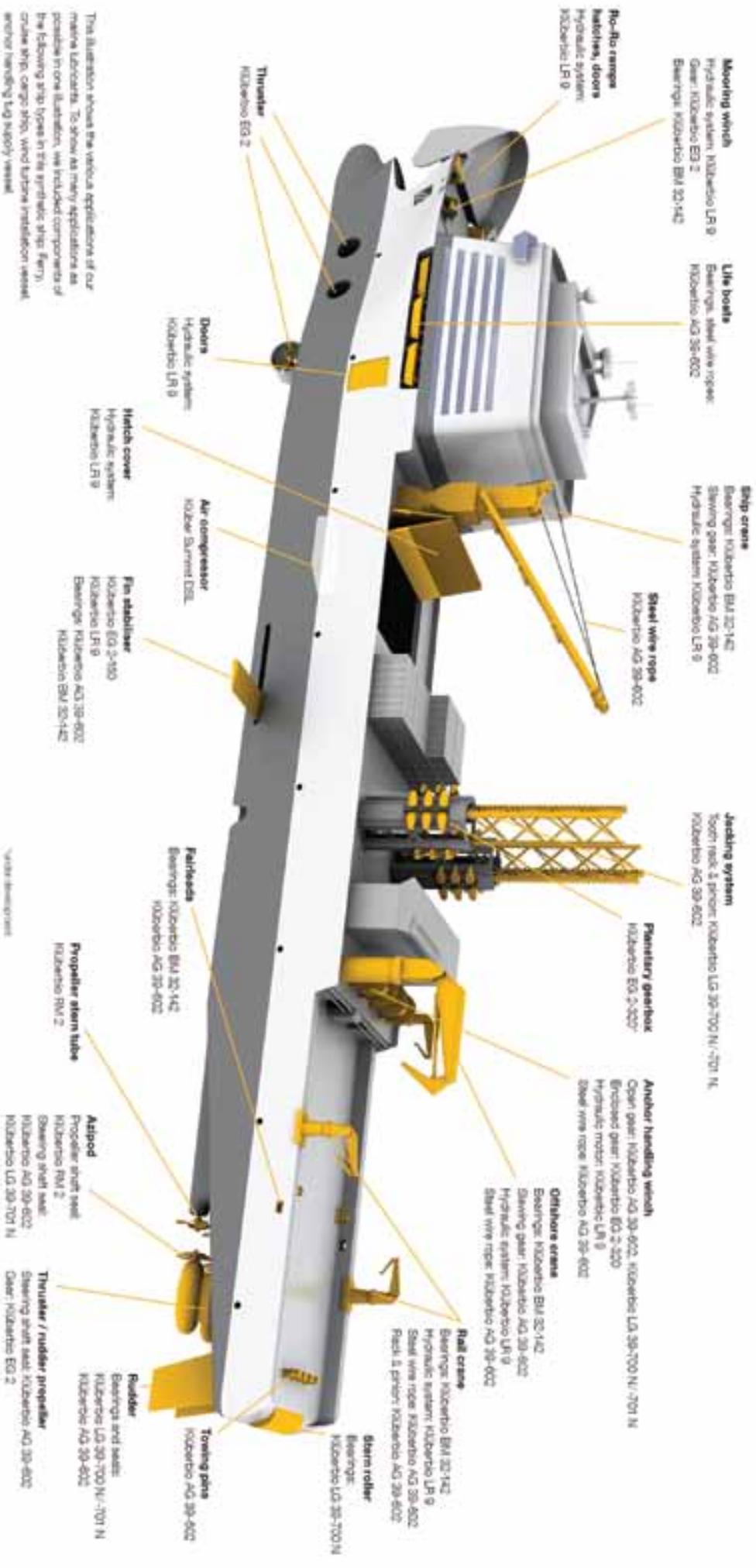
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This illustration shows the various applications of our marine lubricants. To show as many applications as possible in one illustration, we included components of the following ship types in the synthetic ship (Ferry): cruise ship, cargo ship, wind turbine installation vessel, motor handling tug supply vessel.

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2
Finance and Investment Briefings

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Development and Modernization Programs are A must for all Employees in Petroleum Sector

Among the most important programs inaugurated by the Ministry of Petroleum and Mineral Resources is the program for the development and modernization of the petroleum sector, which goes in line with the plans and programs of reform and development adopted by the State on all tracks, especially the economic one. The current project includes 7 work programs including attracting investment in exploration and production, Improving the performance of the production activities, the structural reform of the sector, improving the performance of the refining activities, the distribution of products, the petrochemical industry, raising the energy efficiency, transforming Egypt into a regional hub for energy trading, human resources development, And the decision to link information (ERP) in order to improve the efficiency of performance of the petroleum sector in various activities and develop its mechanisms in line with the rapid changes locally, regionally and globally.

There is a duty on all workers in the sector along with all workers in the Egyptian state is to develop the performance and development of themselves so that we can build a strong Egypt that believes in the future of its children from the coming gospel.

We at Petroleum Today are always striving to develop and launch a new range of media products in the coming period which contain many media tools that accompany the development of information in the world, as well as the great transformation that goes through the petroleum sector in Egypt, Which is considered to be the largest and fastest growing sector in the current period.

The next issues will see a diverse in terms of type (i.e. online publications and printed one) according to the developments planned by the Ministry of Petroleum

In the year 2019 we will celebrate the 10th anniversary of the publication of the first edition of the scientific journal and we will be happy to meet you in our booth at the EGYPS 2019 International Exhibition and conference.

We will be happier to have your suggestion and opinions on the magazine content.

And In the end, we salute you all and wish for Egypt pride and dignity.

Petroleum Today

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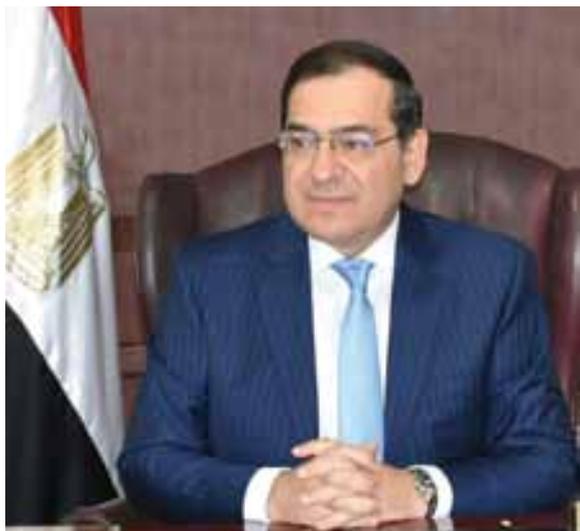
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Egypt to Offer New Production Model to Foreign Oil and Gas Firms

Egypt is working on a new production sharing model with foreign energy companies to encourage oil and gas exploration in deep waters, Petroleum Minister Tarek El Molla said.

«We are thinking of having... a simpler way of having the calculations with our partners,» Molla said during a US business meeting in Cairo.

«So far the feedback that we received from different partners is very positive and they are enthusiastic to participate in the bid round on this basis,» he said.

Under the new model, companies will be offered a share of production in exchange for bearing the costs of exploration and production.

«It will be all together and one figure that includes cost recovery and the profit share of the partner, so we don't go towards what we call cost recovery audits, which sometimes take effort, (create) arguments between different departments and,...for new frontier areas, it wouldn't be encouraging.»

Molla said that bigger oil companies wanted the new model especially for risky deepwater frontier areas in the Red Sea and the Mediterranean near the Libyan border that are coming up in the next two bid rounds.

Egypt to invite oil firms to explore for hydrocarbons in Red Sea



Egypt plans to invite international petroleum companies to explore for oil and gas in its territorial Red Sea waters before the end of the year.

Egyptian Minister of Petroleum Tarek al-Molla said the process would be announced after the processing of seismic data collected by two international oilfield services companies.

US company Schlumberger and British firm TGC invested a combined \$750 million on seismic surveys off Egypt's Red Sea coast. The two companies started work in the area in March and the data collected, the Ministry of Petroleum said, are being processed. The ministry said it expects huge interest in it because of Egypt's reputation in international energy markets.

Starting Production of Giza and Fayoum Fields at North Alexandria Project by the End of 2018

Eng. Tarek el Molla, Minister of Petroleum and Mineral Resources discussed with Mr. Bernard Looney, CEO Upstream, BP, Eng. Hesham Mekawi, Regional President, North Africa, BP and the accompanying delegation; the executive status of the second phase of developing north Alexandria and Western Mediterranean fields project for gas production from deep waters at the Mediterranean. They reviewed Giza and Fayoum fields' development status. It is planned to put its early production (about 400 mcf/d of gas) on production map at the end of this year, to be increased gradually to reach 700mcf/d of gas. They also discussed Raven gas field status, planned to start production at the third quarter of 2019. Moreover, they highlighted the fourth well status, which will be put on stream at Atoll field project, to



raise production from 300 - 400 mcf/d of gas.

El Molla stressed the follow-up significance of the gas field's development projects, within the framework of the Ministry's strategy to accelerate its completion.

For his part, Mr. Bernard Looney announced that a strategic partnership between BP and the Petroleum Sector is bolstered by a long history of successful joint work.

Egypt spends more than \$1.5 bln/month in providing petroleum products locally

Egypt spends more than \$1.5 billion per month in providing petroleum products to the local market, Petroleum Minister Tarek El Molla said, a bill that covers both imports and the share of foreign oil companies. Egypt now spends \$700 - \$800 million buying the foreign companies' share in local joint venture oil production due to the rise in global oil prices, Molla told reporters.



Egypt to present mining law amendments within three months –minister

Egypt will present mining law amendments to parliament within three months to make the industry more attractive to investors, the country's minister of petroleum and mineral resources said.

The law is of particular interest to investors because of Egypt's potential gold production, with much of the country's gold untapped because of restrictive commercial terms.

The minister, Tarek El Molla, said that among the planned changes is a cap on royalties paid by investors.

"It is only changing some of the clauses where we saw that it is a little limiting or restricting investing in the mining sector," he told a forum for U.S. business people in Cairo.

"We have engaged with everybody so that I think in the coming two or three months maximum we will be able to have a fresh, new-look, appealing law."

Egypt has struggled to attract foreign investors since a 2011 uprising, though investment in the oil and gas sector has been increasing.

ARAB & INTERNATIONAL NEWS

UAE's ADNOC to boost oil output capacity to 4 million bpd by 2020

DUBAI (Reuters) - State energy giant Abu Dhabi National Oil Company (ADNOC) plans to increase its oil production capacity to 4 million barrels per day by the end of 2020 and 5 million bpd by 2030 after new oil and gas finds, the company announced.

Abu Dhabi's Supreme Petroleum Council (SPC) approved ADNOC's new integrated gas strategy and its plan for capital investment between 2019 - 2023, the company said in a statement.

The SPC approved AED 486 billion (\$132.33 billion) in capex to support ADNOC's five-year growth plan, Abu Dhabi Crown Prince Sheikh Mohammed Bin Zayed, who headed the SPC's meeting, said earlier on his Twitter account.

"The SPC's approval of ADNOC's gas strategy will add potential resources that will enable the UAE (United Arab Emirates) to achieve gas self-sufficiency, with the aim of potentially transitioning to a net gas exporter," ADNOC said in a statement.

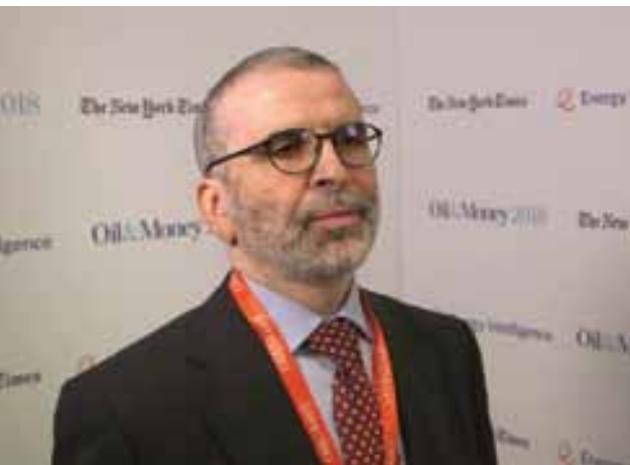
Saudi signs deals worth \$50 billion in oil, gas and infrastructure



Saudi Arabia signed deals worth more than \$50 billion in oil, gas, infrastructure and other sectors at an investment conference in Riyadh officials there said.

Details were announced at the Future Investment Initiative, held in Riyadh in the face of boycotts by Western political figures, international bankers and executives that were prompted by the killing of journalist Jamal Khashoggi. Companies involved in the deals included commodities trader Trafigura, Total (TOTF.PA), Hyundai (011760.KS), Norinco (000065.SZ), Schlumberger, Halliburton (HAL.N) and Baker Hughes (BHGE.N), state television said.

Swiss-based Trafigura said it had signed a deal for a joint venture partnership with Riyadh-based Modern Mining Holding Co.



Phase two development of Libya's Bahr Essalam gas field to finish by end 2018

Seven remaining wells are expected to be online at Libya's Bahr Essalam offshore gas field by the end of the year, the Libyan National Oil Corporation (NOC).

The statement came after a meeting between NOC Chairman Mustafa Sanalla and Eni CEO Claudio Descalzi. The field is operated by Mellitah Oil and Gas, a joint venture between the NOC and Eni.

The first wells in phase two of the development of Bahr Essalam came online in Jul, 2018.

At a meeting in the Libyan capital, Tripoli, Sanalla and Descalzi discussed plans for seven remaining wells, which the statement said were "expected to complete by the end of 2018".

"The parties discussed opportunities to increase production, investment and exploration, and the importance of sustainability in all activities," the statement added.



China's Sinopec, CNPC speed up oil, gas drilling to boost output

China's Sinopec and CNPC [CNPET.UL] are speeding up drilling and exploration from major tight and shale oil and gas formations in the country's western regions to boost domestic output, according to company reports.

New exploration in shale gas, tight oil and tight gas will lead to growth in production for the country's largest oil and gas producer, China National Petroleum Corporation (CNPC), as per firm's official newspaper, citing an internal conference from its upstream services unit.

The drilling cycle at the Mahu field in Xinjiang, one of CNPC's largest findings in recent years, fell 40 percent from

a year ago, CNPC said, implying that oil wells are being completed and produced at a faster rate.

Despite having large domestic oil and gas reserves, China has become the world's biggest importer of crude oil, and this year it is also expected to overtake Japan as the top buyer of liquefied natural gas (LNG). LNG shipments cost China around \$25 billion in October alone, according to Reuters calculations.

CNPC this year increased spending in its upstream sector after a government call to safeguard China's energy security by increasing domestic output.

Israel announces new oil and gas exploration round in Eastern Mediterranean

Israel will tender off 19 new offshore blocks to oil and gas companies, its energy ministry said hoping to rebound from a disappointing bidding round a year ago Israel discovered in 2009 that it had large reserves of natural gas off its Mediterranean coast

Last year's auction elicited bids from only two groups of companies, and the ministry said it expects more to compete this time as conditions have improved.

In 2017 the energy market was weaker and companies in general were investing less. There was also concern over where to sell any newfound gas, since Israel is a small market "There is strong interest in this tender, certainly compared to the previous round," Adiri said

The 19 blocks have been divvied up into four sectors that benefit from more comprehensive geological studies than last time, he said.

WINNIPEG, Manitoba/NEW YORK (Reuters)

- A U.S. judge in Montana

has blocked construction of the Keystone XL pipeline designed to carry heavy crude oil from Canada to the United States, drawing praise from environmental groups and a rebuke from President Donald Trump

The ruling of a U.S. Court in Montana late a setback to TransCanada Corp, whose stock fell 1.7 percent in Toronto. Shares of companies that would ship oil on the pipeline also slid.

TransCanada said in a statement it remains committed to building the \$8 billion, 1,180 mile (1,900 km) pipeline, but it has also said it is seeking partners and has not taken a final investment decision.

The ruling drew an angry response from Trump, who approved the pipeline shortly after taking office.

It also piles pressure on Canadian Prime Minister Justin Trudeau to assist the country's ailing oil sector by accelerating crude shipments by rail until pipelines are built. Clogged pipelines have made discounts on Canadian oil even steeper than they were earlier this year when Scotiabank warned that they may cost the country's economy C\$16 billion.

U.S. District Court Judge Brian Morris wrote that a U.S. State Department environmental analysis of Keystone XL "fell short of a 'hard look'" at the cumulative effects of greenhouse gas emissions and the impact on Native American land resources.

U.S. judge halts Keystone XL oil pipeline in blow to Trump

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SAPESCO,
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SAPESCO has recently completed the pre-commissioning & commissioning activities of the refinery expansion project of Alexandria National Refinery Petroleum Company (ANRPC refinery); a challenging operation that included several specialized activities accomplished by SAPESCO with superior quality & remarkable performance. With more than 30 years' experience.

SAPESCO is one of the leaders in the industry cooperating with its clients to introduce the most advanced technologies.

SAPESCO has implemented chemical boil-out of steam generation facilities and steam blowing techniques during the refinery expansion project by using its engineering capabilities to study the design and operation parameters for the required scope of work, procurement, construction and providing the qualified personnel to perform this advanced operation.

ANRPC was planning to increase the capacity of the existing refinery by building a new Continuous Catalytic Regeneration (CCR) & Plat-forming Unit with the relevant Regeneration Unit within its premise. The new CCR unit is designed to process 604,000 T/Y of Hydro-treated Heavy Naphtha from the existing Naphtha Hydro-treating Units.

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Apache Vice President: The Current Period is the Best for Investment in Egypt

David Chi, Regional Vice President and General Manager, Apache Egypt, delivered a speech, during the event organized by the American Chamber of Commerce in Egypt, titled «Egypt and the United States, A shared Future». In which, he asserted that the current period in Egypt is the best time for investment in oil and gas industry, especially after the country's radical changes, economic reforms and great development in the Energy Sector. He pointed out that Egypt has promising oil and gas potentials in the Mediterranean Sea and Western Desert, which enhances the investment success factors in oil and gas industry, as it owns competitive specifications that make it the best one regionally and one of the most attractive countries for investments in this domain on the international level.

Mr. David praised the government's policies in attracting investment in oil and gas industry, which compromised significant reforms; such as reducing foreign partners' arrears, boosting upstream activities, in addition to starting gas market liberalization after the new law, that represent a significant element for attracting investments and bolster Egypt's position, as strategic energy hub in the region, especially with the available infrastructure, gas networks and LNG plants.

Dubai's Dragon Oil plans \$500 million in acquisitions in 2019

Dragon Oil, a subsidiary of Dubai's Emirates National Oil Company (ENOC), plans to invest about \$500 million next year in oil and gas assets as part of an international expansion strategy, its chief executive told Reuters.

The upstream investment arm of Dubai government-owned ENOC Group, the company aims to boost its production to 300,000 barrels of oil equivalent per day by 2025 and is eyeing new opportunities in Turkmenistan, North Africa and Iraq.

"We are trying to improve our profitability, our efficiency and our sustainability and for that purpose we are continuously looking for opportunities to improve our portfolio, we are a cash positive company," al-Jarwan said

Dragon Oil's main assets abroad are in Turkmenistan's Cheleken field, where it produces close to 90,000 bpd, The Company also has exploration assets in Iraq, Tunisia, Algeria and Egypt.



"We have a program of acquisition to supplement our growth strategy, because our strategy indicates that we have to go to 300,000 (BOEPD) by 2025," he said. "We are looking at Africa mainly, especially North Africa." In Iraq, the company has oil operations in Iraq's southern Basra region and production has started from the Faihaa-1 well.

In Algeria, Dragon Oil is continuing with its exploration activities and hopes for commercial gas operations there to begin after 2019, al-Jarwan said.

BP's

profits thunder to five-year high

BP's profits thundered to a five-year high, boosted by stronger oil prices with production set to rise further thanks to the \$10.5 billion acquisition of BHP Billiton's U.S. shale business.

The results further underscore a striking shift in BP over the past year as it shakes off the legacy of the deadly 2010 Deepwater Horizon disaster with new projects and the BHP deal, its largest acquisition in 20 years. In a further sign of confidence, BP said it now expected to fully fund the acquisition from available cash without resorting to a rights issue as planned. It still plans to sell \$5-\$6 billion of assets to reduce debt.



SDX

announces, talks for it to acquire BP Egypt assets end with no deal

North African-focused oil and gas company SDX Energy (SDX.L) said that talks to buy some of BP's (B.P.L) Egyptian assets have been abandoned.

Reuters reported earlier in the year, citing banking sources, that BP is seeking buyers for its stake in a 50-year-old oil and gas business in Egypt, then estimated to be worth around \$500 million.

"Discussions regarding its proposed acquisition of a significant package of assets in Egypt from BP have been terminated by mutual agreement," SDX said in a statement, without giving details on why the talks were ended.

It was not clear which assets SDX was in talks with BP over. SDX, whose shares were suspended from trading on London's AIM exchange when it confirmed on last September it was in talks with BP, had said the acquisition would constitute a reverse takeover.

SDX shares started trading again and were down around 4.3 percent at 0729 GMT.

"Clearly it's disappointing that this transaction has not materialized," SDX Chief Executive Paul Welch said in the statement.

"It was an exciting opportunity but... we are screening potential deals all of the time and we know that there will be others that will serve to fast track our stated goal to be a North Africa-focused (exploration and production firm) of scale."

Egypt's Midor refinery agrees \$1.2 billion loan with 3 international banks

Egypt's state-owned Middle East Oil Refinery Company (Midor) has signed a \$1.2 billion loan agreement with three internationals, the petroleum ministry said in a statement.

The loan, which is agreed with Credit Agricole, BNP Paribas and Italy's CDP, is part of the company's \$2.3 billion expansion plan, the statement said.

Italy's Eni strikes deal with TOTAL to boost operations in Algeria

Italian oil major Eni said it had struck a deal to team up with French peer Total to look for oil and gas in Algeria and strengthen its position in the north African country.

The two oil companies signed a deal with state-owned Algerian energy giant Sonatrach to pursue offshore exploration in the OPEC country while working together on exploration permits.

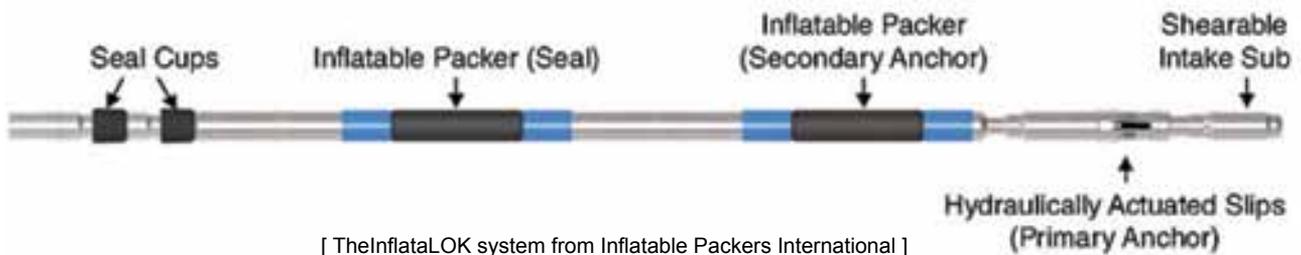
Algeria is seeking to increase oil output to boost revenues following a crash in prices in 2014. The recent rebound in prices has allowed Sonatrach to invest in petrochemicals,

unconventional and offshore.

"Together with Sonatrach and Total, we will have the opportunity to explore the deep waters of the Algerian offshore, a virtually unexplored geological province," Eni CEO Claudio Descalzi said.

Eni, the biggest foreign oil and gas player in Algeria, said it had also agreed with Sonatrach to take a 49 percent stake in three oil blocks in the Algerian desert estimated to hold 145 million barrels of oil.

Inflatable Packer System



Inflatable Packers International introduced InflataLOK, the inflatable packer system designed to optimize rigless installation of an insert progressive cavity pump (I-PCP) without the need of a pump-seating nipple (PSN). Conveyed on rod string, it relies only on hydraulic pressure while eliminating the need for axial loads for its setting sequence. The packer incorporates a hydraulically actuated anchoring-slip mechanism. It is equipped with seal cups and a shearable intake sub to obtain the required pressure competence to confirm tubing integrity and enable its setting sequence while maximizing flow-through capability after it is set. The patent-pending technology has been deployed successfully in multiple onshore and offshore locations across the Middle East and the Asia Pacific region during its field-trial phase. Tool sizes deployed to date are for I-PCP installations inside 2 $\frac{7}{8}$ -, 3 $\frac{1}{2}$ -, and 4 $\frac{1}{2}$ -in. production tubing. The packer is a long-term or interim solution for cost-effective rigless optimization in wells completed with I-PCPs because it enables installation anywhere within production tubing while simultaneously confirming tubing integrity. It allows installation in extended-reach deviated applications beyond previously installed PSNs and eliminates the operational limitations commonly encountered with J-slot anchoring devices.

■ For additional information, visit www.inflatable-packers.com.

Flowback-Control Additive

Hexion introduced the PropShield proppant-flowback-control additive. Proppant flowback occurs when well production carries unbonded proppant out of the fracture. This has detrimental effects on the success of a well by causing fracture-width reduction, wellbore deposition, pump destruction, and surface equipment damage. With the evolution of completion designs leveraging longer lateral lengths and increased proppant intensity, proppant flowback control has become a critical challenge. In some cases, conventional solutions do not provide the cost/benefit ratio operators are looking for when addressing proppant flowback. This solution is applied at the blender tub on location using a standard liquid additive pump and is suitable for all sand mesh sizes. The additive is compatible with most commonly used fracturing fluids and is effective at bottomhole temperatures ranging from 90 to 275°F. A user in the Permian Basin experienced 50% less proppant returned during drillout and more than 80% less proppant flowback when subject wells were compared with nearby offset wells. The well in which the additive was used produced half the sand that the offset well produced during drillout. The well using the additive averaged 0.5 to 3 gal/hr of sand recovered, while the offset well averaged 6 to 8 gal/hr of sand recovered.

■ For additional information, visit www.hexion.com.

Low-Shear Valve System

By reducing shear forces in control valves and choke valves, the low-shear technology of the Typhoon Valve System developed by Typhonix and manufactured by Mokveld Valves represents a solution for cleaner production. It is a cost-efficient technology designed to debottleneck separation and produced-water-treatment systems that does not require any additional equipment, simply replacement of the existing valve. In every process plant, sources of unwanted shear forces creating emulsification of oil and water can be found. The main principle behind low-shear processing is prevention of separation problems caused by droplet shearing of the production fluids in conventional valves. Replacing these existing valves with low-shear versions provides significantly improved separation and less oil residue in the produced water. In contrast with conventional choke and control valves, the low-shear valve uses patented trim technology to involve a larger fluid volume that actively dissipates energy. Through use of low-shear valves and pumps, greenfield separation plants can be built 30 to 50% lighter and smaller, which will have significant cost-savings potential for both capital and operational expenditure. The valve system is winner of the Innovation Award at the 2018 Offshore Northern Seas conference and exhibition.

■ For additional information, visit www.typhonix.com.



The Typhoon low-shear valve system developed by Typhonix and manufactured by Mokveld Valves

Perforating Gun System



Hunting's H-1 perforating gun system.

The H-1 perforating gun system from Hunting eliminates common conventional gun-system failures. Electrical contact components replace the lead wire to provide a plug-and-play assembly. There is no chance for nicked or pinched wires because there is no wire from gun to gun. The pressure switch wiring is now housed within a quick-connect cartridge. Box-by-pin tool design of the gun assembly eliminates the need for a ported tandem sub so that the risk of seal-point failure from O-ring failure reduces. Furthermore, gun strings with 10 H-1 perforating guns have 22 O-rings rather than 50 or more, which is typical for conventional gun strings. To make surface handling even

simpler, the H-Lok shaped-charge technology simply screws and locks into place. The H-1 also prevents waste with predetermined detonating cord lengths that remove the need for measuring and trimming after wiring. The system has a small equipment footprint. The distance from top shot to top shot reduces by 4 to 6 in. per gun. The distance from the cable head to the first shot reduces by approximately 8 in., and the distance from the last shot to the setting tool reduces by approximately 12 in. There is a faster ramp-up to injection and lower treating pressure because of this decreased distance between charges.

■ For additional information, visit www.hunting-intl.com.

Wireline Truck

Nine Energy Service introduced the SkyVIEW wireline truck, engineered to enhance safety and reliability to eliminate downtime and further improve successes in wireline operations. The trucks will begin initial operations at Nine's Permian and Northeast locations starting in the third quarter of 2018. With the trucks, Nine strives to improve upon its 99% success rate in wireline operations by offering greater visibility for the operator with windows above and on the sides to increase safety. An open back also allows 90° visibility, unlike traditional wireline trucks. A reengineered logging unit makes it possible to change out the wireline drum in 20 minutes, allowing for use of different types of cable for varying job requirements. The new truck design lowers downtime by offering greater efficiency and true redundancy, with an extra drum stored on the truck instead of an offsite shop. A separate power pack offers independent hydraulic and generator power that can be used to power the operation in the event of a vehicle failure or when the operator does not want to draw on the truck's power. The power pack provides hydraulic pressure and alternating-current/direct-current power so that downtime is averted.

■ For additional information, visit www.nineenergyservice.com.

[The SkyVIEW wireline truck from
Nine Energy Service]



Production Optimization Fluid Technology

Clear Solutions introduced its Pure-Bore technology for use in fluid systems. The technology provides the flexibility to be the design basis for a range of applications, from shallow section fluids to more-complex requirements for reservoir drilling. Pure-Bore's construction features natural polymer chains with shear-thinning properties that can provide very low equivalent circulating density. The technology optimizes hydraulic horsepower at the bit, allowing improved hole cleaning and increased rate of penetration,

particularly in large-diameter and long lateral sections. This allows users to adjust to different well-construction requirements, using a similar design approach without incurring costly well displacements and surface-equipment preparations. Biodegradable with nontoxic chemistry, the product allows aquifer protection. These features enable operators to achieve a monobore approach, using the same core fluid from top to bottom with minor fine-tuning throughout the section and shortening overall well-delivery time. From an operational perspective, fluid

management is improved through less product load, design simplicity, and leaner inventory management. The technology has been used by several operators in Europe, the Middle East, and North America.

■ For additional information, visit www.drilling-products.com.

Weld-On Connector

National Oilwell Varco (NOV) introduced the Scorpion connector to its XL Systems portfolio of large-bore casing and conductor connectors. Deep onshore wells and shallow-water offshore wells demand robust connector strength and proven sealability in a cost-efficient connector design. Scorpion weld-on connectors deliver these requirements with full pipe-body strength and American Petroleum Institute (API) 5C5 CAL I sealability in a compact profile. Advanced finite-element analysis and full-scale physical testing have demonstrated that the connector's tension, compression, and bending capacities meet full pipe-body strength. Combined loading sealability tests following API 5C5 show that the connectors seal liquid pressure for the full pipe-body internal-pressure and external-pressure envelopes. The connector design incorporates performance features found in other XL Systems large-bore premium connectors, including tapered threads for a deep stab, integral self-aligning stabbing guides, a hooked threadform, and a replaceable elastomeric O-ring pressure seal. The connectors are available in 16- to 30-in. sizes suitable for onshore and offshore conductor and surface-casing applications.

■ For additional information, visit www.nov.com.



[The Scorpion connector from NOV]

Invasion Additive

Vertechs introduced a nanoparticle-based ultralow invasion additive (ULIA) to provide physical formation protection in order to reduce drilling-fluid invasion and filtration, remediate lost-circulation problems, and increase equivalent circulation density (ECD). When drilling through shale-gas formations with challenging characteristics such as brittleness and complex fractures, operators normally use high-density oil-based mud (OBM) to prevent and control well kicks. However, large volumes of lost circulation can be caused by induced pressure, which also leads to a long duration of non-productive time (NPT). OBM use with ULIA can minimize formation invasion depth and allow mud engineers to increase ECD safely during overbalanced drilling. Four types of OBM samples from different suppliers were recently used in invasion and filtration comparison tests by comparing the invasion/filtration depth of OBM samples on the sand bed before and after adding ULIA, which also was compared with other lost circulation materials used widely in the area of the Longmaxi formation in China. Results showed that ULIA forms a compact, low-permeability barrier that successfully prevents fluids from invading the sand bed under 725 psi pressure differentials. In addition, high concentrations of ULIA do not have specific bottomhole-assembly requirements, thus reducing NPT because no extra tripping operations are required.

■ For additional information, visit www.vertechs.com.



[The ultralow invasion additive from Vertechs can allow mud engineers to increase equivalent circulating density safely during overbalanced drilling.]



CLARIANT

We believe in sharing experience and utilize resource to the benefits of everyone. When you look around, you will find many people / organizations in Egypt and even in Africa need a lot to establish a real presence.

This is our role and we are always happy to help benefitting all parties achieving their goals and for better life.



Treating chemicals

- ✧ Corrosion inhibitor
- ✧ Biocide
- ✧ Paraffin dispersant
- ✧ Oxygen scavenger
- ✧ H₂S scavenger. 2
- ✧ Asphaltene dispersant
- ✧ Scale inhibitor
- ✧ ...Etc



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EXPANDED OPERATION RANGE
IMPALA ESP

Advantages:



Wear-resistant design



High efficiency in wide operating range



Expanded operating range due to low axial force

Applications:

- Inventory reduction on the service base due to reduced model range.
- Operations of wells with instable influx or production decline.
- Optimization of the pump selection process.

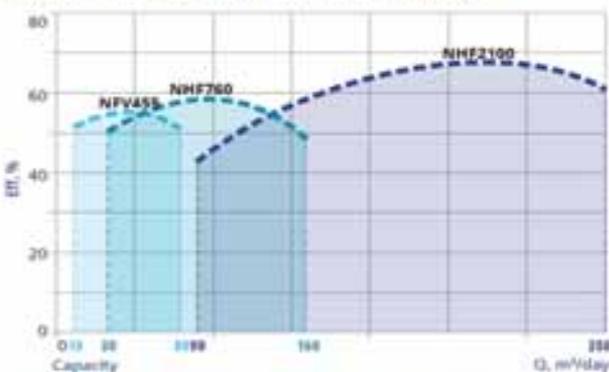
About the technology:

New product line with extended operating range 362, 406, 535 series ESP. Extended operating range enabled reduction of product line for 62-2200 bpd within 362 and 406 series from 13 to 3 pumps.

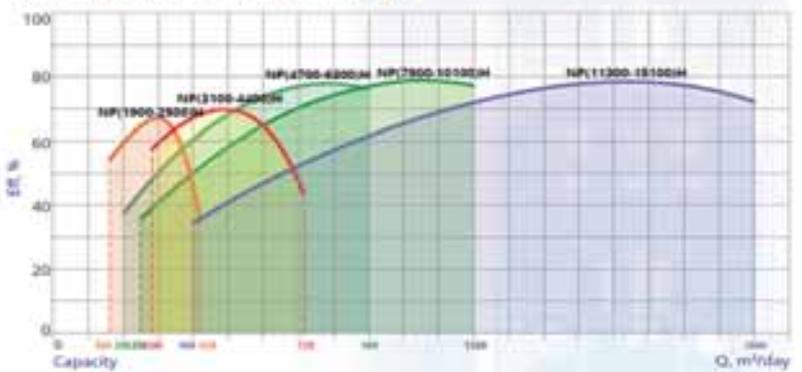
The design features of the new stage:

Uses the device aimed to compensate axial force and to keep the impeller in the floated state. The upper disk of the impeller has special holes, providing crossflow of the small amount of fluid from the upper gap to the lower. This reduces the axial force. The greater the value of the axial force, the more intense is crossflow. It makes possible to achieve low values of the axial force in wide range of flow rates, achieving a wider operation range.

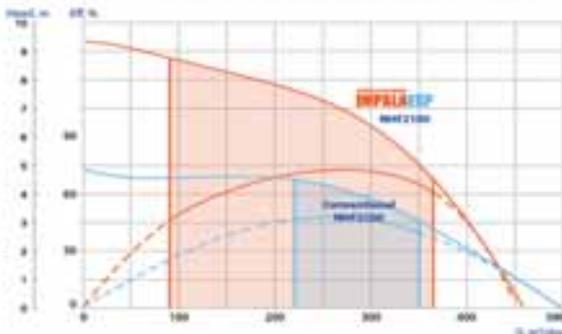
Extended operating range 362 and 406 series ESP



Extended operating range 535 series ESP



Performance comparison of conventional stage and IMPALASP



DEMO 2000 Drilling Mud Process Control

By

Rachid El Boubsi, Jan Atle Andresen, and Geertjan van Og, Huisman; Knut S. Bjørkevoll and Roar Nybo, SINTEF Petroleum; Jan Ove Brevik, Statoil; Gerhard Nygaard, Cybernetic Drilling Technologies; George G. Smith, Intelligent Mud Solutions



Abstract

Managed pressure drilling (MPD) is an adaptive and sophisticated drilling process used to control the downhole and annular pressure. Mud management could enhance MPD as the downhole pressure is dependent on mud parameters such as mud density and rheology. Therefore, a step-change is needed in drilling process control, to enable consistently high performance, accurate pressure control and reduced risk of unwanted effects. Advances in process control have been made, but risk reduction and optimization of the drilling process is still a major challenge in the drilling industry.

A missing piece in considering the process-control puzzle is the in-situ determined drilling mud characteristics. Without accurate knowledge of mud properties and cuttings contents or without an ability to adjust the mud in real-time, a control system cannot reliably maintain bottom hole pressure or ensure a smooth flow of cuttings. The use of real-time density and rheology measurements in combination with a model that optimize the drilling operation by adjusting the mud will be a radically new innovation on the drilling market.

To complete the puzzle, a demonstration of a pilot unit will be carried out. The unit combines monitoring of mud and cuttings with wellbore hydraulic modelling and a control system that adjusts mud properties in real-time. The control setup will strive to keep the drilling operation within its operating envelope with respect to cuttings transport and bottomhole pressure. The demo project will construct such a system from existing components. Its focus will be on demonstrating the potential of a fully integrated drilling system.

In particular to demonstrate that mud properties can be adjusted automatically based on real-time mud measurements. This demonstration project will be carried

out in collaboration between Huisman, Statoil, SINTEF, Intelligent Mud Solutions (IMS) and Cybernetic Drilling Technology (CDT), with financial support from the Norwegian Research Council.

The demonstration project will take place at Huisman Innovative Tower in the Netherlands, where a full scale facility with drilling rig and a 400 m deep test well goes operational in Q1 2017. Available technology from the project partners covers many of the process control components. Such as a commercial hydraulic flow model for downhole pressure predictions provided by SINTEF, a mud density and rheology sensors provided by IMS with software by CDT and a mud treatment system of Huisman's design, allowing for real-time adjustment of mud.

Introduction

A step-change is needed in drilling process control, to enable consistently high performance, accurate pressure control and reduced risk of unwanted effects. Advances in process control have been made but risk reduction and optimization of the drilling process is still a major challenge.

A missing piece in this process-control puzzle is the drilling mud. Without real-time knowledge of, or control over the mud, a control system cannot reliably maintain bottom hole pressure, detect kicks, nor ensure a smooth flow of cuttings. Therefore, it is important to understand, analyze, model, and predict the hydraulics during a given drilling process. These parameters are strongly dependent on the mud properties, well stability and hole cleaning situation. In addition, a given percentage of solid additives are required in the fluid (mud) system to achieve good mud properties, but overcapacity could lead to disastrous situations. The tracing of the exact mud composition allows more accurate predictions for different drilling parameters such as the required critical hole cleaning in combination with an optimal ROP. In addition, it enhances early kick detection.

To achieve this requires an improvement in the monitoring and control of the mud and cuttings parameters such as density, rheology and cuttings size distribution for a better management of the hydraulics hole cleaning, ROP etc. in a drilling operation. This approach is not only important for conventional drilling operation, but also for MPD on floaters.

This project proposes a full-scale demonstration at Huisman's test facility. Novel technologies for monitoring of cuttings and mud properties work in tandem with a mud treatment system and real-time wellbore flow and cuttings tracing models. These are to be integrated with an MPD system on a test rig.

The rig is designed from the bottom-up to provide both automatic pipe handling and heave compensation and the rig will itself undergo heave motions at the test facility.

By bringing mud monitoring and treatment into the process control, this demo project addresses the integration gap in closed loop drilling optimization which was identified by OG21 TTA3. The automatic pipe handling will serve to demonstrate how this can be translated into consistently fast drilling.

The largest value creation potential may however become apparent when the rig undergoes heave and then simulates an MPD operation from a floater. The Norwegian Continental Shelf (NCS) has a thousand well candidates which would benefit from being drilled with MPD from floaters. As highlighted by OG21 TTA3, broad implementation of MPD from floaters could translate into major cost reductions. If the challenges are met, as much as 45% of NCS production could in 2020 come from MPD drilled wells.

We believe that significant improvements in drilling are only met if several innovations are integrated around a common goal. This is a guideline for the demonstration project. Integration is however not without its own challenges. In addressing this, we lean on the ongoing project «Improved Model Support in Drilling Automation», supported by the Norwegian Research Council. Several results from this project will support the demonstration. This includes self-correcting automation systems with a higher degree of autonomy with respect to handling errors, as well as increased robustness of system integrations.

Real-time in-situ mud monitoring

The recent years, a novel method of automatically and continuous evaluation of the drilling fluid has been examined in several papers and reports. [Nygaard, 2011], [Carlsen et al, 2013], [Hansen, 2012], [Krogsæter, 2013], [Kråvik et al, 2013]. The method is based on employing dual differential pressure sensors between the drilling fluid pumps and the top drive, as shown in Figure 1. The measurement setup is often referred to as the «instrumented standpipe» system

(ISPS).

Based on the horizontal differential pressure measurement and the vertical differential pressure measurement, both the density and the apparent viscosity may be calculated. Further details are found in [Carlsen et al, 2013].

High-fidelity modeling

In general, a robust and reliable high-fidelity real-time model adds value to an automated system by filling in where sensors do not measure, by providing redundancy when sensors fall out or do not measure for other reasons, and by enabling automatic detection of anomalous events coming up. These factors get increasingly important as automation of drilling progresses, as the right action to a given response often depends on whether there is an anomalous event going on, and on what kind of event that is. For more details on use of real-time high-fidelity models see [Syltøy et al, 2008], [Petersen et al, 2008], [Rommetveit et al, 2009], [Bjørkevoll et al, 2015] and [Bjørkevoll, 2015]. On the other hand, high-fidelity models are comprehensive, demanding to use, and it is hard to eliminate fully the risk of running into numerical instabilities. Therefore, work is ongoing to develop a simplified model that is significantly simpler, faster, and more robust than normal high-fidelity model, and yet sufficiently accurate for the modelling the systems response to operational changes.

Also in the simplified model mass transport calculations include dynamic effect in that e.g. an increase in pressure causes a delay in flow out due to compression of the fluid in the well. However, accuracy during the transient phases is relaxed somewhat in the simplified model to allow calculations to be done with a minimum of numerical iterations. With this, the algorithm becomes much quicker and more robust, provided the changes are done in the right way to avoid numerical instabilities.

Another simplification is to keep temperature profile fixed, rather than doing the dynamic temperature calculation that many high-fidelity models can do. This simplification is acceptable because changes in temperature profile normally goes much slower than rapid changes in the pressure profile due to operational changes, and therefore a good tuning algorithm can be used to take care of the slowly drifting consequences of temperature changes.

Some additional simplifications are made in sub-models to reduce need for numerical iterations, but still calculations are relatively sophisticated, and include for example pressure and temperature dependent fluid properties, with density either from published correlations or from input tables of laboratory data. An automatic tuning algorithm is used to reduce the effect of sub-model simplifications.

Similar to advanced high-fidelity models the simplified model is capable of handling a train of multiple fluids with independent properties, in order to enable automatic

pressure control during fluid displacements and cementing operations.

Automatic Mud treatment with real time rheology

Real time measurements and automatic injection solutions for additives open up for a fully automatic mud mixing process in the future [J. M Godhavn et al, 2011]. An automatic system can result in reduced costs, improved mud quality and improved drilling performance [Gunnerod et al, 2009]. In addition, an automatic mud-mixing system can enhance the pressure controllability in MPD operations.

Huisman introduces an automated mud-mixing subsystem that functions continuously in real-time mode instead of mixing in batches. The required volumes are derived from the pressure measurement, quantity of removed cuttings and ROP. The quantity and types of required pre-mixed additives will be fed in a realtime mode based on continuous mud and pressure measurements in combination with the predictions from different models discussed earlier. The mud mixing will function by means of a pre-prepared recipe of different mud types with different characteristics. The basic idea is to adjust and control mud density and rheology (viscosity) by mixing of two fluids A and/or B with the return mud from the well (active mud).

Mud A will be mainly used to adjust the density; while mud B will be mainly used to adapt the rheology (viscosity).

Integrating an automated mud treatment system with real-time mud monitoring will result in a sophisticated MPD and mud control system where not only pressure is controlled, but also mud is managed simultaneously. This will ensure an optimal control of both the pressure and mud properties at the well bottom.

A closed loop mud control system – integrated system with link to downhole The control system consists mainly of algorithms to control the auto-mixer. In the first implementation of the control system, the Huisman mixing controller will get a density and viscosity setpoint for mixing. This setpoint is determined from the SINTEF flow model and is determined by requirements such as: pore pressure, fracture pressure, desired BHP, efficient cuttings transport, and a minimum pressure under the MPD-choke, which is necessary to maintain controllability of the BHP by the choke. In order to keep the fluid data in the model up to date, density and rheology measurements of fluid entering and leaving the well are fed into the model in real time. A parameter search algorithm, which runs several instances of the flow model with different parameter combinations in parallel, is employed to find the setpoint for the mixer that best satisfies the requirements.

The controller will send a mixing sequence to the auto-mixer

to add the corresponding mud volume.

The update frequency of the setpoint is subject to a trade-off between fast response to changes in mud requirements and the time needed for the mixer to adjust the mixture in the active tank.

In a later iteration of the control system, the mixer will utilize rheology sensors in a feedback loop, to tune the mud towards the setpoint received from the parameter search algorithm, which now is the desired density and viscosity.

The model estimates the required mud parameters based on the current active mud volume and different sensor measurements at surface and downhole.

Figure 2 shows the control scheme that will be used in the test pilot.

Pilot test at the Huisman Innovative Tower

To prove to the Oil and Gas industry that we practice what we teach, Huisman has built a full scale (90m high) Multi-Purpose Tower called Huisman Innovation Tower (HIT). It was built to show how drill floor robotics could contribute to safer and more efficient offshore drilling operations. The HIT was also built basing on the Dual Multi-Purpose Tower (DMPT) concept developed by Huisman. The main purpose of the HIT is to demonstrate new Huisman drilling equipment, the robotic tubular handling, longer stands and higher hook loads. Engineered with 3.03.6- million lbs hook load capacity, the HIT was designed and built to prove the robotic advancements, including the automated tripping technology at 5,000ft/hr, using actual 180ft stands and running of 150ft risers. The HIT will be also used to test future equipment and systems as well as for training purposes. In addition, the HIT has a feature to simulate heave effects. Dynamic testing at angles of 2 degrees in each direction is realized by rocking the tower over a period of 8 seconds.

This dynamic movement simulates real offshore vessel conditions will be used to test Huisman drilling equipment at off-shore conditions.

In addition to the tower, a 400 m deep well has been recently drilled and cased. The well is provided with sensors along its length and two will be installed to simulate situations such as kicks and loss of circulations.

The overall setup at the HIT consists of three main components:

- The sensors.
- The mud mixer.
- The models.

When all of the components and integrations have been demonstrated separately, the full system is ready to be tested. The pilot test will fulfil the goal of the project to demonstrate that sensors, models and automixing can work

together in concert to realize a drilling control system with mud treatment integrated.

Conclusions

The paper describes an ongoing demonstration project, which involves technology that takes control of drilling fluid properties to a considerably higher level. The technology demonstrated includes real-time pressure and density sensors, an automated continuous mud mixing system to replace manual batch mixing, and a real-time mathematical model to link topside fluid properties to downhole constraints. The new technology components enable a fully automated continuous optimization of drilling fluid properties, and thus opens the way to further and more accurate automation of drilling.

The system will improve accuracy and consistency of

any drilling operation, and by that reduce risk and help early detection of unwanted events. Combining the new technology with automatic pressure control in managed pressure drilling (MPD) is used as an example because it is particularly important when applying MPD as a mean to drill through depleted reservoirs with very tight pressure margins.

Acknowledgements

The work presented in this paper has been carried out with support from the Norwegian Research Council, Statoil, Huisman, Cybernetic Drilling Technologies, and Intelligent Mud Solutions through the DEMO 2000 project Drilling Mud Process Control. The work furthermore build on results from the PETROMAKS2 project Improved Model Support in Drilling Automation.

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Impact of application of occupational health and safety standards in petroleum industries of west sector of Alexandria

By

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Abstract Occupational health and safety for petroleum industries requires standards and guidelines for workers' health surveillance aimed at protection of workers. The current study analyzed accidents and work-related injuries in West Alexandria petroleum sector during the five years from 2010 to 2014 in order to highlight the causes to avoid recurrence through specific tools; conducting site survey and analysis for safety records of petroleum industries in west sector; and reviewing accident reporting for workers in the target sector. The principal objective of the statistics is to provide comprehensive and timely information on occupational injuries for prevention purposes. Survey of OHSAS management system certifications revealed that although some companies are certified, safety culture and performance were not properly well-established.

Between 2010 and 2014, 101 occupational accidents were reported to the local labor office. The majority of reports involved minor injuries (91%). Lower limbs were the most frequent affected organ due to accidents at work (43%). Causes were mostly attributed to unsafe work practices (44% of events) or as unsafe acts (37%). Accidents in petroleum sector can result in major and severe events that might have multiple, intervened and complex causes. No single failure can lead to an accident, luck and chance may play a role in determining the outcome. The most affected body part was lower limbs. Given the perilous nature of the oil and gas industry, the need for implementation of an efficient occupational safety and health management system is important for decreasing the rate of accidents and improving safety and health performance.

Keywords: Occupational health, occupational safety, work-related accidents, injury.

Introduction

Everyone wants a safe and healthful workplace, but what each person is willing to do to achieve this worthwhile objective can vary a great deal. As a result, the management of each firm must decide at what level, along a broad spectrum, the safety and health effort will be aimed. Some managers deny this responsibility and attempt to leave the decision to employees.

This strategy seems to square with hallowed principles of personal freedom and individual responsibility. But such a denial of responsibility by management results in a decision by default, and usually the result is a relatively low level of safety and health in the workplace (Aspahl and Rieske, 2010).

Occupational health and safety is relevant to all types of industries, business and commerce including traditional industries, information technology companies, the National Health Service, care homes, schools, universities, leisure facilities and offices (Rosenthal et al., 2006; Emmett, 1997).

Simply, the health and safety culture of an organization comprises the characteristics shared attitudes, values, beliefs and practices of people at work concerning not only the magnitude of risks that they encounter but also the necessity, practicality, and effectiveness of preventative measures (Vinodkumar and Bhasi, 2011).

Occupational health and safety is an important component of national development, and it is influenced by national developments in other areas.

Occupational health and safety policies and practices are not only shaped by advances in scientific knowledge, but also by changes in laws and in the social interplay between employers and employees. There are important economic and ethical dimensions to this field. Increasingly the links

to the environmental sciences and to the political power of the environmental movement mold development (Zohar and Luria, 2003).

Occupational safety is protecting work place and its essential elements and resources from any risk or hazard; or the feeling of safety among workers towards all risk and hazards they may face due to the nature of their work and it should pertain; safety for using of instrumentations and equipments; safety for getting any occupational diseases; safety for physical, chemical, social, economic, biological, accident, injury exposures (Change and Liang, 2009; Fernandez et al., 2009).

Briefly, it is simply the safe work place practices and safe environment.

The current study aims at analysis of accidents and work-related injuries in West Alexandria petroleum sector during the last five years and highlights on causes to avoid recurrence for the purpose of identifying the role of application of safety standards in minimizing the rates of accidents.

Materials & Methods

Study design. Data of work-related injuries in petroleum companies of west district of Alexandria were collected from the Bureau of Labor, West District, Ministry of Manpower and Immigration, Alexandria, Egypt. Local ethical approval to perform the current study was taken before the start.

The source for this data registry is workplace reporting-based registry. Workrelated injuries and illness registry includes all injuries notified by the governmental, private or business working sectors.

Notification to Bureaus of Labor is performed every six months. Notification of injured cases is supplemented and checked for complete recovery, any impairment, inability or even death.

All cases of work-related injuries in West District accessioned into the registry since January 1st, 2010 till December 31st, 2014 constitute the material for this study.

Medical records for each case were abstracted into special sheets by registrars at the time of hospitalization or days away from work. The different sheets were analyzed and results were reported for each year. The present study covers 101 cases, starting with the first work-related injury reported to Bureau of Labor, West District, on January 1st, 2010, and ending with the last injury accessioned into the registry by 2014.

Study setting. Data of accident reports were collected and investigated through the Ministry of Manpower and Immigration. The main reasons why accident investigations are undertaken in the workplace are as follows:

- Discovery of accident causes;

- Prevention of recurrences;
- Minimization of legal liability;
- Collection of safety data; and
- Identification of trends over time.

The specific aims of an accident investigation will vary depending on the terms of reference and the nature of the accident investigation. However, it should be born in mind that there are sometimes very difficult balances to strike in terms of objective investigations.

Study sample. The study was carried on data for the recorded accidents in west Alexandria Petroleum sector (14 companies) that were collected as half yearly and statistical analyzed for work-related injuries.

Data collection. The data for accidents and work related injuries were collected separately for every company from the west Alexandria sector for five years (2010 - 2014).

Recorded data can verify: the total number of employees, classified as men and women; analysis of accident and work related injuries according to the nature, cause, and mean of injury; affected gender; injured part; affiliation at time of injury; duration of practicing the profession; time of accident; place of accident; and duration of day off work.

Data entry and analysis was performed using Microsoft Excel 2010 software. Data analysis was in the form of percentages; maximum and minimum values. The analysis and survey of work related injuries from 2010 to 2014 were investigated in a follow-up study using the program of MS-Excel 2010. Frequencies, distributions, and days off from work were included in the analysis of occupational accidents in the west Alexandria petroleum sector.

Calculation of accident parameters

Data were statistical analyzed to determine the following:

- Crude ratio (CR) is equal to the number of injuries per total number of workers for 10000 workers in the organization.
- The average number of actual working days per worker
= (The actual working days * Number of employees) – (Day outage/ Number of employees)
- Average hours worked per worker per day
= (The average number of actual working days per worker / the actual working days) * Working hours
- The Frequency Rate (FR)
= The number of injuries * 10⁶ / (The actual working days * Working hours * Number of employees)
- The Severity Rate (SR)
= Days lost due to injury * 10⁶ / (The actual working days * Working hours * Number of employees)

Ethical clearance

Local ethical approval to perform the current study was taken from labor office.

All the inquiries from the authorities and questions about the nature, purpose and aim of the study were answered and cleared before carrying out the study. Following this, the supervisors of the selected labor office were contacted for data collection.

Results

Analysis of major accidents in the target sector from 2010 to 2014 was identified. Survey of OHSAS management system certifications revealed that although some companies are certified, safety culture and performance were not properly well established.

Between 2010 and 2014, 101 occupational accidents were reported to the local labor office. The majority of reports involved minor injuries (91%). Lower limbs were the most frequent affected organ (43%) due to accidents at work (Table 2). Table

1. shows that the total injuries among petroleum companies, during year 2010, were 21 injured workers, of which 5% was major accident with death; 5% was major accident with amputations; and 90% were minor injuries. Total days lost due to reported accidents were 6252 days. Total injuries among petroleum companies, during year 2011, were 19 injured workers, of which 5% was major accident with death, 5% was major accident with amputation and 90% were minor injuries. Total days lost due to reported accidents were 5836 days. Total injuries during year 2012, were 19 injured workers with 100% minor injuries. Total days off work due to reported accidents were 882 days. Total injuries during year 2013, were 22 injured workers, of which 5% was major accident with amputation, and 95% were minor injuries. Total days lost due to reported accidents were 830 days. Total injuries during year 2014, were 20 injured workers, of which 5% was major accident resulted in death, 15% were major accidents with amputation and 80% were minor injuries (Figure 1). Total days off work due to reported accidents were 5958 days.

Analysis of affected organs in minor accidents in petroleum companies of Alexandria west sector is illustrated in Table 2. The results show that the total number of minor injuries in petroleum companies during year 2010 was 19 injured workers, of which the affected organs were 10% head injuries, 32% upper limbs and 58% lower limbs. Total number of minor injuries during year 2011 was 17 injured workers, of which the affected organs were 29.4% head injuries, 29.4% upper limbs and 41.2% lower limbs. Total number of minor injuries during year 2012 was 19 injured workers, of which

the affected organs were 26% head injuries, 37% upper limbs and 37% lower limbs. Total number of minor injuries during year 2013 was 21 injured workers, of which the affected organs were 38% head injuries, 14% upper limbs and 48% lower limbs. Total number of minor injuries during year 2014 was 16 injured workers, of which the affected organs were 24% head injuries, 33% upper limbs and 43% lower limbs. Lower limbs were the predominant affected organs during the studied period (Figure 2).

Accidents' crude rate, frequency and severity rates in west Alexandria petroleum sector from 2010 to 2014 were calculated.

As illustrated in Table 3, the highest severity rate was noticed during 2011 (1448.88 Days lost/million hours). The highest frequency rate was noticed during 2013 (3.24 Injuries / million hours).

The highest crude rate was noticed during 2013 (32.43 Injured Workers/10000 workers).

The rates were not too high compared to other industries emphasizing the role of application of safety standards in these types of industry.

Figure 3 shows the frequency of accident-related causes in the target industrial sector. Causes were mostly related to unsafe work practices (~44% of events) or as unsafe acts (37%). Other causes were related to 3rd party errors (9%), improper design (8%) or others (2%). Results revealed that more injuries and work-related accidents occurred in maintenance companies or projects.

Discussion

The twentieth century witnessed remarkable reductions in the number and rate of occupational fatalities and injuries.

However, many preventable injuries and deaths still occur. Occupational injuries and deaths continue to add up to an overwhelming and unacceptable toll— unfortunately, it is known that most such deaths are preventable. People should learn from these thousands of workplace deaths, and the millions of workplace injuries that continue to occur, largely one at a time, across all our nations (Stout and Linn, 2018).

Nowadays, work place safety is considered by World Health Organization (WHO) a priority setting for health promotion in the 21st century (WHO, 2010).

International Labor Organization (ILO) and WHO reports indicated that in manufacturing industries many employees suffer from workplace injuries and property damage resulted in economic crisis (ILO, 2010; WHO, 2010). Every 15 seconds, a worker dies from a work-related accident or disease. Every 15 seconds, 153 workers have a work-related accident. Every day, 6,300 people die as a result of

occupational accidents or work-related diseases – more than 2.3 million deaths per year. Annually, 317 million accidents occur on the job; many of these resulting in extended absences from work. As a result of the everincreasing pace of worldwide liberalization of trade and economies, as well technological progress, the problem of occupational accidents and diseases are becoming more and more global concern, particularly in developing countries (Soehod and Laxman, 2007).

In recent years, occupational health and safety of the workers has improved and is relatively satisfactory in developed countries, whereas in developing countries, occupational health receives little attention and comes at low-level in the list of national priorities. Studies showed that there are baskets of measures providing information on a range of health and safety performances need to be taken care of (HSE 2001; Yessuf *et al.*, 2014).

In developing countries including Egypt, the risk of having work-related injury is 10 to 20 times higher than that of developed countries. This is because in developing countries, majority of the workforce is employed in small and medium scale industries that do not meet the minimum standards and guidelines set by the WHO and the ILO for occupational health, safety and social protection (Tadesse and Kumie, 2007). Occupational health and safety laws cover only about 10% of the population in developing countries, omitting many major hazardous industries and occupations (LaDou, 2003). Occupational health remains neglected in most developing countries under the pressure of devastating social, economic, and political challenges (Ahasan and Partanen, 2001; O'Neill, 2000).

Alli (2008) and WHO listed out some of several problems of occupational safety and health problems as psychological stress of employees, physical body damages, socio economic dissatisfaction, property damage, family disorder, and severe accidents.

Occupational health research in developing world focuses on the internal of the organization than on the social and political issues.

In summary, in order to perform critical OSH improvements, pretense of political mechanisms mediates scientific findings to policies and regulations and economic, technological, and socio-political feasibility of intervention should be valid and strong (Jilcha and Kitaw, 2016; Verma *et al.*, 2002)

Conclusion

Overall, despite high demands on better performance of occupational health and safety with low accident rates, stress should be put on improving safety culture of organizations. The majority of results of the current survey

in west Alexandria petroleum sector seem to be satisfied, emphasizing the role of application of health and safety standards. The main focus of action to promote workers' health should be on preventing problems that may result in occupational accidents or diseases.

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Figure 1. Total injuries in petroleum companies of west Alexandria sector from 2010 to 2014.

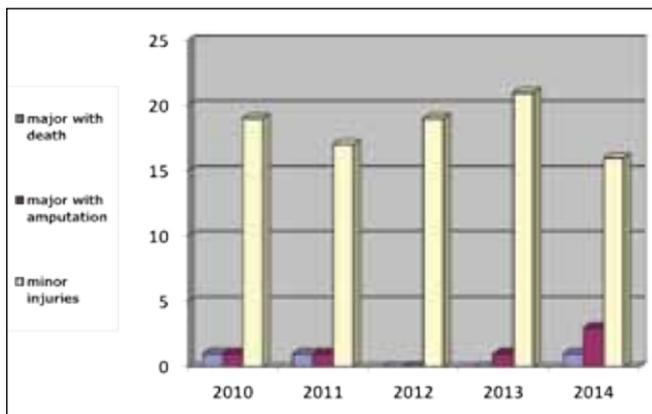


Figure 2. Classification of minor injuries according to body part affected.

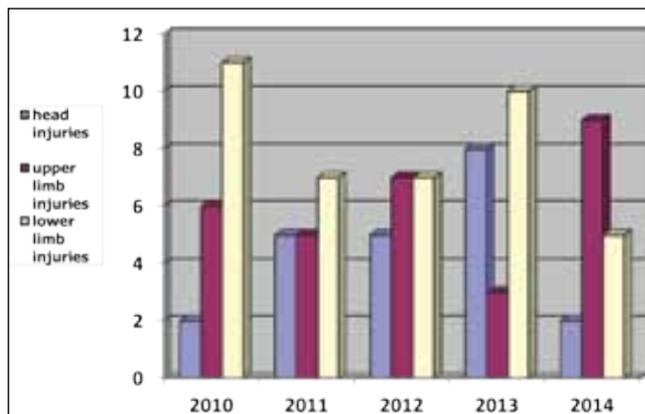


Figure 3. Frequency of accident-related causes in the target industrial sector.

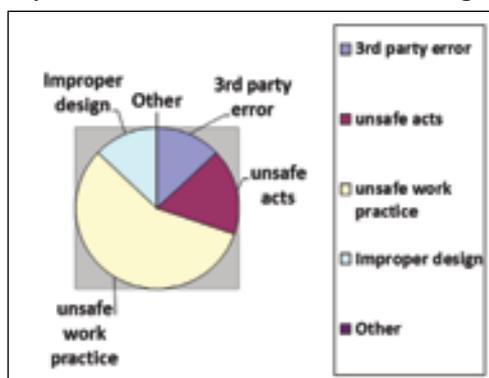


Table 1. Total occupational injuries in petroleum companies of west Alexandria sector from 2010 to 2014.

Year	2010	2011	2012	2013	2014	Total
Major accident with death	1 (5%)	1 (5%)	-	-	1 (5%)	3 (3%)
Major accident with amputation	1 (5%)	1 (5%)	-	1 (5%)	3 (15%)	6 (6%)
Minor injuries	19 (90%)	17 (90%)	19 (100%)	21 (95%)	16 (80%)	92 (91%)
Total injuries	21 (100%)	19 (100%)	19 (100%)	22 (100%)	20 (100%)	101 (100%)

Table 2. Classification of minor injuries according to body part affected.

Year	Injured organ	2010	2011	2012	2013	2014	Total
Head		2 (10%)	5 (29.4%)	5 (26%)	8 (38%)	2 (12.5%)	22 (24%)
Upper limbs		6 (32%)	5 (29.4%)	7 (37%)	3 (14%)	9 (56.25%)	30 (33%)
Lower limbs		11 (58%)	7 (41.2%)	7 (37%)	10 (48%)	5 (31.25%)	40 (43%)
Total injuries		19 (100%)	17 (100%)	19 (100%)	21 (100%)	16 (100%)	92 (100%)

Table 3. Accidents' crude rate, frequency and severity rates in west Alexandria petroleum sector from 2010 to 2014.

	2010	2011	2012	2013	2014
C.R.	25.62	20.81	8.67	32.43	21.01
F.R.	2.98	2.01	1.19	3.24	2.12
S.R.	277.72	1448.88	51.07	65.46	228.08

C.R = Crude Ratio (injured Workers/10000 workers)

F.R= Frequency Rate (Injury/million hours)

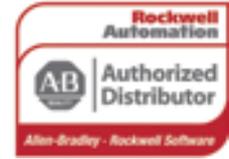
S.R=Severity Rate (Days lost/million hours)

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Successful Application of A New Inertial Steering Mode of Point-the-Bit RSS in Middle East Oilfield

By

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Abstract
In the past two decades, the point-the-bit rotary steerable system (RSS) has been widely used for high-profile directional drilling jobs in challenging environments, which require accurate directional control.

A new inertial steering mode of the point-the-bit RSS was developed by using accelerometers and a rate gyroscope sensor to achieve toolface control in environments, where magnetometers cannot be used for steering. This inertial steering mode effectively expands the operational envelope of point-the-bit RSS by improving its steering ability when magnetic interference, such as drilling out of whipstock window and close to offset wells or ferrous formations, is present or within a Zone of Exclusion (ZOE). Furthermore, the new steering mode can be used as a redundancy scheme in circumstance during magnetometer failures.

Through close collaboration between Research and Development (R&D) and field operation, the inertial steering mode of the point-the-bit RSS has been successfully applied in four wells in Middle East oilfield.

In the first well, the new steering mode was used to kick off two 8 3 / 8» hole sections after setting whipstocks in near vertical wells and it completed the kick-offs in desired directions with accurate toolface control in a high magnetic noise environment. In the second well, the new steering mode was used to exit the casing and drill to TD by using a whipstock. In the third and fourth wells, 12 ¼» hole sections passing through the ZOE were successfully drilled according to the well plan. The application of the new steering mode in these wells saved extra BHA trips, which would have been required if without this new steering mode.

The successful application of the new steering mode in the

Middle East oilfield has proven its technical advantages and business benefits.

Introduction

Oilfields in the Middle East presents various challenges in drilling and completion. Directional trajectory control is one of the challenges, which is mainly caused by

- directional drilling in congested platforms,
- deep sidetracks from vertical cased hole,
- window exits from already drilled wells,
- and planned trajectories passing through the ZOE.

Historically, steerable motors with MWD tools were used to drill wells from platforms and whipstocks were sometimes used for sidetracking or multilateral drilling, which, however, required extra BHA trips. In the latter case, drilling performance was also compromised when deep near-vertical wells were kicked off due to inaccurate toolface control in magnetic interference environments. To achieve better toolface control, the point-the-bit rotary steerable system has been implemented particularly in the situations where hydraulic limitation is present because of high mud weight in deep gas drilling environment or in soft formations where other technologies have difficulties in achieving planned trajectories.

The point-the-bit rotary steerable system uses a counter rotating methodology for toolface control (Schaaf et al. 2000). As Fig. 1 shows, the axis of the bit shaft is offset by a mandrel, which is then controlled geostationarily by a counter rotating motor during collar rotation. The tool controls the toolface orientation of the bit shaft geostationarily by driving the motor in the opposite direction to collar rotation at the same rotation speed. To change toolface, motor velocity is slightly

adjusted to change the toolface position of the mandrel and point the bit in the desired direction. For toolface control, the control system requires two parameters, i.e. the rotation rate of the collar and the toolface orientation of the bit shaft. An angular position sensor and magnetometers in a direction and inclination (D&I) sensor package measure these two parameters.

As a strap-down RSS tool, it primarily uses the magnetic field to perform toolface control. In the cases that magnetic field measurement is interfered, such as inside casing or during the tool was used with whipstocks or when magnetic field measurement does not have enough signal strength, known as Zone of Exclusion (ZOE), the RSS tool cannot control its toolface. As a result, the application of the RSS tool requires caution during well planning to avoid the trajectories passing through ZOE, which, however, limits its operation envelope. To expand the tool's operation envelope, a new steering mode, the inertial steering mode, has been developed to use inertial sensors for toolface and trajectory control.

Design of New Inertial Steering Mode

The new inertial steering mode utilizes accelerometers and a rate gyro. While the accelerometers remain part of the existing D&I sensor package, the rate gyro sensor is a new addition to the tool. In the laboratory, the rate gyro sensor was qualified with the measurement ranging up to 350RPM; a real-time calibration algorithm was developed in downhole firmware to tackle the inherent drifts of the sensors; the sensor performance and calibration were verified and validated.

Since downhole shock and vibration are likely to distort accelerometer and rate gyro measurement, effective filtering algorithm has to be developed to eliminate undesired noise. In the new steering mode, downhole high-frequency data sets, which included lateral shocks and collar rotation speed from the gyro, were analyzed to understand the frequency spectrum for low-pass filter design. The plots in Fig. 2 show one data set used for the analysis.

Fig. 3 shows the control diagram of the new inertial steering mode. The rate gyro is used to estimate the collar rotation speed. The lateral accelerometers together with the angular position sensor are used to compute gravity toolface. In the design, a low-pass filter is employed to realize stable toolface control.

After the new inertial steering mode was designed, a series of laboratory tests were conducted on a rotating machine, which was used to validate sensor computation and toolface control. Fig.4 shows four signal traces during a rotation test. **TF** is the RSS toolface; **RT_Mode_Bit11** is the bit 11 of a real-time data point for the indication of the steering

modes with 0 indicating the magnetic steering mode and 1 indicating the inertial steering mode; gyro is the rotation speed measured by the rate gyro sensor and **magvel** is the rotation speed measured by the magnetometers. The test was started at 09:27 Jan. 01 using the magnetic steering mode. The steering mode was switched to the inertial steering mode at 09:35. The toolface control was smoothly indexed from 0 to 360 deg as designed. Slight discrepancy between **MagVel** and **Gyro** were noted, which was caused by the magnetic field interference from metal and electrical surroundings.

To facilitate seamless integration of this new steering mode with oilfield operation, a downlink has been implemented in the RSS to toggle between the inertial and magnetic steering modes. The downlink does not require to change any drilling parameters during toggling between two modes. The engaged operation mode can be seen in real-time surface display.

As an operation guideline, the RSS is tripped in with the inertial steering mode to ensure the steerability inside casing or with whipstock. If desired, the inertial steering mode can be dis-engaged to use magnetic field measurement for steering. When inclination is lower than 2 degree, the toolface computed from magnetometers will be utilized due to diminished gravity toolfaces.

Benefits of the New Inertial Steering Mode

The new inertial steering mode contributes to an enhanced steering ability of the RSS when the tool is within a blind zone or the ZOE. As a result, the RSS operation envelope is increased by the inertial steering mode based on the following enhancements:

- removal of the ZOE requirement,
- better toolface control out of casing and the zone close to casing shoe,
- better toolface control when drilled well is close to offset wells, which are likely to introduce magnetic interference,
- better toolface control while drilling out of whipstock,
- and the provision of a RPM sensor redundancy in the RSS tool.

Field Run Results

This section presents four successful field runs with the new steering mode in the RSS. Technical challenges existed in all the wells where magnetic interference was present or ZOE was passed through well paths.

Well-A

The first well was drilled from an offshore platform with the objective of drilling and completing as a dual producer. The original borehole had multiple casing and completion strings

and an exit was planned from 13 3 / 8» casing at 25 deg inclination in a 12 ¼» hole. Significant magnetic interference was expected from the casing and completion accessories; the interference could saturate the magnetometers of the point-the-bit RSS and thus could result in steering inability. The option of using steering motors for drilling the exit had been proposed and evaluated, which, however, would have required a second run after the window exited to reach TD. The new inertial steering of the RSS was then put forward as a feasible solution and finally was adopted for the job.

Fig. 5 shows the toolface control performance of the RSS tools in downhole. From 23:30, April 28th to 1:30, April 29th, the magnetic field measurement traces of *RSS_Hy* and *RSS_Hz* were saturated at over 75,000nT. The *RSS_Magvel* measured by magnetometers showed the erratic toolface measurement during this time, whilst the *RSS_TF* measured by inertial sensors was used to control the toolface matching the desired toolface *RSS_TF_Des* trace. The data show that the inertial steering mode was able to control the toolface of the RSS under the situation of significant magnetic field interference.

The well was steered away from the mother bore in the planned direction followed by building inclination and landing the well. The new steering mode allowed the window exit and reached the TD with a signal run with the point-the-bit RSS. The technical solution saved an extra run for client with significant financial benefits.

Well- B

In this nearly vertical well, the well plan was to set a whipstock in 9 5 / 8» casing and kick off in deep well in 8 3 / 8» hole. Previously, similar wells in the Middle East were drilled with motors and rock bits after setting Whipstocks. The disadvantages are listed below.

- In the same BHA, a single shot gyro for toolface orientation had to be run for toolface orientation purpose;
- It requires an extra BHA trip. In case that a PDC bit was used to save the trip and the well was drilled to TD with motors, the lower ROP were recorded, and the inability of kicking off from a planned azimuth were identified due to the unavailability of the real-time gravity/magnetic toolface.

After detailed planning and risk assessment in coordination with R&D, operation support center, drilling engineers and directional drillers, a comprehensive field run plan was developed including the use of the new steering mode of the RSS. By using the inertial steering mode of the RSS, this well was kicked off successfully in the planned direction. The real-time data show the actual toolface from the inertial gyro matched the desired toolface.

Fig. 6 shows the toolface control performance of the RSS

tools in this job. For most of the time, magnetic field measurement was interfered; the *RSS_TF* measured by inertial sensors was used to control the toolface matching the desired toolface *RSS_TF_Des* trace. The data showed that the inertial steering mode was able to control the toolface of the RSS under the situation of significant magnetic field interference. The data also show some variation on the *RSS_TF* when the tool was steering and this was attributed to the near vertical direction.

Well- C

Well-C has the profile of building from low inclination in the NE direction, holding for 1000m, turning from NE to NW direction and then building the inclination above 60 deg at the TD of the section. The challenge for the run was the wellpath passing through the ZOE, in which the magnetic steering mode could not steer.

Therefore, the new inertial steering mode was selected for the run.

Fig. 7 shows overall toolface control performance of the RSS tools in downhole for the Well-C. Between June 5th and June 8th, the magnetic field measurement traces of *RSS_Hy* and *RSS_Hz* were as low as 10,000nT. The *RSS_Magvel* measured by magnetometers shows the erratic toolface measurement during this time, whilst the *RSS_TF* measured by inertial sensors was used to control the toolface matching the desired toolface *RSS_TF_Des* trace. The data showed that the inertial steering mode was effective to control the toolface of the RSS under the situation of the ZOE.

Well- D

Well-D has a 2-D profile towards the NNE direction with the focused on building the inclination. The challenge of the run was the wellpath passing through the ZOE, in which the magnetic steering mode could not steer. As a result, the new inertial steering mode was selected for the run.

Fig. 8 shows overall toolface control performance of the RSS tools in downhole for the Well-D. Between 21:00 to 9:00, Oct.15, 2015, the magnetic field measurement traces of *RSS_Hy* and *RSS_Hz* were as low as 8,000nT. The *RSS_Magvel* measured by magnetometers showed the erratic toolface measurement during this time, whilst the *RSS_TF* measured by inertial sensors was used to control the toolface matching the desired toolface *RSS_TF_Des* trace. The data show that the inertial steering mode was effective to control the toolface of the RSS under the situation of the ZOE.

Conclusion

The new inertial steering mode was developed for the point-the-bit RSS tool and the technology was deployed in Middle



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East Field. Four successful field runs have been successfully completed and the tool performed well in all the four sections drilled with exposure to different directional profiles.

- a. Window exit from 13 3 / 8» casing and drill ahead in 12 1/4» hole;
- b. Window exist across whipstock from deep near vertical well in 8 3 / 8» hole;

c. Two runs in 12 1/4» hole with inertial toolface control across ZOE.

The new inertial steering mode of the RSS tool is time- and cost-effective, as it reduces the number of BHA runs and reduces the single shot gyro runs for toolface orientation. The four successful runs prove that the new inertial steering mode has increased the operation envelope of the Point-the-bit RSS tool.

REFERENCE

1. Schaaf, S.; Mallar, C. R.; and Pafitis, D. «Point-the-bit Rotary Steerable System: Theory and Field Results,» SPE Paper 63247, presented at the 2000 SPE Annual Technical Conference and Exhibition held in Dallas, Texas, 1 - 4 October 2000

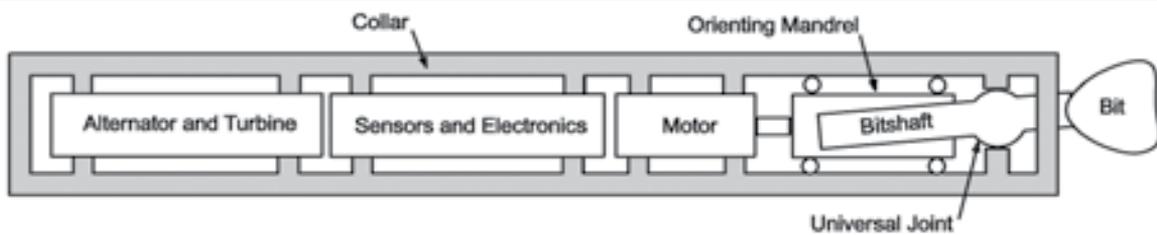


Figure 1—Block diagram of the Point-the-bit RSS system

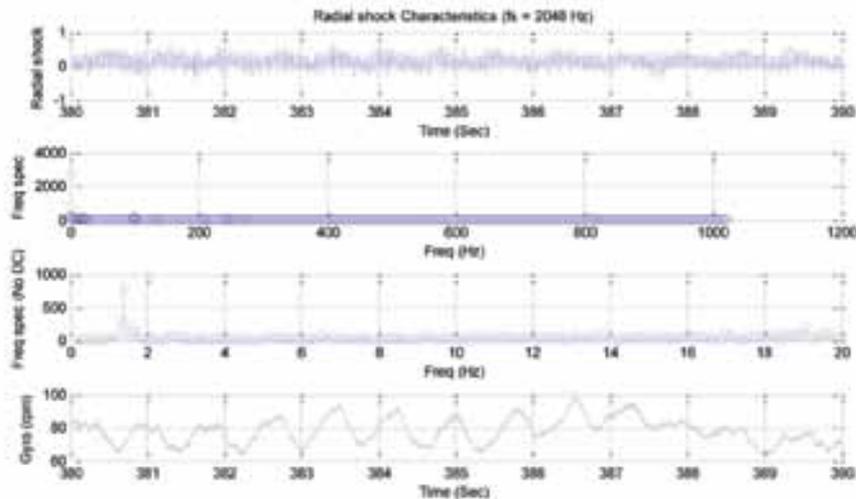


Figure 2—Lateral shock characterization; top plot – radial shock waveform; upper middle plot – frequency spectrum of the radial accelerometers over whole frequency range; lower middle - frequency spectrum of the radial accelerometers to 20 Hz without DC component; bottom plot – collar rotation speed by the gyro

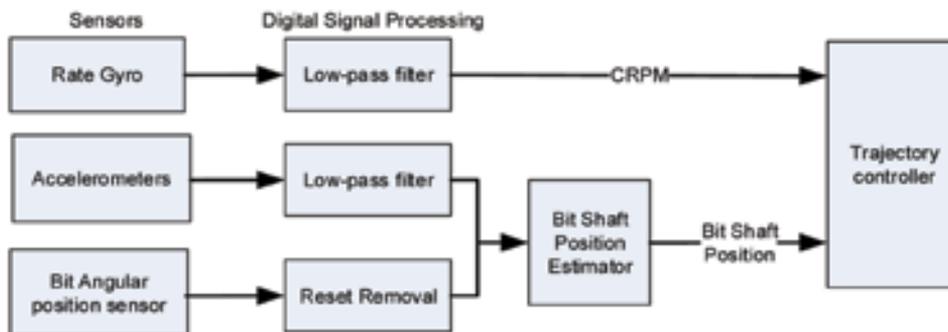


Figure 3—The control diagram of the new inertial steering mode of the RSS

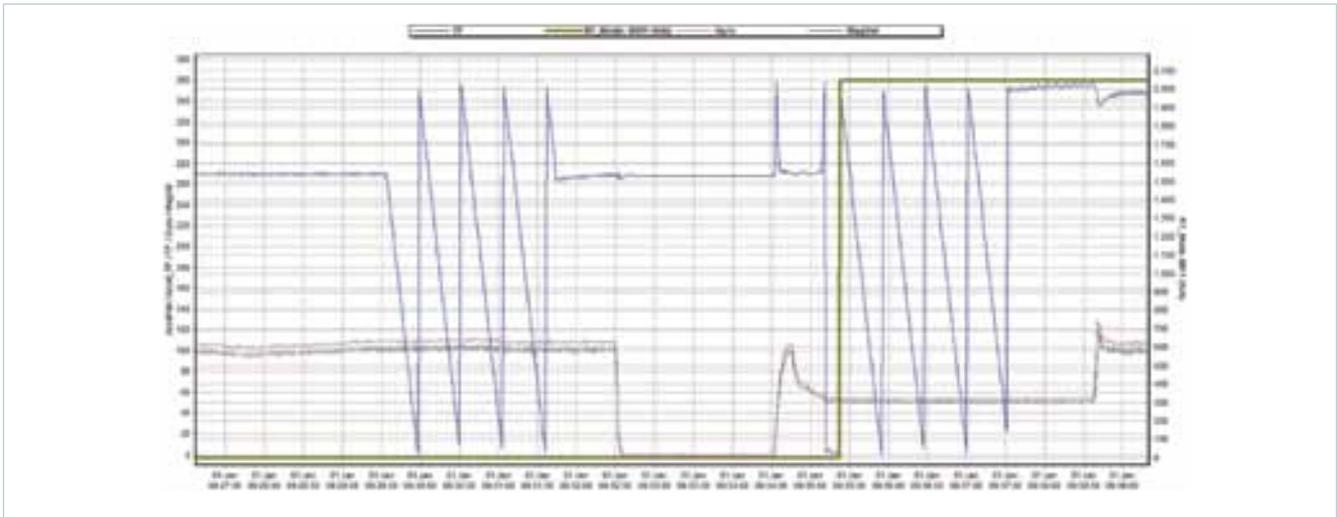


Figure 4—Toolface control in magnetic and inertial steering mode; TF – Toolface; RT_Mode_Bit11 – indication of magnetic steering mode (0) and innerial steering mode (1); gyro – rotation speed by rate gyro sensor; Magvel - rotation speed by magnetometers

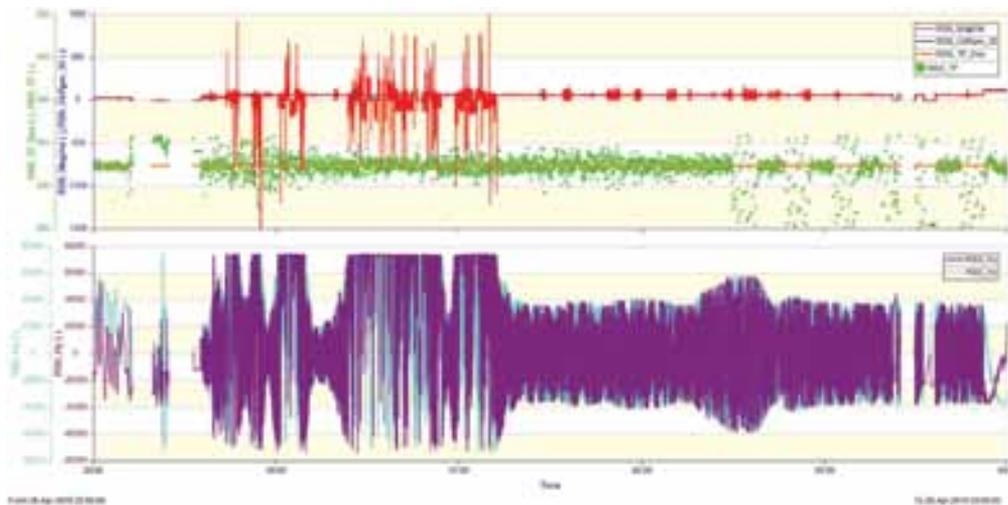


Figure 5—RSS toolface control performance in Well-A (upper plot is the toolface and RPM traces; lower plot is the lateral magnetic field measurement) in the Well-A

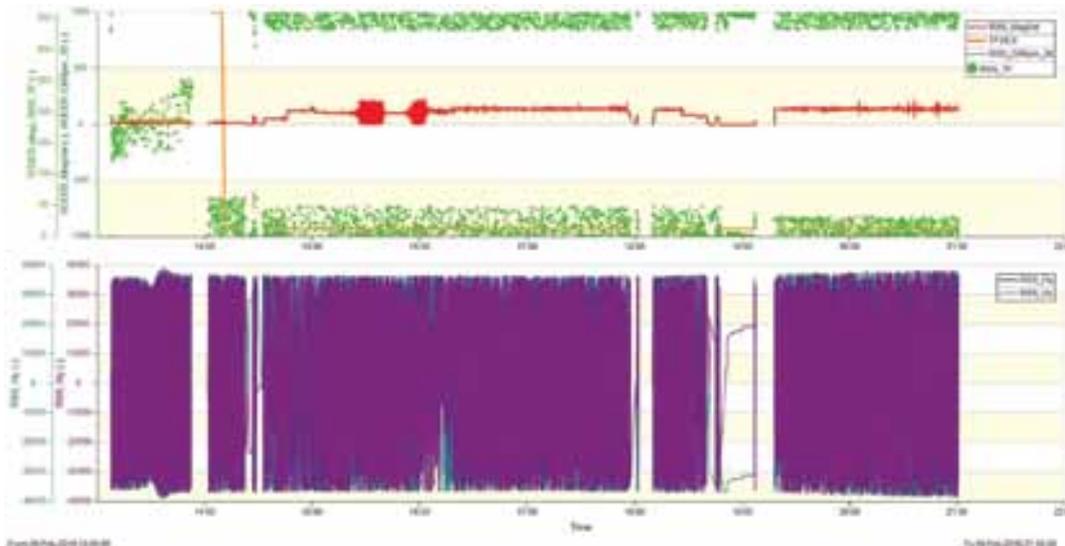


Figure 6—RSS toolface control performance (upper plot is the toolface and RPM traces; lower plot is the lateral magnetic field measurement) in the Well-B

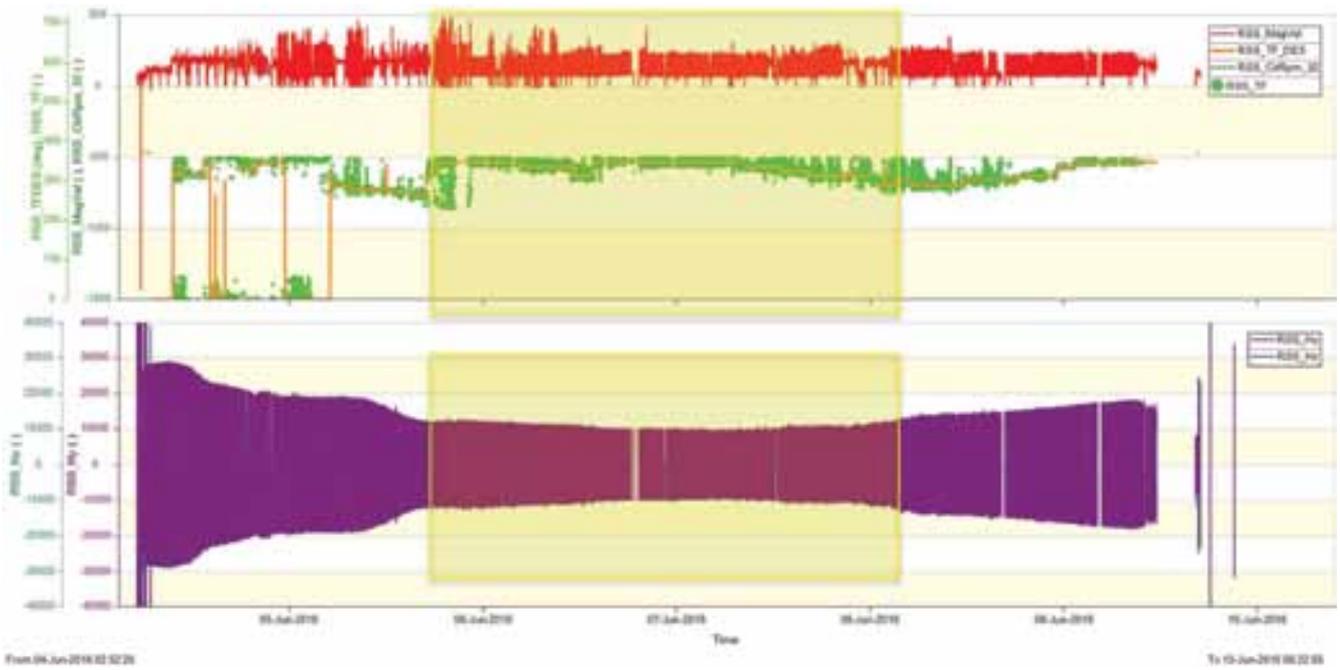


Figure 7—RSS toolface control performance (upper plot is the toolface and RPM traces; lower plot is the lateral magnetic field measurement) in the Well-C

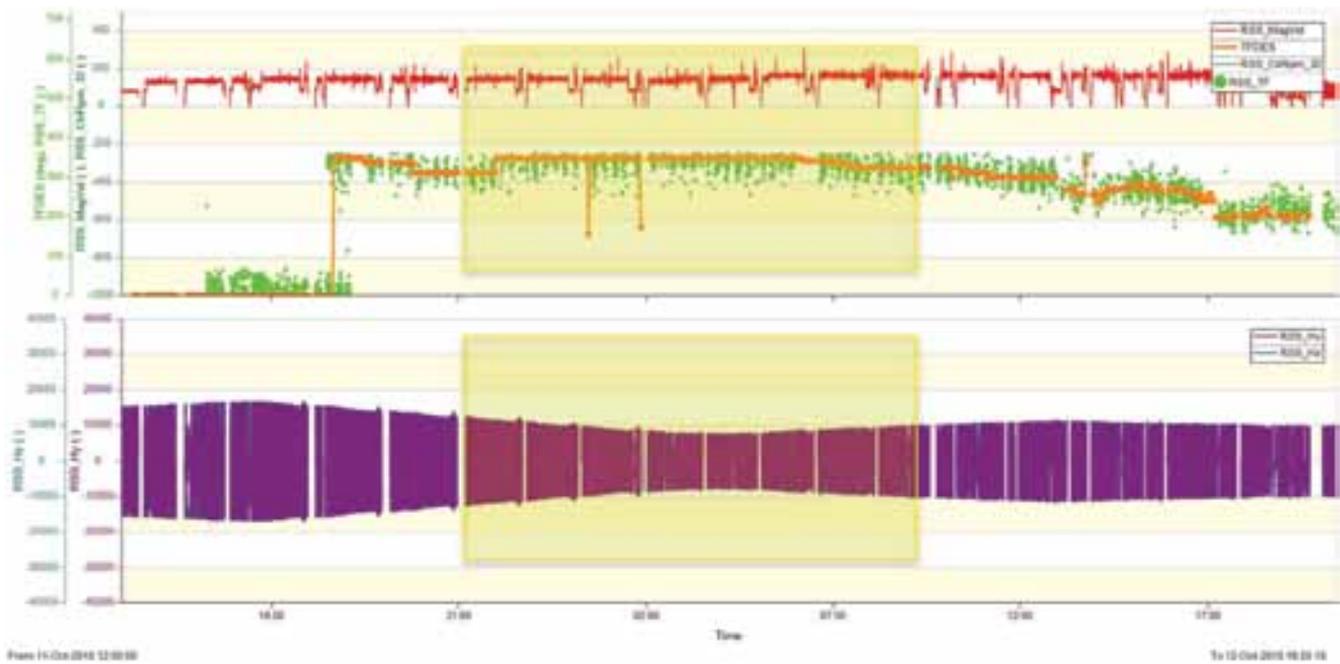


Figure 8—RSS toolface control performance (upper plot is the toolface and RPM traces; lower plot is the lateral magnetic field measurement) in the Well-D



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MOC is a sister event with OMC – Offshore Mediterranean Conference and Exhibition which takes place in Ravenna, ITALY and they both keep focusing E&P companies, contractors, service companies and suppliers to the Mediterranean Offshore Oil&Gas sector. The companies keep recognising in MOC and OMC a defining meeting points where to discuss about the major Oil&Gas issues and where industry comes together to network, learn and grow.

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THE HISTORY OF INDUSTRIAL LUBRICATING OILS

The history of industrial lubricating oils began as soon as man discovered that reduced friction meant greater efficiency. There are many different types of industrial lubricating oil and each oil has been developed over time to serve a different purpose.

Early hand or horse-powered machinery was often made from very heavy, cast metal components. Thick, treacle-like industrial



lubricating oils were developed to reduce friction between these heavy surfaces. Early engineers were quick to recognize that proper use of the correct industrial lubricant oil ensured smooth running machinery and longer component life.

The steam engine signaled a new era in the history of industrial lubricant oils as it created challenges that had never been seen before. Steam engines could run faster and for longer than any previous machine but this produced a brand new range of

engineering challenges.

Possibly the biggest challenge faced by early engineers was to reduce the amount of friction generated by their machines and at the same time, to reduce the heat generated by that friction. Excessive heat causes metal to expand and expensive machinery to stop working. It was more cost effective to develop effective industrial lubricating oils than keep replacing burned out bearings! As machinery became faster and more complex and components

became lighter in weight, lighter weight industrial lubricating oils were developed to cope with the speed of operation and increased heat generated by high speed machinery. Highly viscous industrial lubricating oils were developed to fill sumps and baths so that delicate machinery was kept constantly lubricated. The lubricating oil was itself cooled by running it through water and air cooled pipes. As each new engineering challenge was met, a new industrial lubricating oil was developed to service its needs. The early days of the automotive industry saw a huge amount of development money spent on creating efficient lubricating oils that could cope with the constant high speed movement of machine parts.

«Cutting edge» lubricating oil development funded by the pioneers of the motor manufacturing industry and aimed at increasing the efficiency of the motor car also enabled the development of new and more efficient industrial lubricating oils for powered lathes, milling machines and other heavy machinery.

These early industrial lubricating oils were mostly refined lubricants produced from mineral oils or crude oils; but the ever increasing demands made by a fast moving industry prompted the development of a new kind of industrial lubricant: synthetic industrial lubricating oil.

Synthetic lubricating oils are a complex scientifically engineered alternative to petroleum-refined lubricants and provide greater performance and reliability. They combine enhanced mechanical and chemical properties to deliver the required level of performance. Several types of synthetic industrial lubricating oils exist, all containing organic compounds or synthetic hydrocarbons. High speed machines of all types - from state of the art commercial printers to supersonic aircraft - rely on a wide range of highly developed industrial lubricating oils to keep them running smoothly. Development is ongoing and new lubricants are constantly required to meet the demands of modern industrial engineering.

INDUSTRIAL LUBRICATING OILS

INTERESTING FACTS:

- Industrial lubricants, fluids and coolants are highly specialized and are carefully designed to perform specific tasks.
- Industrial lubricants are used for several reasons including the reduction of thermal deformation.
- Industrial lubricants work as a cooling agent and can help to prevent unwanted materials from adhering to surfaces.
- Industrial lubricants can help reduce the effects of corrosion and rust.
- Lubricants help to reduce wear and tear, prolong the life of tools and other moving parts, reduce the time spent on maintenance - and of course ultimately ensure a company's profitability over the long term.
- Different industrial lubricants possess different properties and features. Features that might be important when choosing specific oil include resistance to heat, oxidation inhibiting ability and biodegradable ability.

- Flash point is an important consideration when choosing an industrial lubricating oil - the flash point is the lowest temperature at which liquid can emit enough vapors to cause an ignition.
- Some industrial lubricants contain a high percentage of water and are generally known in the industry as HWCF - high water content fluids.
- Synthetic industrial lubricants generally provide an effective resistance to heat as well as excellent cooling abilities; they don't contain a petroleum or mineral oil base.

INDUSTRIAL LUBRICANTS MARKET SEGMENTATION

The tremendous growth of industrial production, and increased trade, are primarily responsible for the high consumption of industrial lubricants.

The major end-use industries for industrial lubricants are construction & mining, metal production, cement production, automotive, power generation, marine, food processing, paper, wood, aviation, and others.

CONSTRUCTION & MINING

A construction site is full of harsh conditions, where the majority of construction equipment is exposed to extreme cold, heat, moisture, and dust, which can affect the performance of equipment. The use of appropriate industrial lubricant on a construction site helps to prevent equipment failure, eliminate downtime and reduces operating cost. There are various heavy loads, mobile, and processing equipment in mining that need industrial lubricants on a large scale. Bucket wheel, excavators, dragline, electric rope shovel, hydraulic shovel, and mining truck uses industrial lubricants such as hydraulic oil, grease, and gear oil.

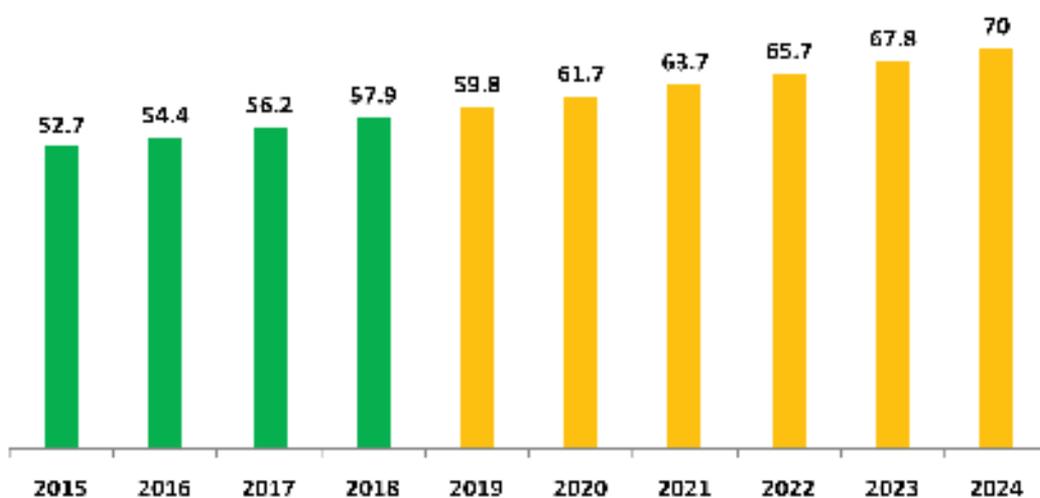
METAL PRODUCTION

The metal production consumes industrial lubricants on a large scale. The metal production process includes various tasks such as metal cutting, metal grinding, metal forming, and metal joining that operate in extreme environments. The use of industrial lubricants during these processes help to reduce production costs & operating temperature, improve machining quality, and extends the machine life.

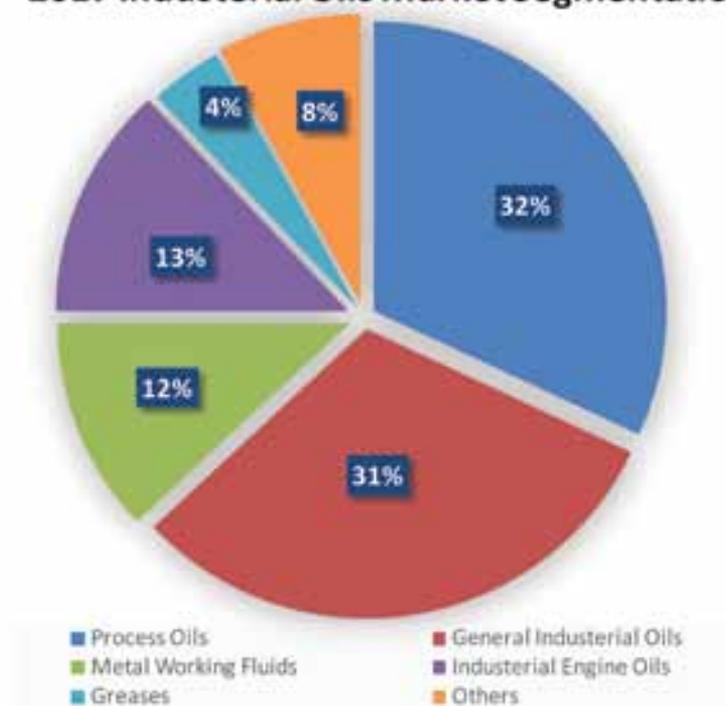
CEMENT PRODUCTION

The cement production plant has some tough operating conditions. The cement manufacturing process involves a variety of heavy duty equipment. The key machines in the cement production plant include crushers, mills, kilns, and coolers. These machines are mainly exposed to the highly abrasive dust, high temperatures, vibrations, and high load.

Global Industrial Lubricant Market Size (Billion USD)



2017 Industrial Oils Market Segmentation



MAJOR MARKET DEVELOPMENTS

- **In September 2016**, Total Lubmarine, (Norway) a division of Total S.A. launched new cylinder lubricant called Talusia Optima. This is a specialized lubricant designed for the marine industry. It has helped the company to strengthen its product portfolio
- **In August 2016**, Fuchs Petrolub acquired industrial oil producer ULTRACHEM INC. (U.S.). ULTRACHEM INC. (U.S.) is a well-known producer and marketer of the specialty synthetic lubricants for the compressor OEMs and industrial maintenance markets. This acquisition has helped the company to enhance its products offerings in the industrial lubricants market.
- **In November 2016**, ExxonMobil signed an agreement with Chilean industrial conglomerate Empresas Copec for the production and distribution of lubricants and fuels in Colombia, Ecuador, and Peru.

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An Interview With

Dr. **MOHAMED ELHABIBY**, PEng, EMBA
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S∞D was initially developed by METI, a leading professional Research and Development (R&D) company offering consulting and product services for both engineering and geomatics sectors. METI has established a fantastic reputation for innovation and competing with the “big boys” through its agile management and tremendous dedication to R&D.

WHAT ARE THE SUCCESSFUL CASE HISTORIES FOR THE SERVICES YOU PROVIDE?

In the last years, METI has been the main project consultant on a variety of projects involving precession surveying, mapping, and structure monitoring and has had significant success providing innovative solutions for their unique challenges. METI measures deformation and movements of the tracks and retaining wall inside the tunnel. METI technologies and expertise have been proved to meet all the specifications and requirements of the projects using the most up-to-date and accurate robotic total stations for absolute deformation monitoring of the retaining wall and geo-referencing.

METI has carried out laser scanning work for clients. Typically, laser scanning areas of interest are industrial facilities, oil and gas sites and structures, and historical sites. Currently, METI scans facilities using hand and vehicle portable laser scanning units. The laser scanning services and as-built 3D modeling have recently been combined with complete monitoring and design services for large and complex projects. This has become METI’s ASTech award winning

deformation monitoring. Please see the link to the awards page, <http://astech.ca/>.

METI already has existing clients in Canada and overseas.

HOW CAN THAT TECHNOLOGY HELP OPTIMIZE THE PETROLEUM INDUSTRY?

METI will provide a customizable, intelligent online platform connected with new and existing sensors used in capital asset management's energy and industrial facilities. Real-time and archived data will be projected onto multi-dimensional engineering grade 3D models with virtual and augmented reality (VR/AR) options. The platform will have an artificial intelligence module to leverage captured and real-time streaming data for evaluation of maintenance prediction models with the following modules: a generic datalogger equipped with advanced communication protocols that stream in real time through the IoT; a geolocation-capable module; a cloud-based computing data analytics module; an engineering-grade 3D modeling-as built, a VR/AR module, and an AI module using software as a service. METI currently has three levels of service: integrated asset modeling, sensors and connectivity, and asset management/risk assessment/maintenance prediction.

METI is introducing an intelligent and connected online platform as a one-stop-shop for capital asset management with customizable digital transformation modules that leverage the IoT, as built, geolocation, data analytics, AI, VR/AR, and more. The platform can be fully or partially integrated into new and existing facilities. The main value proposition of METI's offerings is to remotely monitor critical physical variables of different machinery for predictive maintenance improvements, operation cost minimization, risk mitigation, productivity maximization, and optimal return on investment. Massive cost savings in maintenance and operations are introduced.

PERSONALLY, ENCLOSE YOUR EXPERIENCE FROM EGYPT TO CANADA IN A NUTSHELL SPOTTING THE SHINY PATHS AND THE OUTSTANDING AWARDS.

I, Dr. Mohamed Elhabiby, is a professional engineer with 20 years of experience in geomatics engineering and software development engineering. A protégé of Dr. Michael Sideris, I obtained his doctorate in geomatics from the University of Calgary and went on to teach at the university. Eventually I left full time academia to pursue collaborative consulting projects and to ultimately launch METI with his mentor. Five years after taking the plunge, I led his team to win the 2015 ASTech award in Science and Technology, the ultimate technology prize in Alberta, as a result of METI's work in developing extremely sensitive multi-sensor systems to monitor the structural integrity of municipal infrastructure and large development projects. Since then, this technology

has been adopted for multiple applications, winning METI contracts around the globe. I continue to direct METI's R&D daily, leading negotiations with certain external key strategic partners and overseeing the firm's general strategy development.

In addition to my many other accomplishments, I was listed in the Top 40 under 40 awards by Avenue Magazine in 2013. In December of 2016, METI was named a finalist for a Small Business Award of Distinction due in large part to my guidance. I was a finalist for the 2017 Immigrants of Distinction Award in Science, Technology, Engineering and Math. I also served as the Chair of WG 4.1.4: Imaging Techniques, Sub-Commission 4.1: Alternatives and Backups to GNSS for four years. I chaired the Geo-Computations and Cyber Infrastructure oral session at the Canadian Geophysical Union annual meeting for five consecutive years (2008-2012) and served as the Treasurer for the Geodesy Section of the Canadian Geophysical Union for six years (2008-2014). I lead an archaeological mission at the area of the Great Pyramids, in Cairo, Egypt. In addition to my outstanding record of service, I have published more than 100 academic journal articles, conference presentations, book chapters, workshop proceedings, and technical reports.

KEY AWARDS AND ACHIEVEMENTS

- Over 120 publications: Book chapters, journal papers, conference proceedings, technical presentations, and reports.
- Led Micro Engineering Tech Inc. holding company (main shareholder) of RoboGarden to be a finalist of the Alberta business distinction award in 2017 (<http://abbusinessawards.com/2017-alberta-business-awards-of-distinction-finalist/>).
- Finalist in the Science, Technology, Engineering and Mathematics category 2017 of the Immigrants of Distinction award in 2017 (<https://www.immigrant-education.ca/the-2017-immigrants-of-distinction-awards/>).
- Won the ASTech Foundation award in 2015 for Outstanding Achievement in Applied Technology and Innovation (<http://www.astech.ca/archives/indexofpastwinners/micro-engineering-tech-inc>).
- Featured in the well-known Calgary Herald as a researcher and entrepreneur who can use science to create usable technologies (<https://www.pressreader.com/canada/calgary-herald/20140425/282054800032422>).
- Named a Top 40 Under 40 by Avenue Magazine in the list of 2013 (<http://www.avenuecalgary.com/City-Life/Top-40-Under-40/Mohamed-Elhabiby/>).
- Leader and director of an archeological research project at the area of the Great Pyramid in Giza, Egypt for the use of Gravimetry in non-destructive Archeology (from 2009 to 2012).
- Bibliotheca Alexandria Center for Special Studies and Pro-

grams (CSSP) Grant recipient for the year 2008 in Engineering Sciences and Technologies in Alexandria, Egypt. Persuaded industry officials of the merits in investing in this project to personally secure 20% of total grant value.

- Co-Principal Investigator with an established University of Calgary Professor of Geodesy on the Industrial Airborne Gradiometry project with GEDEX Inc. entitled “GEDEX High-Definition Airborne Gravity Gradiometer System to explore minerals, oil, and gas”; successful in gaining consensus amongst both industry and academia to adopt this initiative despite differing viewpoints.

DO YOU HAVE A PLAN OF SPREADING YOUR BUSINESS GLOBALLY?

Yes, I plan to expand METI’s business globally. METI – in partnership with several reputable companies like Nova-Tel, Teledyne Optech, and GEXCEL – has designed S∞D to serve the upstream, midstream, and downstream energy sectors. Services include smart as built for brownfields and monitoring of pipeline strain, settlements, and deformations. Vehicle tracking and customized asset management through real-time tracking are also available. METI’s S∞D services are available in five countries: Canada, Egypt, UAE, KSA, and Brunei.

HOW DO YOU STAY ALIGNED WITH THE SUSTAINABLE DEVELOPMENT GOALS IN YOUR DIFFERENT POSITIONS?

In my option, the sustainable development goals are expected to shape the global agenda on economic, social and environmental development for the upcoming years. In my different positions, I’m focusing on the sustainable development goals which are the blueprint to achieve a better and more sustainable future for all. For example, I’m offer internship/work opportunities to achieve gender equality/empower women and girls.

WHAT IS INNOVATIVE AS A BUSINESS LEADER IN YOUR PREVIOUS PROJECTS?

As a business leader, I have an in-depth experience in creating business development strategies, leveraging both B2B and B2C models to help with progressive growth goals in the oil and gas industry in general, and with start-ups in particular. My experience with developing comprehensive market and account strategies, opportunity analyses, and resource planning with sales focus is an incredible asset to METI. I have experience in selling planning, and forecasting. My interpersonal relationship-building skills give me the ability to influence decision makers. I can manage an ever-changing workload and can find opportunity in all stages of technical and business development. I have excellent leadership skills, making me an expert at building strong relationships across all stakeholders.

In my previous projects, I was responsible for implement-

ing an agile management approach. As a business leader, my responsibility was to understand the business requirements (functional and non-functional) and translate them into technical requirements for the development team. I offered suggestions for improvement and simplification of the systems to add value to the business. After each development sprint, I ensured that the requirements, scope, and deliverables are maintained.

IN YOUR OPINION, WHAT IS THE BEST PRACTICE TO CHOOSE THE OPTIMUM REQUIRED MAN POWER FOR EACH BUSINESS?

Finding and hiring quality talent has never been more critical. Competition, economic uncertainty, and high costs mean that business owners must hire the right talent to ensure business success. In my opinion, there are many strategies for closing the optimum required man power for each business:

1. Understand the environment of the workplace and understanding the uniqueness of the business to choose the right person for the right job.
2. Conduct needs Analysis:
A needs analysis initiates the manpower recruiting process. This phase entails identifying a vacant position or creating one to meet new needs that have arisen in the organization --- this may be an entry-, mid- or upper-level management position. The employer then develops a job description describing the duties involved with this position.
3. Create a clear manpower planning for each business.

AS A RESEARCHER, HOW DO YOU STATE THE R&D PLAN OF MICRO ENGINEERING TECH INC. TO COPE WITH FUTURE NEEDS?

METI has established a fantastic reputation for innovation and competing with the “big boys” through its agile management and tremendous dedication to R&D.

Given its focus on R&D, METI’s newest service, S∞D, is a state of the art digital transformation solution designed especially for the industry. Recognizing the opportunities generated by the advancement of technology, falling costs of digitalization, and high availability of devices and sensors that provide massive amounts of valuable data, METI looked at the market and sought to provide companies with significant operational gains while shaving tens of millions from their costs. Even as companies improve efficiency and reduce overhead, by using S∞D, their products will become smarter, more sustainable, and more efficient.

S∞D services provide intelligent, connected Smart Infinity Dimensions modelling for capital asset management of existing and new facilities. Engineering-grade 3D models are created using cutting-edge laser scanning systems and image-based sensors. METI recognizes the inherent value of creating a system that produces information from a variety of other sensors in other dimensions integrated into a 3D model that provides high rate, real-time data analytics through IoT systems.



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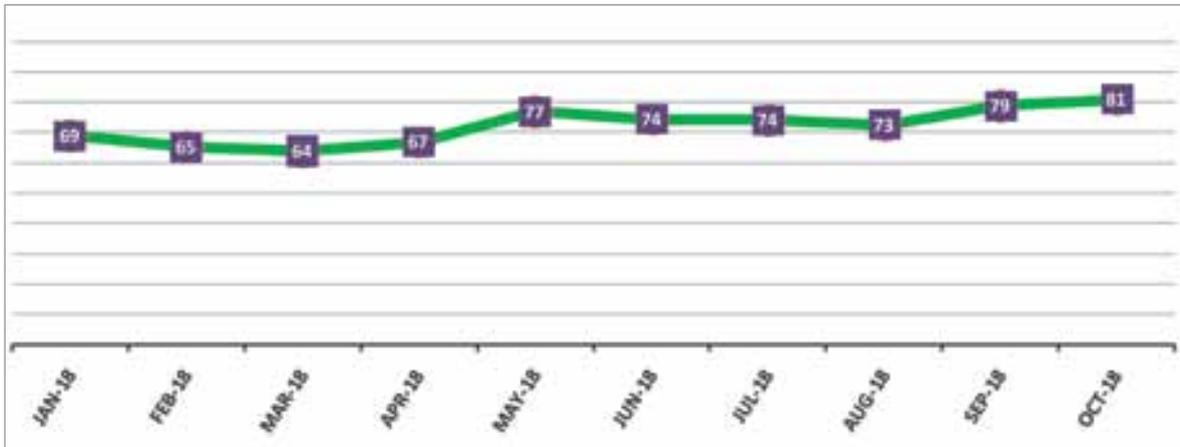
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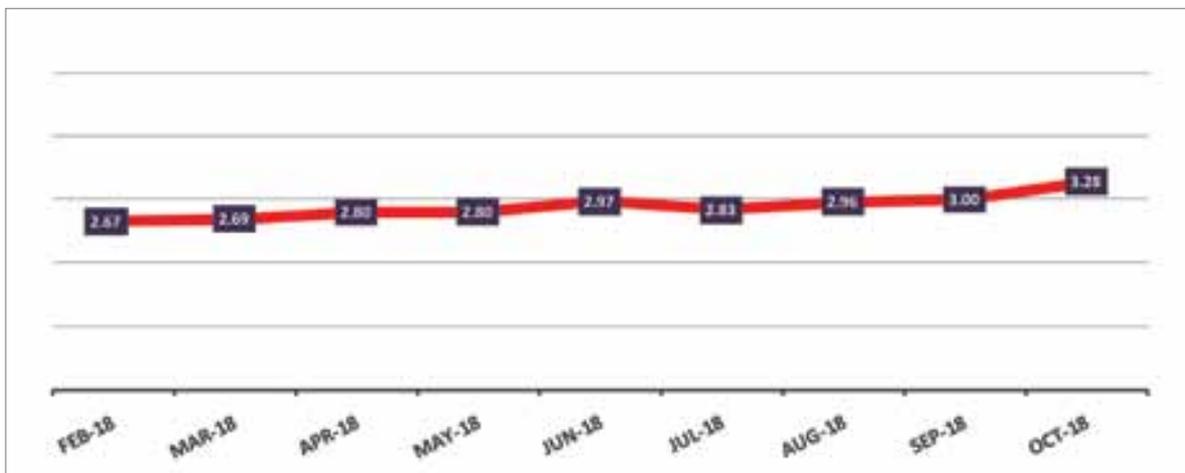
INDUSTRY AT A GLANCE

by: Ali Ibrahim

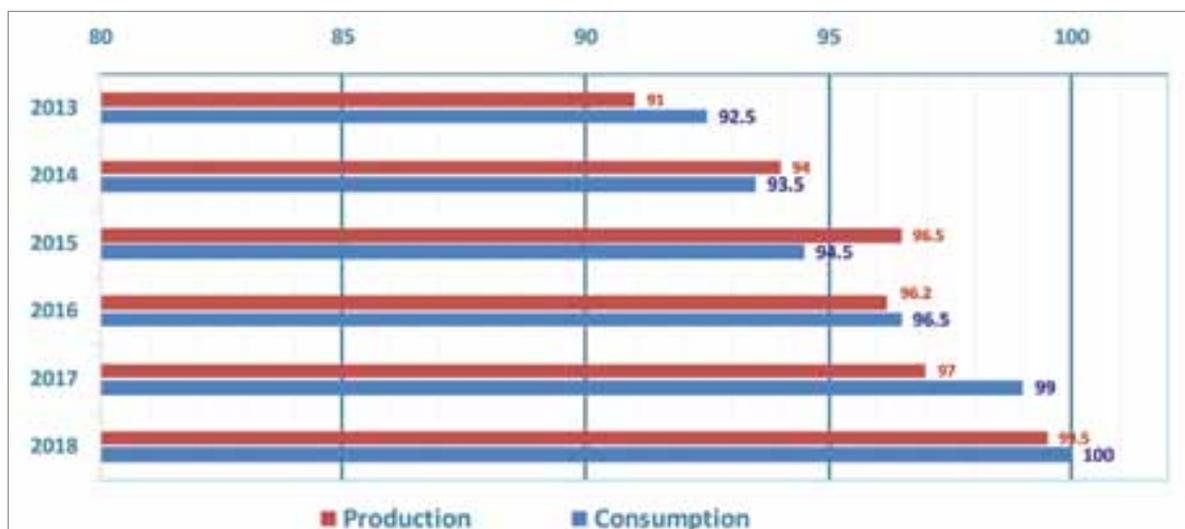
Brent Crude Oil Spot (dollars per barrel)



NYMEX Natural Gas Prices USD/Million BTU



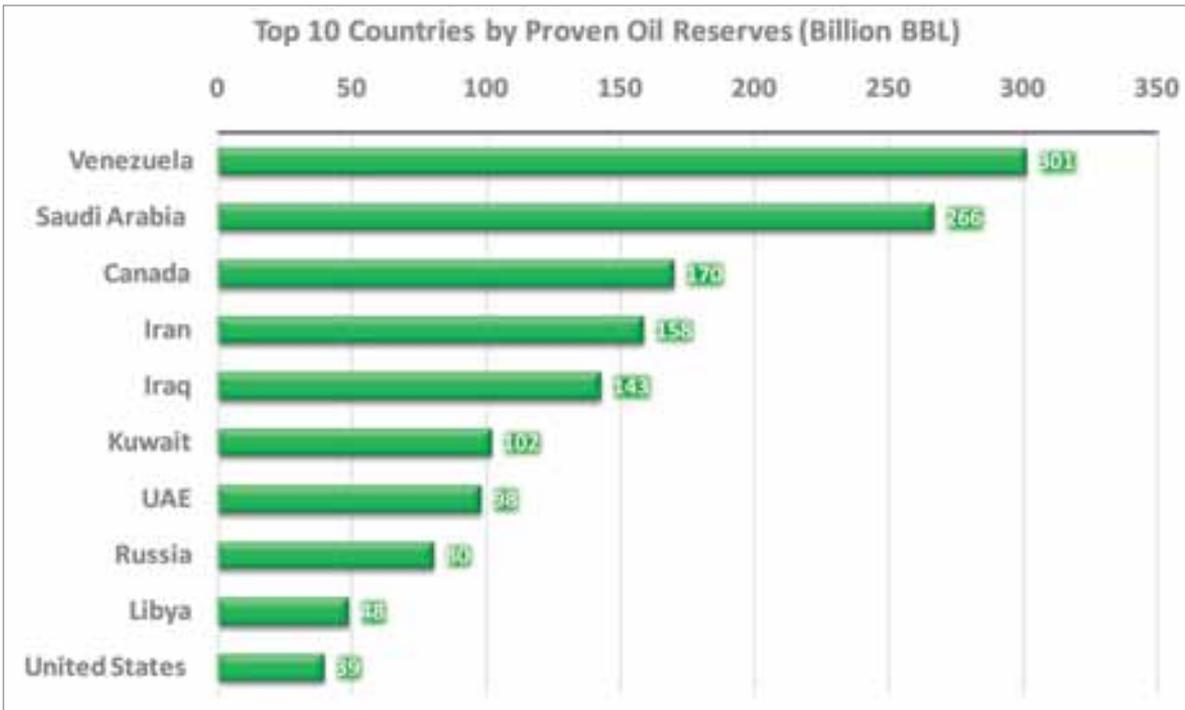
World Liquid Fuels Production & Consumption (Million BBLs / Day)



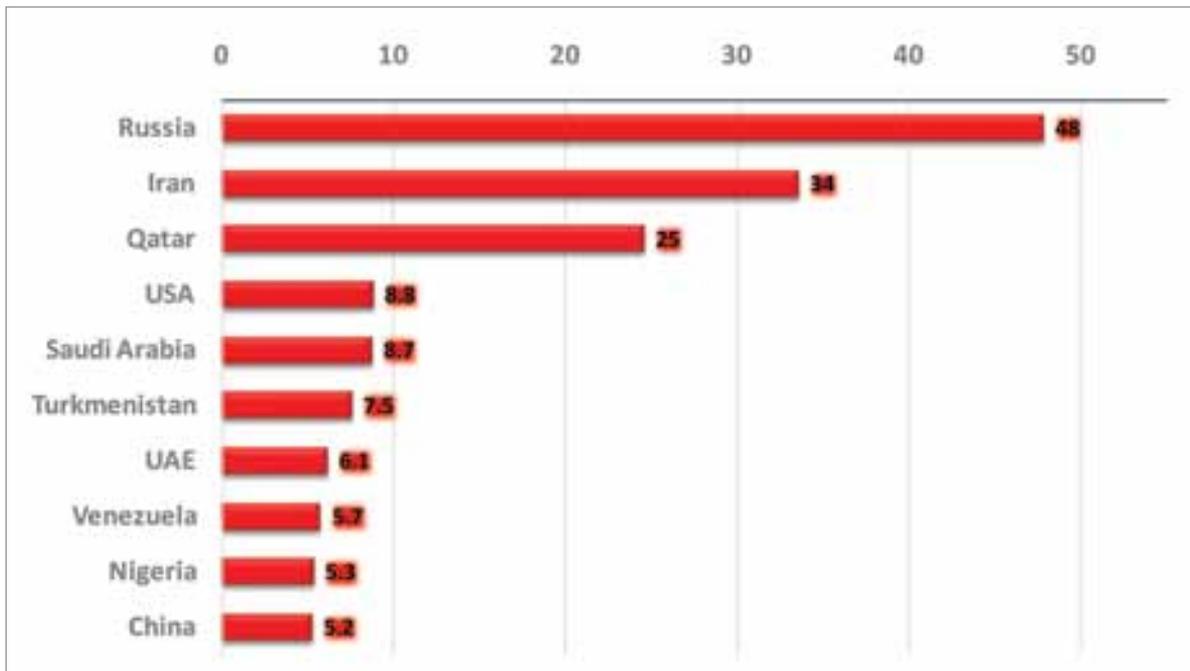
World's Largest Crude Oil Producers (Million BBL/Day)



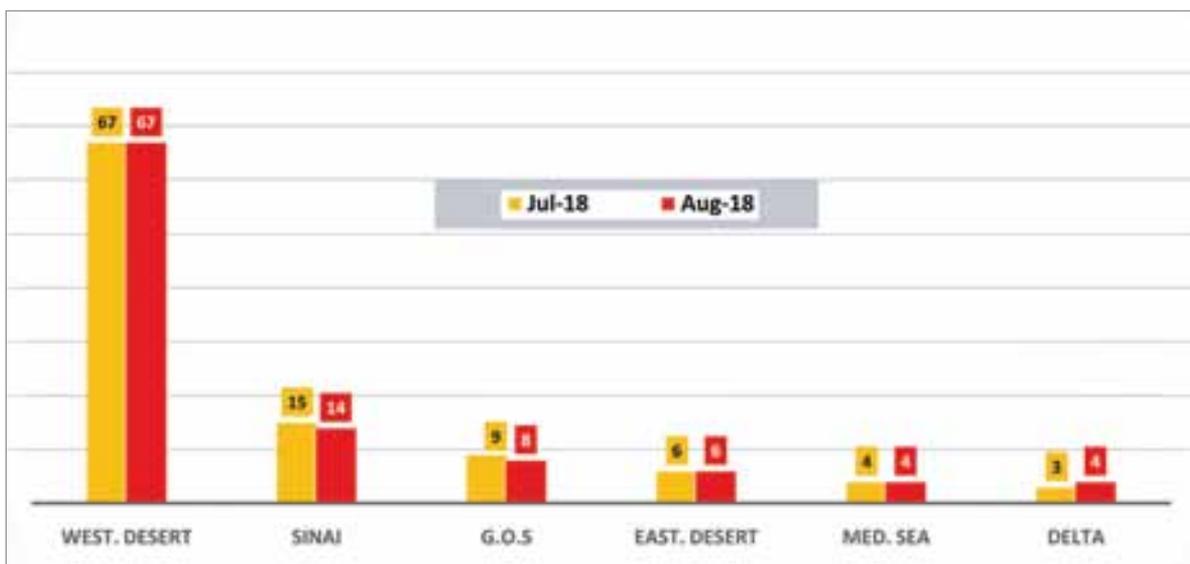
Top 10 Countries by Proven Oil Reserves (Billion BBL)



Top 10 Countries by Proven Gas Reserves (BCM)



Egypt's Geographical Rig Count





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Oilfield Services (Free Zone)



MIDCO has a highly experienced professionals specialized in upstream & downstream Oil & Gas related facilities services provides a full range of Services & supplying equipment these includes & not limited to:

- Wellhead maintenance.
- CST Wellhead Agency.
- Load test for elevators & handling tools.
- Manpower Supply .
- Cold Casing Cutter Services.
- Pre-heating & Welding services.
- Pressure Test Services
- Supplying Blohm & Voss Handling Tools.
- Manufacturing Offshore Transportation Baskets.
- Brine filtration services (POD type).
- Fabrication of Flanges & Risers.
- Sandblasting and Painting.

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info@midco-eg.com



MIDCO
Oilfield Services (Free Zone)



Load test

The API specification 8C determines the importance of performing a proof load test for handling tools equipment in the same manner as in actual service and with the same area of the contact I the load bearing surfaces

performing such load test is avoiding any suddenly cracks might happen while using handling tools with full capacity at rigs site, as the mentioned test is done at a workshop.

Testing elevators & handling tools loading capabilities up to 750 tons – Certifying the accepted tools- load test equipment has been adapted to test different types of devices as slings and shackles with different types and sizes.



CST Well Head Agency

MIDCO is an agent for CST Well head manufacture in Egypt- Hungarian company founded in 1991- Close to 50 years of experience in manufacturing assemblies for the oil & gas industry, Manufacturer of high-quality Wellhead and X-mas tree assemblies to fulfill individual customer needs worldwide- Assemblies described under API 6A and API 16A



Maintenance and Refurbishment of Well Head

Based on API Standards- Setting up Well Head- Conducting on-site & long-term well head maintenance- Service benefits are far greater than purely- providing integrity assurance for an Operator's assets.- Strict guidelines are imposed on every activity undertaken to assess risk and eliminate it- MIDCO Wellhead Maintenance is very powerful in risk elimination and meeting customer needs.



Lifting Equipment Engineers Association



Main Office:

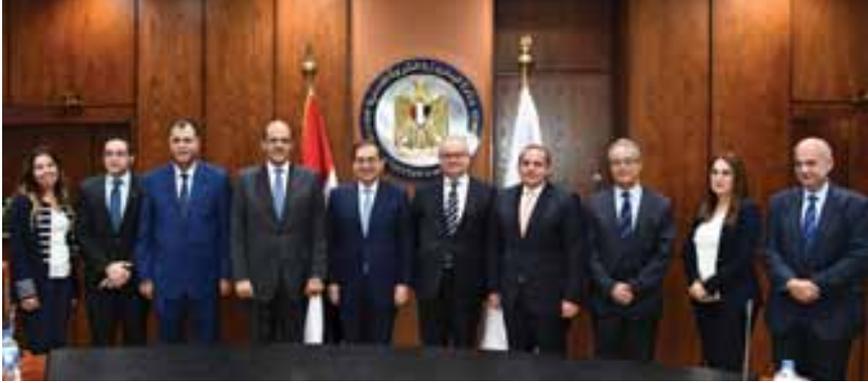
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زيادة طاقته التكريرية ٦٠٪... توقيع الاتفاق النهائي لعقد مشروع توسعات معمل ميدور



المقاول العام للمشروع ورئيساً شركتي انبي وبتروجت. وتهدف التوسعات الى ارتفاع الكميات المنتجة من معمل تكرير ميدور من البوتاجاز والبنزين عالى الاوكتين ووقود النفاثات والسولار والفحم والكبريت من ٤,٦ مليون طن حالياً إلى ٧,٦ مليون طن بعد انتهاء مشروع التوسعات مما يؤثر ايجاباً على توفير كميات أكبر من احتياجات السوق المحلي من هذه المنتجات الاستراتيجية والمساهمة فى تحقيق استراتيجية الوزارة لتحقيق سياسة الاكتفاء الذاتى من المنتجات البترولية.

وقعت وزارة البترول والثروة المعدنية على الاتفاق النهائي لعقد قرض تمويل مشروع توسعات معمل ميدور لزيادة طاقته التكريرية بنسبة ٦٠٪ بين شركة ميدور مع رؤساء تحالف بنوك كريدى اجريكول وبنك بي ان بى باريبا الفرنسيين وبنك CDP الايطالى والبنك الاهلى المصرى وبنك ابو ظبى الوطنى المستشاران الماليين للمشروع الذى تبلغ قيمته ١,٢ مليار دولار من اجمالى تكلفة مشروع التوسعات البالغ استثماراته ٢,٢ مليار دولار.

حضر مراسم توقيع الاتفاق المهندس طارق الملا وزير البترول والسفير الإيطالي بالقاهرة جيام باولو كاتينى ورئيس هيئة تنمية الصادرات الإيطالية (SACE) الضامنة للقرض ورؤساء تحالف البنوك المقرضة ورئيسا البنك الاهلى المصرى وابو ظبى الوطنى بالإضافة إلى رئيس شركة تكنيب الإيطالية

بدء الإنتاج من حقل جيزة وفيوم بمشروع شمال الإسكندرية نهاية العام الحالي

التاريخ الطويل للعمل الناجح المشترك وأن الفرص المتاحة تعزز الاستثمارات الكبيرة التي يتم ضخها خاصة في مجالات البحث والاستكشاف وتنمية الحقول المكتشفة ، مؤكداً على استمرار التنسيق وتضاضر الجهود المشتركة لتحقيق المصالح للطرفين.

حضر المباحثات المهندس محمد مؤنس مستشار الوزير لشئون الغاز والمهندس عابد عز الرجال الرئيس التنفيذي لهيئة البترول والمهندس أسامة البقلى رئيس الشركة القابضة للغازات الطبيعية (إيجاس) والجيولوجى أشرف فرج وكيل الوزارة للتأقيات والاستكشاف.

غاز يومياً ، كما تم استعراض مشروع حقل غازات ريفين المخطط دخوله على الإنتاج في الربع الثالث من عام ٢٠١٩ وتم استعراض موقف البئر الرابع الذى سيتم وضعه على الإنتاج في مشروع حقل أتول والذي سيرفع الإنتاج من الحقل من ٣٠٠ - ٤٠٠ مليون قدم مكعب غاز يومياً.

وأكد الملا على أهمية المتابعة المستمرة لمشروعات تنمية حقول الغاز في إطار استراتيجية الوزارة لسرعة الانتهاء منها والالتزام بالبرامج الزمنية الموضوعية لزيادة الإنتاج المحلي من الغاز الطبيعي. ومن جانبه صرح برنارد لوني أن هناك شراكة استراتيجية بين بي بى وقطاع البترول يدعمها

بحث المهندس طارق الملا وزير البترول والثروة المعدنية مع السيد / برنارد لوني الرئيس التنفيذي لشركة بي بى للاستكشاف والإنتاج والمهندس هشام مكاوى الرئيس الاقليمي لشركة بي بى بشمال أفريقيا والوفد المرافق الموقف التنفيذي للمرحلة الثانية من مشروع تنمية حقول شمال الإسكندرية وغرب المتوسط لإنتاج الغاز من المياه العميقة بالبحر المتوسط حيث تم استعراض موقف تنمية حقل جيزة وفيوم المخطط وضع باكورة انتاجهما على خريطة الإنتاج في نهاية العام الحالي بحوالي ٤٠٠ مليون قدم مكعب غاز يومياً تزداد تدريجياً لتصل إلى ٧٠٠ مليون قدم مكعب

السعودية توقع صفقات ب ٥٠ مليار دولار في النفط والغاز والبنية التحتية

اتفاقاً لمشروع مشترك مع شركة التعدين الحديثة التي تتخذ من الرياض مقراً.

وقالت أرامكو السعودية إنها وقعت اتفاقات مع ١٥ شريكاً دولياً تزيد قيمتها على ٢٤ مليار دولار.

وتشمل الصفقات اتفاقاً لتشييد مجمع بتروكيماويات متكامل ومنطقة لأنشطة المصب ضمن المرحلة الثانية من مصفاة ساتورب المملوكة ملكية مشتركة بين أرامكو السعودية وتوتال، واستثمارات في محطات الوقود بين أرامكو وتوتال أيضاً.



ترافيجورا لتجارة السلع الأولية وتوتال وهيونداي ونورينكو وشلومبرجر وهالبرتون وبيكر هيوز. وقالت ترافيجورا التي مقرها سويسرا إنها وقعت

وقعت السعودية اتفاقات بأكثر من ٥٠ مليار دولار في قطاعات النفط والغاز والبنية التحتية وقطاعات أخرى خلال مؤتمر الاستثمار الذى انعقد في الرياض. وجرى إعلان التفاصيل خلال مؤتمر مبادرة مستقبل الاستثمار، الذي انطلقت أعماله في الرياض رغم مقاطعة عدد من الشخصيات السياسية الغربية والمسؤولين التنفيذيين والمصرفيين الدوليين له بسبب مقتل الصحفي جمال خاشقجي.

وأوضح التلفزيون الرسمي أن الصفقات تشمل شركات

بيكر هيوز تشتري ٥% في أدنوك للحفر مقابل ٥٥٠ مليون دولار

وقعت شركة بترول أبوظبي الوطنية (أدنوك) اتفاق شراكة استراتيجية مع بيكر هيوز يسمح لثاني أكبر شركة خدمات في العالم بالاستحواذ على خمسة بالمئة في وحدة الحفر التابعة لأدنوك مقابل ٥٥٠ مليون دولار.

تصبح بيكر هيوز بذلك أول شركة أجنبية تستحوذ على حصة في إحدى شركات الخدمات التابعة لأدنوك المملوكة للحكومة بموجب الاتفاق الذي يُقدر قيمة أدنوك للحفر بنحو ١١ مليار دولار. تسمح الصفقة لبيكر هيوز بتعزيز حضورها في الشرق الأوسط، المنطقة الأسرع نموًا فيما يتعلق بعمليات النفط والغاز، وتمكن أدنوك للحفر من كسب المعرفة والخبرة الفنية التي يملكها اللاعبون العالميون.



رشيد تنجح في وضع البئر الأولى "سيميان DT" من مشروع المرحلة ٩ ب على الإنتاج

نجحت شركة رشيد للبترول بوضع البئر الأولى سيميان DT أحد آبار مشروع إنتاج الغاز من المرحلة ٩ ب بمنطقة غرب دلتا النيل في البحر المتوسط بإنتاج مبدئي حوالى ٢٠ مليون قدم مكعب يومياً على أن يتم زيادة الإنتاج من البئر بعد تقييمه، وقد تم تحريك جهاز الحفر NGT-١ من موقع البئر لبدء عمليات إكمال البئر سكارب DT وقد تم استخدام تكنولوجيا حديثة في الحفر أدت لتوفير ٨ أيام عمل من الفترة المعتادة لتحريك الحفار وتخفيض التكلفة حوالى ٤ مليون دولار.

وأوضح المهندس صبرى الشرفاوى رئيس شركة رشيد للبترول بأن هذه التكنولوجيا الجديدة سيتم تطبيقها في كل آبار المرحلة ٩ ب البالغة ٨ آبار مما سيؤدى في نهاية برنامج الحفر إلى توفير ملايين الدولارات والوصول بمعدلات الإنتاج الكلية من المشروع إلى حوالى ٤٠٠ مليون قدم مكعب غاز و ٣ آلاف برميل مكثفات يومياً قبل الموعد المخطط

اس.دي.اكس: انتهاء محادثات شراء أصول مصرية من بي.بي.دون اتفاق

قالت اس.دي.اكس إنرجي للنفط والغاز التي تركز على شمال أفريقيا إن محادثات لشراء بعض الأصول المصرية التابعة لشركة بي.بي توقفت دون اتفاق.

وكانت رويترز قالت في وقت سابق من العام نقلا عن مصادر مصرفية إن بي.بي تبحث عن مشترين لحصتها في نشاط لها بقطاع النفط والغاز المصري عمره ٥٠ عاما وتقدر قيمته بنحو ٥٠٠ مليون دولار.

وقالت اس.دي.اكس في بيان "المباحثات بشأن استحواذنا المقترح على حزمة كبيرة من الأصول في مصر من بي.بي أنهيت عبر تفاهم مشترك". ولم تذكر الشركة مزيدا من التفاصيل بشأن سبب إنهاء المحادثات.

ولم تتضح الأصول التي كانت اس.دي.اكس تجري محادثات بشأنها مع بي.بي.

وقال باول ولش الرئيس التنفيذي لشركة اس.دي.اكس "من الواضح أنه أمر مخيب للأمال أن تلك العملية لم تتحقق".

"كانت فرصة رائعة لكن... نحن نفحص صفقات محتملة طوال الوقت ونعرف أن هناك صفقات أخرى ستسرع تقدمنا صوب هدفنا المعلن بأن نكون (شركة تقييم وإنتاج) كبيرة تركز على شمال أفريقيا".

مصر توقع عقد الاعمال المبكرة لتنفيذ اكبر مشروع لتكرير البترول في الصعيد



وقعت كل من شركة أسيوط الوطنية لتصنيع البترول "أنوبك" وشركة تكنيب الإيطالية وشركة إنبي عقد تنفيذ الأعمال المبكرة لمشروع مجمع التكرير الهيدروجيني للمازوت أحد أهم مشروعات تطوير معمل تكرير أسيوط بصعيد مصر، حيث قام بتوقيع العقد المهندس محمد بدر

رئيس الشركة و السيد فرانسيسكو كاماراتا عن شركة تكنيب والمهندس علاء حجازى رئيس شركة إنبي. وبمقتضى العقد المبرم تشمل الأعمال المبكرة كل من التصميمات الأساسية للمشروع وإعداد طلبات الشراء وطرح المعدات الرئيسية وحساب حجم الأعمال الإنشائية وتحديد تكلفة عقد تنفيذ المشروع والتفاوض مع جهات التمويل فضلاً عن البدء في اعمال تجهيز الموقع.

ويعد توقيع هذا العقد البداية الحقيقية لأعمال تنفيذ المشروع البالغ استثماراته حوالى ١.٩ مليار دولار والذي يمثل أحد كبريات المشروعات الاستراتيجية التي تهدف الى توفير المنتجات البترولية لصعيد مصر وخفض الإستيراد والمساهمة بإيجابية في تنفيذ خطة الدولة لتنمية الصعيد، حيث يقوم المجمع الجديد بإستقبال حوالى ٢٥ مليون طن مازوت سنوياً من معمل تكرير أسيوط بهدف إنتاج وتوفير المنتجات البترولية الرئيسية والتي تبلغ ١٦ مليون طن من السولار بالمواصفات الأوروبية Euro-١٥ إلى جانب ٤٠٢ الف طن نافتا لإنتاج البنزين عالى الأوكتين و١٠ الف طن من البوتاجاز هذا بالإضافة الى ٢٣٠ طن من مادة الكبريت كمنتجات ثانوية.

بعد مرور ١١٥ عام على تواجدها بالسوق المصرى اكسون موبيل ترغب فى التوسع فى أنشطتها فى مجال البترول والغاز



عقد المهندس طارق الملا وزير البترول والثروة المعدنية جلسة مباحثات مع برايان ميلتون رئيس شركة اكسون موبيل العالمية وهشام العمروسى رئيس اكسون موبيل مصر، حيث تم خلالها استعراض الفرص الاستثمارية المتاحة فى قطاع البترول والغاز فى إطار استراتيجية الوزارة التي تستهدف التوسع فى مختلف أنشطة صناعة البترول والغاز وفتح مجالات عمل جديدة تحقق قيمة مضافة للاقتصاد المصرى ، وقد أبدى رئيس شركة أكسون موبيل الرغبة القوية للشركة فى زيادة التعاون والتوسع فى أنشطتها فى مجال البترول والغاز، مشيداً بالتغيرات الإيجابية التي شهدتها قطاع البترول فى مصر خلال السنوات الأربع الماضية والأرقام القياسية التي تحققت فى تنفيذ مشروعات تنمية حقول الغاز والبترول ومشروعات البنية الأساسية والتكرير.

وإضافة أن مشروع تطوير وتحديث قطاع البترول يعد نموذجاً يحتذى به فى باقى قطاعات الدولة، مشيراً إلى التاريخ الطويل والشراكة المتميزة مع قطاع البترول المصرى على مدار ١١٥ عاماً خلال تواجدها فى مصر حيث ساهمت بإيجابية فى مجال تكنولوجيا المنتجات البترولية وامتلاكها شبكة واسعة الانتشار من محطات الوقود البالغ عددها ٢٥٠ محطة ومستودعات التخزين فى مختلف أنحاء مصر يدعمها اسطول سيارات نقل للمنتجات البترولية مجهز بأحدث التكنولوجيات

والمساهمة فى تغطية جانب من احتياجات السوق المحلى من الوقود وزيوت السيارات وعقب المباحثات شهد المهندس طارق الملا وزير البترول والثروة المعدنية اللقاء الذى نظمته شركة اكسون موبيل بمناسبة مرور ١١٥ عاماً على تواجدها فى مصر تحت شعار "١١٥ عاماً من الشراكة الناجحة فى تنمية مصر" بحضور الدكتور محمد العصار وزير الإنتاج الحربى والدكتور على مصيلحى وزير التموين والتجارة الداخلية وعدد من السفراء ورؤساء شركات البترول المصرية والأجنبية.

سجلت احتياطيات مصر من الغاز الطبيعى نحو ٩٠ تريليون قدم مكعب يومياً، لتسجل ارتفاعاً قدره ٢٣٪ بالمقارنة بـ ٦٠ تريليون قدم خلال عام ٢٠١٥ حسب ما ذكرت جريدة اليوم السابع المصرية . وتأتى زيادة احتياطيات مصر من الغاز الطبيعى وذلك بعد تشغيل عدد من المشروعات الجديدة على رأسها حقل ظهر وحقل أتول والمرحلة الأولى من مشروع شمال الإسكندرية بالإضافة إلى حقل نورس، وهى المشروعات التي ساهمت فى تحقيق الاكتفاء الذاتى من الغاز الطبيعى، وإيقاف استيراد الغاز المسال من الخارج. ويعد البحر المتوسط هو كلمة السر فى زيادة الاحتياطيات الغازية المصرية خاصة أن المشروعات الأربعة الأخيرة التى تم ربطها على الإنتاج من البحر المتوسط.

٩٠ تريليون قدم مكعب احتياطيات مصر من الغاز الطبيعى

نائب رئيس أباتشى الأمريكية؛ الفترة الحالية الأفضل للاستثمار فى مصر

الحكومة فى جذب الاستثمار فى صناعة البترول والغاز والتي شملت تنفيذ اصلاحات مهمة مثل خفض مستحقات الشركاء الاجانب وتعزيز أنشطة البحث والاستكشاف اضافة الى بدء تحرير سوق الغاز بعد القانون الجديد الذى يمثل عنصر هام لجذب الاستثمارات ويدعم مكانة مصر كمركز استراتيجى للطاقة بالمنطقة خاصة مع توافر البنية التحتية وشبكات ومصانع اسالة الغاز الطبيعى .

والتطور الكبير فى قطاع الطاقة مشيراً الى ان تمتع مصر باحتمالات بترولية وغازية واعدة فى البحر المتوسط والصحراء الغربية يعزز من عوامل نجاح الاستثمار فى صناعة البترول والغاز بها والتي تمتلك مميزات تنافسية تجعلها الافضل فى المنطقة وواحدة من اهم الدول الجاذبة للاستثمار فى هذا المجال عالمياً .
واشاد نائب رئيس أباتشى الأمريكية بسياسات

أكد ديفيد شى نائب الرئيس والمدير العام لشركة اباتشى الامريكية بمصر خلال كلمته فى اللقاء الذى نظمته غرفة التجارة الأمريكية تحت عنوان " مصر والولايات المتحدة .. مستقبل مشترك " ان الفترة الحالية التى تشهد مصر هى افضل وقت للاستثمار فى صناعة البترول والغاز فى مصر خاصة بعد التغيرات الجذرية التى شهدتها البلاد والاصلاحات الاقتصادية

البتروولية خلال السنوات المقبلة ، خاصة فى ضوء التوسع الجارى فى توقيع اتفاقيات البحث وتنفيذ برامج تنمية الحقول والمشروعات الكبرى لإنتاج الغاز من المياه العميقة بالبحر المتوسط.

وأكد الملا استمرار الوزارة فى استراتيجيتها لطرح المزايدات العالمية وعقد الاتفاقيات البتروولية مشيراً إلى أنه تم إغلاق مزايده هيئة البترول لعام ٢٠١٨ للبحث عن البترول والغاز فى ١١ منطقة فى خليج السويس والصحراء الشرقية والغربية وجرى حالياً تقييم العروض للإعلان عن الشركات الفائزة ، مشيراً إلى أن تقييم العروض بالنسبة لمزايدة إيجاس سيبدأ فى نهاية الشهر الحالى عقب إغلاق باب تلقي العروض فى المزايدة العالمية لعام ٢٠١٨ للبحث عن البترول والغاز فى ١٦ منطقة بالبحر المتوسط ودلتا النيل وجرى الإعداد لطرح مزايده عالمية للبحث عن البترول والغاز فى منطقة البحر الأحمر لأول مرة فى نهاية هذا العام ووضع هذه المنطقة على الخريطة الاستثمارية لصناعة البترول، وأضاف أن السنوات الأربع الأخيرة شهدت توقيع ٦٢ اتفاقية بتروولية جديدة ستسهم نتائجها فى زيادة احتياطي وإنتاج البلاد من البترول والغاز.



الملا : ١٠ مليارات دولار استثمارات جديدة خلال العام ٢٠١٨/ ٢٠١٩ للبحث عن البترول والغاز وتنمية الحقول

خلال العام المالى الحالى ٢٠١٨/ ٢٠١٩ للبحث والاستكشاف عن البترول والغاز وتنمية الحقول المكتشفة ، لافتاً إلى أن الإقبال من جانب الشركات العالمية الكبرى يمثل رسالة واضحة على ثقة الشركات الأجنبية فى تحسن مناخ الاستثمار فى مصر بفعل الإصلاحات التي تم تنفيذها وأنه من المخطط تحقيق نمو مطرد فى حجم الاستثمارات

أكد المهندس طارق الملا وزير البترول والثروة المعدنية اهتمام الوزارة بزيادة جذب الاستثمارات فى مجال البحث عن البترول والغاز وإنتاجهما خلال الفترة المقبلة مشيراً الى استمرار الوزارة فى تنفيذ الإجراءات التي تسهم فى جذب الاستثمارات فى هذا المجال، وأنه من المخطط ضخ نحو ١٠ مليارات دولار استثمارات جديدة

مصر تعرض نموذجاً جديداً لتقاسم الانتاج مع شركات البترول الأجنبية

والبحر المتوسط وقرب الحدود الليبية والتي ستطرح فى جولتي العروض القادمين.

الجديد خصوصاً للمناطق النائية التي تنطوي على مخاطر فى المياه العميقة فى البحر الأحمر

قال وزير البترول طارق الملا إن مصر تعمل على نموذج جديد لتقاسم الانتاج مع شركات الطاقة الأجنبية لتشجيع التنقيب عن النفط والغاز فى المياه العميقة.

ومتحدثاً أثناء اجتماع الغرفة التجارية الأمريكية فى القاهرة قال الملا "نفكر فى أن يكون لدينا... طريقة أبسط لإجراء الحسابات مع شركائنا". وأضاف قائلاً "حتى الآن فإن الردود الأولية التي تلقيناها من الشركاء المختلفين إيجابية جداً، وهم متحمسون للمشاركة فى جولة العروض على هذا الأساس".

وفى ظل النموذج الجديد، سيعرض على الشركات حصة من الانتاج فى مقابل تحمل تكاليف الاستكشاف والانتاج.

وقال الملا إن شركات النفط الكبرى تريد النموذج



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