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February 2017 - 44 Pages - Issue 122

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Year	Drilled Wells	Total Drilling Meters
2015	132	380,000
2014	142	419,626
2013	215	520,000
2012	198	500,000
2011	156	450,000
Before 2010	1534	4,289,000
Total	2377	6,559,000

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Editor's NOTE

EDITOR IN CHIEF NATAŠA KUBÍKOVÁ



nkubikova@egyptoil-gas.com

The Egypt Petroleum Show has set the tone for the entire Egyptian oil and gas industry in February. Under the high patronage of Egypt's President, His Excellency, Abdel Fattah El Sisi, EGYPS 2017 symbolizes the grand re-opening of the sector to the regional and international markets.

Egypt has a gigantic pool of opportunities. All participating industry executives, business leaders, experts, and governmental officials will get together to learn about what the country's sector has to offer through Strategic, Technical, and Women in Energy conferences and at North Africa's largest oil and gas exhibition.

Ahead of the event, EOG team has researched some of the key issues that the Egyptian industry is to tackle in the near future with help of its investors such as offshore exploration technology, oil and gas project management paradigms, opportunities of the downstream sector, cogeneration as well as the challenges with regards to female involvement in the industry.

With an intensive program over the course of three days, EGYPS 2017 promises to create a productive environment in which key players will exchange their ideas and design news solutions that will boost innovative projects and gear up the business to a new era.

Having ambitious goals for 2017 and onwards, it is clear that Egypt's industry would not be able to achieve those without a dedicated support of its partners.

Shell has been one of many that have undoubtedly played this role with determination to date. With the company's new Country Chairman, Eng. Gasser Hanter, who is committed to enhancing Shell's presence in Egypt, the industry may see a robust increase in the number of projects, production, and mark significant success. In an interview with Eng. Hanter, EOG discussed the company's 2017 projections and brings you more details.

Schlumberger is yet another partner for Egypt's future oil and gas industry. To fulfill this responsible role, the company has introduced its unique Transformation Program presented at Schlumberger's Town Hall in January, which is to guarantee profitability for both the service provider and its clients in the long run.

We hope that you will enjoy reading this issue.

And as always, we thank you all for your support in the year full of new opportunities.

EOG team is looking forward to meeting you at EGYPS 2017.

inside this issue



Shell: Egypt's Partner of the **Future**



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'No Barriers Ahead'



New Paradigms in Managing Oil&Gas Proiects



Modern Innovation in Offshore Technology



Cogeneration in Refineries: A Step Forward for Energy Efficiency



Oil&Gas Industry Aiming for Gender Equality



Goofy Oil Policy towards Iraq



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Publisher MOHAMED FOUAD

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Egypt Signed New Exploration Deals

A press release to Egypt Oil&Gas stated that Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, signed two new oil and gas exploration agreements between the Egyptian General Petroleum Corporation (EGPC) and Sahary Petroleum Company to search for petroleum and natural gas in the Western Desert and Gulf of Suez.

The first agreement stated that EGPC and Sahary Petroleum will work in West Qarun Concession located in the Western Desert and drill 11 wells with total investments of \$30m and a signature bonus of \$5m.

Meanwhile, the second agreement states that EGPC, represented by Offshore Shukeir Oil Company (OSOCO), will process projects in Shukeir Concession located in the Gulf of Suez.

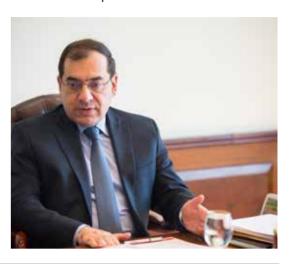
The agreements were also signed by EGPC's CEO, Tarek El Hadidy, and Sahary's General Director, Ali Mira, in the attendance of First Undersecretaries of the Ministry of Petroleum, Mohamed Taher and Mohamed Mounes, and the Ministry's First Undersecre-

tary for Agreements and Exploration, Ashraf Farag. Minister El Molla pointed out that the oil and gas sector is keen on signing new petroleum agreements to increase exploration and boost production and reserves. He added that by signing these new agreements Egypt had entered into 76 exploration agreements with international oil companies (IOCs) since 2013, with overall investments of at least \$15.3b and signature bonuses of around \$1b to drill 319 wells altogether.

In December 2016, three new agreements for exploring oil and gas in the Mediterranean Sea were signed. The first one between Egypt's EGAS and a consortium of British Petroleum (BP) and Italy's IEOC to explore North Ras El-Esh concession area with the investments of \$75m.

The second agreement was signed between Egypt and a consortium including the three international firms on exploring North El-Hammad concession area with investments worth \$80m.

Meanwhile, UK's BP and Egypt's EGAS signed the third agreement that aims at exploring gas and oil in North El Tabya area with investments estimated at \$65m, Amwal El Ghad reported.



Egypt to Boost Oil Production by mid-2017

An official at the Egyptian General Petroleum Corporation (EGPC) stated that the oil and gas sector plans to increase production of crude oil and condensates to reach 705,000 b/d before the end of June 2017. He added that this increase will cover a huge part of the local market's demand for petroleum, reported Amwal Al Ghad.

The source added that the production increase is part of the Ministry of Petroleum's strategy to achieve self-sufficiency by fiscal year 2019/2020.

In addition, several projects will be in production phase soon, which will play an important role in boosting production to the planned volume. This includes the North Alexandria field, Atoll and Zohr fields that are considered the most prominent oil and gas discoveries and the center around which the self-sufficiency strategy is revolving. The sources concluded that the international oil companies (IOC)'s invest-



ments in Egypt are increasing due to the exploration processes in addition to the development operations of the fields that are added on production. This directly led to almost doubling the country's output.

GPC to Drill 18 Wells in 2017/2018

An official at the Egyptian firm General Petroleum Company (GPC) stated to Egypt Oil&Gas that the company will drill 18 exploratory and development wells during the fiscal year 2017/2018. Under GPC's general budget for the new fiscal year, the company further plans to execute a number of programs to develop the infrastructure and develop discovered reserves. GPC will provide facilitation on land as well as offshore. The official further stated that GPC made two new discoveries of crude oil and gas in North Amer Field in Gulf of Suez as well as in North Ras Al Behar Field in the Eastern Desert during the first half of fiscal year 2016/2017 and will evaluate the results.

SDX Energy to Buy Circle Oil's Assets

SDX Energy entered into non-binding heads of terms (HoT) with Circle Oil Company for the attainment of Circle Oil's assets in Egypt and Morocco. The HoT has a 30-day exclusivity period, according to a statement published on the company's website. Circle Oil's AIM shares were suspended in June amid financial turmoil and its investors were warned a number of times through the second half of 2016 that there would be 'little or no value left' for equity holders, reported Proactive Investors. The attainment of the assets comes as a result of the completion of due diligence, documentation, compliance with all regulatory requirements,

and conclusion of an equity fundraising.



Petrobel to Invest \$630m in 2017/2018

An official at Egypt's Belayim Petroleum Company, otherwise known as Petrobel, stated to Egypt Oil&Gas that the company approved an allocated budget of \$630m of investments for fiscal year 2017/2018 and it is studying the addition of \$214m to be invested in new discoveries and development of the existing fields as well as in improving the infrastructure and company's facilities. Additionally, the company plans to develop several existing fields including South West Baltim. The development of South West Baltim will be processed through drilling and completing five wells and adding them to production as well as securing inland and offshore

Egypt to Lift Butane Subsidies by 2019

A source at the Egyptian General Petroleum Corporation (EGPC) stated to Egypt Oil&Gas that the Egypt will likely lift subsidies for butane bottles for wealthy citizens by 2019 after applying butane coupons that are expected to be distributed within 2017. The source added that the government's plan is to curb the cost of fuel subsidies that has reached EGP 60 per 1 butane bottle. The source further explained that the government's plan is pending the parliament's approval to be executed during 2017.

Sino Tharwa to Market Seismic Services

Sino Tharwa's CEO, Ahmed Anwar, stated to Egypt Oil&Gas that the company contracted with China's Sinopec Star Petroleum Company to become its Seismic Marketing Agency in Egypt. The three-year contract, with a renewal option, is expected to result in around \$5m annual profit for Sino Tharwa. This came as the company's seismic analysis services have been registered with the Egyptian General Petroleum Corporation (EGPC). Additionally, Anwar informed that Sino Tharwa is currently bidding on a seismic analysis tender launched by Apache. In addition, the company is offering services related to drilling water wells and maintenance as well as providing mud-logging units, drilling rigs, and seismic acquisition.

Egypt to Receive Iraqi Oil



Iraqi Ambassador to Cairo, Habib Al Sadr, stated that Egypt was to start receiving 1mb of light crude oil per month from Iraq as of January, reported Amwal Al Ghad.

The Ambassador added during an interview with Egypt's official news outlet Middle East News Agency (MENA) that the light oil cargos will come from Al Basra and the volumes are possible to be increased. Furthermore, Iraq will provide Egypt with payment facilita-

tions, reported BBC.

This came within the memorandum of understanding (MoU) that Egypt signed in March 2016 to receive crude oil and natural gas from Iraq. This MoU was finalized during the visit of the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, to Iraq at the end of October 2016. The visit came few days after the announcement of the halting of Saudi Aramco's 700,000 tons cargos of petroleum products to Egypt.

Nooros to Produce 1.2bcf/d of Gas



Italian Eni has raised its expectations for production from Egypt's Nooros Field by 20% to reach 1.2bcf/d by mid-2017, reported Al Borsa, as recent results of the drilling of development wells in the field showed such positive prospects.

The sources pointed out that the company will link 180mcf/d from three wells in Nooros field to production within the first quarter of 2017. This increase in production has a total investment of \$450m. Furthermore, the field's current production is planned to reach 850mcf/d after the completion of drilling a number of development wells and linking them to production.

Thus, linking production from Nooros field will help compensate the national production declining ratio of natural gas, which is estimated at 600mcf/y. It will further lead to an increase in the total local production. The sources added that Egypt's total natural gas production reached 4.45bcf/d.

In September 2016, Nooros set a pro-

duction record of 128,000b/d of oil just 13 months after discovery; 67,000 net to Eni. According to the company, this capacity was achieved ahead of schedule due to the success of the last exploration wells drilled in the Nidoco area and the drilling of new development wells, Offshore informed.

The gas and condensate produced are sent to Abu Madi's treatment system, located 25 km from the discovery and then allocated to the Egyptian network.

The development and production of the Nooros field are operated by Petrobel on behalf of Nidoco company, a joint venture between IEOC, BP and the state company Egyptian General Petroleum Corp.

Yet, Egypt still imports 1bcf/d of gas through the two floating storage regasification units (FSRUs) and the Jordon pipeline. In early January, the Ministry of Petroleum and Mineral Resources asked the Central Bank of Egypt (CBE) to provide \$270m per month to import 1.4bcf/d of gas starting from June.

Dana Gas to Drill New Wells



Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, met with Dana Gas' Director in Egypt, Iman Hill, and Dana Gas' General Manager in Egypt, Michael Pyszka to review the company's plans for its joint venture El Wastani Petroleum Company (WASCO) to drill new and existing wells from Balsam field to be added to production, reported Amwal Al Ghad.

The company produces 195mcf/d of natural gas, 6,200b/d of condensates and around 220 tons of gas per day. WASCO eyes increasing production by 40mcf/d of natural gas and 2,000b/d of condensates.

At the meeting, Dana Gas further discussed the situation of renting and installing a temporary gas processing

unit to handle production until the expansion work at Al Wastani's main processing station ends.

The attendees also reviewed the company's drilling plans during the second half of 2016/2017 as it has scheduled to drill two new wells in its concession area as well as a third exploratory well in Balsam field.

Among the participants at the meeting were the Ministry's First Under Secretary for Gas Affairs, Mohamed Moanes, the Egyptian Natural Gas Holding Company's (EGAS) CEO, Mohamed El Masry, and the Egyptian General Petroleum Corporation's (EGPC) CEO, Tarek El Hadidy.

Egypt to Import Fuel from UAE

Egypt is negotiating with the United Arab Emirates (UAE) to import petroleum derivatives such as benzene, diesel, and butane, in order to cover 2017 local market's demand, a source with the Egyptian General Petroleum Corporation (EGPC) stated to Egypt Oil&Gas.

The source added that Egypt seeks to import 700,000 tons of benzene and diesel, and 500,000 tons of butane on a monthly basis.

The Egyptian-Emirati negotiations will witness Egypt's request from UAE for payment facilitations to have the cargos repaid over at least three years with a 2% interest per annum. Egypt plans to receive the cargos through Alexandria Port and Suez Port starting in March 2017.

The source added that EGPC is working on signing long term contracts to import fuel in order to avoid any future crisis in the local market, especially after the increase in fuel prices.

In related news, Egypt has recorded a decline in fuel export that fell by 22.6% during the period from January 2016



to September 2016. Export revenues reached EGP 16.2b during the first nine months of the previous year, which marked a considerable drop from EGP 21b during the same period in 2015, reported Amwal Al Ghad.

Global Connect Bought Stake in Abu Sennan Concession

Kuwait Energy signed a Farm-Out Agreement (FOA) with Global Connect Limited for 25% participating interest from its shares in the Abu Sennan concession, announced Kuwait Energy in a press release. Thus, Kuwait Energy now holds a 25% interest share, and is the operator of the Abu Sennan concession. Dover Investment, Global Connect and Rockhopper Exploration hold 28%, 25%, and 22% respectively. The FOA was signed in the mid December 2016 by Kuwait Energy's CEO, Sarah Akbar, and Founder and Chairman of Global Connect, Sherif Foda. The agreement was put in effective at the end of 2016. Yet, the agreement is still pending government and pre-emption approvals.

Egypt to Execute New Petchem Projects

The Egyptian Ministry of Petroleum and Mineral Resources announced that it is taking measures to execute four new petrochemicals projects worth over EGP 1b in order to increase added value to crude products instead of exporting it and to achieve compatibility among the Egyptian projects, reported Al Ahram Newspapers. Minister of Petroleum, Tarek El Molla, pointed out, in a press release to Egypt Oil&Gas, that it is important for new budgets of oil firms to take into consideration new global market circumstances as well the changes in the Egyptian economy, which will affect the oil and gas industry.

GUPCO to Invest \$538m in FY 2017/2018

An official at the Gulf of Suez Petroleum Company (GUPCO) stated to Egypt Oil&-Gas that the company has allocated \$538m in investments in the new budget of fiscal year 2016/2017. The company will allocate the sum in drilling a number of new wells and in renovating aging infrastructure. The earmarked amounts will further be used in constructing a number of new pipelines and conducting maintenance work on several wells, in addition to the rehabilitation of the main production plant in Morgan Field. GUPCO's CEO, Nabil Salah, pointed out to Al Borsa that the company is intending to produce around 76,000b/d of oil within fiscal year 2017/2018.

Egypt, Russia Finalize Credit Package for Dabaa

Egypt and Russia agreed on credit packages and bank guarantees in Dabaa Nuclear Power Plant's Contract. Sources at the Egyptian government stated that the technical negotiations have been concluded. Thus, only the distribution of commitment and minor commercial and financial details are still to be negotiated, reported Daily News Egypt. Egypt and Russia are expected to sign the final contract soon after they reach a mutual understanding on these terms. Both the Egyptian and Russian parties agreed on the banking guarantees, in terms of the mechanism of granting loans and guarantees of payments.



Carbon Holdings' CEO Awarded AFRICA Entrepreneur of 2016 Award

Founder, Chairman and CEO of Carbon Holdings, Basil El-Baz, has been selected to receive the AFRICA Entrepreneur of the Year Award 2016 following his nomination at the Business Africa Entrepreneur Awards in December 2016. The award was announced at the Africa-France Economic Forum at the 27th Africa-France Summit held in Bamako, Mali on 13th and 14th January 2017.

Basil El-Baz is the first Egyptian entrepreneur to receive such an honor. The award follows his ranking (in 2016) as 12th in Choiseul's Africa 100, which surveys and ranks African business leaders aged 40 years and under. The Business Africa Entrepreneur Awards, in connection with Business Africa, and in partnership with the Choiseul Institute, have the backing of MEDEF (Mouvement Des Enterprise De France). Established in 1988, MEDEF is the largest employer federation and entrepreneur network in France, with over 750 000 firms and business enterprises amongst its members. It organizes over 200 annual events and business forums and is recognized by the Government of France as the primary representative of the private sector. Approximately 40% of MEDEF's activities are related to Africa under the theme of 'Sustainability, Growth and Job Creation.'



EMC Invests in HR Skills Development



In line with the professional aspects of planning strategy, EMC CEO Eng. Salah Ismail, has a priority agenda in investing in the skills of the human resources focusing on the training schemes with advanced selective topics, materials, methods of workshops, and the latest academic learning modules up to the international measures of standards.

Meanwhile, under his leadership and encouragement, a positive cooperation was activated with Midor & Tharwa by a series of training courses in December 2016 for 42 participants from the three organizations sponsored by EMC with the full support

of Dr. Hanan Abdel Moniem, Midor HR Manager, and Rania Helmy, Tharwa Training Manager. As a result, the mentioned shared event has successfully met the expectations of all respective trainees and seniors.

EMC Management is keen on having a serious input in personnel development by enforcing criteria established on the global level in the petroleum sector and providing a great opportunity for maximizing the training hours' benefits for groups and individuals in all majors of business. The aim is to change the training concept from essential to optional factors.

DRILLING

BAPETCO

BAPETCO, a joint venture between EGPC and Shell, has completed drilling a new exploratory gas well in its concession area in the Western Desert. The natural gas production in December was 2,355,714 barrels.

OBA J14-C

The well was drilled at a depth of 14,370ft utilizing the EDC-51 rig. Investments surrounding the project are estimated at \$4.551m.

QAKUN

QARUN, a joint venture between EGPC and Apache, has completed drilling a new oil development well in its concession area in the Western Desert. The production rate of Qarun in December 2016 was 1.102.126 barrels of oil.

WON A-14

The well was drilled at a depth of 7,155ft utilizing the EDC-64 rig. Investments surrounding the project are estimated at \$1m.

WON X-4

The well was drilled at a depth of 7,150ft utilizing the EDC-63 rig. Investments surrounding the project are estimated at \$1.014m.

PETROBEL

PETROBEL, a joint venture company between EGPC and Italian Eni is drilling a new development well in its concession area in the Mediterranean. The production rate of PETROBEL in December 2016 was 22,998,712 barrels of oil and 7,927,727 barrels of pas

BALTIM E-12 ST-1

The well was drilled at a depth of 18,143ft utilizing the ALQAHER1 rig. Investments surrounding the project are estimated at \$36.7m.

SIDRI-22

The well was drilled at a depth of 10,600ft utilizing the ST-11 rig. Investments surrounding the project are estimated at \$5.21m.

BM-118

The well was drilled at a depth of 10,259ft utilizing the TRIDNT 16rig. Investments surrounding the project are estimated at \$10.32m.

KHALDA

KHALDA, a joint venture between EGPC and Apache, has completed drilling new oil development wells in its concession area in the Western Desert. The production rate of Khalda in December 2016 was 4.524.496 barrels of oil.

M.RZK-164

The well was drilled at a depth of 6,822ft utilizing the EDC-66 rig. Investments surrounding the project are estimated at \$1.146m.

TUT-112

The well was drilled at a depth of 9,300ft utilizing the EDC-65 rig. Investments surrounding the project are estimated at \$1m.

E.RZK-163

The well was drilled at a depth of 7,000ft utilizing the EDC-61 rig. Investments surrounding the project are estimated at \$1.016m.

NORPETCO

NORPETCO, a joint venture company between EGPC and Sahari Oil Company, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of NORPETCO in December 2016 was 280,437barrels of oil.

ABRAR-31

The well was drilled at a depth of 7,100ft utilizing the ECDC-2 rig. Investments surrounding the project are estimated at \$1.296m.

GPC

GPC, a state owned company has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of GPC in December 2016 was 1,521,160 barrels of oil.

SWS-46

The well was drilled at a depth of 9,974ft utilizing the ST-4 rig. Investments surrounding the project are estimated at \$2m.

AGIBA

AGIBA, a joint venture company between EGPC and IEOC, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of AGIBA in December 2016 was 1,400,048 barrels of oil.

MEL-97

The well was drilled at a depth of 6,393ft utilizing the ST-8 rig. Investments surrounding the project are estimated at \$1.120m.

MEL-98

The well was drilled at a depth of 6,320ft utilizing the ST-8 rig. Investments surrounding the project are estimated at \$1.110m.



OPEC Might Not Extend Output Cut Deal

OPEC may not need to extend a sixmonth agreement with non-OPEC members to pare oil output. According to the Saudi Oil Minister, Khalid Al-Falih, the demand is rising and compliance with cuts is high. The National reported.

The re-balancing of the oil market should take place by the end of the first half of the year, Al-Falih told reporters during an energy event in the United Arab Emirates capital of Abu Dhabi, Bloomberg informed.

This followed previous statements by Kuwait's Oil Minister, Issam Almarzoog, who had earlier commented: "If we continue to see the current level of prices and the commitment of the community, as well as non-OPEC at a satisfactory level, I think we could renew it for another six months," according to Seeking Alpha.

Al-Falih had also stated that, indeed, "all players have indicated their willingness to extend, if necessary." However, he added: "Based on my judgment today, I think it's unlikely that we will need to continue. Demand is going to pick up in the summer, and we want to make sure the markets continue to be supplied well. We don't want to create a shortage or a squeeze, so the extension will only happen if there's a need, and if there's a need, we will do it."

OPEC's decision from November 2016 to cut output reversed a two-year policy that let members pump crude all they wanted to try to maximize sales - a strategy that had contributed to a worldwide glut. The producer group, together with 11 other countries including Russia, is seeking to reduce supply by about



1.8mb/d. The cuts took effect early January and are to last through June 2017. The promised cuts have already pushed oil prices higher, and that is stimulating investment and production elsewhere, complicating the task for OPEC and its non-OPEC allies. Moreover, shale oil producers in the US are taking advantage. US State Department's Special Envoy

for International Energy, Amos Hoghstein, said they have increased output by 300,000b/d since October.

OPEC will meet in May to discuss production plans, but a monitoring committee charged with developing a mechanism to ensure compliance with OPEC and non-OPEC cuts was still in discussion.

Edeltech to Buy Gas from Leviathan Field

The partners involved in Israel's giant Leviathan natural gas field said that they have entered talks to supply 14.8bcm of natural gas over 17 years to Edeltech, an Israeli private power provider, Reuters reported. Based on prices under similar agreements signed in the region, the deal could be worth around \$3b.

Delek Drilling and Avner Oil said in a statement mid January that the parties signed a non-binding letter of intent with the aim to negotiate a binding agreement, according to LNG World News. This came in line with a deal closed in 2016 for Edeltech to buy 6bcm of gas from Leviathan for its power plants.

Leviathan, which is expected to start production in 2019, was discovered in the eastern Mediterranean in 2010. Israel has an estimated 622bcm of gas earmarked for exports. Delek Drilling and Avner each hold 22.67%



of Leviathan, while Texas-based Noble Energy owns 39.66% and Ratio Oil holds the remaining 15%.

In related news, the Greek energy company Energean Oil & Gas announced its plans to develop the Israeli Tanin and Karish gas and condensate fields using a floating production solution, Offshore Engineering reported. The company noted that both fields will be developed using a Floating Production, Storage and Offloading (FPSO) unit.

Iran to Export Gas to Iraq

Iran's Deputy Petroleum Minister for International Affairs and Trading, Amir-Hossein Zamaniniya, said that Iran is ready to proceed with a much-awaited project to export natural gas to Iraq as soon as Baghdad takes measures to make the related payments, Press TV reported. Iran and Iraq signed an agreement in 2013 under which Iran would export 25mcm/d natural gas from its huge South Pars field to power plants in Sadr. Baghdad, and al-Mansuriya in Iraq through the 270km pipeline. The amount would increase to as high as 35mcm/d during summer. The project is expected to bring Iran \$3.7b in revenues annually, according to Oil Price.

Saudi Arabia Increased Oil **Output Reductions**

Saudi Arabia's Energy Minister, Khalid Al-Falih, said that the Kingdom has reduced oil production to less than 10mb/d, below its targeted level, and will consider renewing its pledge to cut crude output in six months, Bloomberg reported. This is considered the lowest oil output levels for Saudi Arabia in two years. In addition, Falih, speaking at the Atlantic Council Global Energy Forum in Abu Dhabi, said the Kingdom planned to make even deeper cuts in February, according to Reuters. This means Saudi Arabia has cut oil production by more than the 486,000b/d it agreed to

Kuwait's Oil Cuts to Reach 148.000b/d

Kuwaiti Oil Minister, Essam Al Marzoug, said that the country's output cuts could reach between 146,000 and 148,000b/d, which is more than the reduction to which the member of the Organization for Petroleum Exporting Countries (OPEC) committed itself under December's global deal among producers, Reuters reported. Marzouq added: "We used this opportunity to do maintenance at some wells, whether they were at Burgan field or the northern fields," according to Arab Times.

Yet, he was optimistic that oil prices would stay between \$55 and \$60 a barrel or move even higher if market fundamentals helped.

Qatar Petroleum to Explore Offshore Morocco

Oatar Petroleum has obtained the licensing to prospect for oil and gas in Morocco's southern costs, The Middle East North Africa Financial Network reported. Moroccan authorities have extended the previous license for twoyears to a consortium including Qatar Petroleum, American Chevron, Moroccan National Hydrocarbons and Mines Office (ONHYM), to operate the exploration of oil and gas in the seas surrounding southern Morocco, according to Morocco World News. This extension follows an agreement signed between Oatar Petroleum and Chevron in February 2016 by virtue of which the Qatar company acquired a 30% stake in three deep-water exploration leases offshore the Moroccan coasts.

Kuwait to Import Gas from

Kuwait is set to import up to 200mcf/d of gas from Iraq, as the two countries finalize a long-delayed deal, Middle East Monitor reported. Both the Iraqi Oil Minister, Jabbar Al Luaibi, and his Kuwaiti counterpart, Essam Al Marzouq, have confirmed the news. The plans for such a deal have dragged on for over a decade, but have failed to come to fruition because of Iraq's ongoing internal conflict and lack of investment for infrastructure to convert the huge amount of gas it flares from its oilfields, according to The National. Al Marzouq said the quantities have been agreed, starting with purchasing 50mcf/d.



Iran Earned \$41b in Oil Revenues



Iran's Oil Minister, Bijan Zanganeh, said that the country's oil and condensate revenues are expected to reach \$41b in the country's current fiscal year ending on 20th March 2017, Kallanish Energy reported.

Zanganeh described the current oil market conditions as 'satisfactory,' noting that oil revenues reached \$24.7b during the first nine months of the current Iranian fiscal year, according to Oil Price. Furthermore, Zanganeh comments came in early January as the National Iranian Oil Company issued a list of 29 companies that have qualified for bidding in oil and gas tenders.

Since Western sanctions against Iran were lifted, Tehran has been quickly ramping up crude oil production, aiming to reach pre-sanction levels. The right to reach pre-sanction levels was the Islamic Republic's main bargaining chip while pleading for an exemption from the OPEC producers' supply-cut

The International Monetary Fund (IMF) said in an end-of-mission statement in December that increased oil production and exports are expected to take Iran out of the recession that it was in 2015/2016 and lead to 6.6% growth in real GDP in 2016/2017. Since the lifting of the sanctions, Iran has been also eager to lure international oil companies back to developing the country's vast oil and gas fields.

Libya's Oil Output Reached 3-Year High

Chairman of Libya's National Oil Corporation's (NOC), Mustafa Sanalla, announced that the country's oil production has reach a three-year high of 708,000b/d, Libya Herald reported.

The increase came after major problems in Zawiya Oil Refinery were resolved, and after the reopening of Sharara oil field that has a capacity of 330,000b/d, according to Libya Express. However, some reports indicated that Feel oilfield has not resumed production, which has a capacity of 90,000b/d. Sanalla comments came during his visit to Jalo oil production area in south

Sanalla comments came during his visit to Jalo oil production area in south east Libya, where he discussed local development and environment issues in the region. He said that the region suffered from huge neglect and needed the state to support it. Sanalla also laid the foundation stone to local Petroleum Institute, which he hoped would

aid development and training in the region.

Meanwhile, Sanalla continued his media attack on fuel smuggling and its effects on Libyans. In an earlier statement released by the NOC, Sanalla expressed his condolences for the death of a Libyan family by carbon monoxide poisoning as a result of using charcoal for heating due to power cuts and fuel shortages.

According to the company, this family represents the thousands of miserable cases that poor Libyan citizens suffer as a result of fuel smuggling or demonstrations preventing oil production.

In related news, Brega Marketing, NOC's fuel distribution company, said that it will be initiating strong anti-smuggling measures to prevent fuels going into the black market.



Additionally, Brega Marketing announced that it was increasing diesel distribution by 2.5m liters in view of the cold weather and power cuts so as to meet increased demand for heating. Cooking gas cylinder distribution will also be increased.

The company also said that it was rolling out the installation of a number of

Point of Sale (POS) machines at petrol stations so that customers can pay with their debit cards. This move aims to mitigate the current cash crisis at Libyan banks. Cooking gas cylinder distributors will also have POS systems in the next phase, Brega revealed.

Iraq Cut Oil Exports



Oil exports from Iraq's southern terminals fell in January 2017, according to loading data and an industry source, which is a sign that the Organization for Petroleum Exporting Countries' (OPEC) second-largest producer is following through on the group's decision to cut output, Reuters reported.

Mid January, Iraq's Oil Minister, Jabar Ali al-Luaibi, said that his country cut exports by 170,000b/d and will cut a further 40,000b/d during the first month of 2017. At the time of the statement, Iraq's OPEC Governor, Falah al-Amri, told reporters that Iraq's oil exports stand at 3.077mb/d, according

to Hellenic Shipping News.

Baghdad's initial request to be exempted from the OPEC deal, plus loading programs pointing to continued high Iraqi exports, have added to skepticism that the country would comply with the output cuts. According to the deal, Iraq is supposed to curb its production by a total of 210,000b/d. However, exports from southern Iraq in the first half of January were reported to be in average of 3.25mb/d, according to shipping data tracked by Reuters, which is a record high decline, down from Iraq's own figure of 3.51mb/d in all of December.

Platts Issued MENA LNG Price Index

Commodity pricing agency S&P Global Platts will begin assessing prices for liquefied natural gas (LNG) delivered to the Middle East and Pakistan in the Platts Middle East Marker (MEM), reflecting growing imports into a region better known as an exporter, CPI Financial reported.

The Egyptian port of Ain Sokhna will be used as the main point for the Platts price marker. Deliveries into other ports will be assessed by applying a freight cost factor. The MEM price assessments will also be based on a delivered exship (DES) basis to ports in the Middle East that are able to receive shipments with a minimum cargo size of 135,000 cubic meters, according to Reuters.

S&P Global Platts' Global Director, Shelley Kerr, said: "Our analysis indicates a greater tendency for new entrants in the region to use short term purchasing strategies, which is creating additional liquidity. This liquidity is further compounded by the participation of trading companies who are willing to take on the additional price and credit risk associated with these new buyers."



This came as demand for LNG in Dubai, Egypt, Jordan, Kuwait, and Pakistan has grown close to tenfold since 2010 to 20.8mt/y in 2016, with Egypt taking about one-third of those imports.

Rosneft to Withdraw from Algerian Oil Blocks

Russian Rosneft may soon withdraw from its only project in Algeria, an exploration project, which Russia's oil giant considers having doubtful prospects, Oil Price reported. Rosneft is seeking to sell its share in the project concerning the development of the 245-South Block including the West- and East-Takuazet oil fields and the North-Tesselit gas condensate field, according to Sputnik News. A joint venture between Rosneft and Russian oilfield engineering company Stroytransgaz holds 60% in the block. The remaining 40% in the 245-S prospect block is held by Algeria's state-run company Sonatrach.

DNO Discovered Oil at Peshkabir in Kurdistan

Norwegian oil and gas operator DNO, currently drilling in the Kurdistan region of Iraq, has discovered oil in Peshkabir-2 well's Cretaceous horizon in the Peshkabir field, Oil Review Middle East reported. In a statement, the company announced: "The well flowed at a stable rate of 3,800 barrels of 28° API oil per day on a 52/64 choke from an open hole test of a 170m interval. Pressure data supported by observations of oil shows from cuttings and side wall cores indicate a Cretaceous oil interval in excess of 300m," informed Kurdistan 24. DNO, along with Genel Energy and the Kurdistan Regional Government (KRG), are looking at the possibility of early production from the field.

Bahrain to Start Building LNG Terminal

Bahrain LNG, a developer and owner of the kingdom's first receiving and regasification terminal for liquefied natural gas (LNG), will start the construction work on its new terminal in January and complete it by 2019, Trade Arabia reported. Furthermore, the developer of Bahrain's LNG terminal has finalized a \$741m syndicated loan for the platform's construction, as the Bahraini company has closed a limited recourse financing with a

syndicate of nine international and regional banks. The loan has a tenor of 20 years, and Korea's export credit agency Korea Trade Insurance Corporation (K-sure) provided commercial and political risk cover for about 80% of the financing, according to Global Trade Review.



Angola Cuts Output Following OPEC Deal

Angola has become the latest OPEC member to announce the beginning of production cuts as part of the group's deal to curtail production in a bid to lift oil prices, Oil Price reported.

Angolan state oil company Sonangol has cut output by 78,000b/d to 1.673mb/d, informed Africa News. The country is reeling from low oil prices, with oil comprising about 45% of its Gross Domestic Product (GDP) and over 95% of its exports.

Economic growth slowed to about 1% in 2016 driven by a sharp slowdown in the non-oil sector. In June, the International Monetary Fund (IMF) said the Angolan economy continues to be severely affected by the oil price shock experienced in the last two years. The IMF expects GDP will tick up 1.5% in 2017. And while consumer prices are reported to have surged by 33.7% in 2016, they are expected to further rise of up to 38.3% in 2017.

The state-run company has also felt the weight of the oil price slump to the point that employees have recently complained that they were not being provided basic supplies.

In addition to the output cut, Angola's crude oil exports are expected to fall to 1.51mb/d in March, a loading program showed mid-January. The total monthly volume is actually higher than February at 46.9m barrels, but the greater number of days in March trims the barrel-per-day figure. Reuters reported.

Early January, Sonangol sold two cargoes, a Cabinda and a Saturno, after lowering offer levels, though neither the buyers nor the agreed prices were immediately clear, Business Day informed.



Additionally, Total was still offering an Angolan February-loading cargo of Girassol on a delivered basis, but the program was otherwise largely sold out. Girassol was valued at discounts to dated Brent. There were no offers from the freshly issued March program as barrels still needed to be allocated.

Furthermore, around 20 cargoes in Nigeria were still available from the February program. ExxonMobil was offering a cargo of Qua Iboe loading mid-February at dated Brent plus \$0.70 a barrel, but recent deals were said to have been done at dated Brent plus \$0.50 a barrel or lower.

Nigeria Is Again Top Oil Producer in Africa



Nigeria is said to have returned back to the position of Africa's top oil producer after Angola, who took over in March 2016, lost in production competition, Nigerian Bulletin reported.

As reported by secondary sources in the December 2016 Monthly Oil Market Report (MOMR) of OPEC, Nigeria and Angola produced 1.692m barrels of oil a piece in November. In December, however, according to the information from primary sources in the MOMR, Nigeria produced 1.782mb/d of oil against Angola's 1.688mb/d, which has demonstrated its takeover of Angola by about 94,000 b/d.

Angola had led the African oil producing countries with its 1.7mb/d recorded for September 2016, well above Nigeria's 1.5mb/d, for seven straight

months. However, crude oil production from Nigeria went a notch above that of Angola even before the start of 2017 as per the planned production cut agreed by OPEC and non-OPEC producers, from which Nigeria was exempted, International Business Times informed. The exemption was due to militant at-

The exemption was due to militant attacks on Nigeria's pipelines, which had made the country record the biggest oil production decline among OPEC members, as its output dropped by 200,000 barrels, All Africa reported.

Nigeria's huge output decline was also attributed to maintenance on the Erha field and strike by workers at Exxon-Mobil Corporation's operations in the country, which disrupted both exports and production.

Ophir Energy to Drill Offshore Ivory Coast

UK listed independent Ophir Energy said preparations for drilling to restart on the deepwater Ayame-1 oil exploration well offshore Ivory Coast are at an advanced stage, Offshore Engineer informed. The company said it will drill the deep-water Ayame-1 well in late-May. The well, located on Block CI-513, will target approximately 240m barrels of recoverable resources with an estimated 28% chance of commercial success, Petroleum Africa reported. Ophir entered Block CI-513 with the signing of a PSC in March 2016. The company has a 45% operated interest in the block and is partnered with African Petroleum and Petroci on the acreage.

Cairn Energy to Drill New Wells Offshore Senegal

Cairn Energy was gearing up to start the third phase of its drilling program offshore Senegal in late January, aiming to further evaluate the SNE discovery, Offshore Energy Today reported. Cairn added the company and its partners are benefiting from the lower cost environment and significant availability of high-quality rigs, according to Offshore Magazine. Cairn has so far drilled six successful wells in Senegal and the 2017 drilling program plans for two new, firm wells. The new wells, SNE-5 and SNE-6, are meant to optimize the SNE field development plan before submission to the government of Senegal for approval.

NNPC, Schlumberger Partnered on Explorations

The Nigerian National Petroleum Corporation (NNPC) said it is collaborating with oil service company Schlumberger on the deployment of state-of-the-art technology in the ongoing search for commercial hydrocarbon deposits in the Chad basin and other parts of the inland sedimentary basins, The Sun reported. According to NNPC's COO of Ventures, Babatunde Adeniran, a research area for the companies will be "exploration and risks assessment studies of the Nigerian Frontier Basins, which include the Upper Benue where NNPC is currently carrying out exploration works," Reuters informed. The COO listed other areas of collaboration to include Wellbore Instabilities studies to assist in reducing drilling costs through prevention of stuck pipes, especially for directional drillings, and to improve safety and drilling performance.

Solo Oil Updated Tanzania's Well Progress

Solo Oil provided an update on the progress of the Ntorya-2 appraisal well in the Ruvuma Basin, Tanzania, operated by Aminex plc, Oil Voice informed. The vertical Ntorya-2 appraisal well was spud late December 2016 and has a planned total depth of 2,860 meters. Early January, the 17-inch section was cased and cemented to a depth of 1,326 meters. The well is currently drilling in the 12-inch section and is planned to reach a depth of 2,095 meters, which will then be cased and cemented, 4-traders reported. The company added that an eighth section is planned through the targeted Cretaceous formation to an estimated total depth of 2,860 meters.

Tullow Found Oil in Kenyan Well



Tullow Oil said it has made an oil discovery following exploration of the Erut-1 well in onshore Block 13T, northern Kenya, The Irish Times informed. Erut-1 was drilled to a depth of 1,318 meters and it cut a 25-meter interval at a depth of 700 meters. Tullow stated the overall oil column is considered to be between 100 to 125 meters, Proactive Investors reported.

The well was drilled some 10km to the north of the Etom-2 well, and it was designed to test a structural trap at the edge of the basin. As such, Tullow highlights that the well successfully shows that oil has migrated this far north, which in turn de-risks multiple further

exploration prospects in the area.

Tullow's Exploration Director, Angus McCoss, stated: "This extends the known hydrocarbon limits of the basin beyond the successful Etom discovery into the underexplored northern part of the basin where we have several undrilled prospects."

He added that, following the scheduled appraisal wells at Amosing-6 and Ngamia-10, further exploration drilling of this area is being planned.

The company has a 50% stake in Block 13T and Block 10BB alongside partners Africa Oil Corp and Maersk, which both own 25%.

ExxonMobil Finds More Oil Offshore Guyana

ExxonMobil Corp. announced in early January 2017 it had further established offshore Guyana as a significant exploration province with a new oil discovery and successful appraisal drilling at its Liza field, Rigzone informed.

The well Payara-1 was drilled by ExxonMobil affiliate Esso Exploration and Production Guyana Limited, and encountered more than 95 feet of high-quality, oil-bearing sandstone reservoirs. It was safely drilled to 18,080 feet in 6,660 feet of water, Jamaica Observer reported.

Payara-1 marks the second oil discovery ExxonMobil has made at the 26,800km² Stabroek Block. The company started drilling the well in November 2016, reaching initial total depth in December.

In addition to the Payara discovery, appraisal well at Liza-3 has identified an additional high quality, deeper reservoir directly below the Liza field, which is estimated to contain between 100 - 150m barrels of oil. This additional resource is currently being evaluated for development in conjunction with the world-class Liza discovery. The Liza field is estimated to yield the equivalent of 800m to 1.4b barrels of crude.

ExxonMobil drilled the Payara-1 well and conducted the Liza appraisal drilling using the Stena Carron (UDW drillship), according to Rigzone's Riglogix database.

These recent exploration successes are



examples of the company's technological capabilities in ultra-deepwater environments, which will enable effective development of the resource for the benefit of the people of Guyana and ExxonMobil shareholders.

In December 2016, Esso awarded contracts to SBM Offshore for a floating production, storage and offloading (FPSO) vessel, a key step in moving the Liza field towards first production. Wood Mackenzie estimates that FPSO at Liza would produce 180,000 b/d until 2030, which is near its total capacity. The firm also assumes a second FPSO will be needed at Payara. With a longterm Brent oil price of \$65 per barrel, Payara's net present value of 10 reserves could range from \$426m to \$1.6b. This estimate is based on low case model scenario of 300m barrels of oil equivalent to a 100,000b/d-FP-SO, and a high case scenario assuming reserves of 500mboe produced by a

Mozambique to Finalize Oil, Gas Exploration Contracts



Mozambique's government forecasts that negotiation of contracts for oil and natural gas exploration areas in the country, resulting from the fifth international tender launched in 2014, could be finalized by the end of June 2017, Macauhub reported.

Meanwhile, model contracts for hydrocarbon areas were approved, but foreign oil companies are still not sufficiently familiar with the document, which is why they have been asking for further clarification on specific aspects, Club of Mozambique informed.

A spokesperson stated that details about exchange rates have been the main requests for information sent to the government by the majority of companies awarded concession. Since the hydrocarbon sector involves very complex matters, the contracts should be viewed in full detail so that in the future neither party is negatively affected.

The fifth tender for research areas was launched simultaneously in Maputo and London in 2014 and ended at the end of the following year, covering three maritime areas in the Rovuma basin, two in Angoche and six in the Zambezi Delta and onshore areas, namely three in Pande/Temane and one in Palmeira region, totaling close to 77,000km².

S. Sudan to Boost Oil Output

Deputy Head at South Sudan Embassy in the United Arab Emirates (UAE), Mayom Alier, said that South Sudan is planning to increase its oil production early January as oil prices increase following the Organization for Petroleum Exporting Countries' (OPEC) agreement to cap output, informed Gulf News. According to Alier, 98% of the country's budget is dependent on oil revenue and the drop in oil prices has heavily impacted its economy.

Alier further noted that the country aims for crude production increase. "We are planning to increase oil production as oil prices go up to increase our revenue and expand the ways of oil industry. We suffered the most due to low oil prices. Rise in oil prices is a good news for us."

Alier did not specify the extent to which the production is expected to rise, but said the country is trying to reach the levels of 500,000 b/d, informed Oil Price.

Tullow Farmed Down to Total in Uganda

Tullow Oil and Total E&P Uganda have entered a sale and purchase agreement that had Tullow farming down a substantial slice of its assets in Uganda, Petroleum Africa reported. Tullow has agreed to transfer 21.57% of its 33.33% interests in Exploration Areas 1, 1A, 2 and 3A to Total for a sum consideration of \$850m, informed Interactive Investor. This agreement will allow Tullow to retain an 11.76% interest in the upstream and pipeline, which would reduce to 10% when the government of Uganda formally exercises its right to back-in. The total consideration for the transaction consists of \$100m upon completion of the transaction, \$50m at both final investment decision and first oil, and \$700m in deferred consideration.

Vaalco Resumes Production at Avouma 2-H

Houston-based Vaalco Energy restarted production at the Avouma 2-H well on the Avouma platform, offshore Gabon, after utilizing a hydraulic workover unit to replace a failed electric submersible pump (ESP) system, Offshore Engineer reported. According to the company, the well is currently producing at a rate of 2,700b/d of oil gross, 730b/d of which goes to Vaalco, informed Offshore Energy Today. With the two recent workover wells online, total company net production is averaging 4,600b/d. The ESP systems had failed in both the South Tchibala 2-H and the Avouma 2-H wells on the Avouma platform.



South Sudan has the third largest oil reserves in sub-Saharan Africa after Nigeria and Angola, with proven reserves estimated at 3.5b barrels as of January 2014. Its current production stands at 130,000b/d. During the civil war, the country's production capacity fell to below 130,000b/d from 350,000b/d in its only functioning Paloch oil field of Upper Nile state.

Pura Vida to Drill Offshore Gabon

Pura Vida Energy has reached a conditional agreement with an offshore drilling contractor which will fund a threewell drilling program in the Nkembe block, offshore Gabon, Offshore Energy Today reported. Under the term sheet, the rig contractor will provide a jack-up rig and fund the costs of the rig for the three-well program anticipated to commence in the second half of 2017 with an estimated duration of 3-4 months. Energy-pedia News informed. Additionally, it would cover the mobilization costs and operating day rate of the rig, in exchange for a royalty out of production from any fields discovered during the drilling campaign that are brought into production.

China's Poly-GCL Drilling in Ethiopia

The Chinese firm Poly-GCL has begun drilling at Hilal-7 gas field in Ethiopia, Ezega reported. Thus far, the company has drilled five gas wells around Calub and Hilala areas in the Ogaden Basin. The drilling of Hilal-7 gas field is expected to be finalized within half a year, 2Merkato informed. The drilling of the well was officially commenced early January in the presence of the Ethiopian Minister of Mines, Petroleum and Natural Gas, Motuma Mekassa, and the Chinese Ambassador to Ethiopia, La Yifan. According to the minister, the country will start extracting natural gas after three years.





SHELL EGYPT'S PARTNER FOR THE FUTURE

Shell has appointed a new Vice President & Country Chairman, ENG. GASSER HANTER, who has returned to his home country in December 2016, after an exciting journey with Shell in the Middle East and North Africa (MENA) region and Europe, to run Shell companies in Egypt. In an exclusive interview with Egypt Oil&Gas, Eng. Hanter has shared his vision for the company and convincingly confirmed its long-term commitment to Egypt, with a determination to support the country's vision to become a regional energy hub.

elocating to Cairo with his extensive experience from other MENA countries, Eng. Hanter is bringing in fresh views on how to enhance Shell's role in Egypt, as he added: "I had a very unique experience in Iraq between 2008 and 2014 where I was overseeing different Shell businesses as Country Chairman for Shell, and also as Managing Director for Basrah Gas Company (BGC). We [Shell] see a lot of potential in Egypt's energy industry, including the possibility for the country to become a regional gas hub

through its strategic location and its state-of-the-art infrastructure," Shell's Chairman stressed.

With a series of recently adopted economic measures, the Egyptian government has been successfully attracting foreign investors. Shell's new Country Chairman intends to use the opportunity to demonstrate Shell's track record as a reliable partner for Egypt. "We are quite encouraged by the pace and progress of the economic program by the Egyptian government that has significantly shifted investors' sentiment towards Egypt and its oil

industry." Having been active in Egypt for more than 100 years, he confirmed that Shell is committed to the country for the long-term.

It comes as no surprise that the company has no smaller ambition than "to become Egypt's partner for the future," as Eng. Hanter put it. This seems as a realistic projection given Shell's operational and technological capacity that is supported by its global portfolio across the energy value chain.

Shell as a Leading Player

To date Shell has invested significantly – billions of dollars – in Egypt and is well-placed to contribute to the government's new strategy along the modernization program. "We have built up a thorough understanding of Egypt's onshore, offshore resources, and the supply needs of the country," said Eng. Hanter.

Building upon remarkable achievements of 2016, most notably as a result of the acquisition of BG that has expanded Shell's operations in Egypt, "we are quite keen on becoming a leading player in both the onshore and offshore oil and gas industry," said Shell's Chairman. He highlighted that the combination with BG has extended Shell's investment position in Egypt, which necessarily brought Shell back to the Mediterranean offshore operations; an area where the company has extensive experience in.

"Shell is quite encouraged by the pace and progress of the economic program by the Egyptian government that has significantly shifted investors' sentiment towards Egypt and its oil industry."

An Expanded Footprint

Eng. Hanter is thus confident of Shell's future prospects. Shell now has a material footprint in Egypt producing a significant percentage of the country's oil and gas, being one of the two biggest operators in the Western Desert, and representing roughly around 25% of the country's gas production at ~1.1 Bcf/d (100%), placing Shell amongst the top producers of offshore gas.

Shell operates in the country in partnership with its three joint-ventures - Badr Eldin Petroleum Company (Bapetco), Rashid Petroleum Company (Rashpetco), and Burullus Gas Company (Burullus) - providing continuous production and development activities. Indeed, Shell's portfolio includes both onshore and offshore exploration and production activities in the Western Desert and the Mediterranean Sea. In addition, Shell is also a market leader in lubricants in Egypt, with a market share of around 19%.

Shell also has a major shareholding in the two-train (3.6 mt/y per train) Egyptian LNG (ELNG). "The trains are currently operational, but processing gas at a very low rate of a few cargos per annum", noted Eng. Hanter. Furthermore, "we are an active player in the Eastern Mediterranean region with our Aphrodite position in Cyprus and ELNG infrastructure," Shell Chairman added. Shell's comprehensive gas business in the country relies on an extensive network of subsea infrastructure, hundreds of kilometers of pipelines extension on the seabed, onshore gas processing facilities and an LNG plant, which Eng. Hanter describes as "one of the most comprehensive infrastructure grids in the Mediterranean Sea."

Shell's commitment to Egypt was further boosted with the government's recently unveiled

modernization program. "A key indicator of the successful roll out of the [modernization] program is allowing for an open dialogue with key energy players in the country, which aims at placing Egypt as a global oil and gas hub, encouraging Foreign Direct Investment (FDI), and promoting economic growth," Eng. Hanter stressed.

*Eng. Hanter will be joining H.E. Eng. Tarek El-Molla, Minister of Petroleum and Mineral Resources at a panel discussion about the sector's vision for the 2021 modernization program, which is taking place at the Egypt Petroleum Show (EGYPS) 2017.

Unlocking Onshore & Offshore Potential

Shell Chairman is determined to capitalize on Shell's recent wins in the Western Desert and further develop the existing concessions. "We have interest in nine onshore Production Sharing Contracts (PSCs) with 22 production licenses and three exploration concessions," Eng. Hanter asserted. "We will continue to increase our onshore production in 2017, currently at around 130,000 boe/d, drilling exploration wells within the exploration licenses of North East Obaiyed and North Matruh. Furthermore, we are entering into the second exploration phase for North Alam El Shawish."

Eng. Hanter added that the recent gas discovery, BTE- 2, in Shell's North Alam Al Shawish exploration concession, has preliminary identified volumes of around 0.5tcf of gas in place with further potential, making it one of the largest discoveries in the area in recent years, and the deepest well in the Western Desert. Overall, the well "has the potential to contribute to 10-15% of overall production of Bapetco, with drilling operations to continue to investigate the deeper Kharita sandstones beyond 6,000m depth in the concession area" and he added that "evaluation of hydrocarbon volumes will be conducted after drilling and well-testing are completed."

In a similar vein, Shell's further expansion of its onshore footprint is the recent award of the North Um-Baraka Block in the 2016 onshore bid round by the Egyptian General Petroleum Corporation (EGPC). Building on more than 30 years of expertise in the Western Desert area and an outstanding track record in exploration with a success rate of more than 80%, Shell has "ambitious plans for the exploration drilling and quick production ramp-up for our expected discoveries, where we will be using new technology such as high resolution 3D seismic surveys to explore for new targets," noted Eng. Hanter. He added that any discovery will be tied-in quickly into the Shell-operated Obaiyed facilities to further boost production from this area.

With regards to offshore, Shell has interest in two operated non-producing concessions, in addition to two operated gas-producing concessions; Rosetta and the West Delta Deep Marine (WDDM). "Currently, gas production and processing continues from WDDM and Rosetta, where these areas have proven to be prolific and rich in the past. In the coming period, Shell has an ambitious development program for offshore," emphasized Eng. Hanter.

'Goal Zero' is Possible

There is no value in having a business when safety is not factored in as the main – and the first – success criterion. 'Goal Zero' means achieving 'zero serious injuries' over a prolonged period, year after year.

Shell celebrated achieving a safety record of 8.5 million man-hours Lost Time Injury (LTI) free with its joint-venture with the EGPC, Bapetco. Eng. Hanter also asserted that Shell's world-class ELNG plant "has recently been awarded the 2016 RoSPA Gold Medal for Occupational Health and Safety. This is ELNG's 8thconsecutive gold award."

Safety Day in Shell is a real celebration. "It is a

celebration of the lives that we can and have saved through our care for each other," confirmed Eng. Hanter. He stressed that following Shell's 12 Life-Saving Rules is mandatory for anyone who works for Shell. "We take this very seriously at Shell; the message we send out to staff and contractor partners alike is simple: 'if you choose to break the rules, you choose not to work for Shell'," added Eng. Hanter. Building on Shell's long standing Safety Day, Shell was a key participant and supporter of the industry's First Annual Upstream Oil & Gas Safety Day, organized last October by the EGPC.

Investing in People Development

Shell Egypt takes its social investment projects seriously; developing a number of social and community-related programs that focus on Small and Medium Enterprise development through the company's flagship program, Shell Intilaaqah Egypt, which has been running for 12 years, providing entrepreneurship training for around 9,000 youth in 14 Egyptian governorates, including Matruh. Shell

"We see a lot of potential in Egypt's energy industry, including the possibility for the country to become a regional gas hub through its strategic location and its state-of-the-art infrastructure."

is currently revamping this program to include more candidates to be more linked to the company's supply chain for a more sustainable business.

Another key focus area for Shell is combining human capital development with energy efficiency through the Shell Eco-Marathon (SEM); an annual global Shell competition held for university students, who design and build a fuel efficient car. The car, which travels the furthest distance on one liter of fuel is the winner. Eng. Hanter added "this year marks the fourth participation from Egypt with seven teams flying to Singapore in March to participate in the SEM Competition. One of the cars participating in the SEM in Singapore is showing at the Shell stand at the EGYPS."

"We are quite keen on becoming a leading player in both the onshore and offshore oil and gas industry."

In addition, in line with Shell's core belief in safety as a top priority, Shell has been running a road safety program for the past ten years, providing defensive driving awareness sessions to over 1,000 school bus drivers in Egypt.

In a related note, Shell invests in its peoples by providing them with leadership development and continuous improvement programs. "Today, I am proud to say that we have 80 Egyptians located in various Shell offices around the globe," concluded Eng. Hanter.



ith more than 20 operating marine units currently employed in the Mediterranean Sea and in the Gulf of Suez, Maridive Group counts to the top notch offshore service providers in Egypt. It is also proudly presenting its achievements with the rest of its fleet spread across several continents from the Arabian Gulf and North and West Africa, all the way to Latin America.

Maridive's Offshore Fleet

"Maridive is the largest offshore oil services provider headquartered in Egypt with 40 years of experience and a history of cooperation with NOCs and IOCs, having an efficient network of administrative, technical and logistic support, while being managed and operated by around 2,500 Egyptian professional employees," as Dr. Maged Nadim, Maridive's Chief Commercial Officer (CCO) stated.

With its subsidiaries Maridive Offshore Projects, Maritide, and Valentine Maritime, the company has gained a strong reputation for its excellence and efficiency in the offshore oil and gas services fields. In the region, the company relies on its onshore bases in Alexandria, Port Said, Ras Shukheir, Abu Rudies, Abu Dhabi and Al Khafgi in Saudi Arabia.

Maridive has got 35 AHTSs, 7 AHTs, 4PSVs, 8DSVs, 7 mooring boats and 12 Barges. This undoubtedly represents the largest offshore fleet in the entire region. On a global scale, Maridive is one of the largest players in the AHT/AHTS segment with 42 units.

The company currently operates on five continents with 73 marine units via four companies. It has 53 Offshore Support Vessels (OSV) units and offers Offshore Construction Services (OCS) with 21 Marine units at the disposal. Indeed, it possesses "a diversified Marine fleet with up to date technologies and state-of-the-art vessels and services tailored to the client's needs," Dr. Nadim further emphasized. Securing long term contracts allows the company to target highest utilization rates for its entire fleet.

Building upon its successful track record from different continents since its establishment in Egypt in 1978, Maridive has become a vertically integrated player that guarantees highest quality services to offshore explorers, covering the entire value chain.

The range of its offshore services is impressive as besides offshore rig supply they offer towage, anchor handling, oil spill recovery, safety and emergency response, salvage, firefighting. In the area of OCS, Maridive manages multiple offshore projects securing highest quality in pipe laying, marine con-

struction, maintenance, diving services and survey

Currently, in Egypt, Maridive has 14 of its vessels deployed in the Red Sea area and 6 in the Mediterranean Sea, providing anchor handling tug supplies, platform supply vessels and multi-purpose support vessels.

Future Offshore Partner of Choice

Maridive Group is the future partner of choice for your offshore operations. This is not only for their largest fleet, but also for their client approach. The company is fully committed to managing quality, health, safety, and environmental issues (QHSE) as an integral part of its business. For them, QHSE is not to be compromised; hence, the company has adopted a strict safety policy to avoid any undesirable injuries, accidents, or damages. According to Dr. Maged Nadim's previous statement to Egypt Oil&Gas, "our Quality, Health, Safety & Environment (QHSE) has improved tremendously in the last years, indeed, we have had a revolution in our QHSE regulations."

As the company stressed, "personal and environmental safety is our top priority and our services come with the highest level of professionalism, expertise, integrity, and dedication."

Complying with all international conventions, laws, and regulations, Maridive is here to minimize its clients' offshore risks through thorough and continuous risk assessment processes for current facilities and to ensure that new projects can safely continue in the future. "We are trying very hard to stay with our clients as close as we can during the operations to have their feedback and to be constantly amending operations when necessary towards a better working potential for them," Dr. Nadim added.

Looking into Maridive's approach to its clients, the company is a guarantor of a successful completion of any offshore project with reduced costs. Dr. Nadim explained with dedication that in the times of low oil prices, when the entire market has been challenging, Maridive has been keen on simply sitting down with its clients in order to "really understand their requirements that would allow us to find the ways, in which we can cut their costs and thus deliver the added value services." For example, as he continued, "there are versatile vessels that can do more than one job; a multipurpose vessel (MPSV) can be built to do diving works, constructions works, and survey works at the same time." Hence, replacing

several vessels with a multi-purpose one that can do the work efficiently is the way to go. "This requires a lot of technical engineering, and we have extensive background, and a very strong engineering department that allows us to be competitive," stated the company's CCO.

Hence, Maridive, in close cooperation with its clients provides cost effective and technically advanced solutions tailored to their specific project requirements.

In order to meet clients' demands and adapt to the emerging international market trends, the company attracts, recruits, and retains highly qualified managers and technical employees.

Aiming for Growth

Geographical expansion and constant growth is the company's key strategy in order to boost its profitability and ensure success for its clients. It seeks to surpass its competitors with the diversity of its services, fleet size, technology, and expertise.

"Our vision for 2017 is to maintain and increase our flexibility with our clients through adding value to our services and maximizing the utilization and usage of our Marine units, which, as a result, will allow our clients to achieve more at a lower cost," noted Dr. Nadim.

With the projection - 'Endless Sea - Endless Growth', Maridive is energetically seeking to expand its activities to other geographical locations in Egypt and to strengthen its position further beyond. "We are continuing targeting new markets and expanding our spectrum of services," added the company's CCO, "which is also a crucial measure in such a competitive and harsh environment" as the offshore sector in the region clearly proves over and over again.

Maridive Group has maintained its highest reputation with its partners and clients through its commitment to high work ethics, integrity, and innovative solutions. It has been recognized as one of the most competitive companies of its kind in terms of vessels, equipments, new technologies and expertise in OSV, and OCS segments.

Its overall objective is to further diversify its offshore services, expand the fleet, enhance technology, deepen the expertise, and broaden its outreach globally. These are no modest ambitions. Yet, Maridive is strongly convinced it is capable of achieving its targets, some of them already in 2017.





EGYPS

EGYPT PETROLEUM SHOW

14 - 16 February 2017, CICC, Cairo

GATEWAY TO EGYPT'S NEW OIL AND GAS OPPORTUNITIES





















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'NO BARRIERS AHEAD'

By Nataša Kubíková

In preparation for EGYPS 2017, Egypt Oil&Gas had a pleasure of meeting Technical Committee Chairman, Geologist ABU BAKR IBRAHIM, to learn about what to expect from this inaugural event and what Egypt has to offer to its investors.

he core of EGYPS 2017 lies in the Technical Conference that will spread across the entire three days. The conference brings together experts from the entire upstream, midstream, and downstream oil and gas value chain, providing the opportunity to share technical knowledge and gain critical insights into Egypt's and North Africa's fast evolving hydrocarbon business.

This event reflects positively on the Egyptian position in the regional industry and opens up a circle of opportunities. As Abu Bakr Ibrahim, the Chairman of the Technical Committee noted, "Egypt is a leader in the oil and gas industry," hence EGYPS 2017 will be "a very good opportunity" to showcase that.

It is for no other reason this event is taking place in Cairo this year than to draw attention of the global industry to Egypt, a country that "still has many resources left to be explored and developed." With a lot that Egypt has to offer on the ground, "the event will be a unique chance for the IOCs to learn about our resources in different areas of the country. It is also for investors to see more promotion for our resources and to understand the enhancement and modification of the agreements," that will set the legal framework for any future exploration and production activities.

Immediate Opportunities in Egypt

The Technical Conference will explore the potential for the country and for the entire region and present all technical aspects related to different sedimentary basins. "In addition to the technical sessions, the conference will share updates on recent drilling and evaluation results and recent discoveries," said Abu Bakr Ibrahim. Furthermore, "exhibitors will present latest technologies for all sectors from upstream to downstream, including the most updated software and equipments."

Some of the sessions will reveal trajectories of exploration in some areas of the country, which according to the Chairman, "will be lessons learned for the IOCs," which will then be able to gain an overall picture of the immediate possibilities in Egypt. The ultimate goal is also "to update companies about Egypt's last years' progress on many other fronts." In addition, "model agreements will also be covered in some of the technical papers." As Ibrahim elaborated further, "the government is moving on

elaborated further, "the government is moving on in the direction to enhance and modify agreements to attract investors," which will reflect positively on previous years' efforts that the government exerted in open discussions and roundtables with the private sector in order to address all implicated challenges. "The government's objective is to meet and listen to operators in order to see how we can exploit our resources together through improved model agreements and larger inflow of investments," as lbrahim put it.

Onshore and Offshore Prospects

With new discoveries made, as Geologist Ibrahim explained, there are countless opportunities in the country and EGYPS 2017 will help the industry to showcase them for future projects. "No doubt the Mediterranean area has huge reserves of gas yet waiting to be discovered." But what is more appealing to a variety of possible investors is the plethora of hydrocarbon wealth hidden in other

areas of Egypt. "We have a lot of potential in the offshore areas, not only in the Mediterranean Sea, but also in the Red Sea, which has not been fully explored yet, as well as in Sinai and the remaining parts of the Gulf of Suez, the Eastern Desert and the Western Desert," added Ibrahim.

From the geological point of view, as the Chairman continued, "we have different sedimentary basins in Egypt and every basin has its own geological models and challenges." At the Technical Conference some presented papers will address these issues. "Some basinal areas will be highlighted like the Red Sea that has unexplored potential and most of our Western Desert is still virgin areas." The geological models will certainly come under a closer scrutiny during EGYPS 2017. The Chairman further added: "In the Western Desert, we believe, that basins from the Paleozoic age were not vet fully explored. These sedimentary basins are producing hydrocarbons in Algeria, Libya, and to the east in the Gulf countries such as Oman, Saudi Arabia, but not yet in Egypt. We are working very hard to prove it [the presence of hydrocarbon in the Paleozoic formations] in the Western Desert, especially in its western part."

Furthermore, new opportunities arise when one looks at "the southern parts of the Western Desert, which are not yet fully revealed either due to a lack of data and we are trying to acquire new geophysical data to explore it more in the next few years." Geologist Ibrahim believes that such prospect is realistic thanks to the availability of "advanced technologies and high capacity rigs to drill ultra deep wells." Yet, while "we have a plan to acquire relevant data from this area," there is an entire complex cycle with necessary risk assessments that will have to precede the drilling.

Accordingly, as Abu Bakr Ibrahim emphasized, Egypt is "to focus on both onshore and offshore areas," which are "equally promising." "Every basin has its own capability and its resources; in the onshore areas we have crude oil, gas and condensate, while in the offshore areas we have mainly gas and condensates," he noted.

A Variety of Contributions

The success of the conference will hinge upon contributions from different areas of expertise that will best embark upon new opportunities open for grab in Egypt. For these purposes, and under the leadership of Abu Bakr Ibrahim, the Technical Committee was responsible for selecting a variety of papers to diversify the conference input of experts, much needed in the current industry environment and for future speed of development of hydrocarbon sector in Egypt.

Accordingly, for more than a year, "more than 200 submissions were evaluated to select the best ones to gain the added value presentations that will deliver key messages related to each area in Egypt," said the Chairman. In addition to that, "every technical session has a chairman and a co-chairman to jointly organize the presentations" in an effective way and provide grounds for the evaluation team to assess the achievements of each session.

For Abu Bakr Ibrahim, "the measure of success of any conference with different contributions is to establish open debates among academics, local



NOCs, IOCs, and governmental representatives. The main advantage of the conference is to share ideas and solutions. It is the most important opportunity away from our day to day industry business."

Continuous Improvements

It is no secret that the first of its kind event in Egypt, The Egypt Petroleum Show, has an ambition to grow fast alongside the most prominent regional industry events. Chairman Ibrahim is convinced that "EGYPS 2017 will be a success" and that "we will see the same level of conference input as presented at other international events."

"The interest in EGYPS 2017 is enormous. It will be important for us to see the directions and intentions in which the IOCs plan to move on to grow their businesses," added Ibrahim.

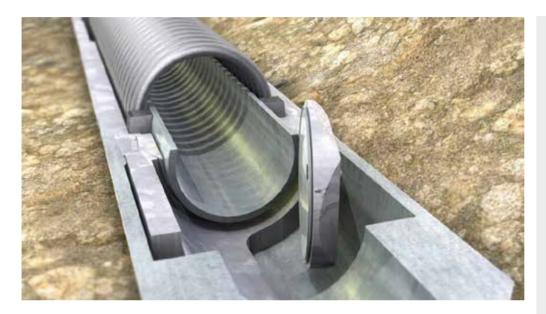
In his view, "there is no big barrier that could slow down the oil and gas industry in Egypt." "In fact, the petroleum sector in Egypt has never stopped, not even during the peak of 2011 revolution, when oil fields were producing uninterruptedly," as he noted. Since then, "Egypt has been continuously improving its status. We are renovating the infrastructure amidst established stability and security. Investments are still ongoing. Bid rounds signify progress with 76 concession agreements ratified and signed." All this combined will bone well for future prospects of the industry to attract new investors, most likely already at EGYPS 2017 in February.

With much optimism, the Technical Committee Chairman concluded saying that "Egypt has a strategic geographical location in the [MENA] region and in Africa. Eastern Africa is growing fast in terms of Exploration and Production and many investors would like to enter Eastern Africa through Egypt as we have technology, expertise and service providers. This can generate huge benefits for all involved players. I am very optimistic about the future."

The event will seek to deliver the key messages for the major oil companies. "Egypt is growing and will continue to grow to become a hub in the region for energy," to put it in Abu Bakr Ibrahim's words. | bakerhughes.com OVERVIEW

DeepShield Deepwater Subsurface Safety Valve

Install fail-safe protection in deepwater completions



The Baker Hughes DeepShield™ deepwater subsurface safety valve delivers fail-safe performance in completions that require low operating pressures due to control system limitations. The patented DeepShield operating system provides simple and reliable operation in the most critical applications.

The DeepShield safety valve is the industry's first V1-validated valve as defined in API SPEC 14A Specification for Subsurface Safety Valve Equipment, Twelfth Edition. Per this specification, subsurface safety valves must now undergo more stringent prototype testing than was previously required. With only minor modifications, the Baker Hughes subsurface safety valve prototype test program was able to accommodate the new V1-validation specifications, and continues to exceed the requirements set forth by API.

The DeepShield safety valve uses an integrated nitrogen-charged system that opposes the hydrostatic pressure acting on top of the piston.

Balancing the hydrostatic pressures ensures low operating pressures, even in deepwater applications. The dynamic seal configuration used for the operating piston represents a significant engineering achievement that uses reliable, field-proven sealing technology designed for nitrogen-charged safety valves. The valve features a patented operating system capable of closing in all applications, even if primary nitrogen chamber pressure is lost.

To ensure long-term nitrogen containment, the DeepShield valve includes an enhanced dynamic seal configuration, upgraded dynamic seal materials, increased volume in the secondary chamber, internal alignment enhancements, redundant seals in the fail-safe piston, reduced leak path in primary nitrogen coils, and upgraded materials for low-pressure sealing performance of the check seats in fill ports. An energized scraper ring minimizes ingress of debris in harsh environments, and a stronger power spring is also available for higher closing force in heavy debris applications.

Applications

- Completions requiring low operating pressures due to control system limitations
- Remote subsea wells
- Deepset wells in dry-tree applications
- Completions requiring a V1-validated safety valve

Features and Benefits

- Field-adjustable primary nitrogen chamber
 - Enables last-minute adjustments to match changing well conditions
- Two independent, patented operating systems
 - Offer redundancy to maintain dependable valve operation
 - Ensure fail-safe operation in critical applications
- Same moving parts as a conventional tubing-retrievable subsurface safety valve
 - Simplifies operation
 - Increases certainty
- Piston wear bearing and scraper ring
- Minimizes ingress of debris
- Maintains functionality in harsh, debrisladen environments
- Low operating pressure at any setting depth

 Padvess operating system cost
 - Reduces operating system cost
- Baker Hughes RBT metal-to-metal thread technology
 - Provides gas-tight sealing in harsh environments
 - Enables high tensile rating
- Optional integral control line
 - Offers clean and trouble-free operation





NEW PARADIGMS IN MANAGING OIL&GAS PROJECTS

By Amira S. Badawey

ighlighting the importance of sound project management in the oil and gas sector, the Egypt Petroleum Show (EGYPS 2017) has dedicated a specific category on the topic, which will be discussed by experts, industry professionals and executives during the conference's Technical Sessions

Compromising of large ventures that span multiple years and with momentous outcomes, the oil and gas sector represents a huge challenge for project managers. Imagine the amount of manpower and effort put into the construction of an undersea pipeline or oil refinery complex. Furthermore, adding to the complexity of oil and gas projects is the strategic significance of the outcomes of these projects to nations and economies. With billions of dollars invested in exploration and production, any delay or change in an oil and gas project can have an immense impact, in addition to heightened environmental and safety risks.

Experienced and talented project managers are a must, but they are not enough to ensure the successful delivery of projects in oil and gas. Strict and disciplined project management habits are crucial. Successful managers of large projects follow a coherent, consistent reference framework that guides their decisions and processes. Successful companies also continuously improve their general

project management skills, as well as skills specific to oil and gas.

The Project Management Institute's (PMI) framework remains the de facto methodology applied in the sector, with oil and gas project managers seeking Project Management Professional Certification (PMP). Although the PMI incorporates new project management concepts in every edition of its Project Management Body of Knowledge (PMBOK) reference material, PMI's framework mainly centers on the more conventional waterfall model. With other project management concepts, such as Agile, emerging over the years, the question remains whether or not the oil and gas industry can benefit from these advancements.

The Nature of Oil&Gas Projects

The success of any project is assessed by the completion of the required scope of work to the agreed upon standards of quality, within the agreed upon timeframe and budget. Accordingly, these three factors of scope, time, and cost also stand as a comprehensive measure for the magnitude of projects. Based on this, projects within the oil and gas sector are enormous. However, the notion of an oil and gas project is too ambiguous, as this can be the execution of development plans for oil fields, the construction of a gas pipeline, or building a petrochemical factory. In order to identify how oil

and gas projects can benefit from advancements in project management, we must first define what a project in the sector is.

Projects under the midstream and downstream segments of the industry are more akin to construction projects. According to The Contractor Civil Engineering Home website, these projects have specific targets, with construction occurring in a routine manner that consists of a number of associated activities contributing to the project as a whole. The timeframe of such projects are limited. with a high degree of predictability in defining completion dates. As is the case with any project, the construction of a pipeline or facility does bare some risks. Yet, civilizations have been building structures since the days of the Colosseum and Pyramids, therefore the construction industry has centuries of aggregated knowhow to identify and mitigate potential setbacks.

On the other hand, the exploration of petroleum and mineral wealth has only been around for slightly longer than 150 years, with the first successful use of a drilling rig on an oil well occurring in 1859 in Pennsylvania, according to the American Oil&Gas Historical Society. Furthermore, upstream discoveries are associated with significant investments to ramp up oil and gas production. Bain & Company's report titled 'Large Project Management in Oil and Gas'

states that an offshore facility in the Arctic can cost more than \$3 billion. Furthermore, such projects involve many stakeholders, including shareholders, local authorities and regulators, and environmental and community advocates. Schedules are also compressing. The report further explains that "for one oil company, more than 90% of its field discoveries from 2009 to 2011 were due online in less than eight years."

Of course, oil and gas companies do not manage only one concession at a time. Firms' portfolios include hundreds of complex explorations traversing the globe. Companies prioritize these developments not only on financial goals and risks, which include execution, commercial, health-safety-environmental (HSE), and reservoir risks, but also increasingly based on the availability of scarce resources like engineering talent. With the size and the strategic nature of exploration and production, the most benefit from advanced project management techniques can be incurred in the upstream segment of the industry.

Conventional Project Management Methodologies

Traditional project management has explicit, high visibility processes for planning and executing work, with implicit, secondary visibility processes for communicating and problem solving. A project-based methodology is a consistent approach to warrant that, all features are included, assessed and recorded. Therefore, the application of project management techniques will be proven advantageous only when organizations succeed in carrying out projects to completion and yielding the desired results, with the main benefit in the form of better risk and stakeholder management. The oil and gas industry has long been benefiting from traditional project management concepts.

In complex oil and gas endeavors, project cost, timeframes, and quality are stressed to meet the demand of various stakeholders. Furthermore, oil and gas companies utilize portfolio management to administer the projects under execution. Accordingly, a portfolio consists of projects that are clustered together in order to manage them more effectually, and ultimately accomplish corporate aims. In their report titled 'Project Management in Oil & Gas Industry', Sunitha Katna, Edward Rose Cooper, Emmanuel Ukpong, and Richard Tuin cited that "the primary advantage of good portfolio management include improvements in financial performance, asset engagement, and transparency." Additionally, the report advocates that "projects in a portfolio should be categorized, so as to line up projects with the overall organizational strategy, and rank for better resource and funding allocation decisions.'

Based on a case study of a project in the Sultanate of Oman operated by Portugal's Partex Oil and Gas Group, Zarina Kenzhetayeva pointed at that the oil and gas industry only applies selected risk management tools to projects rather than the complete framework as stated by the PMI. In her

"Today's capital projects need to find a balance between yesterday's best practices and complete flexibility."

Dick WestneyFounder and CEO at
Westney Consulting Group

'Project Management Methodology and Tools for Oil Field Development: From Investor Point of View' study, Kenzhetayeva stated that "oil firms rely more on specific risk management techniques, such as Monte Carlo simulation and economic analysis and modeling." This comes mainly because risk in oil and gas projects are viewed as commonly associated with the application of the specific standards concerned with prevention of hazard risks such as oil spills, fatal accidents, and workforce injuries.

Furthermore, the propagation of offshore projects, specifically in the West-Mediterranean region, has encouraged firms to share lessons learnt in various discoveries. This share of knowhow spans service companies across the upstream value chain starting with the collection of seismic and geological data, leading to drilling and production. A report titled 'Project Management of Offshore Well Completions' by a group of oil and gas professionals in Texas, Trinidad and Tobago, Angola, and Malaysia found that "achieving a successful offshore completion required a closely integrated, multidisciplinary project-management team comprising personnel from the operating company, drilling and service companies, and equipment manufacturers." After agreements were finalized, it took the involved teams about 24 months to analyze technical parameters and obstacles, determine the completion strategy, design and manufacture the completion equipment, perform thorough testing and finally install the completion in the well. Close integration between the service company and operator was critical to achieve success in a timely and economic manner, especially for challenging deepwater fields. Project managers have a birds eye view of progress being made by various teams, and therefore can assure better coordination and collaboration as needed, as well as exert tighter controls.

Towards a More Agile Industry

However, traditionally defined project control mechanisms require project scope to be broken down into well understood, discrete, interdependent tasks. This is ideal for activities where there is a clear picture of the final outcome and where there is low likelihood, requirement, or desire to accommodate change. Agile Project Management methods, on the other hand, offer an empirical control model that works through frequent inspection and adaptation. something that can be more suited for recent oil and gas discoveries. Agile Project Management pays equal attention to communicating and problem solving as it does to planning and execution. There is upfront acknowledgment that requirements are not knowable in advance and that building feedback loops will be necessary to uncover definite requirements.

Kate Parker of Agilis Project Intelligence believes that an Agile approach to project management can offer value to the oil and gas industry. She pointed out that specific technique such as Kanban (Japanese for signboard or billboard) will allow petroleum companies to track progress of longstanding items through a process and let status, progress, priority information, and areas requiring attention to be easily shared among project participants and stakeholders. Furthermore, Scrum or Scrumban ensures the efficient completion of work in order of its value to an organization within a fixed timescale or budget.

Mike Griffiths, an Agile consultant and trainer, stated that Agile techniques are a "natural compliment and fit" with lean processes, "especially well with the unique problem solving and collaboration needed to undertake complex projects." However, he explained that oil and gas projects represent a unique blend of knowledge worker challenges that are a great fit for Agile, and industrial engineering that requires traditional approaches. Accordingly, he recommended combining techniques to best

suit specific needs, and to provide mental models to facilitate planning and problem solving. Griffiths sees that activities like the collaborative work of geologists and geophysicists as a better area to use Agile methods to collaborate on solving complex problems and gain consensus on the direction to move towards. After determining an area to explore, the execution of a seismic survey might involve mobilizing a large workforce of several hundred people and scheduling constrained equipment. While this can be done in an iterative, prioritized manner, many of the benefits of short iterations, reviews and adaptation are diminished so a hybrid approach is preferable.

Dick Westney, Founder and CEO at Westney Consulting Group, agrees. He stated that, "today's capital projects need to find a balance between

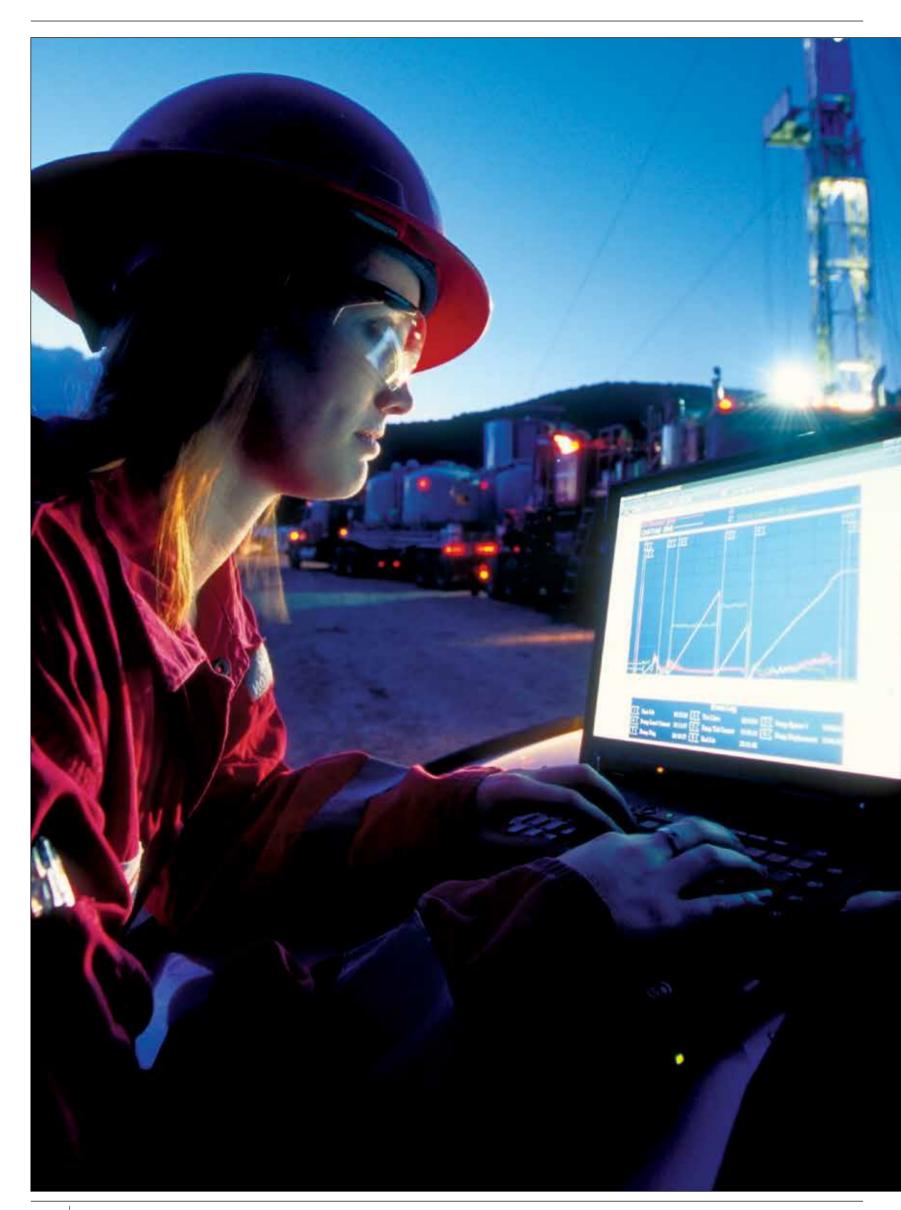
"The primary advantage of good portfolio management include improvements in financial performance, asset engagement, and transparency."

Sunitha Katna
Edward Rose Cooper, Emmanuel
Ukpong, and Richard Tuin.
Project Management in Oil & Gas
Industry.'

yesterday's best practices and complete flexibility." Yet, the challenge remains in understanding how to combine the iterative, problem solving knowledgework with the linear, predictive industrial-work in a way that stakeholders can understand and embrace. The oil and gas industry needs a holistic model, suitable for complex life-cycles that have consistent communications, but flexibility for specialization.

Success in petroleum projects will require a combination of evolving technologies, human resources expertise, and strong project management methodologies to provide investors with tools to manage and respond to unforeseen changes. If a project has a poor project management framework, it can cause unfavorable consequences such as loss of the project value and damage of business relationships with partners and governments. On a contrary, adequately used project management tools can increase the chance of project success and shareholders satisfaction.

Oil and gas companies should work on bringing an Agile mindset to delivering organizational and project objectives. However, getting divergent groups to adopt a consistent methodology is difficult and potentially sub-optimal. Groups need the freedom to operate using their industry's best practices and also have a say in work scheduling. Forcing a group to adopt a new approach whether it is Aqile or traditional will generate resistance and obstacles. While executives want to move quicker and more accurately, companies need to balance the mindsets and risks of "Look before you leap" and "Cross that bridge when you come to it". Engagement models that balance both approaches, but also provide integration points can help organizations to become more Agile, while maintaining their traditional edge.



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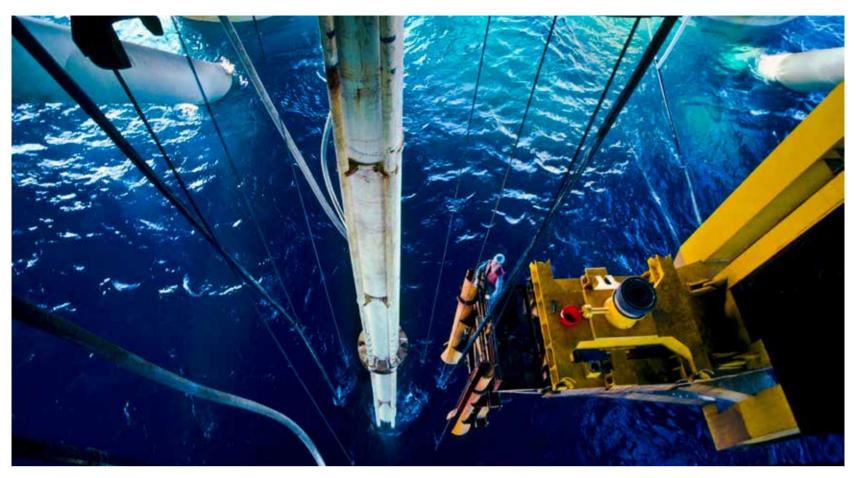
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MODERN INNOVATION IN OFFSHORE TECHNOLOGY

By Salma Essam

he steady increase in global energy demand has long made oil and gas major sources of world energy. In spite of some speculations, petroleum resources are plentiful, particularly in deep waters. Therefore, rather than availability of hydrocarbons, the most troubling question for the IOCs nowadays is related to safe and efficient extraction. And this is where technology plays a key role in offshore drilling. As Egypt is due to host the biggest annual conference for the oil and gas industry in the region, EGYPS 2017, offshore technology and operations are two cardinal themes of the Technical Sessions. The debate is to ensure that today's offshore technology reflects the actual requirements of the industry.

As Egypt is looking forward to start production from its deepwater Zohr field, the country's credentials as an offshore producer are promising. With this comes the need for advanced technology and know-how techniques that the country will inevitably be required to apply. And this is where The Egypt Petroleum Show is to present the existing innovative technologies available for the offshore segment, address offshore challenges, and discuss future technological prospects. In this sense, it is recommended to consider novel technologies that different IOCs have recently introduced for successful offshore development.

Booming Rigs Sector

The technological progress in the oil and gas industry has evidently contributed to the high success rate of locating and extracting oil across the globe. However, many offshore-rigs-focused companies have taken long time to embrace new technologies since that they preserved their traditional designs. This has imposed financial burden regarding their maintenance cost. In addition, ageing rigs produce potentially low output.

In the context of rising demand on oil and gas production, companies have no other choice but to adapt to the visible progress that the offshore rigs have been recently witnessing. Noticeable is

the highly improved productivity of new rigs that contributed to maximizing output thanks to news designs and functional structures. For example, Australian McKay Drilling has completely changed its operational structure by implementing "various state-of-the-art changes to the rigs," according to Spencer Ogden's report. In this sense, McKay Drilling General Manager, Brenton Wallace, said: "There's quite a lot of innovation going on throughout the whole business, from small changes to the master changes in the drill rigs." He further emphasized the importance of reacting to the market needs through innovative technology. Stressing that it is important to have the ability to change the way any oil company operates, Wallace further noted: "Whether there's a boom or a recession and if there is a requirement for new technology we can interact with it very quickly." The oil and gas industry's trends are not constant. It

is therefore always difficult, even for oil analysts, to affirm where the market is going a year from now. Especially because the prices are unstable, which in turn affect the supply and demand forces. However, throughout the last decade, profitable businesses in the oil and gas sector have adopted a strict approach towards improving operational performance of offshore facilities. Achieving objectives of safety and efficiency have been a direct result of superior machinery and technological application. Drilling safety continues to be a top priority for many companies who are building newer rigs in adherence to environmental standards as well as operators' safety. Drilling Sales Director of Spencer Ogden Americas, Alastair Cole, said: "The development of technology in the offshore drilling sector has increased efficiency and the exploration reach to find hydrocarbons. Beyond this, the constant development of technology is largely based around increasing the safety of these operations to ensure the crew and the environment remains safe."

The 2014 decrease in oil prices was followed by a decrease in the drilling rigs demand as well. This drop has prompted different offshore contractors to retire their old assets. As a result, the improvements

in the offshore exploration project had to be brought about by the technologically advanced fleet of rigs that were introduced to the oil and gas market. Canada stands out as an example for healthy growth in offshore rigs since that the confidence of the Canadian oil and gas contractors is growing and a boom within the sector is imminent. In the World Oil's report on Global Rig Utilization, published in November 2016, it was stated that many companies improved drilling machinery and different assembly systems in efforts to increase productivity and enhance safety measures.

Vibration Analysis Technique: Importance & Challenges

Offshore deepwater drilling along with unconventional offshore oil and gas exploration and production activities will continue to grow. This comes in line with meeting increasing demand for energy and addressing shortfall in mature conventional onshore oil and gas fields in the world. Thus, most complex and highly effective marine technologies and products are required to enable the oil and gas industry to flourish and expand. Every offshore platform will need to be supplied with suitable

"There's quite a lot of innovation going on throughout the whole business, from small changes to the master changes in the drill rigs."

Brenton WallaceMcKay Drilling General Manager

machinery. For example, North Sea operating drilling rigs need to be designed for harsh environments and should meet rigorous specifications, which is not the same case in less tougher environments such as offshore drilling in the Middle East.

In return, improved systems are championing the work environment in offshore operations and becoming the new standards in the sector. According to The Importance of Technological Innovation in the Drilling Industry, a report published by Spencer Ogden in January 2016, the industry statistics show that up to five years ago, it took around nine months for oil companies to produce oil compared to today's standards. Nowadays, many drilling sites are recording extraction within a period of 30 days or even less in some cases, thanks to more advanced marine machineries.

Therefore, it becomes of extreme importance to carry out frequent maintenance for the machines. In today's offshore industry, vibration analysis is a common practice. A multinational oil and gas service company, Wood Group, explained on its website that "structural vibration occurs when dynamic forces generated by compressors, pumps, and engines cause the deck beams to vibrate. This vibration leads to piping failures, poor equipment reliability, and safety concerns." This vibration occurs due to the structure being mechanically resonant.

Indeed, carrying out vibration analysis on machines is important to control as well as reduce the probability of unexpected shutdowns occurring due to unplanned machinery failures. Vibration in oil and gas assets has been a significant issue for many offshore platform operators as piping failures and poor equipment reliability, in turn, lead to huge production losses.

In these veins, Emirati Giant Zakum Development Company (ZADCO) has stricken a deal with Xodus Group of around \$270,000 to perform innovative analysis on the offshore North Satellite platform. The platform's infrastructure has been excessively utilized and has needed effective maintenance. In this sense, ZADCO's Operation Support Vice President for Maintenance, Mohamed Abdulrahman Al Marzouqi, told Spencer Ogden: "The need to manage long term performance and issues has led ZADCO to seek out a more economical future development concept. Reducing vibration has been a major challenge for us as we have increased production on these ageing assets in recent months."

Nevertheless, vibration analysis technology is not easily applied for two reasons. First, offshore operators tend to encounter specific challenges that arise due to daily management of the drilling platform. Offshore personnel are typically present around four weeks at the platform and four weeks they are off. This means that the time spent at the drilling site is limited, which makes it difficult to train and qualify the workers to carry out efficient vibration data collection. Safety may be risked in hazardous areas in case handheld devices were used by unqualified staff for the collection of vibration readings.

Second is the cost of hiring an external partner, such as the aforementioned case of ZADCO. The entire process of vibration data collection, if subcontracted for a year, is likely to be an unsustainable option. In addition to the skyrocketing costs of transporting highly trained service engineers to offshore platforms through helicopters, the process itself is time-consuming and needs a lot of planning.

Hence, companies need to address and contain these challenges. Specifically in the offshore industry, it is required to ensure high integrity in data collection, especially when vibration data are carried out off the platform by analysts or even external service providers. The analytical reports are a basis for business strategic decisions whether or not to extend the inspection interval of equipment and machinery under maintenance. With that explained, it

is of great importance for the vibration data collection to be short and easy. In its press release The Offshore Challenge, German giant service company, Pruftechnik, recommended that "offshore operators keep vibration data collection as easy as possible in order to decrease the exposure to risks." In other words, vibration data collection must be quick and reliable. Therefore, online monitoring systems for data collection offer better vibration data collection since that it automatically observes the health of the equipment.

If the operator is short of highly qualified staff, it is essential it hires a subcontractor to carry out the job instead. The operator therefore should allocate part of the project's budget for the needed technology required to ensure the safety of the offshore machines and equipment used.

BP: Applied Material Science

Safety remains on top of the industry agenda, as shock waves from different offshore disasters continue to reverberate. The petroleum industry has been under scrutiny as the community's expectations are high with regards to safe drilling activities. Never in the history of the oil and gas industry will anybody forget BP's oil spill disaster that happened in 2010. It brought about serious environmental damages, threatening the marine life in the Mexican Gulf, and dragging BP's CEO to interrogation. Since then, offshore drilling has been equipped with optimum technologies in attempts to meet safety and efficiency measures.

Giant British Petroleum has been investing in technology programs that enhance offshore safety, improve exploration and production, and boost conversion processes. The company invested \$100 million in its one of a kind International Center for Advanced Material (BP-ICAM), which aims to "advance the fundamental understanding and use of materials across a variety of energy and industrial applications," in efforts to develop high performing equipments.

One of the leading advances BP has been working on is the development of stronger steel, which is essential for the infrastructure of the oil and gas industry, since that the quality of infrastructure material such as pipelines ensures the safe transportation of extracted petroleum products and life longevity of transport system. As hydrogen is highly reactive and combines readily with metals, scientists at BP-ICAM are developing chemicals that map the surface of carbon steel, which will help identify where the dangerous hydrogen lies in the microstructure. These chemicals will help pipelines to be more resistant to corrosion and will extend their durability. In turn. offshore pipelines tend to be resistant to any leakage incidents that may harm the marine life, hence meeting environmental standards and extracting the highest amounts of oil and gas.

Positive Prospects for Offshore Sector

The future of offshore drilling remains bright, particularly driven by the steadily rising energy demand. It becomes critical for oil and gas companies to show planning and financial commitments towards technological advancements that help ensure offshore operational safety in today's unpredictable market. In tough and challenging sectors such as the offshore industry, equipping the workplace with modern machinery is essential for the safety of the personnel, the marine life and for the efficiency of exploration and production activities. Therefore, embracing top-notch technologies, combined with involving local and international expertise, will act as a benefit for oil companies which will help them carve a reputation for high quality and up-to-date technology. That said, advanced technology proves to be the tool for wide and extensive deepwater oil and gas industry. Egypt can accelerate its deepwater development through an effective technological application and advanced offshore innovations.

CLARIFYING THE NEW INVESTMENT LAW AT EGYPS 2017

EGYPS 2017, the international petroleum conference that will be held for the first in Egypt supported by the Ministry of Petroleum and Mineral Resources, is the most important event of the Egyptian government in this year. This conference will be the gate that connects the Egyptian petroleum sector with the international one if it succeeded in attracting foreign investments. The Egypt Petroleum Show is organized for the benefit of the oil and gas industry to push the sector to achieve further growth and see progress on the worldwide level.

At the event, the Oil Ministry should explain the new Investment Law, which is considered one of the most important sources of confidence for IOCs. The pros and cons of the law should be displayed in a transparent manner to the participating IOCs. Explaining the new law is the first step to attract foreign investments to Egypt during the coming period.

Moreover, the ministry should present the latest modifications to the recently signed petroleum agreements with foreign partners in order to convince them to enter into new joint partnerships with the Egyptian oil companies in the coming years.

The officials of the Ministry of Petroleum should make use of the presence of more than 400 exhibiting companies and 10,000 professional visitors from the Gulf countries, Middle East, North Africa, Europe, Americas and Asia, to strengthen their relationship with the Heads of those companies.

The Egyptian national oil companies also have an important role to play in consolidating the professional relationship with IOCs, especially in the presence of engineering and procurement contractors and petroleum construction contractors from Arab, African, Asian, and European countries. They also need to focus on building a functional relationship with consultants and funders to build on those companies' experience.

It is crucial to discuss the growing opportunities in the field of energy in Egypt and North Africa and in line with that debate the requirements of future projects in the oil and gas sector in Egypt and the short and long term strategies for solving the recurring energy crisis.

By Medhat YoussefFormer Vice President of the Egyptian General
Petroleum Corporation



COGENERATION IN REFINERIES: A STEP FORWARD FOR ENERGY EFFICIENCY

By Mariana Somensi

opulation growth and rising living standards have continuously increased Egypt's energy demand faster than the capacity of supply. Since the country's main source of electricity is natural gas, improving efficiency in the oil and gas power generation is extremely important to overcome Egypt's ongoing energy shortages and preserve its natural resources.

A highly effective approach to improve energy output is cogeneration; combined heat and power (CHP). Cogeneration takes the wasted energy from the industrial processes and reuses it for electricity and heat from a single fuel source. Refineries worldwide have shown successful results in energy efficiency when combined with cogeneration. When crude oil is refined into lighter products, the refining facility produces a great amount of heat and gases. CHP generators use the wasted heat and industrial gases released to produce electricity and steam to cover its demands onsite. Produced electricity can also be added to the national grid.

Given its importance, CHP will be part of the topics discussed by specialists at the Egypt Petroleum Show (EGYPS), which will be held in Cairo.

Egypt has a great number of refining facilities, which ranks the country the second biggest in Africa. The efficient application of CHP in the Egyptian refineries thus displays a high potential for the technology to play a remarkable role in the oil and gas power generation. Through CHP, the country can benefit not only from energy improvements, but also from cost and fuel savings.

Natural Gas Savings

A research by the Microgrid Institute suggested that CHP provides simultaneous thermal and electricity generation, which could cut energy consumption by 35% when compared to having the two tasks done separately. Another research by the Pew Environment Group showed that doubling CHP generation in the United States by 2020 would also eliminate the need for over 200 mid-sized power

plants. "When compared to large baseload plants, CHP is a step forward in efficiency gains" and in how energy is produced, according to the US Fresh Energy Organization's Energy Performance Director, Will Nissen, cited by Mid West Energy News.

ExxonMobil is one of the major oil and gas companies that have adopted CHP as a standard feature in many of its facilities throughout the world. The company has interests in approximately 5,500 MW of cogeneration capacity at more than 100 installations, which is an equivalent to the annual energy needed to power 2.5 million US homes.

In Egypt, electricity is mostly generated from natural gas. Ministerial data of 2013/2014 pointed that natural gas accounts for 77.8% of total fuel consumed in the country, from which 75.2% correspond to the fuel consumed by the power plants connected to the gas network.

Therefore, applying cogeneration to the vast refining field in Egypt would directly affect and reduce the natural gas consumption, since it would add another significant source of electricity.

Trade Balance

Decreasing the amount of natural gas used in power generation is extremely important for a nation that has been struggling to stabilize its oil and gas trade balance. With reserves greater than that of Norway or Canada, Egypt began to export gas in the early 2000s. However, the production downturn made it go from being a booming exporter to an importer a decade later. Even with massive discoveries, such as the Zohr offshore field, the largest findings in the region, the trade balance is still a center of attention since the country's population is growing considerably and power consumption rapidly increases also due to low subsidized energy prices.

Egypt requires an action to reduce imports and help rebalance its trade budget. The extra electricity production from the CHP generator in refineries can assist this reduction, which would not only save finances that cover costly import, but also assure

the country's natural gas resources last for longer.

Decentralized Generation

To date, Egypt's full energy capacity has been barely enough to accommodate the demand. According to the Middle East Economic Survey, in 2015 the country's supply was 31.45 GW, which was slightly higher than the peak demand of 30 GW. However, the country has been unable to make full use of its total installed capacity due to energy losses.

The Egyptian Electricity Holding Company (EEHC) pointed out that electricity is being lost during distribution because of considerably aging network. Therefore, connecting cogeneration facilities to the refining plants can significantly reduce this waste, since the energy used onsite would not need to be distributed from the grid.

Moreover, decentralizing forms of electricity generation, with the use of CHP, increase flexibility of system use. Employing CHP is an opportunity to diversify generation, which results in a more robust system that allows more reliable, efficient, and cost-effective use of steam and electricity onsite. Such decentralization also improves local and general security of supply, which minimizes the risk of refineries being left without supplies of electricity and/or heating during operation.

Environmentally Friendly

All the energy benefits of cogeneration previously mentioned also provide an enormous positive impact on the environment. As stated by the European Association for the Promotion of Cogeneration (COGEN Europe), CHP is the single biggest solution to the Kyoto's targets.

In gas-turbine-based cogeneration, there is a very high excess of air – compared with only 15% for the boiler. This high excess air ensures complete combustion, which considerably decreases some harmful emissions, such as carbon monoxide and unburned hydrocarbons. The emissions of carbon dioxide (CO2) are also drastically reduced due to lower consumption of fossil fuels.

The Climate Investment Funds reported that Egypt is among the 11 fastest growing greenhouse gas (GHG) emitting countries in the world, and 70% of GHG are generated from electricity and transport. In 2013, the emissions of CO2 reached 2.4 metric tons, according to the World Bank data, and an increase of 300% in emissions is expected in 2017.

It is therefore important to remember that Egypt's population is growing quickly, which means that the quality of life in the country can be extremely compromised by the equally fast growing polluting emissions. CHP generators at the refineries would, once again, help Egypt remediate this problem and assure the oil and gas sector meets its environmental responsibilities.

ExxonMobil, for instance, stated it has been reducing CO2 emissions through cogeneration by about 9 million tons a year compared to traditional methods and buying electricity from the market. Similarly, in January 2016, Mexico's state-owned oil giant, PetroleosMexicanos (Pemex), also announced its plans to invest \$3 billion in cogeneration for refineries. The initiative was part of an overall spending of \$23 billion in downstream projects to enable the reduction of 7 million tons of CO2 emission a year the country produced.

Barriers of Implementation

Even though CHP generators are promising facilities for the Egyptian refineries, some important aspects must be taken into consideration in order to overcome the barriers in the implementation.

In the early 2000's, Ihab El Massry, who has specialized in studying, developing, and implementing Clean Development Mechanism (CDM) projects in Middle East and North Africa (MENA) and South Asia, published a detailed study on the application of cogeneration in Egypt, and highlighted the main adaptations to be made to apply CHP technology, which still needs to be considered nowadays.

According to El Massry, cogeneration projects are

usually complex and require a high level of research, design, installation, and operation. Aiming to meet these requirements, Egypt would have to improve the available assistance for project identification, installation, financing, and implementation. Since the majority of end-users do not have the engineering capability to design and/or install cogeneration systems, the country would have to invest in professionals with cogeneration specialization and updated technology. In the long term, this investment would not only enable CHP application, but would also result in a more developed engineering field.

Another aspect that might discourage betting on cogeneration at refineries is the considerable cost of the facility in its initial phases. However, the fear of investing in cogeneration highlights a lack of enduser awareness on the prospects of the system. In his study, El Massry defends the notion that to attract end-users, "there must be a wide dissemination of the saving results that cogeneration can achieve, so that the idea that it is not cost-effective can be overcome." As mentioned before, cogeneration provides electricity and fuel savings, which results in significant cost savings. This would translate in Egypt to savings in power generation and natural gas imports.

Furthermore, the North African country would also have to improve its system organization. Communication channels between company management and plant engineers are currently insufficient, and the maintenance of this dialogue is extremely important to assure that potential gains in efficiency are not lost.

Moreover, CHP units would have to be allowed to operate in parallel with the national electric grid and sell back the excess power to the grid. However, there is a risk that sell-back price will be lower than the actual cogeneration system fuel cost. Industrial end-users normally pay an energy charge and a maximum demand charge in case of selling-backs. In case of running the cogeneration plant in parallel

with the grid and using the grid as a back-up source, in addition to the previous two charges, end-users would also have to pay a stand-by charge.

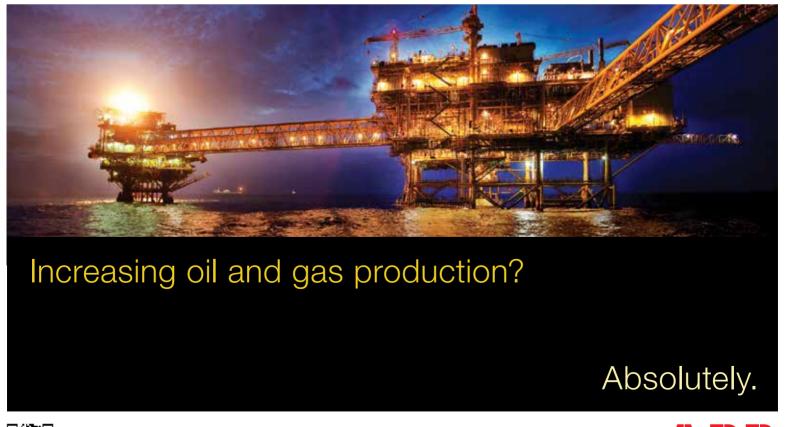
El Massry, however, stressed that the biggest challenge remains the tariff subsidy in Egypt. Egyptians enjoy energy tariffs that are bellow the world market levels. The subsidized scheme makes CHP projects harder to be applied, since the actual value of the energy produced would not be reflected in the price currently paid by consumers.

Briefly, Egypt must go through five points to successfully propose CHP projects for its refineries: the project financing, sell-back price, stand-by charge, utility price – which consists of electricity and natural gas, and the environmental concepts to make it more attractive.

Time for Improvement

Although the mentioned adaptations required might make the implementation of CHP generators in refineries seem a little daring, Egypt would end up losing many investments in the energy sector if it does not upgrade its technology and energy market in the long-term. The aging distribution networks, which have been causing energy losses, are a clear example of how the lack of innovation can affect the country in the future.

All the benefits of cogeneration turned the technology into a growing feature in the oil and gas sector. Concisely, from the industry perspective, cogeneration would enable fuel and energy savings, which can also significantly reduce costs. From the national perspective, the method can remediate Egypt's distribution losses as CHP is more cost-effective than a central power station, reduces the grid peak demand, and results in a more robust and reliable electricity system. Additionally, it represents a great improvement for the environment, since it considerably reduces polluting emissions.





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OPTIMIZING EXPORT OF REFINED PRODUCTS

By Shaden Esam Aldin

gypt's geographical location allows the country to become a key regional exporter of refined products. This dream can become a reality for the country in a near future. The Egyptian refineries overall designed capacity amounts to 704,000 b/d, according to EGPC, which would qualify the country to become petroleum derivatives exporter. In search for ways to achieve this, The Egypt Petroleum Show (EGYPS 2017) will open up the floor to discussions about apt strategies for this path.

The Technical Conference will host several sessions related to the refining sector on Day 2 and Day 3 under two umbrellas: Marketing and Distribution of Refined Products; and Downstream: Refining, Petrochemicals and Fertilizers Technology and Operations. The industry leaders will engage with international experts and foreign investors in a plethora of topics that could lead to an improvement in refined products exports.

The future of Egypt's downstream business, indeed, hinges upon such expert debates and innovative solutions that can contribute to expanding on the sector's potential and present capacities, while at the same time helping rationalize the consumption-production dynamics in the country.

Domestic Demand for Derivatives

Egypt has the largest refining capacity in Africa. However, the refined crude oil output has been steadily declining, which was a result of several factors related to the volume of produced crude oil and limited utilization of refining capacities to mention a few.

Egypt has also been recognized as the largest petroleum products consumer on the African continent. Domestic consumption due to the population growth has massively impacted on Egypt's capacities to gain revenues from petrochemical exports. Subsidies were another factor in the equation. "Energy, of course, has to be affordable, but not so cheap as to result in waste or because of subsidies indiscriminately given to rich and poor as to inflict on the government a crippling budgetary burden," noted Prof. Robert Marbo, Fellow at St. Antony's College in Oxford and Former Director of the Oxford Institute for Energy Studies in his report 'Egypt Oil & Gas: Some Crucial Issues.'

In addition to the volumes of crude oil available in the country and local consumption, from a macro perspective, the dynamics of the petrochemicals sector are also closely tied to the global oil prices. This is again of relevance to Egypt that imports crude oil for its refineries. Securing supplies of crude has turned to be a complex issue to resolve. The most recent deal Egypt has sealed was the one with Iraq that will deliver 1mb/d of light crude oil to the North African country as of January 2017.

In light of all this, Egypt's petroleum products export is thus lagging behind what the country may wish to achieve and what it in fact has capacities for.

Declining Export Capacities

The export of refined products in 2014 generated \$6.84 billion in crude petroleum and \$1.34 billion in refined products, according to the Economic Complexity Index (ECI). However, since then, "Egypt's exporting status of refined products is falling under pressure of the continuous increase of the local demand of transportation fuels and other sources of energy," said Eng. Farouk Qandil, Consultant for Refining and Petrochemicals in an email interview with Egypt Oil&Gas.

A 2014 report by Ken Research stated that the nation exports 100% of its domestic naphtha production, which ranks Egypt as the fifth largest naphtha producer in the Middle East region, however, experts argue that this may no longer be true. Given the exponentially growing local demand, the Egyptian General Petroleum Corporation (EGPC) "ends up with only certain amount of naphtha streams for export,

which also varies based on the yield of light and heavy naphtha in the available crude oil feeds and its utilization to get the required formulations of the grades of local gasoline," Eng. Qandil explained.

This decline in exporting capacities necessarily creates "a significant burden on the state annual budget of about \$4 to \$5 million," as Eng. Qandil added.

With declining crude oil production and rising domestic consumption of refined products, the country's import-export strategy is calling for modifications if Egypt intends to boost its cash flow from exports and limit costly imports of petroleum derivatives. Yet, for exports strategy to be optimized, the first step is to increase refineries' production capacity, as the government has identified and has engaged with an overall restructuring plan to expand their outputs.

According to EIA report from June 2015, Egypt has the largest oil refining capacity in Africa, yet the country's refining output declined by 28% from 2009 to 2013, amidst growing domestic oil consumption. As a result, Egypt imports expensive petroleum products to make up for the shortfall and pay for those in lacking foreign currency.

In 2014, Egypt imported about 145,000 b/d of petroleum products, while exported approximately 60,000b/d, according to Global Trade Information Services. The gap of 75,000b/d that emerged in that year prompted the Oil Ministry to design a new strategy to cope with the challenges. At the end of 2016. Eavpt's imports bill for petroleum derivatives including benzene, diesel and mazut still reached EGP 13 billion a month, a sum that translates negatively into the ministry's balance sheet, especially that the country possesses refining capacities not only to satisfy domestic market, but also to aim for exports. Similarly, "EGPC is forced to import significant additional amount of high octane gasoline, diesel and ATK above the production of its refining system to cover the local demands of transportation fuels. further noted Eng. Qandil.

Even though EIA had estimated that Egypt's refining capacity is likely to increase in late 2015 or in 2016 when a new 85,000 b/d refinery constructed by the Egyptian Refining Corporation (ERC), was to begin operations, in November 2016, the discrepancy between designed refining capacity and used capacity persisted.

By the end of 2016, the Egyptian Minister of Petroleum, Tarek El Molla, stated that the ministry has estimated the unused capacity of Egyptian refineries at 6.7mt/y of crude oil. While national refineries' annual operational capacity is in fact 33mt/y of petroleum, they are currently using merely 26.3mt/y, as Egyptian Al Borsa Newspaper informed.

Eng. Qandil further affirmed the statistics saying that "the total operating capacity of the refining system is currently running at about 26 to 27 mmt/y, which is lower than its maximum attainable capacity of 33 mmt/y and much lower than its design capacity of 37 mmt/y." He attributed this shortfall to both "inadequate availability of crude oil and the occasional failure of some of refineries' equipments."

Hence, part of the ministry's expansion strategy for local refineries is to increase crude oil imports in order to boost refining output and gear up to become an exporter.

Marking Progress

EGYPS 2017 both technical and strategic conferences will offer new opportunities to search for effective solutions how to enhance petrochemical sector and optimize output in relation to both local demand and export plans. Some progress has already been noticed from a comparative perspective. According to data from OPEC's Annual Statistical Bulletin, Egypt's refined petroleum output averaged 445,000 b/d in

2013, suggesting that refinery utilization was about 63%. In November 2016, the ministry informed that the used capacity amounted to 79%. While this may seem to still be lagging behind the actual aspirations and needs, it is highly likely that the pace for improvements will be stepped up.

Similarly, in the overall statistics from 2009 to 2015, the refined crude oil decline was recorded at a rate of 16%, which is lower than 28% cited for up to 2013, according to 'Egypt Oil Downstream' presentation by Chemist Amr Mostafa Kamel, shared on World Refining Association's website.

Similarly, some segments of the Egyptian refined products show a positive trajectory. For example, production of gasoline in 2015/2014 stood at 4.4 mmt/y, while consumption was 6.3 mmt/y. This noticeable shortage was further reduced in 2015/2016 as production rose to 4.9 mmt/y and consumption saw merely a slight boost to 6.5mmt/y.

In these veins, Egypt has also marked progress in naphtha production since 2007 to 2013. The main reason behind this, according to Ken Research cited by Energy Global, is that "Egypt has moved its attention to low cost feedstocks such as ethane." It is thus predicted that "naphtha production in the country is going to increase dramatically by 2018 due to the naphtha crackers that are being developed in the country," and accordingly the export of naphtha may see a boost by the envisioned year.

These statistics clearly suggest that the improvements are on the way, yet there still remains room for new inputs.

Diversifying Exports

In search for solutions, EGYPS 2017 is offering opportunities for new partnerships in the downstream sector and the country has a unique chance to capitalize on the existing and incoming capital potential.

The time is ripe to take a firm stand and adopt alternative measures as "Egypt cannot afford to ignore the need to make some difficult decisions regarding its energy sector," further stated Prof. Robert Marbo.

One of many options is to diversify the refined products export. As Eng. Qandil further elaborated on this point, "the diversification of the petroleum products could extend to cover the feedstocks and commodity petrochemicals using the suitable technologies in an ultimate vertical integrated refinery." However, this may present some challenges. "Such wide span of diversification is normally tamed by the relations between the necessary capital cost and the capacity of the applied technology."

Egypt would thus need to aim for fresh investments in refining technologies that would enhance its capabilities to materialize its visionary plans. Hence, "it became essential for EGPC to take an immediate action to develop the detailed technological/economic study to define the required scope and execution plans of the refinery projects," said Eng. Farouk Qandil.

The capacity and capabilities are in place in Egypt to implement any such new strategies. It is only a question of putting them to good use. As Consultant Qandil added, "ENPPI has the necessary caliber of process engineers with thorough refining knowledge and high skills to develop the necessary Integrated Operating Programs and Linear Programming facilities" that will enhance refined products output.

EGYPS 2017's Technical Conference will undoubtedly provide some further solutions and strategies for how to go about complexities of the optimization of the downstream sector.

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OIL&GAS INDUSTRY AIMING FOR GENDER EQUALITY

By Sarah Samir

he number of women in the Egyptian oil and gas industry has been increasing in the past years, yet at a slow pace. This is also a reason why The Egypt Petroleum Show (EGYPS 2017) is opening a unique floor to a full-day Women in Energy Conference dedicated to the opportunities that women have in the oil and gas industry.

With Eng. Amira El Mazni, Women in Energy Ambassador, and His Excellency Tarek El Molla, the Egyptian Oil Minister as the keynote speaker, the conference will facilitate the space to create an action plan for driving more opportunities for females in the energy sector.

Attendees, experts, female oil and gas executives and government officials will among other topics debate female leadership in the industry, and policies for gender equality.

Bridging the Gap

The Egyptian government has taken initiatives and following certain strategies based on research studies in order to establish gender equality in the workplace in the sector. Yet, although the Egyptian Labor Law remains unchanged, some policies followed in dealing with female employees in the oil and gas companies seem to differ from one firm to another.

The application of labor laws with regards to women in the industry, flexibility programs implemented at workplaces and how these empower female employees to succeed will thus stand in the center of experts' attention.

One of the unanswered questions about women in the industry is, therefore, how does the Egyptian Labor Law empower women in the workplace and how is it adapted by oil and gas firms?

Pro-Women Policies

The Egyptian Labor Law no. 12 of 2003 is believed to enable women at the workplace to enjoy gender equality and to achieve balance between their work duties and the responsibilities towards their families. Article 91 of the law states that "a woman who has worked for 10 months for an employer is entitled to a maternity leave of 90 days, and the employer may not require her to work during the first 45 days after childbirth." In addition, the same article further declares that "while on leave, she shall receive her usual compensation. She may only take this maternity leave twice during her service to the

employer." Furthermore, IT Specialist at Petroleum Pipelines Company (PPC), May Shoukry, also confirmed to Egypt Oil&Gas that "according to the Egyptian Labor Law, working women get paid for nursery fees." This article clearly protects women from discrimination and from being forced to retire their jobs in order to succeed in their families.

Some companies apply the law fully, others reach even further beyond. For instance, "Echem adopts all articles of the Egyptian Labor Law as it should be and facilitates its regulations," said Ola Mohsen, Training and Development Department Head at the Egyptian Petrochemicals Holding Company (Echem) in an interview with Egypt Oil&Gas. She further explained that "the company's management has many ways to facilitate and minimize life and work burdens upon females, including for working single mothers." Echem also offers to "give an extra hour for female employees to come or leave early [to fulfill their motherly roles], maternity leave, contributions to nursery fees, family medical insurance, and [even] short loans."

Yet, the law in its wording regarding the maternity leave seems to limit the number of children a woman can have, while working for the same employer, as she cannot take a maternity leave more than twice in her service.

In contrast, some oil firms, including Cairo Oil Refining Company (CORC), allow a maternity leave three times and with an extended time, as Reem Sabry, Director of Planning Department at CORC stressed in an interview with Egypt Oil&Gas: "CORC allows its employees to take a maternity leave three times for a total of six years, two years per child." She added: "A woman has also the right to take a leave for family needs, if a member of the family is sick for up to two years, one year at a time, upon presenting relevant medical documents."

In addition, as Sabry noted, in CORC "women have the right to be part-time employees as well," which is a highly positive adaptation, given the scope of women's responsibilities in their families.

Implicated Limitations

Nonetheless, there are some policies' implementations by oil and gas companies that may limit female employees and discourage them from becoming involved in the petroleum sector. For example, as part timers, women seem to not

enjoy benefits on the same level as full-timers. As PPC's May Shoukry informed Egypt Oil&Gas, "although women have the right by the law to work as part timers for only three days and receive 60% of the salary, PPC's policy does not include that part-timers should also receive 60% of the nursery allowance," just as full-timers receive the full allowance. Shoukry thus pointed out that "part-timers are active employees and have the same rights as those granted to full timers." With the nursery allowances being cut or reduced disproportionally, it implies clearly the scope of limitations for female professionals more than for males.

Moreover, some women in the industry believe that companies' management may follow certain techniques to dissuade them from following their dreams. Eng. Amal Mansour, General Manager of Operations and Communications Systems at PPC told Egypt Oil&Gas about her experience. "When I was competing for a position, my manager sent to me a letter entitled 'a private letter,' which is offensive [for Egyptian women] in order to embarrass me as he knows that as a woman I will not like that." This move made a female employee feel awkward using a framing imposed on her by society and in consequence tried to discourage her from seeking a promotion.

Other women in the petroleum sector also see that they do not benefit from their lawful rights to a full extent. Although the Egyptian Labor Law states that an employer should establish a nursery if the number of employed women reaches more than 100, there are several Egyptian oil and gas companies that do not follow this rule. Reem Sabry from CORC further revealed in an interview with Egypt Oil&Gas that when the matter was raised at her company, the management informed its employees that "it was declined as the pollution of refineries will harm children's health and that the company does not have a sufficient budget for that. However, the oil and gas regulation gives the right to receive an amount of money instead, but this is not implemented at CORC. When the employees requested this money [the management] replied that there is no article in the company's budget document [to facilitate] the nursery allowance." This is yet related to another challenge that female workers face.

Female employees cannot enjoy their rights, when

they do not have access to companies' by-laws to demand their rightful benefits. "At CORC it is not allowed to view the company's policy documents as these are non-negotiable," said Sabry. "When we ask about something that we think is our right, we are told that this was in the old policy document," Director Sabry completed. In this way, women cannot even be informed about their companies' employment policies and they do not know whether they can enjoy what the labor law grants them or not.

It is therefore that Reem Sabry strongly recommends that "we need supervision of oil and gas companies to ensure that the [state] policies are well implemented and not controlled arbitrarily by [the management], and to ensure that the rules are followed."

Discouraging Female Professionals

Women in the industry thus may get discouraged by the policies that are adopted by their employers. For instance, "according to the new oil and gas regulations, an employee should work for three

"We need supervision of oil and gas companies to ensure that the [state] policies are well implemented."

Reem Sabry Director of Planning Department at CORC

consecutive years in order to be promoted," emphasized Reem Sabry. In line with that, "it is a part of CORC's policy to promote a person if his/ her group of colleagues has advanced in their career paths." Yet, as she further shared her views, "the company does not apply that on each and every group of employees." This drives CORC's female professionals to feel that the decisions about promotions are sometimes biased, especially because women are the most harmed by this move due to their needs to take leaves for the family care. In Egypt, it is generally believed that women are the ones who carry the responsibility for bringing up future generations and who take care of the family. Women's career path is thus eventually affected by the policies and their adaptation, PPC's Eng. Amal Mansour believes. "Promotions in PPC are not based on potential tests, but based on the period of time an employee spends in a continuous work for the company," as per the Egyptian regulations. Yet, you can find someone like IT Specialist at PPC, May Shoukry, who has been working in the company for 16 years without getting promoted.

Empowering Women

But just like companies' by-laws can discourage women from their involvement in the sector, other oil firms have clearly demonstrated their support for their female professionals and helped empower them to ensure receiving their best productivity. Ola Mohsen from Echem stated that the facilitations offered by her company "enhance [female employees'] loyalty to the company." She added: "The role of HR and training department is very clear and effective in developing [the company's] employees' career path. [Echem's] policies are flexible and strict at the same time. All [female employees] know [their] role, duties, and responsibilities. Working environment and leaders also affect our social life positively." This example shows that when the management encourages its workers it will not only gain their

"The company's management has many ways to facilitate and minimize life and work burdens upon females."

Ola Mohsen Training and Development Department Head at the Egyptian Petrochemicals

Holding Company (Echem)

commitment to the company, but it will also ensure the efficient fulfillment of their roles, which in the overall balance sheet translates into companies' success.

These implementations clearly affect the productivity of a company's employee and therefore can lead to higher achievements of the entire oil and gas industry in the country. Implementing policies that grant gender equality in oil and gas companies will be further discussed at The Egypt Petroleum Show's conference. The Egyptian Ministry of Petroleum and Mineral Resources has shown that it has been keen on having gender disparity abolished in the workplace by offering equal promotion opportunities for women and thus enable them to reach the top of their career ladders.

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WOMEN IN ENERGY:

The energy sector is entering a new era, where skills and talent trump gender.



By Patricia Tiller, Partner, Andrews Kurth (Middle East) DMCC

ver the past decade, the energy industry has witnessed a noticeable increase in the number of women in the sector workforce. Several energy companies now boast female CEOs, including traditional exploration and production companies such as Occidental Petroleum and OMV Petrom; and broader energy sector companies such as Engie, Lockheed Martin, Sempra Energy and Duke Energy. There is no doubt that women have made important gains in the industry.

Global statistics on women in energy are often hard to find, inconsistent or incomplete. Unquestionably though, the overall percentage of women in the energy sector, particularly at executive levels, remains low.

Closing the Gender Gap

While there are clear efforts to attract more women into the energy sector and to overcome barriers evident in the industry, more needs to be done to encourage and maintain a female workforce.

Many energy companies have implemented policies to recruit more women, and to adapt the workplace environment to attracting and maintaining senior female staff. Progressive, energy-rich countries such as Norway are driving change by requiring that a minimum percentage of executives and board level management must be women. While the "quota" versus "merit" based approach is not favored by all in the industry, the results speak for themselves.

Creating enabling environments for women and providing access to female role models are important strategies to foster the development of women's careers. Likewise, adequate work-life balance arrangements (for both women and men) are a fundamental requirement to advance women's careers to senior levels.

Advocating Change

A major motivator for recruiting and retaining women in the energy industry is access to a wider pool of talent. Prior to the sharp fall in the oil price, the energy industry was experiencing almost unprecedented labor costs due to a shortage in supply of key personnel. Even with a downturn in the industry, a whole generation of experienced engineers is expected to retire over the next 10 years, resulting in global challenges for staffing. Increasing the number of qualified candidates will have long term cost saving implications for the industry.

Likewise, there is increased evidence and recognition that gender balanced and diverse management teams at all levels produce positive business outcomes.

It is no secret that men and women approach business differently – the correlation between diverse thinking and broader solutions to problems is clear. A recent McKinsey & Company study suggests that if women enjoyed the same economic opportunities as men (colloquially known as "the full potential scenario"), then the Middle East North Africa region would gain \$2.7 trillion by 2025. There is general agreement that the involvement of women in leadership positions is an important driver of organizational effectiveness.

The Missing Piece

So why do women remain under-represented in the energy industry?

Despite several energy companies taking steps to actively recruit women and to make the workplace more hospitable for female employees, more efforts will need to be made by both governments and the industry before we witness a significant change in the number of women in the energy sector. The perception from many women remains that careers in the energy industry are dangerous, and would require them to work away from home.

The application of new technologies to the energy sector may be the missing piece needed for greater diversification. Firstly, the use of advanced technology in the field may mean that the "cowboy," "man camp" world of oil and gas exploration is no longer the domain of men alone. Increased safety on site and greater ability to perform tasks remotely (for example, the use of drones for storage tank inspections) mean that the stereotypical barriers to women working in the field may no longer exist. Early experience in the field has long been part of the route to the top, and new advances in technology may mean that women will now been able to follow the same career path as their male counterparts.

The Middle East Perspective

Women in energy in the Middle East have the added hurdle of a generally male dominated business environment. Globally, the Middle East has the lowest representation of women in management and leadership positions. (M) The problem begins with lower participation rates of women in the region, and is exacerbated by the typical "glass ceiling" and "sticky floors" obstacles present in other markets. The Middle East workforce demonstrates a particularly sharp decline in female participation rates with age, meaning that the number of experienced women in higher management positions is especially low.

Gender biased legislation as well as limited access to networking are some of the barriers that women in the Middle East will need to overcome in order to pursue successful careers in the energy industry. Cultural expectations regarding family care responsibilities are also a key barrier to career advancement.

However, it is encouraging to note that, following similar global trends, an increasing number of women in the Middle East have positioned themselves at more prominent business and management levels. This is particularly true in national oil companies and government or quasi-state owned authorities. Nonetheless, the full potential of women in the Middle East remains underutilized.

Conclusion

It is difficult to quantify the value that an increased representation of women can bring to the energy industry, but the general consensus is that the future for women in energy remains bright. After attending the 2016 Women in Energy sessions at the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) and the Egypt Oil and Gas People Development Roundtable in December 2016, where representation by women was high, I am encouraged by the enthusiasm of women wanting to succeed in the energy industry.

This years' Egypt Petroleum Show will provide women with the opportunity to showcase their talents, and inspire constructive discussions on how to achieve merit-based gender equality at all levels.

(iv) Ibid.

⁽i) International Labor Organization, Regional Office for Arab States. 2016. Women in Business and Management: Gaining Momentum in the Middle East and North Africa.

⁽ii) McKinsey and Company. September 2015. 'The Power of Parity: How Advancing Women's Equality Can Add \$12 Trillion to Global Growth.'

⁽iii) McKinsey and Company. 2014. 'GCC Women in Leadership – From the First to the Norm.'



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ATTENDANCE OF THE PRESIDENT, PM, AND IOCS ARE KEY STEPS FOR EGYPS' SUCCESS

There are a lot of key steps Egyptian petroleum companies have to implement in order to guarantee the success of EGYPS 2017, The Egypt Petroleum Show, which will be held in Cairo from 14th to 16th of February, 2017. This conference is expected to help the Egyptian government in raising foreign investments especially in the bio-petroleum sector during the coming years. But in order for the government to achieve the best out of this conference, the following steps have to be executed.

The first step is for Oil Minister, Tarek El Molla, to invite the President, Abdel Fattah El Sisi, and the Prime Minister, Sherif Ismail, to attend the international conference. This step will encourage new companies to start foreign investments in Egypt and to deliver the message that the presidential office is interested in petroleum investments. The attendance of the political leaders will increase the companies' trust in the Egyptian sector, which is much need given the current state of the Egyptian economy. This will guarantee that Egypt will sign new petroleum agreements through this international conference, which might raise oil and gas production rates in the Egyptian concessions.

It is also necessary to present a detailed explanation of the most important 66 oil and gas agreements that have recently been signed by the Egyptian government, after three years with no new agreements, especially the ones that have boosted the Egyptian economy in the past few years. Eni's agreement to work in the North Alexandria concession, along with BP's agreement, were the main indicators of increasing foreign investments.

The second step is for the Ministry of Petroleum to include speeches by the Heads of IOCs operating in the Egyptian oil and gas sector in the conference agenda. Through this step, the Oil Ministry is assuring the new companies to start investing in the Egyptian concessions. It will guarantee that Egypt will sign new oil and gas agreements that will help in raising research, operations, and discoveries in different concessions around Egypt. It will also subsequently boost local production of oil and gas products, instead of importing them for "hard currency."

In the third step, the Ministry of Petroleum has to project a detailed explanation of production sharing agreements. These agreements are part of the system followed by the Egyptian General Petroleum Corporation (EGPC). All the signed agreements in the sector should be presented according to the law and the Egyptian constitution. Such an explanation needs to include all the positive and negative sides concerning this system.

These three steps may help Egypt sign at least 10 new sign long-term agreements in February and attract further investments, which will help the government solve repetitive energy problems as petroleum sector depends by 80% or 90% on IOCs' investments in order to raise the national income.

Finally, the Heads of IOCs, which are already operating in Egypt, have a critical role to play in attracting new companies during the international conference. The Egyptian petroleum leaders should therefore see to that such an event is organized annually to assure a continuous contribution of those companies.

EGYPS 2017 IS A GOLDEN OPPORTUNITY TO ATTRACT NEW PLAYERS, INVESTMENTS

The Egypt Petroleum Show is going to be a golden opportunity for the Minister of Petroleum, Tarek El Molla, and Egyptian companies CEOs' to define the status of investments in Egypt and to attract new foreign capital in the coming years. In order to achieve those targets, some methods have to be applied to attract new companies to work in the Egyptian petroleum sector.

Firstly, the ministry should use the conference to form new partnerships with the companies to ensure injecting new investments to Egypt by illustrating the banking and investment facilities that the government provides. As the government is trying to attract \$30 billion of investments in the petroleum sector in the next 30 years, they also should explain all the parameters of such collaboration. The availability of large investment opportunities in the Egyptian concessions will require adopting new plans to develop all regions of the country.

Secondly, if the Ministry of Petroleum desires to raise and attract new foreign investments during the international conference in February, they have to seize the opportunity and clarify the new investment law that was approved by the parliament to the companies' representatives. The leaders of the conference have to consolidate their relationship with the attending companies to build new joint ventures. They also should clarify the status of the national investments and the status of the joint investments with IOCs and with national companies with regards to the global oil prices expected to return to their previous value during the upcoming months. It is estimated that the price per barrel of oil will go up to \$70 during 2017, after OPEC's decision to cut production projecting to stabilize the prices.

If the petroleum leaders succeed in presenting the investment opportunities in the country, it will be the first step to attract those companies to work in Egypt and to inject huge investments of at least \$8 billion annually. Taking into consideration that foreign investment is the main factor in the success of the Egyptian petroleum sector, compared to other sectors, attracting those investments will revive the Egyptian economy. Foreign companies are the only player that can spend huge funds in oil regions, especially the Egyptian offshore regions that need more than \$250 million at least to start operations.

Lastly, I believe that this international conference is also the biggest challenge to the oil industry in a long time. We will wait and see how they will succeed in attracting g new companies in the given external fluctuating price environment.

EGYPT TO CONVEY
IMPORTANT MESSAGES AT
EGYPS 2017

Cairo has not seen a strong international petroleum event for a long time due to many reasons, yet, the most important being the political instability in the country.

Since more than a year ago, the leaderships of the petroleum sector has been working intensively on preparing EGYPS 2017 to send an important message to the world that the sector wants to shake hands with the industry investors and introduce new opportunities for investments.

EGYPS 2017 in itself can bear a new meaning. Egypt as a land of civilizations and a center of the world with giant projects of infrastructures, especially the new Suez Canal, is to Gain new investment opportunities after the last promising gas discoveries, Zohr and Nooros by Eni in cooperation with Petrobel, and oil discoveries in the Western Desert by Apache with Khalda, and by Shell with Bapetco. There are new chances for fresh investments in oil and gas discoveries in different areas in Egypt from Western and Eastern Desert to the Gulf of Suez to the Nile Delta to Sinai to the Mediterranean Sea to Upper Egypt, with an extended network of oil and gas pipelines and refineries. 'Y' would stand for the Young generation's participation in the event to focus on the development of career opportunities in the Egyptian petroleum sector. Petroleum energy will thus fulfill its vision to satisfy the energy needs in line with the 2030 sustainable development strategy. The event will Show around 400 exhibitors in the event from Egypt and worldwide to introduce the latest technologies and products, which will maximize the value of Egyptian companies' products.

2017 thus promises an optimistic year ahead in the petroleum sector by putting a lot of last discoveries on the production map.

The event will hold the plenary and strategic sessions in the presence of the Egyptian petroleum leaders with global business leaders. More than 150 technical speakers at the conference will maximize the benefits and values for every participant. Furthermore, the schedule of Women in Energy as a separate strategic session is important to highlight the role of the women in the development of the Egyptian petroleum sector.

Lastly, I have full confidence that the event will be a successful international event to showcase the capabilities and the capacity of the Egyptian oil and gas sector.

By Abdullah Ghorab Egypt's Former Minister of Petroleum

By Dr. Ibrahim Zahran International Oil Expert

Hafez El-Shamy Production Technology Division Manager, EGPC

GUPCO Targets Rehabilitation of Its M36 Platform



By Mohamed Ahmed Hussien, GUPCO's Project Deputy General Manager

ulf Of Suez Petroleum Company (GUPCO) is conducting a rehabilitation project for the company's M36 platform with an overall cost saving along the project duration, which amounted to \$40.39 million.

GUPCO's rehabilitation project aims to reduce the Major Accident Risk (MAR) on the company's platforms to an acceptable level, and target optimum shutdown durations, in addition to minimizing or fully eliminating the need for extended production shutdowns. The goal is to not repeat the incident that was experienced on previous TARs.

The Scope of the Project

The project Statement of Requirements (SOR) has been developed to cover M36 Rehabilitation Scope, which includes piping replacement scope (production / PH IV / booster / drilling), and replacing M36 ESD system. M36 Rehabilitation Scope further includes installing new F&G system, replacing switchgear and MCC (Booster / PH IV), upgrading work rooms (Booster / PH IV) as well as conducting structural assessment for M36 platform jackets and bridges, which will be conducted for the first time within the rehabilitation strategy.

The project team has been challenged to execute M36 scope with production losses and secure minimal shutdown durations. The E&I scope forms the biggest challenge as it needs a total shutdown to be executed. Thus, GUPCO concluded to procure a YOKOGAWA system for operations on the M36 platform.

Furthermore, several workshops were conducted with Operations in order to optimize the required durations. The team succeeded in finding an execution strategy for M36 ESD scope during one of the main shutdowns, while a total shutdown is still needed in order to switch between the existing and the new ESD systems.

As for the offshore execution, it started in May 2015 using ADII barge to replace the gratings, decking, handrails, and stairs in order to pave the way for the construction team. The current progress of the offshore execution is 70%.

Moreover, the fire fighting replacement campaign started in December 2015 to provide safe working environment for the people on board with current progress of 21%.

Both scopes are considered as separate campaigns

and therefore are not represented in the Rehabilitation Risk Reduction Scope progress figures, which are currently standing at 43%.

GUPCO's Action Plan

In order to achieve the M36 project's objective, GUPCO's team has to improve the integrity of the hydrocarbon containment systems, eliminate major ignition sources, provide appropriate fire and gas detection systems, and provide reliable emergency shutdown and relief systems.

The engineering activities, which marked progress already in 2014, were interrupted by a change of execution strategy calling to reconsider the single total S/D, replacing it with shorter partial S/Ds in order to minimize production losses.

New studies that are currently being conducted show that the company performs a series of re-engineering processes. These studies include Flare study by DNV to select the best scenario for flare header as well as a new Flare Knock-out Drum study. They further include a structure assessment study to check the integrity of jackets and bridges, and revising the P&IDs to support the execution in repeatedly partial shutdowns.

Procurement is ongoing for the tools and equipments required for the execution of the project. Material requisitions focus on replenishing used materials for other projects. The execution team conducts the preparations of work packs and constructability reviews

In order to overcome the delay in the engineering, rehabilitation project execution followed a fast track approach to start the fabrication of piping spools, which will not be subjected to design modification. The project's in-house workshop is used for this purpose, performing dimensional checks and starting fabrication accordingly with current progress at the level of 15%.

M36 Project's Progress

In February 2016, the M36 Rehabilitation Project took over ADII barge and the completion of the Fabric maintenance and Fire Fighting Scope. Part of the Rehabilitation Risk Reduction Scope (Demolition Scope) will take advantage of available extra capacity of the barge. A new DPII crane with 100t crane and motion compensation system (MD 235) is currently mobilized to join GUPCO's offshore campaigns. The crane was expected to be on location

and manned up by end of March 2016. This was the primary vessel supporting the Rehabilitation Risk Reduction Scope, in addition to the existing ADII, after completing the Fabric maintenance and Fire Fighting scope of works.

Starting from May 2016, the engineering deliverables have been released to allow the fabrication of remaining batches.

Additionally, the project's team is adding some improvements to the strategy in order to reduce the project cost, part of which is to guarantee self-execution of the project by the company. Along these updates, construction management by ENPPI was replaced. As a result, available internal resources have been deployed to cover the activities in order to minimize the need of additional agency to be hired. Accordingly, engineering and management team were moved from ENPPI premises and located to GUPCO's facilities.

Moreover, in order to reduce the project costs, the large Jack-up Barge used in previous campaigns is now replaced with MD 235, instead. Labors are now directly sourced from ADES, which comes at lower cost than ENPPI/PMS/SGB previously used on the project. Similarly, most of the procurements will be processed internally, saving ENPPI mark-up for all contracts and procurements. Fabrication is also undertaken in GOS workshop instead of being contracted to Petrojet.

Project's Time Frame

The M36 Rehabilitation Project is to be executed through three phases. The first phase is the Pre-TAR phase, which lasts for 13 months. This phase includes all non S/D dependent items, PH IV modules (E&D), black startup gas, jumpers, chemical injection systems, and demolishing scope.

The second phase of the project is the TAR phase to be conducted in 12 months. This includes the LPG Partial S/D, which is divided into PH IV and production P/F piping, upgrading work rooms, electrical scope, and ESD scope. This comes in addition to E&I Complete S/D, the Oil Shipping Partial S/D, and HPG Partial S/D.

The third phase of the Rehabilitation Project is the post-TAR phase, which includes PHIV Modules (A, B, and C) and the balance demolish scope. This phase is scheduled to take six months in total.



By Amira S. Badawey

ocated on the Atlantic coast in the southern part of Africa, the Republic of Angola unexpectedly overtook Nigeria as the top crude producer in Africa during the second half 2016. Yet, Angola did not enjoy its primary position for too long. Already in December 2016, Nigerian Bulletin reported that Nigeria's oil output slightly surpassed that of Angola by 94,000 b/d.

The reasons behind Angola's failure to preserve its spot as the top oil producer on the African continent relate to the structure of the country's economy. As the African country heavily relies on oil to sustain the economy, Angola suffered a major structural shock in response to the persistence of low oil prices. Due to operational inefficiencies associated with the stateowned oil operator Sonangol, oil output has not grown significantly over the last two years. In fact, it fell short of the government's 1.8mb/d target. The shock has deteriorated Angola's macroeconomic stability. The local currency, kwanza, depreciated by 40% against the dollar since September 2014. This drove up inflation, which was projected to reach 30% year-over-year in 2016.

As Angola's economic growth rate is driven by its oil sector, with oil production and its supporting activities contributing about 45% to Angola's gross domestic product, the previous two years had already signaled that Angola will face major challenges in sustaining its primacy in the continental oil market. According to the World Bank, Angola's oil exports in the last 10 years accounted on average for 97% of Angolan exports. In 2014, the share of oil in total export remained around the same level and oil exports brought in \$60.2 billion in revenues to the country. However, already a year later in 2015, foreign currency inflow generated by oil exports was at \$33.4 billion, which was a 44.5% decline.

The current state of the country's economy, coupled with declining oil export revenues and political uncertainty as Angola's President, Eduardo Dos

Santos, would not seek re-election in 2017, begs the question whether or not Angola can regain its position as Africa's top oil producer.

Oil Production

Angola initially discovered oil in 1955 onshore Kwanza basin. Since then, the country's oil industry has grown substantially, despite a civil war that lasted from 1975 to 2002. According to the US Energy Information Administration's (EIA) Country Report in May 2016, oil production in Angola comes mainly from fields offshore the coast of Cabinda and deepwater fields in the Lower Congo basin. Although onshore fields contribute some "small-scale" oil production, conflicts within the region have limited exploration and production in those areas.

Oil production gradually increased from the 1960s to the 1990s, reaching almost 750,000b/d by 2000. Angola brought the Chevron-operated Kuito field (Block 14), the country's first deepwater field, online in late 1999. Since then, international oil companies (IOC), led by Total, Chevron, ExxonMobil, and BP, have started production at additional deepwater fields and are in the process of developing new ones. Accordingly, Angola's oil output grew by an annual average of 15% from 2002 to 2008.

Peaking in 2008, Angola's total petroleum and other liquids production reached about 2mb/d, 1.9mb/d of which was crude oil. Angola's total liquids production remained relatively stagnant, averaging close to 1.8mb/d from 2011 to 2015, despite new oil fields were brought online. ElA's report attributes Angola's flat production rates to "persistent technical problems related to water injection systems, gas cooling and floating, production, storage, and offloading (FPSO) units associated with some projects. The technical problems resulted in lengthy maintenance work and disruptions to production from some fields. Rapid reservoir depletion has also contributed to steep decline rates at some fields."

Crude Exports

Nearly all of Angola's oil production is exported because the country's domestic refining capacity is limited. The majority of Angolan crude oil is mediumto-light in density, but some grades, such as Dalia, Pazflor, and Hungo, are heavy grades. According to Index Mundi, Angola's crude export has been on an upward trajectory since 1986, with volumes peaking in 2010 at about 1.9mb/d, and in 2007, Angola became a member of the Organization of the Petroleum Exporting Countries (OPEC). EIA reported that Angola exported about 1.8mb/d of crude oil in 2015, with 60% of cargos going to Asia. Europe followed with 22%, then America with 14%, and lastly Africa with a minor 4%.

Angola has been the second-largest supplier of crude oil to China since 2005, behind Saudi Arabia. But in the country's successful year of 2016, already in August, Angola surpassed its OPEC colleague, as well as Russia, to become the biggest exporter of oil to China with a daily average of 1.11mb/d, as Oil Price informed. The 23% increase was driven by higher demand from Chinese teapot refineries as they sought to take advantage of the cheaper Angolan oil, since the African blend trades below both Russia's ESPO and the Middle East's Dubai benchmark blends. Moreover, Angola accounted for 5% of total US crude oil imports between 2005 and 2009 as the African nation supplied the US with an annual average of 484,000b/d during the period. However, US imports of crude from Angola have been decreasing "in terms of the absolute volume and share." In 2015, the US imported merely 124,000b/d of crude oil from the African country, accounting for less than 2% of total US crude imports.

Production Expansions

Angola has been eager to sustain its primacy in the African market through new developments. The

country is thus moving forward with its production expansion plans. Accordingly, several oil projects are to start production over the next few years, as EIA's report read, however, the start dates may depend on the oil price environment.

The most notable projects to start are the CLOV, the West Hub development, the Kizomba Satellites Phase 2. and the Lianzi field.

Output from the CLOV project began in June 2014, as Total's website informed, and it is to be enhanced. Located off the coast of Angola, the project comprises of four oil fields, namely Cravo, Lirio, Orquidea, and Violeta, with total reserves estimated at 505m barrels. Two types of crude are simultaneously extracted and EIA estimates that CLOV's production capacity is 160,000b/d. The project consists of 34 subsea wells, situated

"The technical problems resulted in lengthy maintenance work and disruptions to production from some fields."

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in water depths of 1,100 to 1,400 meters, and a Floating Production, Storage and Offloading (FPSO) unit, which is "as large as three soccer fields" and a storage capacity of 1.8 million barrels of oil.

2014 also witnessed the start of production from Eni's West Hub Development Project at Sangos, Cinguvu, and Mpungi fields, as well as subsequent development of the Mpungi North, Vandumbu, and Ochigufu fields. Offshore Technology informed the output from the Sangos field commenced in November 2014 and the Cinguvu oil field came onstream in April 2015. The two fields were producing 60,000b/d of oil. The Mpungi field came online in January 2016, bringing the total oil production to 100,000b/d. These projects are also envisioned for further developments in the near future.

Angola also eyes two other projects by Esso and Chevron for expansion. Esso Exploration Angola, a subsidiary of ExxonMobil, started oil production ahead of schedule at the Kizomba Satellites Phase 2 project at the end of April 2015. Kizomba Satellites Phase 2 is a Block 15 subsea infrastructure development of Kakocha, Bavuca, and Mondo South fields. ExxonMobil was quoted by Oil&Gas Journal as saying that the project developed 190 million barrels of oil. At the time of the report, peak production was estimated at 70,000b/d of oil, and was expected to increase total Block 15 production to 350,000b/d. The project also relied on an FSPO at the Mondo South field, with the Kakocha and Bavuca tying back to the Kizomba B FPSO.

Chevron announced the first production from Lianzi Field, which is located in a unitized offshore zone between the Republic of Congo and the Republic of Angola, in early November 2015. At the time, the field was expected to produce an average of 40,000b/d of crude. The field includes a subsea production system and a 43km electrically heated flowline system, which transports the oil to the Benguela Belize-Lobito Tomboco platform located in Angola's Block 14.

Furthermore, EIA stated that Angola has four offshore and deepwater oil projects expected to come online within 2017 and 2018. They have a total output plateau of 420,000b/d of crude. New capacity additions from the upcoming projects are more likely to sustain Angola's crude oil production at or slightly above current levels over the medium term rather than provide a substantial boost to the country's output, as several of the older deepwater fields are past their peak production. In addition, Angola is working on extra four projects with estimated production capacity of 325,000b/d. Yet, the fields do not have a specific date for their first oil, as they have not received a final investment decision (FID). EIA confirmed that despite global low oil prices, projects that are past the FID stage will not be canceled, because the procurement and construction phase has already started.

Obstacles on the Way

Yet, Angola's path to petroleum supremacy was not spared difficulties, which necessarily translated into the current situation in which the country was overtaken by Nigeria. The state-oil company, Sonangol, which is a shareholder in almost all oil and gas projects, has been facing some challenges in recent months. News outlets, such as Oil Price,

reported that the company could not afford basic supplies such as toilet paper. Moreover, in early 2016, Angolan President, Eduardo Dos Santos,

"Rapid reservoir depletion has also contributed to steep decline rates at some fields."

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who has been in the office since 1979, appointed his billionnaire daughter, Isabel, to chair a committee tasked with restructuring Sonangol and revamping the oil sector.

In a statement to the Financial Times, Ms dos Santos, outlined the challenges facing Sonangol after the oil price crash shredded profits and left it struggling to access foreign currency. A recent presentation showed that output would drop from 1.75mb/d in 2016 to reach 1.5mb/d by 2021. Accordingly, dos Santos highlighted that the firm would be divided into three separate units for exploration and production, logistics, and a division that handles Sonangol's concessions with its IOC partners. In addition, the company was in talks with several international banks for a new financing model to meet a \$1.6 billion payment shortfall, as the company might not have enough oil to service its debts at current prices.

Lastly, Angola's commitment to cut production by 78,000b/d according to OPEC's mandate, while Nigeria is exempted from this production freeze, further casts a shadow of doubt over Angola's ability to regain its position as Africa's top crude producer. Hence, for Angola to make progress in the oil sector, the country will need to design a new oil strategy.

ANGOLA'S FORTE INTO LNG

n the natural gas sector, Angola is a small producer, with most of the country's production coming from associated gas at oil fields that is either flared off or re-injected into oil wells to enhance oil recovery. With the rapid growth of exploration offshore Angola, the country will need to better manage the processing of large volumes of associated gas its oil operations will continue to produce.

Angola exported LNG in 2013 for the first time, which totaled 18bcf that year. Cargos went to Brazil, Japan, China, and South Korea. Angola LNG, which is a consortium that includes Chevron as a majority shareholder, together with Sonangol, Total, and BP, had initially scheduled to begin operations at a Soyo LNG plant in the first quarter of 2012, but many delays pushed the start date back to mid-2013. According to Angola LNG's website, the \$10 billion LNG project represented the largest single investment in Angola's history. The plant was built with a capacity to produce 5.2 million tons per year, the equivalent of 250bcf/y of LNG, as well as natural gas plant liquids. Furthermore, the company's sources of associated natural gas are from various offshore and deepwater oil fields within Blocks 0, 14, 15, 17, and 18. Angola LNG also plans to develop non-associated gas fields in Blocks 1 and 2 to feed the LNG plant.

In 2014, the country's gross natural gas production reached 369bcf, with about 91% flared and re-injected into oil wells. Only the remaining 35bcf were traded. The country's LNG production was not without troubles as Angola LNG shutdown the plant in April 2014 due to continuous technical issues. The technical issues the plant experienced included electrical fires, pipeline leaks and ruptures, and a collapsed drilling rig that resulted in a worker's death. As a result, Angola experienced infrequent gas exports while the plant was operational. To remedy the situation, Bechtel, the plant's contractor, worked on overhauling the facility.

In early October 2016, Reuters reported that Angola LNG launched a tender to sell its second post-shutdown cargo that was loading during the same month, after the facility was halted for over 60-days. Yet, the facility suffered another disruption in late December 2016. It was, however, able to recover its 5.2mt/y capacity by early January 2017.

Hence, improving LNG capabilities, developing the domestic market for commercial natural gas, and applying enhanced oil recovery techniques will also be important components to Angola's hydrocarbon strategy moving forward.



TRUMP'S GOOFY OIL POLICY TOWARDS IRAQ

By Salma Essam

raq's oil industry has been a central component to the welfare of its economy, occupying around 95% of the government's total revenues. For years following the end of the US war on Iraq, the development of the oil sector in Iraq has been resurrecting amid conflicting national interests over energy resources. Most recently, with the inauguration of the new American President, Donald Trump, a new threat to Iraqi oil industry emerged. Trump's energy ambitions in Iraq's oil have become a subject matter for analyses, with increasing expectations of the grave consequences that his agenda may likely lead to.

Energy Policy: Aspirations & Arguments

Donald Trump's local energy policy looks firmly-oriented towards growth and expansion in the part of the world that highly depends on the petroleum industry. Energy Analyst, Robert Rapier, wrote in a Forbes-published opinion column that Trump's policies "will probably lead to incrementally higher oil, gas, and coal production than under a Clinton Administration." However, his energy aspirations go beyond the North American borders, and signal to the Bush-like ambitions of taking Iraq's oil.

When in fact, the United States has taken the September 11th attack as gateways for seizing oil resources in Baghdad, Trump has been publicly outspoken about his persistence to stick to this agenda. "I would take the oil" has long been Trump's assertions when asked about his stance regarding the war on Irag.

He has revealed this idea numerous times. "I told you very early on, if we're going to leave, take the oil, because, right now, you know who has the oil," said Trump in an interview with CNN on State of the Union, in October 2015. Similarly, Trump declared in his speech on foreign policy in Ohio in August 2016: "I have long said that we should have kept the oil in Iraq." And even though Trump's strategy towards getting into Iraq may seem coinciding with America's ambitions in the early 2000s, his approach to this country is different from Bush-like "nation-building" aspirations. It is even more grave, blunt, and explicit.

The Guardian's article - Trump's Plan to Steal the Oil in Iraq, published in September 2016, explained that taking the Iraqi oil is an act of reimbursement in Trump's viewpoint. Ironically, Trump says that he would have allocated the money from the sale of Iraqi

oil for the medical care of the wounded American soldiers and for compensating the families of those killed in the war. In this regards, Trump made his most prominent statement during a televised military forum in New York in 2016, saying: "It used to be, 'To the victor belong the spoils," Trump said. "Now, there was no victor there, believe me. There was no victor. But I always said: Take the oil."

The newly-elected President believes that ISIS phenomenon emerged following the gradual secession of American military troops, hence, Daesh exploited the political vacuum and the rooted

"I have long said that we should have kept the oil in Iraq."

Donald TrumpUS President



sectarian strife in Iraq to grasp oil resources and hold control of some oil fields. Trump has recognized that oil production has been a revenue generator for ISIS, which at one point hit an amount of \$2 million a day, according to Los Angeles Times article - Donald Trump Says the US Should Have Taken Iraq's Oil. In essence, the US military launched several attacks on the ISIS-held oil wells, oil and gas separation plants, and tanker trucks. Yet, these efforts do not satisfy Trump's greed for oil. In fact, he said in an interview with Meet the Press in August 2015: "ISIS is taking over a lot of the oil and certain areas of Iraq. And I said you take away their wealth, that you go and knock the hell out of the oil, take back the oil. We take over the oil, which we should have done in the first place." This implies that Trump's motives to eradicate ISIS basis in Iraq is driven by the American desire for oil.

"We can't go around invading countries and stealing their oil. The long-term damage to our reputation would be irrevocable."

Lance Jane
Military Historian at
Cameron University

As Trump has repeatedly endorsed the capture of Iraq's oil fields, he further appeared to be scared of Iran's rising oil status in the international market. The Islamic Republic, who is the third top oil producer in the world, has showcased a novel approach towards the industry. Therefore, Trump, who expressed a desire to re-impose oil sanctions on Iran, has been afraid of the Islamic Republic's increasing advancement in oil after the lifting of international sanctions, which may prompt his administration to exploit the weak Iraqi government and control the oil fields there. In this sense, Trump told Wall Street Journal in an interview when asked if he would keep the US involved in Irag: "You heard me; I would take the oil," Trump insisted. "I would not leave Iraq and let Iran take the oil," as he expressed his rationale.

Yet Trump's plan on seizing Iraq's crude oil is both insensible and withholds unconvincing arguments. Let alone that the mere idea of capturing oil fields in Iraq is greedy, the "take the oil" narrative holds within itself gross consequences in every single angle and

involves a supertanker-size set of problems that would eventually lead to a war crime.

Trump's Plan: Irrational & Illegal

Starting with the "right of reimbursement" premise, it emphasizes that conquered countries should have their resources taken. The idea of the US claiming a reimbursement following an occupation of Iraq, when in fact the US itself has been the conqueror not the conquered, qualifies as an irrational and barbaric. Top Defense Official for George W. Bush, Douglas J. Feith, said according to Los Angeles Time report: "It basically aligns him [Trump] with the views of Stalin after World War II." He added: "The Soviets after World War II went into Germany and dismantled every piece of equipment that they could find and stripped the country down." That said, leaving Iraq devoid of its prime source of revenue, will create hostility, instability, and more warfare. As for the fear of Iran's desire to seize the oil, there's no clear evidence that it is planning to capture Iraq's oil fields. And even if the Islamic Republic has a hidden energy agenda for stealing the oil, these plans are not yet materialized, neither are they declared in any Iranian rhetoric. This makes capturing Iraq's oil field by the US for fear that Iran "may or may not" take it apparently irrational.

In the meantime, Iraq enjoys full political independence, which gives it the full elements of sovereignty over its territory, thus having the rights to resources possession. If what Trump is advocating would be questioned on its legality, then the answer would be direct. The "take the oil" plan is a clear violation of the international law and the Geneva Convention, which explicitly bans seizing a property from an adversary. Article 147 of the 1949 Geneva Convention IV enunciates that the "extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly" are grave breaches. In this sense, Director of Texas Tech University's Center for Military Law & Policy, Richard D. Rosen, said that Trump's idea "appears to constitute aggression of the type condemned by the United Nations' resolution in 1974." The resolution states that "any military occupation, however temporary, resulting from such invasion or attack, or any annexation by the use of force of the territory of another State or part thereof" qualifies as an "act of aggression." This means that Trump's plan is illegal and deemed stealth; with no substantiated claim for reimbursement for any losses he mentioned whatsoever.

Costly, Risky, Undesirable

Not only would stealing Iraqi oil resources breach the international law, it extends to diplomatic losses for the American government as well. The historical American rhetoric of promoting respect for states' sovereignty has been an element the US relies on when it gets involved in conflict resolution cases. By defying the international law, the American government would have made an act of hypocrisy among the UN states, which would incur significant risks to the American diplomatic status. In essence, this distortion of the American reputation in the international community will lobby opposition against this plan - a plan that is unlikely to be endorsed by many congress democrats. Military Historian at Cameron University, Lance Jane, emphasized this point according to Politifact's report - Should the U.S. Have Kept Irag's Oil, as Donald Trump Argues?, published in September 2016, stating: "Are we the good guys or not? Because if we are and if we want to convince the world we are, then we can't go around invading countries and stealing their oil. The long-term damage to our reputation would be irrevocable '

Put aside all legal and ethical arguments, going into Iraq would lead to massive military operation, which, in turn, would require a large number of army men and troops. The 2003 war on Iraq operated with around 200,000 troops, and "it didn't work," according to Washington Post's citation of Andrew Bacevich, a retired Colonel and Professor of History and International relations at Boston University. Taking all the oil in a country as rich as Iraq would mean an explicitly declared occupation. In essence, Bacevich argued: "What would effective occupation actually require? A minimum of a half-million troops, perhaps more." This further emphasizes the implausibility of this idea, because if Trump presumably would have the troops stay until the oil runs out, this would require an occupation that would run for decades. The total cost? It may be even higher than the revenues from the oil captured.

Beyond the huge finances America would need to insert in this case, the troops would actually be coming under a constant threat of attacks from ISIS groups and Iraqi opposition forces. From one side, securing oil fields to make sure that ISIS does not impose control over them entails huge number of troops who must be highly equipped to fight a group as organized and as powerful as ISIS. From the other side, troops tasked with taking the oil would ignite violence among all groups in this territory. Be it ISIS, Iraqis, or the Kurds, the US military operations will be the center point of conflict for all forces in Iraq, who will likely leave behind any internal strife and direct the focus on eradicating the US troops. In this way, there would be no practical way for the American military to either seize the oil fields, or fight Iraqi and ISIS insurgents, or secure pipelines for exports. Even worse, taking the oil would not benefit the US, it would eventually lead to a war crime and grave losses for all parties involved.

Last, the rough geographic nature of the location of the oil fields can hinder different attempts of capturing oil. According to the Guardian's article, most of Iraqi oil fields are located in arid Middle Eastern deserts far away from the major population centers, a fact that makes it hard for the US to maintain military bases at these oil fields, as argued by experts. This makes the idea itself both impractical and daunting.

That said, the Trumpist strategy of taking the oil in Iraq presents severe consequences to both the American government and the Gulf country. Undertaking his plan will require decades of occupation, and the risk of involving his country in a never ending conflict with ISIS militants, Iraqis, and Kurds. Apparently, Trump's incentives show an American greed for the oil and prove that his plan is illegal, unfeasible, and undesirable.



SchlumbergerEEG TRANSFORMATION TOWN HALL

By Nataša Kubíková

chlumberger launched its EEG Transformation Town Hall on 15th of January in a glamorous style, marking the start of a new era that is symbolized by a change towards efficiency. The one-day event took place at the company's brand new eco-friendly Egypt Center of Efficiency in 6th of October district of Cairo, Schlumberger's EGP 1 billion investment, which will be officially inaugurated in the second quarter of 2017.

Through the event, Schlumberger has again demonstrated that a close communication between the top management and employees is the best practice to secure future success for the company. More than 600 employees had an opportunity to share their thoughts about Schlumberger's Transformation program and shake hands with the company's top executives President for Middle East and Asia, Hatem Soliman, Egypt & East Mediterranean Vice-President and General Manager, Hussein Fouad El Ghazzawy, and Continuous Performance Improvement Manager (CPI) for Egypt, South Sudan & East Mediterranean (EEG), Mohamed Helal, who also moderated the event.

Towards the Best-Run Company Profile

Schlumberger has no smaller vision than "to become the best-run company, not only in the oil and gas industry, but in the world," confidently stated VP & GM El Ghazzawy. With this in mind, the company has launched an ongoing Transformation plan, with some new elements being incorporated into the scheme as of this year.

In the opening speech, Hussein El Ghazzawy introduced the big picture of the Transformation, which is to be achieved through a focus on Efficiency, Reliability and Integration of Technologies, and by "creating a value for our customers that only WE can deliver." In the view of Hatem Soliman, "Transformation is not only about what we do, but how we can do it better. It is about Efficiency, Utilizing the best of our people, Delivering up to our clients' expectations, and to keep improving." In other words, as El Ghazzawy continued: "We have to turn our size into a competitive strength."

"We were fortunate that we have started our Transformation journey eight years ago and we are now in a better position compared to others because we have agility and flexibility to react to the change in the market environment," said VP El Ghazzawy. And, as Hatem Soliman added in an interview with Egypt Oil&Gas, Schlumberger "wants to achieve certain targets by 2020. However, Transformation is a complex process, because "you know where you start, but there is no end." "It is a continuous journey."



Ambitious Transformation Scheme

In the heart of Schlumberger's Transformation scheme stands the Customer. This entails that the company is aiming for "Efficiency, Reliability, and Integration to be the most cost-effective for our client," reiterated El Ghazzawy. In order to achieve this goal, Schlumberger is seeking to enhance its business workflow through six elements: Sales Planning, Operational Planning, Product and Service Delivery, Technology Lifecycle Management, Support Platform, and Research, Engineering Manufacturing.

For each of these elements, as VP & GM Hussein El Ghazzawy emphasized, the company has five Transformation goals that are to significantly improve operational reliability tenfold, reduce working capital by 25%, expand people's productivity by 20%, secure 100% asset utilization, and optimize unit support costs by 10%.

He further elaborated on the diagram saying that increasing productivity does not equal to more work for the employees, but rather translates into a better life-work balance for them. Similarly, the enhanced workflow in the field comes down to centralizing assets and maintenance in a way that will allow a more effective distribution of the tools across different sites as needed with a help of a regional distribution hub. "This will make us more competitive and we will be able to transfer that advantage to our clients," explained El Ghazzawy.

Schlumberger's Transformation scheme is a multiannual program with the current 3-year plan, which will necessarily require a well-developed change management plan. In this regard, the company relies

on the already established Schlumberger Change Leadership Framework (SCLF). In line with that, Schlumberger runs a 'Leading Change' training program that focuses on both the professional and personal aspects of change management. "The personal side of coping with the change" must be an integrated part of the training, as Mohamed Helal, CPI Manager, told Egypt Oil&Gas. After the training, the attendees become so called "change agents" in the company who are to spread the word around and help others build upon the acquired skills and knowledge. "On the professional side, within the given overall timeframe of 10 years from 2010 to 2020, we have a three-year plan [to follow], where we can create a better structured program during this period," Helal explained. Schlumberger has thus developed a thriving scheme to manage change within the company. The aim is to consistently "align our team, engage and empower our employees, manage the processes, monitor the implementation stages, and continuously improve our performance," stated Vice-President El Ghazzawy.

The Transformation program is to be implemented with the help of Field Deployment Organization, which is basically a team of people who guide the processes to ensure that the changes are developed accordingly in each specific geography of the company. An upgraded version of the Transformation program includes a digital toolbox, through which the company can track progress, but not only in the current location, but also in other Schlumberger's branches across the entire world.

Basically, El Ghazzawy stated, "the industry needs to change its business model to be able to cope



with the shifting environment." "Although the recent downturn has shown that the industry is resilient," the companies need to prepare for the change. In his view, the key strategy is to improve internal performance, technology systems that would reflect on company's ability to innovative and integrate, and the business model that would encourage closer collaboration with customers.

Transformation Benefits for Employees

And what is there for each of Schlumberger's employees that the Transformation promises? While some of the benefits will be visible presently, others will be delivered in the near future, noted the company's VP and General Manager, El Ghazzawy.

As of now, people working for Schlumberger will gain from new training schemes as the company is targeting "multi-skilling" its employees. While they develop new skills and gain cross-segment experience, their career opportunities necessarily boost. Furthermore, the management thus seeks to provide for their people a better work-life balance with more predictable working schedules. As a result come increased job satisfaction and greater professionalism. Through this process, Schlumberger displays its dedication to its employees.

Indeed, Schlumberger is Transforming to a new mode of operation. As El Ghazzawy put it: "We are changing the mindset, we are challenging the status quo, we are changing the way in which we are doing business, we are changing the way in which we are working." Yet, for the company to do well in this Transformative endeavor towards efficiency, there are some basic requirements for each and every one. The Schlumberger Triangle of Success calls for an open mind, right decisions every time and everywhere, and a joint team effort to achieve all the envisioned goals. For the company's top manager, Hussein El Ghazzawy, the recipe is clear and simple. "We, each of you, all of us as a team, we will drive the change and Transformation."

showcase the benefits of the change, Schlumberger invited an inspirational guest speaker, who was an 18 years old cyclist, Yassin El Zoghby. Yassin had lost his left leg at the age of 11 when a boat hit him while he was snorkeling in Sharm El Sheikh. Ever since he was faced with the reality of a handicapped person, a change that carves into a teenager's soul, but Yassin, after many months in a hospital, courageously decided to learn to Transform this into his advantage. Six years after the accident, Yassin was one of several students that completed a cycling race from Cairo to Ain Sokhna, this time with an artificial leg. To mark his achievements, a cheering audience and Schlumberger President, Hatem Soliman, awarded Yassin El Zoghby a commemorative prize.

Another extraordinary story of how Transformation and change can turn into positive achievements was told about Prof. Magdi Yacoub, a surgeon, who instead of retiring opted for starting a new hospital in Aswan. He established a top-notch facility, where

he treats patients from the neighborhood for free. His dream was to do something different and through this project Prof. Yacoub accomplished it, even at the age of above 80 years. Attracted by his inspirational example, Schlumberger has partnered with Prof. Magdi Yacoub to create a new state-of-the-art city in Aswan that will be powered by solar panels and it will have state-of-the-art school and clinic. "We hope that the entire oil and gas sector will open partnership with him," said Mohamed Helal, CPI Manager. The example of the professor is "an example to go an extra mile to make a Transformation that will be successful," Helal added. Schlumberger and Magdi Yacoub Foundation will hopefully translate into a flourishing partnership.

Debating Complexities in Open Environment

At a following panel discussion with Hussein Fouad El Ghazzawy and Hatem Soliman, Schlumberger welcomed a special guest of the event, Apache's Vice-President and General Manager, David Chi, who shared his views on the Transformation initiatives in his company. The panelists also gave a large space for questions and comments from the audience of Schlumberger employees, who openly voiced their concerns and sought solutions to the emerged complexities that such a Transformation presents.

At the start of the debate, Schlumberger President, Hatem Soliman remembered contributions of the company's previous CEOs and the legacies of some of them, whose goal was for instance to "consolidate efforts into growing oil service part of Schlumberger" and "to create a Transformation system" within the company aiming for better performance and higher efficiency that would help to withstand the worldwide competition. Soliman thus highlighted the urgent need of Transformation for the future success and a sustainable survival in the changing market. "Doing a good job only today may not be enough," instead one needs to be aware of the changes in the environment and one's own limitations to be able to prepare for what future may bring.

David Chi, Vice-President of Apache, shared his company's formula for success. As he stressed, Apache has excelled in two things. The first one is "to get things done" and to do them "faster and better." Another element that the company aims for is "the mindset of the owner," which implies to "make the right decisions" as if for one's own company.

As David Chi further acknowledged, Apache's success is not an isolated experience, indeed, the company has grown to the largest oil producer in Egypt, but "we cannot do that without the support of companies like Schlumberger." It is therefore important, David Chi continued, to engage with a client to gain a win-win partnership. Even in an environment with less abundant resources, efficiency can create higher profit margin. Even though many companies want to drive down their costs, it is a key to recognize that "the cost is not the only side of the equation." In fact, Chi further explained, "the

equation is really where we can create more value." Therefore, "if you can provide a solution that actually has more value, even though on service it may cost more," Schlumberger's clients will be open to get involved. "That is the only way that cooperation can have a long lasting success," concluded Apache's VP

Schlumberger Engages Its Employees

As a part of the program, Schlumberger presented finalists of a company's competition announced in November, when in a call, the company inspired its employees to present their understanding and success stories of Transformation from the field, in their respective locations or segments. The company had selected four final runners and presented the four videos at the event for a public voting.

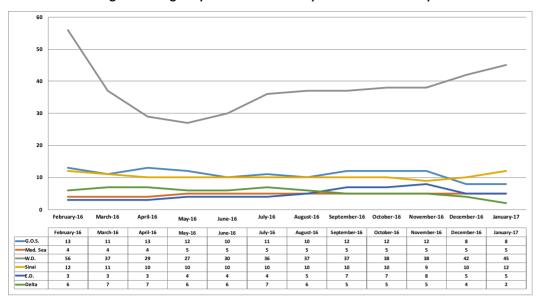
The screened videos again showed where Schlumberger has already achieved success. Across the company's divisions employees have managed to enhance Productivity and Efficiency in performance, deliver Asset Utilization improvements, build on cross-segment training and multi-skilling for turbo drillers and equipment operators, and much more.

In the final part of the program, participants were introduced to six booths, each representing the six different areas of Transformation, where they were informed in more details about all aspects of the change that Schlumberger is currently materializing. It is beyond any doubt that the top management and the company's employees are in unison regarding the ultimate target of the company, the Customer.

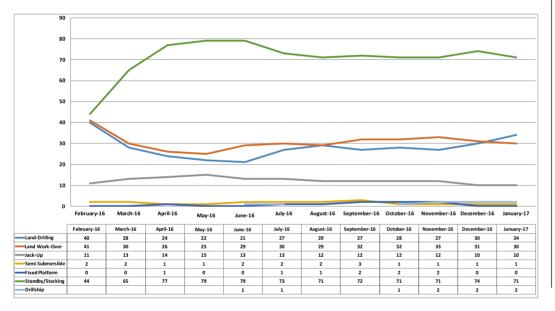
Schlumberger top executives' engagement with company's employees and their interaction from the audience as well as through creative video competition have demonstrated that the company has reached an exceptional level of an integrated team work. This clearly proves that Schlumberger is indeed a company that has indisputable agility to cope with rapid business growth, most visibly thanks to its dedicated, innovative, and engaged employees that are cooperating with top executives in a harmonious synergy.

It's about becoming the best-run company in the world.

Changes in Rigs by Area- February 2016 to January 2017

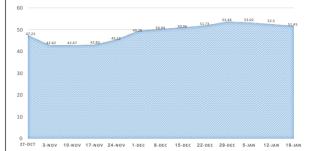


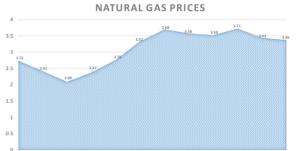
Changes in Rigs by Type - February 2016 to January 2017



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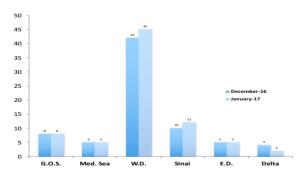


PRODUCTION November 2016

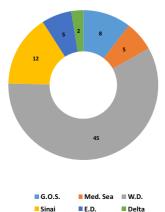
Crude Oil	Equivalent Gas Liquified Gas		Condensate
-	9364643	162554	627513
1888430	18929	4187	1422
9100251	6966607	672119	1340746
3853212	603750	246083	74869
28495	5865357	105309	393568
1626558	536	30854	23985
16496946	22819822	1221106	2462103
	- 1888430 9100251 3853212 28495 1626558	- 9364643 1888430 18929 9100251 6966607 3853212 603750 28495 5865357 1626558 536	- 9364643 162554 1888430 18929 4187 9100251 6966607 672119 3853212 603750 246083 28495 5865357 105309 1626558 536 30854

Unit: Barrel

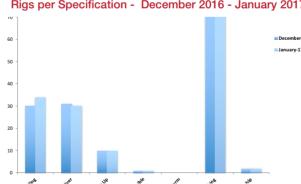
Rigs per Area - December 2016 - January 2017



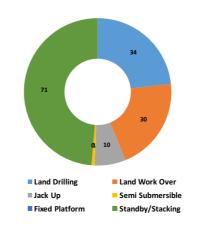
Rig Count per Area - January 2017



Rigs per Specification - December 2016 - January 2017



Rigs per Specification - January 2017



RIGS PER SPECIFICATION

DECEMBER 2016 - JANUARY 2017

LOCATION	December-16	January-17
Land Drilling	30	34
Land over Work	31	30
Jack Up	10	10
Semi Submersible	1	1
Fixed Platform	0	0
Standby/Stacking	74	71
Drillship	2	2
Total	148	148

RIGS PER AREA DECEMBER 2016 - JANUARY 2017

LOCATION	December-16	January-17
G.O.S.	8	8
Med. Sea	5	5
W.D.	42	45
Sinai	10	12
E.D.	5	5
Delta	4	2
Total	74	77



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