



People Are the True Assets in Oil and Gas

**BRIDGING THE GAP: OIL & GAS INDUSTRY
TACKLES SKILLS SHORTAGE**

**REMEDIES FOR OIL AND GAS WORKFORCE
CHALLENGES**

RETAIN AND AVOID BRAIN DRAIN

**PERPLEXITIES OF PETROLEUM
ENGINEERING EDUCATION**

**TOWARDS GENDER BALANCE IN
HYDROCARBON FIELDS**

**Proudly
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EDITOR'S NOTE

The Egyptian oil and gas industry has taken upon itself a decisive role in enhancing the development of human capital. Egypt Oil & Gas is, therefore, proud to announce the upcoming PEOPLE DEVELOPMENT ROUNDTABLE, which will take place on 13th December in Cairo. The discussion of leading industry executives from both the public and private sectors will tackle issues ranging from competency requirements for career progression to development of technical and non-technical staff to the role of IOCs and EGPC in these transformation processes.

Our December issue has been designed to analyze some key subjects of the people development theme, which aspires to gear up the debate in the industry.

EOG team has researched various aspects of people development strategies in Egypt. In an interview with Oil and Gas Skills' Chairman, Eng. Mohamed Badr, EOG examined strategic direction of the company that aims to overcome existing challenges of people development in the sector.

The Egyptian oil and gas sector is currently focused on ameliorating impacts of skills shortage, for which a closer cooperation with all involved players appears to be almost inevitable. In attempt to contribute to these collective efforts, there are other remedies that need to be considered in order for the country to effectively implement its new program in developing human capital. Reliance on local workforce is a key to success and it can be achievable if the industry agrees to adopt the principles of global training strategies.

Negative impacts of brain drain scenarios also play an important role in the development of the sector. In this issue, we look at functional mechanisms that would help retain workforce and avoid the flight of skilled oil and gas workers. To this end, the need for improvements in petroleum engineering education is paramount. In addition, inclusion of women in the industry and focused strategies to strike a gender balance in hydrocarbon business can guarantee sustainability with boosted outputs.

Some companies in Egypt have already launched their alternative staff training programs that introduce innovative modules such as change management and self development, which are also covered in this issue.

Lastly, the 22nd Team's Misr conference in Cairo on people development challenges in the MENA region introduced several tools that could benefit petroleum sector's future.

EOG team is looking forward to welcoming you soon at our roundtable. We believe that the event can help us jointly search for innovative solutions to the current people development questions that the industry is seeking to overcome.

As always, we thank you for your continuous support and your readership.

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inside this issue



People Are the True Assets in Oil and Gas



Bridging the Gap: Oil & Gas Industry Tackles Skills Shortage



Remedies for oil and gas workforce challenges



Retain and Avoid Brain Drain



Perplexities of Petroleum Engineering Education



Towards Gender Balance in Hydrocarbon Fields



The Life Balance Equation



People Development Challenges in MENA Region



Energy in the Middle East The Big Picture for 2017

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Eni Drills 7th Well in Zohr Field

Italian Eni started the drilling operation of the 7th well as the final stage of the accelerated development project which aims to produce 1bcf/d of gas by the end of 2017. Eni targets to increase production to 2.7bcf/d of gas by the end of 2019 when the development plan is completed, stated the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, in a press release to Egypt Oil&Gas during a meeting of Zohr's Development Higher Committee. El Molla further added that the drilling of the 6th well in Zohr field had ended with promising results and Eni is further developing the field.

Additionally, El Molla also reviewed the progress on a refinery at West Port Said aimed to process 2.8bcf/d of gas extracted from Zohr. The terminal is operated by Engineering for the Petroleum & Process Industries (Enppi) and Petrojet.

Furthermore, Italian Eni plans to link 80mcf/d of gas

to national grid from its Nooros concession by the end of November 2016. A source with the Egyptian Natural Gas Holding Company (EGAS) stated that total gas production from Nooros is to increase from 850mcf/d to reach 930mcf/d by the end of November.

This comes after drilling a number of development wells and adding them to the project's production was completed, reported Al Borsa. Linking these wells to the national gas grid will help compensate for natural gas production decrease.

It was reported that Egypt's gas production has been declining at a rate of 1.2bcf/year, while the volume of wells linked to the national grid came to no more than 700mcf/year of gas. A source from EGAS stated that the daily decline averaged 45mcf/d from mature gas fields. He noted that EGAS had no immediate plans to add any new wells to the production grid during November.



Egypt to Finalize New Gas Law by 2017



Egypt's Petroleum and Mineral Resources Ministry announced it plans to finalize the new gas law before the end of 2017, according to Oil Minister, Tarek El Molla, reported Al Borsa.

The new gas law will establish a regulatory authority for the natural gas market, which is expected to define levels of price liberalization and create equal opportunities for gas market contributors.

"By the end of 2017, we will have the law and the executive regulations ready, and we will have completed the establishment of the authority to allow private companies to import gas," Daily News Egypt cited El Molla as saying at

an economic conference held in Cairo in November.

The new gas law is currently being reviewed by the State Council, which was set to submit the law to the Egyptian parliament for approval already by the end of August.

The new gas law is designed to tackle the country's persistent challenge in continuously declining local natural gas production, which in October decreased from 4.4bcf/d to 4.35bcf/d due to deficient speed of connecting new wells to the national grid, reported Al Borsa citing a source with the Egyptian Gas Holding Company (EGAS).

Apache, Shell Sustain Operations in Egypt

Two foreign oil companies operating in Egypt, Apache and Shell announced their future investment and operation plans in the country, media sources informed.

US Apache is bidding for an exploration license in Egypt's Western Desert concession through its Egyptian joint venture company Khalda Petroleum. The bid is for the Egyptian General Petroleum Corporation's (EGPC) May tender for the exploration in 11 sediment basin sectors, reported Al Borsa. The tender included five sediment basin sectors in the Gulf of Suez, and six sediment basin sectors in the Western Desert.

Shell informed that the company has sustained its investments in Egypt through the past period, and is currently in early stages of evaluating WDDM results for future exploration prospects, according to a statement to Egypt Oil&Gas. Shell Egypt's CEO, Aiden Murphy, said that results from the Burullus and Rosetta concessions were encouraging so far, but further evaluation is due in



the upcoming period.

Meanwhile, the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, stated that the exploration and production tenders came in light of Egypt's strategy to secure energy demands. El Molla added that the ministry plans to increase oil and gas exploration, as well as encourage foreign companies to increase their investments in the field.

Apex International Energy Opened Cairo Office

Apex International Energy, a new independent oil and gas exploration and production company focused on Egypt, announced that it has opened offices in Cairo, Egypt, Egypt Oil&Gas reported citing company's press release. Apex's Founder and CEO, Roger B. Plank, said: "We have made Egypt our top priority place to invest and are actively involved in the current concession bidding round and evaluating a number of interesting acquisition opportunities." Furthermore, the company's President and COO, Thomas M. Maher, added that "we are currently working closely with government and local third parties in Egypt as we take an active role in developing our business and network of relationships in the region."

EGAS to Evaluate Gas Projects

The Egyptian Gas Holding Company (EGAS) started reassessing the gas projects that will be linked to national grid until the end of 2017. This reassessment aims to study possibilities of providing local demands through the two floating and storage regasification units (FSRU) in Ain Sokhna and the Jordan pipeline, reported Al Borsa. Egypt postponed contracting a third FSRU for one month. In addition, a source with EGAS stated that Egypt's gas production will reach 5bcf/d by the end of 2017. It will gradually increase until 2020 by linking the production from Zohr field and North Alexandria concession.

Egypt Bought 15% in Iraqi Gas Field

The Egyptian General Petroleum Corporation (EGPC) has signed a contract with Kuwait Energy oil firm to purchase a share in Iraqi Siba gas field, which is located south-east of Basra governorate, reported Egypt Independent. According to the agreement, EGPC will own 15% of Siba field, informed Trade Arabia. The Petroleum Projects & Technical Consultations Company (Petrojet) is the project's general contractor as it will perform the engineering and executive works worth \$200m. The Egyptian Ministry of Petroleum stated that Siba field will start production during 2017. It is primarily estimated to produce 70mcf/d of gas that will gradually increase to reach between 100mcf/d to 150mcf/d.

El Molla: Egypt Signed 70 New Oil&Gas Agreements

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, stated that Egypt has recently signed 70 new oil and gas exploration agreements after agreeing with international oil companies (IOCs) to amend natural gas prices, which helped in attracting new investments, reported Al Borsa. He affirmed that Italian Eni aims to link 1bcf/d of gas to the national grid by the end of 2017 or within the first quarter of 2018. The company further plans to increase production gradually to reach 2.7bcf/d by 2020. Moreover, the first development phase of the northern Alexandria concession and West Mediterranean deep water concession is to be completed by the third quarter of 2017.

SDX Chose Drilling Location in South Disouq

SDX Energy Incorporation chose a location for drilling a carried exploration well in the South Disouq concession in Egypt of which it operates with a 55% interest. SDX assigned a team to provide technical assistance on the well in order to start drilling in the first quarter of 2017, reported Rigzone. SDX received enquiries from a number of operators regarding buying leases in the license. The company's spokesperson stated that "although the company is fully carried on its remaining obligations in the license and is unlikely to farm down any additional equity, it has agreed to let selected companies submit proposals to acquire an interest in the concession."

Egypt to Proceed with Saudi Power Link

The Egyptian Minister of Electricity and Renewable Resources, Mohamed Shaker, stated that the ministry is working on establishing power links with Saudi Arabia. He added that such bilateral connectivity with neighboring Arab nations requires stability in the region, reported Al Borsa. Shaker concluded that the current political and economic situation between Egypt and Saudi Arabia did not affect the electricity link project as tenders had been launched in order to complete the project within the first quarter of 2019. The project consists of three stages. The first aims to establish two 500KV alternating current to direct current transformers in Badr City.

Egypt Received First \$2.75b IMF Tranche



Egypt has received the first \$2.75b tranche of the International Monetary Fund's (IMF) loan upon the IMF's board approval of the three-year \$12b package, reported Daily News Egypt. IMF's approval of the loan came after Egypt started its reform program and it is scheduled to be repaid over the period of 10 years with an interest rate of 1%-1.5%, Bloomberg informed.

IMF Managing Director, Christine Lagarde, stated that the loan is "designed to revive growth and make sure it produces lasting changes and inclusive growth" in the country.

IMF endorses Egypt's reform program, which it believes will help the country to restore its economic stability. As part of the reform, Egypt devalued its currency by 48% in accordance with IMF requirements for the country to qualify for the loan. The devaluation pegged the Egyptian pound at 13 to USD, up from nearly EGP 9 on the official mar-

ket, informed The Guardian.

In line with the country's overhaul, the Egyptian Ministry of Petroleum has further increased petrol prices in early-November in a move to alleviate fuel subsidy expenditures, reported Al Borsa.

Fuel prices were set for Octane 95 petrol to be sold for EGP 6.50 per liter, Octane 92 petrol has risen by 35% to reach EGP 3.50 per liter, and Octane 80 petrol has risen by 47% to EGP 2.35 per liter. Furthermore, the selling price of diesel has increased by 31% to reach EGP 2.35 per liter, while kerosene is sold for EGP 2.35 per liter, and compressed natural gas for automobiles is up 31% to EGP 1.60 per cubic meter.

Moreover, the Egyptian government plans to issue \$2b to \$2.5b in international bonds in 2016 in order to increase inflow of foreign currency. In addition, Egypt reached a currency swap agreement with China valued at \$2.7b in order to fulfill IMF conditions.

Egypt, Russia to Sign Dabaa Nuclear Deal

by End 2016



Egypt agreed with Russia to sign the final contract for the nuclear power plant Al Dabaa by the end of 2016, Minister of Electricity, Mohamed Shaker, stated. He added that Moscow will grant Cairo a \$25b loan to finance equipment for construction and operation of the plant and it is to provide the first tranche already after signing the contracts, reported Daily News Egypt.

The first nuclear reactor is scheduled to start operating nine years after signing the contracts. The second reactor will follow six months later and the third will begin functioning after additional six months, while the fourth is planned to come online after another year since the completion of the third. The total

capacity of the plant is to 4,800MW.

In addition, Egypt and its Russian partner agreed that meanwhile they will launch a training program for 1,711 people, who will work at the plant, already in April 2017.

Meanwhile, Head of the Energy Committee at the Egyptian parliament, Talaat El Swedy, stated that Al Dabaa nuclear plant agreement has not been presented to the Egyptian parliament yet. However, he stressed that the parliament will not decline any national project agreement such as Al Dabaa nuclear power plant agreement and there is no operational and financial terms left to be discussed, reported Al Borsa.

Egypt Paid EGP 1b to Eni

The Egyptian Ministry of Petroleum and Mineral Resources has paid EGP 1b to Italian Eni as part of the outstanding dues for the company's equity production. An official with Eni stated that the company received part of its money in EGP and used it in paying for local contractors, reported Al Borsa.

The Egyptian government paid the amount at the beginning of November before the EGP devaluation along with paying several amounts in EGP to other oil and gas companies. Egypt's foreign debt to international oil companies (IOC) had reached \$3.6b at the end of September 2016. A source in the state petroleum sector stated that Egypt is committed to paying all overdue amounts and has reached a monthly payment plan agreement with IOCs to ensure that they continue exploration and concession development in the country.

Additionally, Egypt's Oil Minister, Tarek El Molla, stated that international oil companies (IOCs) have agreed with the ministry to speed up the exploration



and production (E&P) of new discoveries. They have also agreed to build new refineries, and add production lines at existing refineries, reported Al Borsa.

Egypt Finalized FIT Phase II Arbitration

Egypt's New and Renewable Energy Authority's (NREA) CEO, Mohamed El Sobky, stated that the Egyptian Cabinet has approved Paris as a seat for international arbitration in Phase II of the energy purchasing Feed-in-Tariff (FIT) program, reported Al Mal. He added that the devaluation of the EGP represents an additional risk to FIT project. However, it will also encourage the inclusion of local components, as Egypt stipulated that 30% of FIT Phase II projects be sourced locally. Finalizing FIT phase II arbitration, together with liberalizing the foreign exchange market, the government has addressed investors' concerns that came up during Phase I of the program.

Egypt Listed Oil Firms for IPO

The Egyptian Ministry of Petroleum and Mineral Resources presented eight oil and petrochemical companies to the Ministry of Investment and Capital National Investment Bank to study the launch of an initial public offering (IPO) through the Egyptian Stock Exchange (EGX) and other global markets, reported Daily News Egypt. The Minister of Petroleum, Tarek El Molla, added that during November the government will finalize its evaluation of the eight firms and their offerings, and accordingly determine the timing of IPO, reported Al Borsa. The first phase of the IPO will include five firms among them the Middle East Oil Refinery company (MIDOR) and Egyptian Ethylene and Derivatives Company (ETHYDCO).

Egypt Gas Company Incurred EGP 50m Losses

Egypt Gas Company has incurred a total loss of EGP 50.4m for the first nine months of 2016. This comes to an over 14% increase when compared to EGP 43.9 losses for the same period during 2015, reported Al Borsa. The company's Financial Manager, Tarek Farouk, stated that Egypt Gas

has submitted a study to the Egyptian Natural Gas Holding Company (EGAS) to increase installation and delivery fees collected from customers in order to align the company's income with the rising operational costs associated with floating the EGP, as the company imports 60% of its materials. The company is waiting for EGAS' approval.

Egypt to Invest \$10b in Coal-Fired Power

The Egyptian Deputy Minister of Political Communication Development at the Ministry of Electricity, Sabah Mashaly, stated that the ministry received proposals from Shanghai Electric, Dongfang, Harbin-General Electric, El Sewedy-Marubeni, Mitsubishi-Hitachi, as well as Sumitomo, to establish coal-fired power plants according to an engineering, procurement, and construction (EPC) contract, plus financing that will reach \$10b, reported Al Borsa. Furthermore, a source with the Egyptian Ministry of Electricity stated that Chinese Dongfang started studying the establishment of a private port for the construction of a coal-fired plant in Hamraween area in the Red Sea governorate, reported Al Mal News.

Egypt Expanded in Renewable Energy

Egyptian Minister of Electricity, Mohamed Shaker, stated that the electricity sector launched three new renewable energy tenders under the build, own, and operate (BOO) system. The tenders are for plants to produce 250MW from wind farms, 200MW from photovoltaic, and 100MW from solar concentrators. The projects will be established on land owned by the New and Renewable Energy Authority (NREA) located West of the Nile, reported Al Wattan News. In related news by Al Wattan News, Shaker said that the Egyptian Electricity Transmission Company (EETC) signed energy purchasing agreements for solar energy projects under the terms of Phase I of the Feed-in-Tariff (FIT) program.

El Molla: Egypt to Become Self-Sufficient in Gas by 2020/2021



Egyptian Minister of Petroleum, Tarek El Molla, stated that Egypt will become self-sufficient in the natural gas sector by the fiscal year 2020/2021, with some gas to be exported, Egypt Oil&Gas reported in exclusive news from the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) in November.

According to the minister, Egypt has a competitive edge as a gas exportation hub thanks to its “geographically fantastic location” and proximity to various markets, especially in the Middle East and East Mediterranean. In addition, Egypt’s current gas infrastructure in terms of available LNG plants and the availability of the Suez Canal boost country’s potential to aspire for an energy regional hub role.

Furthermore, he stated that the country is planning ahead to optimize the

use of gas in petrochemicals through two important plants in Alexandria and Damietta, with three other petrochemical projects under development.

El Molla also addressed the subject of fuel subsidies in the country ahead of the \$12b IMF loan, stating that the Egyptian government has been committed to economic reforms and it has outlined a five-year program to gradually lift energy subsidies with a focus on pump prices and electricity.

“We are still committed to the five years so in the remaining two to three years maximum we eliminate or reduce the subsidies eventually,” El Molla noted. He explained that fuel subsidies had eroded Egypt’s petroleum resources due to excessive consumption, turning the country to fuel importer after it was once a net exporter.

Egypt Extended Crude Import Deal with Kuwait



Egypt has extended its crude import contract with Kuwait for the first nine months of 2017, as Kuwait’s cabinet approved the deal starting from January, reported Al Rai.

Egypt will receive 2mb of Kuwaiti crude each month, informed Bloomberg.

A Kuwaiti official stated that the shipments were not intended to make up for the loss of Saudi fuel imports to the North African country after Aramco halted supply of oil products to Egypt in October.

The Egyptian Minister of Petroleum, Tarek El Molla, confirmed that Aramco’s shipments, expected to be delivered under the \$23b agreement, would be halted indefinitely, according to Reuters. Aramco had agreed earlier in 2016 to provide Egypt with 700,000t of refined oil products a month for up to five years. Nonetheless, following the cancellation of Saudi supplies to Egypt, the country opted for buying fuels on world markets, which came at higher cost.

Egypt to Pay EGP 60b in Power Subsidies

The Egyptian Minister of Electricity and Renewable Energy, Mohamed Shaker, stated that the cost of the country’s power subsidy has increased from EGP 30b to EGP 60b for the current fiscal year 2016/2017. He added that the budget sub-

mitted by the ministry and approved by the Egyptian cabinet showed subsidies expenditure saving of EGP 18b, reported Al Borsa. Shaker explained that current economic changes that occurred in Egypt including the EGP devaluation, the fuel prices hike in addition to the value added tax have led to increase in subsidies expenditure projections.

DRILLING

QARUN

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 oil production rate of Qarun in September 2016 was 1,112,302 barrels of oil.

ASALA-71

The well was drilled at a depth of 5,800ft utilizing the EDC-64 rig. Investments surrounding the project are estimated at \$1m.

BAPETCO

BAPETCO, a joint venture between EGPC and Shell, has completed drilling a new exploratory oil well in its concession area in the Western Desert. The oil production rate of BAPETCO in September 2016 was 1,451,989 barrels of oil.

BED3 C9-D

The well was drilled at a depth of 11,785ft utilizing the EDC-52 rig. Investments surrounding the project are estimated at \$2.313m.

JDT 1-05

The well was drilled at a depth of 4,350ft utilizing the EDC-66 rig. Investments surrounding the project are estimated at \$1m.

KHALDA

KHALDA, a joint venture between EGPC and Apache, has completed drilling new oil well in its concession area in the Western Desert. The oil production rate of Khalda in September 2016 was 4,566,937 barrels of oil.

WRZK-140

The well was drilled at a depth of 6,813ft utilizing the EDC-65 rig. Investments surrounding the project are estimated at \$2m.

MRZK -130

The well was drilled at a depth of 7,360ft utilizing the EDC-66rig. Investments surrounding the project are estimated at \$1.640m.

BP

BP, a British multinational research & exploration company, has completed drilling a new exploratory gas well in its concession area in the Mediterranean Sea.

LIBRA N-4

The well was drilled at a depth of 7,645ft utilizing the DISCOV-2 rig. Investments surrounding the project are estimated at \$21.938m.

TAURUS S-1

The well was drilled at a depth of 6,893ft utilizing the DISCOV-2 rig. Investments surrounding the project are estimated at \$18.486m.

PETROBEL

PETROBEL, a joint venture company between EGPC and ENI, has completed drilling a new crude oil development well in its concession area in Sinai. The production rate of PETROBEL in September 2016 was 2,845,859 barrels of oil.

BLS-18

The well was drilled at a depth of 10,711ft utilizing the PD-104 rig. In-

vestments surrounding the project are estimated at \$3.458m.

ARM-27

The well was drilled at a depth of 13,268ft utilizing the ST-11 rig. Investments surrounding the project are estimated at \$4.176m.

GPC

GPC, a public sector company, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of GPC in September 2016 was 1,452,480 barrels of oil.

HF-36/7B

The well was drilled at a depth of 7,5137ft utilizing the ST-4 rig. Investments surrounding the project are estimated at \$2m.

PETROSANNAN

PETROSANNAN, a joint venture company between EGPC and NAFTOGAZ, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of PETROSANNAN in September 2016 was 172,401 barrels of oil.

AES E6 1/10

The well was drilled at a depth of 6,775ft utilizing the SHAMS-2 rig. Investments surrounding the project are estimated at \$1.049m.

PETROSILAH

PETROSILAH, a joint venture company between EGPC and MERLON international, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of PETROSILAH in September 2016 was 288,092 barrels of oil.

N.SILAH D1-4

The well was drilled at a depth of 8,810ft utilizing the TANMIA-1 rig. Investments surrounding the project are estimated at \$1.433m.

NORPETCO

NORPETCO, a joint venture company between EGPC and SAHARI, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of NORPETCO in September 2016 was 285,845 barrels of oil.

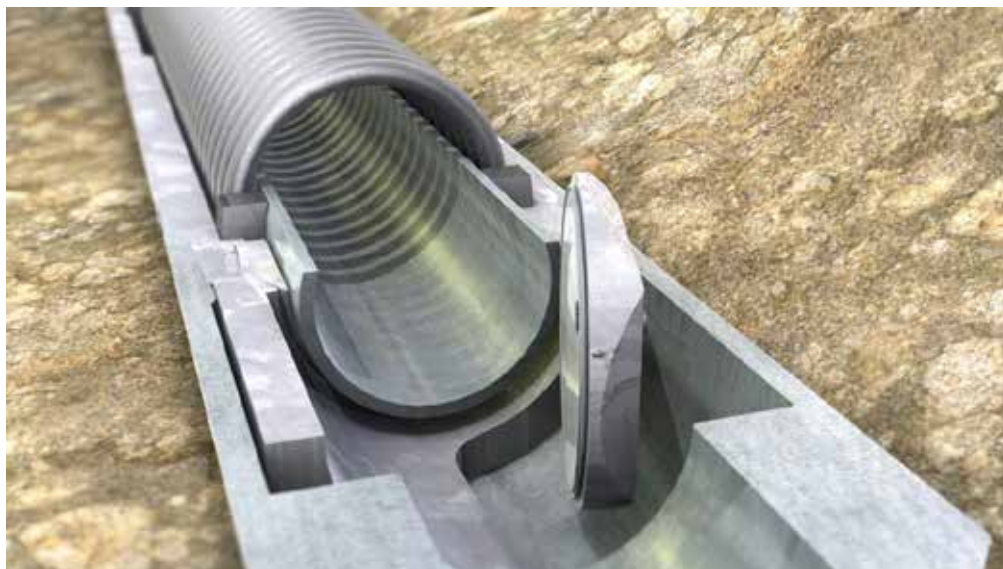
GANNA - 9

The well was drilled at a depth of 8,385ft utilizing the ECDC-2 rig. Investments surrounding the project are estimated at \$1.017m.



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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.

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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, debris-laden environments
- Low operating pressure at any setting depth
 - 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

OPEC Oil Freeze Plan

The Organization of the Petroleum Exporting Countries' (OPEC) oil output set another record high in October. According to shipping data and information from industry sources, supply from OPEC has risen to 33.82mb/d in October from a revised 33.69mb/d in September, Reuters reported. That would be 820,000b/d above the top end of a target output range OPEC agreed to adopt in September to limit supplies. Production near 34mb/d would prolong the supply surplus weighing on the market, and thus add skepticism about OPEC's ability to reach an agreement on a production freeze, informed Oil and Gas People. This comes as the Saudi Energy Minister, Khaled Al Faleh, was in Algiers for talks with his Algerian counterpart, Nouredine Bouterfa, to discuss the need for a new

date for OPEC technical committee negotiations. The two ministers agreed to adhere to a September Algiers deal to cut output, reported Reuters. Al Faleh added: "In this period marked by unstable oil prices it is imperative to reach a consensus between OPEC nations and to agree on an effective mechanism and precise figures to activate the historic Algiers accord," informed Al Arabiya. Accordingly, Iraq's Oil Minister, Jabar Ali Al Luaibi, declared that Iraq will make three new suggestions at a meeting of OPEC oil ministers in Vienna at the end of the November to implement the agreement to restrain crude supply, reported Reuters. However, the statement hinted that Iraq would not be contributing to any output cut. Al Luaibi said: "Our alternatives are based on other variables and



will make it easier for OPEC members to make a decision," according to The Wall Street Journal. In October, Al Luaibi had said Iraq should be exempted from

output restrictions, with Iran, Libya and Nigeria, whose output has been hit by sanctions or conflict.

Libya Marks Growing Oil Output

month, informed the Tripoli-based National Oil Corporation (NOC) in a statement. The rise in output came accordingly to NOC's work in some previously-shut oilfields, reported The Libya Observer.



Furthermore, NOC's official, Ibrahim Al-Uwami, remarked that Libya's oil output is gradually ascending and expected to reach 1.5mb/d, once the budget needed for overhaul procedures in the oilfields and terminals is provided for the NOC, coupled with reopening of Al-Sharara and Al-Feel oilfields in the south, according to Ecofin News Agency.

Libyan Commander, Khalifa Haftar, and handed to NOC, according to Reuters. Abu Tifl was shut for two years because of protests by local residents and blockades at eastern ports that were recently lifted. The field previously produced 75,000b/d, with output expected to further grow.

This comes as gas production has resumed at Libya's eastern Abu Tifl field and 12,000b/d of oil was scheduled to be pumped by mid-November 2016, reported Ecofin Agency News. The oil will be shipped to the port of Zuetina, one of four terminals seized in September by forces loyal to eastern

Iran Opens Oil Production from New Fields

Iranian President, Hassan Rouhani, launched Phase 1 of oil production at Yadavaran, North Yaran, and North Azadegan fields, with a total output of more than 220,000b/d of crude, reported Reuters. Iran had awarded Yadavaran to China's Sinopec through a \$3b contract. North Azadegan had been awarded to the China National Petroleum Company (CNPC) and North Yaran to Iran's Persia Oil and Gas Development Company through contracts worth \$2.5b and \$600m, respectively, informed Press TV.



Furthermore, Iran began first oil production from North Yaran field shared with Iraq. The field's Development Manager, Arash Baqerzadeh, said that production began with 30,000b/d on the back of ten wells, according to Press TV. It is expected that the combined output from North and South Yaran, North and South Azadegan, and Yadavaran, which are shared with Iraq, is to reach 700,000b/d by 2018/2019, reported Oil Price News.

rector, Bijan Alipour, declared that the company will develop additional four oilfields, Parsi, Karanj, Rag Sefid, and Shadgan, under the new contract model, which is expected to extend up to five years per agreement, with no ceiling for investments, reported Trade Arabia. Alipour added that the company is in talks with more than 22 European and Asian companies for fields' development, according to Shana.

Additionally, the National Iranian South Oil Company's (NISOC) Managing Di-

KRG's Oil Exports to Turkey Declined

Iraq's current exports from the Kirkuk oil field through a pipeline to Turkey have dropped to 100,000b/d, compared with 133,000b/d in October. An official at state-run North Oil Company attributed the decrease to power outages, reported Reuters. The pipeline delivers crude to Turkish terminal of Ceyhan on the Mediterranean coast. It also carries crude produced in fields developed by the Kurdistan Regional Government (KRG), an autonomous region in north Iraq.

North Oil resumed exports through the Kurdish-controlled pipeline in August, after a five-month halt caused by a dispute on oil revenue sharing between Baghdad and the KRG, according to Al Arabiya.

Eni to Buy Algerian Gas

Italy's Eni will continue buying Algerian gas in 2017 with the same vein as its purchases for 2016, reported Platts. Eni's CEO, Claudio Descalzi, said that the company discussed its expected volume purchases with Sonatrach every year. Accordingly, the Italian company has increased its gas imports from Algeria significantly in 2016, its volumes averaged 46mcm/d in the first ten months of the year, compared with an average of 19mcm/d in the same period in 2015, informed Hellenic Shipping News. Descalzi added that Eni's purchases are also related to the prevailing price conditions.

Iraq Delayed Upstream Bid

Iraq's Oil Ministry is postponing an upstream bidding round for 12 small and medium-sized oil fields across three provinces until mid 2017, reported Reuters. A statement by the ministry said that there are essential changes to its previous announcement, including plans for the government to develop some of the fields itself and adding other fields to the tender. The ministry announced the tender in October, re-qualifying 19 bidders including six Japanese firms, the UAE's Dragon Oil, Mubadala Oil, and Crescent Petroleum as well as

Glencore Exploration Ltd and companies from China, Russia, Italy, Kuwait, Indonesia, Vietnam, Thailand, and Romania, according to Hellenic Shipping News.

Oman to Invest \$1.8b in Petchem

The state-owned Oman Oil Company (OOC) plans to progress the implementation of three strategic petrochemical ventures by 2017. The total investment is worth \$1.81b, reported Trade Arabia. OOC's CEO, Isam al Zadjali, said that all three schemes, which include the Salalah liquefied petroleum gas (LPG) project of Oman Gas Company, the purified terephthalic acid (PTA) and polyethylene terephthalate (PET) complex of Oman International Petrochemical Industries Company (OMPET), and the ammonia project of Salalah Methanol Company, will be sent to OOC's board for final investment decision (FID) before the end of November, according to Oman Observer.

Aramco Awarded \$1b Deals to Saipem

Saudi Aramco awarded the Italian oil service group, Saipem, two contracts for new offshore engineering and construction contracts worth around \$1b. The contracts include development of Marjan, Zuluf in the Arabian Gulf, in addition to and Safaniya field, the world's largest offshore oilfield with 37b barrels of heavy crude in place, reported Reuters. Under the terms of the Aramco deals, Saipem will provide design, engineering, procurement, construction, installation and implementation of subsea systems in addition to the laying of pipelines, subsea cables and umbilicals, platform decks and jackets, according to Upstream Online.



Algeria's Sonatrach Expands Oil Exports

Algeria's state-run Sonatrach achieved record high crude oil exports in October of 2.77m tons of oil equivalent, as opposed to the company's usual monthly export volumes of 1.9m to 2m tons of crude oil per month, Reuters reported. Furthermore, the company's total exports for the first eight months of 2016 reached 71.5m tons of oil equivalent. This is an 8% increase when compared to the 65.4m tons export volumes for the same period in 2015, according to Algeria Press Service.

On the other hand, the company's CEO, Amin Mazouzi, said that the Sonatrach's oil and gas exports have reached 89m tons during the first ten months of 2016, marking a 9% growth when compared to volumes from the same period during 2015. Additionally, oil production had increased by 80,000b/d during the third quarter of the year. Mazouzi noted that the growth came as a result of Sonatrach's program to enhance



production capabilities and diversify within international markets, informed Kuwait News Agency (KUNA).

This comes as the company made 28 hydrocarbon discoveries from the beginning 2016 until the end of September, mostly from the Hassi Messaoud and Berkine, Ecofin Agency reported. The overall volume of hydrocarbons discovered through the finds is estimat-

ed at 177.47m tons of oil equivalent. Moreover, Sonatrach declared that the Tiguentourine gas plant will resume full production with the start of its third train before the end of 2016, after a militant attack halted operations in the facility during 2013, reported Reuters. The third train will come online up in December 2016 to produce 6mcm/d of gas. The facility, which is operated by

Sonatrach, BP, and Statoil, currently produces about 16mcm.

The company also added that the production from the CAFC perimeter at the Menzel Ledjmet field, operated jointly by Sonatrach and Italy's Eni, will be an estimated 10,000b/d, according to London South East.

Israeli Leviathan Gas Field to Yield 12bcm/y



Partners in Israel's Leviathan natural gas field declared that the project's first development stage will include a capacity of 12bcm/y of gas. Further stages could include an additional 9bcm/y of gas, reported Reuters.

This comes as US energy major, Noble Energy, which hold 39.66% stake in the field, announced it expects to make a final investment decision (FID) on field development by early 2017, while also trying to secure new sales contracts. Noble Energy EVP Operations, Gary W. Willingham, said that the company has contracted up to 450mcf/d of gas for 15 years, according to Offshore Post. Development work in the field is

expected to yield positive cash flow and royalties by 2020, with most of the gross revenue from the Leviathan project estimated to come from a deal signed with Jordan totaling \$10m. The company did not reveal further updates on when it will hit first gas in the development, but it had declared earlier that this is predicted by the fourth quarter of 2019.

Noble Energy partners with Israel's Avner Oil and Delek Drilling, which each has a 22.67% share in the Leviathan field, and Ratio Oil with the remaining 15% stake.

Iraq, Jordan to Build Oil, Gas Pipeline



Iraq and Jordan have affirmed their plans to implement a double oil and gas pipeline to transport Iraqi hydrocarbon to the Jordanian port of Aqaba, informed Middle East Monitor. The project is to be finalized in cooperation with a consortium of investors, Iraq Business News wrote. The two countries will establish a committee to follow up on the development of the project.

The Iraqi Oil Minister, Jabar Ali Al Luaibi, and his Jordanian counterpart, Ibrahim Saif, stressed the importance of enhancing mutual energy. The two ministers further agreed to resume shipment of Iraqi crude oil to Jordan when the security situation in the border provinces stabilizes.

Earlier in November, the Egyptian Minister of Petroleum, Tarek El Molla, signed a memorandum of understanding (MoU) to import oil from Iraq. El Molla stated that this agreement will pave the way for the development of Egyptian-Iraqi cooperation in the field of oil and gas, reported Ecofin Agency. This agreement comes after Aramco halted its oil shipment to Egypt. Al Luaibi, commented that the agreement prepares the way for collaboration that includes Iraqi oil exports to Egypt. He added that Iraq offered Egypt the opportunity to invest in 12 Iraqi oil fields, informed Hellenic Shipping News.

Turkey's Nuclear Power to Start in 2023

The Turkish Energy Minister, Berat Albayrak, declared that Turkey expects the first unit of its planned \$20b Akkuyu nuclear power plant, being built in collaboration with Russia, to be online by the end of 2023, reported Reuters. The initial agreement on the nuclear power plant was signed between Turkey and Russia in 2010. The power plant consists of four nuclear reactors and an installment capacity

of 4,800MW, according to Daily Sabah. The nuclear plant is in the southern province of Mersin and it is the first of three nuclear power plants Turkey plans to construct.



Dana Gas Earned \$13m

Dana Gas, the Sharjah-based natural gas company, declared a third quarter net profit of \$13m, compared to a net loss of \$9m during the same period in 2015, reported Gulf News. The nine-month net profit stood at \$26m, against a gain of \$10m in the same period last year. The company pointed that the reason of this increase due to a combination of accrued interest on overdue receivables from the Kurdistan Regional Government (KRG), were

collection stood \$64m, and additional reductions in operating expenditure and general expenses, according to Trade Arabia.



Nigeria to Drill Oil Wells in Chad Basin



The Nigerian National Petroleum Corporation (NNPC) has announced that it will begin drilling operations for oil in Chad Basin in early 2017, informed Ecofin Agency. The drilling will commence after assessing the results gathered from the interpretation data.

NNPC's Managing Director (NNPC), Maikanti Baru, stated that this plan follows the acquisition and processing of more than 1,900 sq km of new 3D seismic in the area. The corporation plans to restart oil exploration activities in other inland basins, which include the Benue Through, This Day reported.

In line with these projects, NNPC announced that the country is to adopt new oil and gas policies aimed at attracting more private investors and boosting crude production by 500,000b/d by 2020. The Petroleum Ministry's oil and gas policies will include restructuring of NNPC, setting up an industry regulator, inviting more investors, and boosting refining capacity to end expensive imports.

The draft oil policy stated that NNPC will be made autonomous from the state, it will relinquish all its policymaking and regulatory activities, and will be treated

on an equal basis with private sector operators for projects.

Additionally, in November, Nigerian Oil Minister, Emmanuel Ibe Kachikwu, said that the country has reached a \$5b outline settlement with five oil majors to cover outstanding payments for joint exploration and production.

Although NNPC had repeatedly questioned the amounts owed, the company approached the settlement in an attempt to resolve the ongoing dispute as the delay in payments has hindered oil and gas investment in Nigeria and worsened a budget crisis as the government seeks to increase spending in a push to revive the economy. The settlement also addressed the \$1b debt the oil companies claimed was due from NNPC for costs incurred during 2016 in the joint ventures.

Accordingly, NNPC will implement a joint venture (JV) cash call exit model by early January 2017, which would guarantee the Nigerian government most of the revenue that normally accrues to it from the JV operation by lifting the royalty and tax oil upfront.

Tanzania, Uganda to Expedite Crude Pipeline



Tanzania's Energy and Minerals Minister, Sospeter Muhongo, and his Ugandan counterpart, Irene Muloni, signed and exchanged documents to speed up the execution of the \$3.5b East Africa Crude Oil Pipeline (EACOP), World Pipelines reported.

Construction of the 1,403km EACOP pipeline, which will transport crude oil from Hoima (Uganda) to Tanga Port (Tanzania), is expected to be completed by June 2020. However, concerns have been raised by Tanzania due to the lack of clarity on the operational aspect of the EACOP at Tanga Port during execution of the project.

The two countries agreed to grant multiple contractors construction deals. This comes as Uganda sent a letter to

the Ministry of Finance, Planning and Economic Development to start legal analysis of the proposed fiscal package, according to Ecofin Agency. It was proposed that the parties considered removing the fiscal package from the intergovernmental agreement (IGA) to allow for an IGA to be signed or for the Tanzanian government to issue a letter of comfort to other parties.

In April, Uganda announced that it would construct an oil pipeline through Tanzania instead of Kenya. Choosing a route is important for oil companies in order to make a final investment decision on the development of reserves found in Uganda and Kenya.

Africa Oil Corp. Projects New Oil Wells in Kenya



Africa Oil Corp. and its two joint venture partners, Tullow Oil and Maersk, have announced new plans to drill up to eight exploration and appraisal wells in Kenya starting from December to boost proven resources and improve financing prospects for field development and an export pipeline, Standard Digital wrote. The plan to recommence drilling activities in the Kenyan South Lokichar oil basin is located in Blocks 10BB and 13T.

An initial project for four wells has the potential to be extended by further four wells. The first two wells are expected to be the Etete and Erut prospects in the north of South Lokichar basin. Oth-

er potential prospects include further appraisal of the Ngamia and Amosing fields to target un-drilled flanks.

In addition, the group is also intending to launch an extensive water injection test program in the same period of this year in order to collect data to optimize the field development plans.

The South Lokichar Basin in north Kenya is estimated to have 766m barrels of recoverable contingent oil resources. The group initially planned to build a single pipeline to connect Ugandan oil fields and the Kenya's coast, but Uganda opted to build its own pipeline via Tanzania.

Shell Started Drilling Off-shore Tanzania

Royal Dutch Shell and its joint venture (JV) partners, Pavilion Energy and Ophir Energy, have started \$80m Noble Globetrotter II drilling campaign off-shore Tanzania, World Oil reported. It consists of one well in Block 1 and another in Block 4, which will take place in the Mafia Deep basin. Blocks 1 and 4 have a net contingent resource of 3tcf, about 501mb of oil equivalent, and a total gross contingent resource enough to support a three train liquefied natural gas (LNG) development. These wells will fulfil remaining requirements for the exploration licenses requested by Tanzania's Ministry of Energy and Minerals, informed Ecofin Agency.

Uganda to Award Exploration Licenses

The Ugandan Ministry of Energy announced that the country aims to sign deals by the year-end with the four oil exploration companies it had invited for talks in its first licensing round, informed Reuters. The four companies selected to negotiate production sharing agreements (PSA) are Nigeria's Walter Smith Petroleum Oil Ltd, Oranto Petroleum International, Niger Delta Petroleum Resources, and Australia's Armour Energy Ltd. Uganda launched its first round in February 2015 for six exploration blocks, covering a total of 3,000 sq km. Bidding documents were granted to 16 oil firms, but only seven had submitted bids, reported Ecofin Agency.

Strata-X Energy Announces Gas Farm-In in Botswana

Strata-X Energy Ltd. has entered into a heads of agreement with Magnum Gas and Power Ltd for a staged farm-in to earn up to 75% of the Serowe CSG gas project located on the Kalahari Basin CSG Fairway in Botswana, Oil Voice informed. Strata-X will operate the project, which spans approximately 273,000 acres. The proposed farm-in is in three stages, with the first scheduled to begin in January of 2017. The company has up to three years to complete all stages, with each earning the company a 25% working interest in the Serowe CSG Project.

Kenya's Tarach-1 Showed Hydrocarbon Presence

The American trade corporation, ERHC, announced that preliminary analysis of the drilling results from Tarach-1, situated in Kenya's Block 11A, reveals encouraging information for further hydrocarbon exploration, Oil News Kenya informed. ERHC's President and CEO, Peter Ntephe, said that the well came across oil shows and highly-elevated gas reading, indicating the presence of a working petroleum system with the strong possibility of significant hydrocarbon generation, according to Ecofin Agency. The well encountered two different hydrocarbon charged intervals, the first extending more than 100 meters. Block 11A is operated by CEP-SA with 55% alongside state-run National Oil Corporation of Kenya and ERHC with 10% and 35% stakes, respectively.



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Eni to Invest in Mozambique's Coral Project



Italian Eni approved the investment for the first phase of the Coral South gas project related to deep waters discovery in the Rovuma basin's Area 4, offshore Mozambique, reported World Oil. The project involves the construction of six subsea wells connected to a floating liquefied natural gas (FLNG) facility that will have a liquefaction capacity of over 3.3m tons of liquefied natural gas (LNG) per year, the equivalent of 5bcm/y. Eni estimates that the Coral discovery contains about 16tcf of gas in place.

Accordingly, in October, Eni and its Area 4 partners signed an agreement with UK's British Petroleum (BP) for the sale of the entire volume of LNG produced through the Coral South project, for a period of over twenty years. This was the first agreement ever signed in Mozambique for the sale of LNG produced in the country, and it was the first significant step towards the development of the 85tcf of gas discovered in Area 4, which cleared the way for Eni and Mo-

zambique to make the long-awaited final investment decision (FID) on the project.

The FID is pending the approval of all Area 4 partners, informed Natural Gas World. Eni said an FID is expected from partners on Mozambique's deep-water Coral South FLNG project by December, with production starting five years later, Reuters reported.

According to earlier reports, Eni had approached banks for billions of dollars to finance the huge offshore gas development. However, the banks were also looking for credit guarantees from foreign governments, including Britain and China.

Eni is the operator of Area 4 with a 50% indirect interest owned through Eni East Africa (EEA), which holds a 70% stake in Area 4. Galp Energia, South Korean state Kogas, and Mozambique's state-run Empresa Nacional de Hidrocarbonetos (ENH) each owns a 10% stake. CNPC has a 20% indirect interest in Area 4 through Eni East Africa.

the project will be completed within schedule in spite of the challenging oil and gas environment, according to Citi Business News. Italian Eni, the operator for the Sankofa-GyeNyame oil and gas project, holds a 47.2% participating interest in the block, while Vitol holds 37.8%. GNPC owns a 15% carried interest and 5% additional participating interest.

Bowleven Advanced in Gas Assets in Cameroon

Scottish oil explorer, Bowleven, has made progress on developing its Cameroonian assets despite its losses widening by \$40m in 2015/2016, Energy Voice reported citing company's preliminary results and operational updates for the year ended 30 June 2016. The company said two appraisal well locations had been decided with its partners on the Etinde play in Cameroon as they target extra volumes of about 2tcf of gas. Bowleven holds 20% interest in the license; Lukoil has 30%, SNH with 20%, while NewAge holds the operatorship and 30% of Etinde, according to Ecofin Agency.

US Vaalco Exited Angola's Offshore Market

Houston-based Vaalco Energy exited the Angolan market, discontinuing all operations, as the company picked up stake in Etame offshore Gabon during the third quarter of 2016, narrowing its focus and reducing costs, Offshore Engineer reported. Accordingly, the company withdrew from Angola's offshore Block 5 as it reported a quarterly loss. Vaalco had already written off almost all its investment in Angola and does not believe that a \$15m penalty for not drilling three commitment wells will have to be fully paid up. The company believes that a substantial portion of the amount has been reduced due to exploration expenditures already made, informed Upstream Online.

Ghana to Get FPSO for Sankofa Oil&Gas Project

Eni Ghana's Managing Director, Fabio Cavanna, said Ghana will receive a Floating, Production and Storage and Offloading (FPSO) vessel for the Sankofa project by March 2017 after which production of crude would commence by August. An estimated 170mcf of gas would be produced daily by 2018, News Ghana reported. Furthermore, the Ghana National Petroleum Corporation's (GNPC) CEO, Alex Mould, added that

Angola's MafumeiraSul Field Began

Oil Output

Angolan state oil company, Sonangol, and its partners including oil major Chevron have started production at the MafumeiraSul oil field with an initial output of 10,000b/d, Reuters reported.

The MafumeiraSul project in Block Zero is situated about 24km off the coast of Malongo and in waters depths of about 60m. The \$5.6b project is using early production systems (EPS), while it is being developed to pump an estimated 110,000b/d or more.

The development of MafumeiraSul mainly involves the installation of new platforms, drilling of 34 production wells and 16 water-injection wells, installation of umbilical, riser and flowline (URF) facilities, and 121km of subsea pipelines.

Chevron's subsidiary, Cabinda Gulf Oil Company (CABGOC), is the field's operator with 39.2% interest, Sonangol at 41%, while Total and Italian Eni hold



10% and 9.8% interests, respectively, informed Ecofin Agency.

Meanwhile, Angola had become China's largest crude supplier for the second time in September, taking the top position from Russia. China had imported 4.19m tons of oil from Angola during September, averaging 1.02mb/d. This was a 45.8% increase when compared to import volumes for the same period in 2015.

Sasol Drilled New Gas Well in Mozambique



Sasol Exploration and Production International has begun drilling a third well in its production-sharing agreement area in Mozambique, despite projected \$100b cuts in capital investment in oil and gas in sub-Saharan Africa until 2021, Business Day reported.

Furthermore, Sasol is commissioning the \$210m Loop Line 2 project to expand the capacity of the gas pipeline between South Africa and Mozambique. It has also budgeted \$1.4b to drill for oil and gas in its 100% owned production-sharing agreement area in southern Mozambique over a 24-month period, according to Ecofin Agency.

The production-sharing agreement area, on which work started in May 2016, contains two oil and two gas

reservoirs. Sasol is exploring it in two phases, focusing first on oil and then gas. In the first phase, 13 wells are being drilled including one for water. The second-phase program will depend on the results of the first.

Company's Senior Vice-President, John Sichinga, said that once commercial gas reserves were proven, they would initially be fed to a 400MW gas-to-power plant to serve southern Mozambique in a joint venture with the government. The rest of the gas would be sold into the best market. The oil could be either processed and used within Mozambique or exported.

Hyperdynamics to Drill Offshore Guinea

Hyperdynamics Corporation, an independent oil and gas exploration company, has announced that it has signed a letter of award with drilling contractor, Pacific Drilling, to employ the Pacific Bora drillship to Guinea, Ecofin Agency reported. Under the agreement, the rig is to be used for a drilling campaign offshore the Republic of Guinea during the second half of 2017, at the Fatalurbidite fan prospect. It also allows Hyperdynamics to extend the contract to include as much as three further follow-up wells at the same favorable terms and conditions, according to PR News Wire.



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PEOPLE ARE THE TRUE ASSETS IN OIL AND GAS

Egypt Oil&Gas met with Eng. MOHAMED BADR, the Chairman of Oil & Gas Skills (OGS), in an exclusive interview to discuss OGS's role in people development within the Egyptian oil and gas sector. OGS' Senior Consultant, Geologist MOSTAFA EL BAHR, was also present during the interview and offered his insightful comments on the subject matter.

By Amira S. Badawey

The Egyptian governmental entities the Egyptian Natural Gas Holding Company (EGAS), the Egyptian General Petroleum Corporation (EGPC), and the Egyptian Petrochemicals Holding Company (ECHEM) founded OGS with a mandate to develop skills of people working in the oil and gas sector. OGS has built up a massive portfolio and focuses on "technical and non-technical skills in all segments starting with drilling, exploration, geological studies, all the way to downstream activities, and production, as well as refineries and petrochemicals, all segments within the petroleum sector," as Eng. Badr described the scope of organization's work.

Oil and Gas People Development

OGS offers training services, annually schedules standard programs, as well as customizes training programs according to companies' developmental needs that are specified through

competency assessments used to identify areas of improvements.

OGS further collaborates with various universities as a significant number of instructors come from academia. The company has agreements with Cairo, Ain Shams, and Suez Canal universities, as well as other agreements with the private institutions such as the American University in Cairo (AUC), Future University, and the British University in Egypt (BUE). Under the terms of these agreements, OGS qualifies university students in order to augment their skills with specific competency required by the industry.

The subjects that OGS delivers are not available through graduate studies, among them are piping engineering and project management, as well as geological work in drilling and exploration. Currently, OGS is working with Cairo University on creating a special program for calibers working in other underdeveloped disciplines

such as renewables and nuclear energy. Furthermore, OGS provides certification like Project Management Professional (PMP), and is in the process of renewing a memorandum of understanding (MoU) with the French Institute of Petroleum (IFP) on petroleum specific certification programs.

Eng. Badr explained that OGS has quite a unique position within the market due to the availability of simulators that are used in upstream training. OGS has full size physical simulators, drill cell that is used to train drilling engineers. As a result OGS is eligible to provide international certificates such as WellCAP from the International Well Control Forum (IWCF), and WellSHARP from International Association of Drilling Contractors (IADC).

Over the years, OGS has expanded its regional presence, as the company has set up a branch in Iraq and has won several contracts across

the country for environmental studies and training. Iraqi calibers even came to Cairo to attend OGS training programs. Furthermore, OGS has an agreement with the Arab Petroleum Institute, with previous work in Sudan, and a current MoU for geological work in Chad.

Overcoming Challenges

Like most companies, OGS has been facing certain challenges associated with Egypt's dynamic economic and political environment, in addition to industry specific difficulties, namely the decline in global oil prices. Accordingly, foreign partners in Egyptian oil and gas joint ventures restrict investments in such difficult times. Eng. Badr said that "whenever they cut costs, they start with the easiest thing, which is usually the training." Yet, he added, "this will be for a temporary period because IOCs [international oil companies] are aware of the importance of training."

that demand for upstream development programs may decrease, while, “there are certain programs that have a steady demand. For example, currently, Project Management is in demand and downstream development programs [as well], to a certain extent.”

OGS as an independent entity necessarily encounters challenges in the training market when it comes to alternative training schemes. Eng. Badr stated that OGS faces fierce competition with other training firms, as well as oil and gas companies themselves, because they might offer some in-house services via their Human Resources (HR) departments, which have lower overheads and can therefore offer training and development activities at lower prices. He added: “This represents a challenge for us in setting a competitive price that is comparable to the market price, as well as cover our own costs and overheads.”

Even some smaller companies started organizing and offering their internal training services at lower prices. Eng. Badr commented on the situation saying that despite the subpar quality of such service providers, “these providers reduce the price of training to unreasonable rates. We must be able to compete within the market as it is, therefore, we are examining market prices and reviewing our prices regularly.”

However, Eng. Badr stated that at OGS, the majority of instructors come from an oil and gas background. “This is what differentiates OGS. It is one of our strengths. They [the instructors] provide the knowledge plus practical experiences. For a course on instrumentation, for example, we can get a University professor who lectures on instrumentation from an academic perspective. OGS’ instructors who come from within the sector are experienced in various application issues. They had experienced how to troubleshoot and they know what can happen during practice, and can, therefore, transfer part of their practical expertise to the trainees.”

Another challenge is the shortage of USD, as OGS uses hard currency for payments to international certifying bodies, in addition to software and hardware updates for simulators,

and the purchase of maintenance contracts and new hardware. OGS struggles to source USD for such payments, especially when customers, namely oil and gas companies, face a similar financial dilemma.

OGS’ Strategic Direction

In light of these challenges, Eng. Badr opted for a new strategy. Upon joining OGS, Eng. Badr created a business development committee tasked with conducting a strengths, weaknesses, opportunities, and threats (SWOT) analysis for the company, in order to envision a new OGS’ strategy.

Accordingly, OGS separated the marketing function into an autonomous department in order to expand its outreach on various levels. “We will focus on customer satisfaction and service quality, we have plans to significantly enhance them. We are developing our marketing team that will be responsible for handling customers and providing us with feedback on the market so we can take necessary corrective and preventive measures,” Eng. Badr revealed in the interview.

Furthermore, the company will focus on introducing new services such as certified lifting and welding inspection, as well as geological services. Eng. Badr added: “We are diversifying in services to decrease the company’s risk.” OGS’ Senior Consultant, Geol. Bahr added that OGS has added new services, such as Data Security to its portfolio, which is concerned with securing operating systems used in oil and gas fields, and hacking prevention. Eng. Badr clarified that OGS is in the process of preparing a project to develop this service. “I believe that companies will be more keen on getting these services, because the harm that could come from a deficiency in such services is greater than any investment required to establish them. That’s why we are confident that this project will proceed accordingly.”

In addition, OGS will focus on expanding its market presence. Eng. Badr said that “the closer we get to actual operations and production, the better we can devise economical pricing schemes and, therefore, companies can send more trainees to participate in our developmental programs. This will be a Win-Win for OGS, the oil and gas companies, and the people working in the field.”

Accordingly, OGS had planned for a roundtable at the end of November in Port Said to launch OGS’s new branch to service about 22 oil and gas companies operating in the city and in neighboring Damietta, in addition the Petrobel’s giant Zohr development. The objective of the roundtable is to bring together managers related to operation and production in order to get their feedback on training needs.

OGS Head further added that “we will extensively expand to external markets, especially in Iraq, because it is an important market. OGS already had operations with Africa for a long time, but there were some disturbances, after 2011, so we are looking into reviving our African work.” In that vein, OGS has gathered a team of experts who will periodically meet to review all provided courses and training material to ensure that it is up-to-date and meets a certain level of knowledge content that matches latest technologies and know-how in the field. Eng. Badr explained that, “they [the appointed experts] will provide OGS with advice on the existing training portfolio and on anything new we can introduce to our services.”

OGS’ Legacy

OGS has been training thousands of employees within the sector, as well as qualifying the majority of Board Chairmen. Eng. Badr stated that “this is an important achievement because there was a drop in management calibers within the sector due to retirement and unavailability of second-line managers. We qualified a number of leadership calibers. I, myself, am one of those calibers who were qualified by OGS development programs.” OGS also focuses on qualifying board members through customized programs to enable them to become more effective in their positions.

Eng. Badr concluded that “there are a number of projects in petrochemical, refineries, and gas discoveries that are under development. Once these projects are completed they will have significant value added and returns.”

He drew on previous experience. In his view, “before, the sector was concerned with exporting raw material, crude oil and gas, however, today, the sector is focusing on value added activities to cover domestic needs of derivatives as well as to export these products. The country has a lot of development programs, and energy is needed in order to achieve industrial and commercial development.” Having shifted the strategy “will in turn help the country achieve savings and boost income for Egypt,” he noted.

There is no doubt that energy will remain one of most critical aspects of Egypt’s economic development. As Eng. Mohamed Badr eloquently stated, “the oil and gas sector will have a significant impact on the country’s progress because it is a major industry. Renewables and such are alternative sources of energy, but the main source will continue to be hydrocarbons.” Therefore, Egypt will continually have a need to develop its oil and gas people.

In light of restricted investments, OGS collaborates with sector companies to maintain the skill levels of individuals. Geologist Mostafa El Bahr noted that “there are some activities that will be impacted by restricted investments because when there are budget cuts, the foreign partner delays all exploration activities because they carry a high risk, but he cannot delay production activities because this will directly impact his income.” OGS Chairman, Eng. Badr clarified

“I believe that companies will be more keen on getting our training, because the harm that could come from a deficiency in such services is greater than any investment required to establish them.”

Eng. Mohamed Badr, Chairman of Oil & Gas Skills

BRIDGING THE GAP:

Oil & Gas Industry Tackles Skills Shortage

By Shaden Esam Al-Dine



Human capital is a vital component in determining socio-economic development in any country. Enhancing human capacities within any business is, therefore, crucial. This is particularly true of the energy sectors in the Middle East where oil and gas are the key to sustaining economic growth and bettering the general standard of living.

Shortages in human capital and a lack of adequately trained energy industry personnel is, no doubt, a global problem. Yet, in the Middle East, the challenge is more visible as fewer students decide to pursue science and technology related studies and an aging workforce cannot be easily replaced to meet the needs of the industry. The public and private sectors in hydrocarbon business are thus experiencing a talent crunch, as Honeywell and Deloitte pointed out in their reports based on recent surveys in the region.

Skills Shortage in Oil&Gas Industry

The skills shortage is of a particular concern in the energy industry, given the length of time it takes to train specialists, for instance, in areas such as geology and petrophysics, industry experts declared.

A call for fresh experienced human resources is growingly urgent now than ever before also in relation to the global commitment to mitigate climate change effects, conduct safe exploration for oil and gas, and exploit hydrocarbon reserves in an environmentally protective way, for which highly qualified experts are invaluable.

In the present low oil prices environment that makes many companies shrink their expenditure, often by cutting headcount, fewer oil and gas firms are capable of providing sufficient training to their employees. Elaine Welch, a consultant at grow. ME wrote that many of small to mid-sized companies do not have the bandwidth, nor the financial ability to support activities such as graduate programs, apprentice schemes, or comprehensive quality in-house training.

In Egypt, for instance, professionals at Agiba Petroleum Company desire global training programs abroad in order to test new technologies and its production. Yet, the company is able to assign not more than “two courses per annum for each employee,” said Eng. Shehab Ali Abouel

Kasem, the company’s Senior Petroleum Engineer in an interview with Egypt Oil&Gas, which is not sufficient.

In light of the lacking funds for targeted technical modules, the private sector has thus opted for providing soft-skills training, which is less demanding in capital and time. Dr. Ahmed Abdel Bassit, Human Development Consultant at the National Management Institute told Egypt Oil&Gas that training institutions offer courses in presentation, interpersonal and effective communication skills.

In some cases this lack of focused technical training might lead employees to jump to another company that may be able to sustain their more relevant schemes for their staff. A 2013 study sponsored by BP and conducted by the Society of Petroleum Engineers, found that 75% of survey respondents stated that training factored heavily in their choice of employment, 53% noted they would consider changing a company for the lack of professional development opportunities, and as many as 25% believed that insufficient training would hurt their careers in the long run.

Egypt Faces Skills Gap

Egypt is one of the countries that have witnessed skills gap among competent technical workforce, who, as they move up the career ladder in an organization, lack other relevant skills such as management skills and requisite financial acumen required to drive the company towards achieving its strategic and financial objectives.

While traditionally perceived as highly qualified, “the Egyptian calibers have always been in high demand in the Middle East,” said Dr. Hossam Farahat, the President of EGY TEC Projects and Professor at the American University in Cairo (AUC) in an interview with Egypt Oil&Gas. As he further noted, “this demand is not as it used to be, because large organizations are shrinking.”

As most of the companies tend to rely on designing their individual schemes for staff development in Egypt, Dr. Farahat pointed out that the general objective in the industry is for “each and every company to develop a new generation of people that are not only technically superior in their expertise, but also well trained



in managerial and communication skills to be able to drive companies' performance."

Given the economic conditions, this is not always possible. Hence, Egypt itself is currently seeing a lack of talents. "A shortage in the logistics departments in oil and gas sector" is most visible, as Dr. Farahat specified. Therefore, as he further explained, there is a challenge "to invest more in the development of lower level management employees, which would in turn benefit the companies," in his opinion.

Fueling the Future through Qualification Training

In attempt to generate qualified work labor for the oil and gas industry, companies and training organizations have been searching for creative ways to approach this conundrum. Darren Grainger, Middle East Regional Director at NES Global Talent, a recruitment specialist agency, said that there is an ongoing "war for talents."

Several countries and companies have undertaken measures to meet this call. But as 'the talent war' intensifies, "increasingly innovative solutions are re-

quired to fill in demanded disciplines," according to Grainger.

The industry must therefore look ahead to ensure its staff meets requirements that global demand for energy poses on individual firms now and for the future, rightly emphasized Sean Price, Head of Direct Delivery at Pearson Education, the world's largest learning company.

In line with that, Pearson Education has developed and implemented a program named TQ, which provides vocational & work-based training scheme. In the Gulf region, TQ program assists governments with the implementation of national employment strategies by offering nationals the opportunity to gain an internationally recognized qualification that will help them get employment in an oil and gas company.

In Saudi Arabia, "the TQ program is considered as oil and gas training experience, which works with a number of education and training providers, who are responsible for operating the Saudi Petroleum Services Polytechnic (SPSP)," said Price. The SPSP was founded by the Saudi Ministry of Petroleum and Mineral

"The Egyptian calibers [in oil&gas] have always been in high demand in the Middle East."

Dr. Hossam Farahat, the President of EGY TEC Projects and Professor at the American University in Cairo

Resources, the Technical and Vocational Training Corporation (TVTC), and Saudi Arabian Chevron. The institute equips Saudi school leavers with a two-year vocational qualification that was developed in close consultation with major employers in the kingdom in response to corporate needs for human resources.

In addition, the TQ program also delivers academic and construction skills training at Jizan Construction Centre in the southwest of Saudi Arabia. It has provided an extensive portfolio of training for the world's largest oil and gas company, Saudi Aramco. Pearson's TQ aims at building a strong and capable workforce for the future of a country, where oil and gas exploitation is the cornerstone of economic prosperity, as Price put it in an interview with Trade Arabia.

Another company that has developed a comprehensive training program is GE Oil & Gas, a global leader in advanced technologies and services. In various locations worldwide, GE Oil & Gas has implemented so called Edison Engineering Development Program (EEDP), a two-year initiative for recent engineering graduates. EEDP is an intensive program designed to accelerate participants' professional development through a variety of intensive technical and business-related training.

view with Egypt Oil&Gas that the solution to overcome talent shortages in Egypt is to generate high quality university graduates through university-sector collaboration as a first step. "There should be an initiative sponsored by the oil and gas companies to bridge the gap between the faculty students and the upcoming engineers."

While this is currently being implemented in Egypt, it is still on a small scale, mainly through individual faculties, a Rotary Club and large consultancy entities, which promote 'From University to Work' schemes, as Dr. Farahat further explained. These are designed for final year university students to enhance their experience in the field and boost their professional capacities to apply for job openings. EGY TEC Projects President also revealed that "unfortunately, we pursue the initiative 'From University to Work' for a maximum of 500 people per annum, because this is a voluntary work."

In light of that, he advocated strongly that the private sector should take a more active part in these training schemes. As he put it: "If a petroleum company with its available resources sponsors similar projects, it can have both short- and long-term positive effect."

The important part for the companies to consider is to broadly share relevant

"There is an ongoing 'war for talents,' therefore, increasingly innovative solutions are required to fill in demanded disciplines."

Darren Grainger, Middle East Regional Director at NES Global Talent

The program consists of three or more rotational assignments such as engineering projects driven by GE's actual business priorities. "Edison graduates have the technical and business foundation to proactively and continually make innovative contributions to GE's future," according to the company website. The innovative approach of the program helps cultivate technical problem-solving skills via advanced engineering coursework, formal reports and presentations to senior leadership. Moreover, participants have the opportunity to earn credits towards M.Sc. degrees in engineering or technologies application programs.

Bridging the Gap

In order to overcome the present challenge of skills shortage, there is an immediate need to target cooperation with all involved parties - governments, international oil companies (IOCs), and private educational entities.

Dr. Hossam Farahat affirmed in an inter-

information about the available opportunities at all levels in the oil & gas industry. A pro-active targeted communication to the employees can make a difference whether those with expertise stay or leave to a new employer. Professionals need to know about learning and development options, promotion, and advancement schemes, as well as about compensation and benefits packages in order to garner their interest to stay working in a company.

IOCs and private businesses companies have a tangible vested interest in as well as an obligation to participate in this human capital development endeavor. Collectively, the involvement in spurring youth development can ultimately conquer the skills shortage and help foster economic diversification and innovation that are needed to guarantee sustainable growth for the entire region.



REMEDIES FOR OIL AND GAS WORKFORCE CHALLENGES

By Salma Essam

In the exceptionally competitive market of the oil and gas industry, it becomes essential to improve the existing human resources development policies. This requires a set of strategies that ranges from a global training strategy for the industry to reliance on local workforce to attracting calibers from diverse labor pools that may not have been previously involved in a sufficient manner, such as women and workers with disabilities. Therefore, certain training schemes and policies should be applied in order to avoid a chronic skills shortage in the medium and long-term and to enable growth.

Developing Global Training Strategy

Efforts have been taken on the part of oil and gas companies to create efficient training programs for its workers, yet, they proved to generate only limited success. A coherent global training strategy needs to be designed and created with alignment to the International Labor Organization (ILO) standards and policies.

The framework for skills development is introduced in the Human Development Recommendation 2004 of the ILO. In a prepared paper by the ILO's sectoral activities department titled: Current and Future Skills, Human Resources Development, and Safety Training for Contractors in the Oil and Gas Industry, it is explained that this framework mainly focuses on promoting a virtuous circle. This happens through matching the training needed to labor market demands, equipping lifelong learners

with opportunities, and using developed skills to drive innovation, which will help in future job growth. Through this holistic strategy, the industry can have a well-trained workforce and even higher employment results.

In addition, the 97th session of the International Labor Conference held in 2008, presented the conclusion on Skills for Improved Productivity, Employment Growth, and Development, providing practical guidance on how the recommendation of 2004 can achieve the desired efficiency. The conclusion introduced a vision framework for strengthening the bonds between skills, productivity, employment, and decent work. It underpinned effective skills principle, according to which these development strategies need to become a cardinal component of national development policies for them to be successful. In this way, the workforce and corporate sector will be better prepared to adopt novelties and capitalize on new opportunities.

In order to successfully link skills to productivity, employment creation, and development, skills development policies should target three objectives: matching supply to current demand for skills; helping workers and enterprises adjust to change; and anticipating and delivering the new and different skills that will be needed in the future.

Subsequently, the ILO developed the G20 Training Strategy: A Skilled Workforce for Strong, Sustainable, and Balanced Growth, published in November

2010, which focuses on building bridges between the world of education and training and the world of work. In the ILO's report – Global Employment Trends 2012: Preventing a Deeper Job Crisis, it is explained that a skills strategy is needed to bring in the maximum potential of the employees.

A good skills development strategy will be able to: anticipate skill needs; engage employers and workers in decisions about training provision, including in specific sectors; maintain the quality and relevance of training; make training accessible to all sectors of society; ensure viable and equitable financing mechanisms; and continuously evaluate the economic and social outcomes of training.

As a result, it becomes important to note that all G20 countries have identified skills development as a strategic objective. It is stated that several countries are stepping up investments in skills, according to the 2010 ILO report. However, different countries focus on different elements as they see relative strengths and weaknesses in their own skills development systems, and as they learn more about innovations and experience in other countries. For example, India adopted an ambitious National Skills Development Policy in 2009. South Africa is adjusting training strategies under the newly created Ministry for Higher Education and Training. The Global Employment Trends 2012 report outlines a conceptual framework and assembles the essential building

blocks of a robust training strategy – including the roles of the social partners. It has, as well, explained that there are certain success factors for the G20 training strategy, which are: lifecycle perspective of skills development; policy convergence so that skills and employment policies are viewed together; coordination mechanisms to connect basic education to technical training, labor market entry, and lifelong learning, in addition to communication between trainers and employees.

Developing a global training strategy will help improve the overall employment sector and will inevitably and positively impact the oil and gas industry. Thus, the oil and gas industry's training strategy would contribute not only to creating more decent jobs within, but it would also lead to job-rich growth in the country concerned. It is, therefore, recommended that the oil and gas industry would consider relying on its local workforce, initiate an inter-organizational scheme for sharing knowledge and experience, and attract entry-level talents. In addition, promoting equality in terms of hiring women and people with disabilities is in fact a basic element for the human development strategies in the industry.

Reliance on Local Workforce

Oil and gas companies, particularly national ones, are looking to build local skilled workforce so that they can rely less on expatriate services. Nevertheless, decreasing foreign workforce is difficult to implement in some cases, and

nearly impossible in areas where local skilled workers can barely be found. For example, there is large population of migrant workers in the MENA region. Turkish-based Daily Sabah publication said in its business analysis – Gulf Countries Employ Highest Number of Workers, published in January 2016, that there are 17 million foreign workers in Gulf countries, ranking first in the world in terms of number of foreign employees.

It further explained that according to Al Jazeera Research Center's report: "Gulf countries; namely, Bahrain, Qatar, Saudi Arabia, the United Arab Emirates (UAE), Kuwait and Oman, have rich oil and natural gas reserves and therefore need a foreign labor force. What these countries lack the labor force is provided by other countries, as locals with high incomes do not prefer to work as employees."

Similarly, Senior Contracts Engineer at Mubadala Petroleum, Samy Fahmy, said in an exclusive statement to Egypt Oil&Gas: "Not all the national workers in the Gulf countries are skilled enough to meet the region's ambitious growth plans. Accordingly, these plans create a continuous demand on foreign workforce across almost all the Gulf countries, especially with the nationals being very reluctant to do handy workmanships."

Towards the end of 2004, the Gulf Cooperation Council (GCC) states were inhabited by 12.5 million foreigners, who constituted 37% of the total population. In Qatar, the UAE, and Kuwait, foreigners constituted a majority; in the UAE they accounted for over 80% of the population. Only Oman and Saudi Arabia managed to maintain a relatively low proportion of foreigners, about 20% and 27%, respectively.

Recently, several local companies tried to contain the challenge of having to recruit international workforce and drifted away towards relying on national workers. This comes in line with the desire to invest in their national citizens. They have recognized the increasing importance of recruiting local talents with local knowledge and experience to join their workforce and to move into business leadership roles. This change in emphasis is important, not just for cost reduction reasons, but for companies to benefit from the best local talents, culture, and knowledge.

Transfer of Skills

Transfer of skills required for the oil and gas industry must be made from countries that have the skills to countries that have not. Local content policies and practices are among the means through which such skills transfer can

be accommodated and employers are already exerting efforts to meet them. For example, Total has a training center in Luanda, which is the Pazflor center, as part of its commitment to invest in developing its local staff in Angola. Courses offered for Angolans to work in the oil and gas industry include: risk analysis, geological systems and structures, industrial drawing, rotation equipment, and introduction to drilling, and valves and tubing.

In the meantime, some governments have established policy frameworks on implementing local content in staffing. In Ghana, since the discovery of major oil reserves at the Jubilee Oilfield in 2007, the active involvement and participation of locals in the oil and gas industry has become a major policy issue. After a nationwide consultation process in 2010, Ghana's Ministry of Energy formulated a policy framework which set a number of key policy objectives, including: maximizing the use of local expertise, goods, and services; financing all aspects of the oil and gas industry value chain; developing local capability through education, skills, and expertise development; securing transfer of technology, active research, and development; achieving at least 90% local content and local participation in all oil and gas activities by 2020; and creating oil and gas and related supportive industries to sustain national economic development.

Attracting Entry-Level Talented People

It is known that all industries compete to recruit talented workers. Young people have many career opportunities other than the oil and gas industry. What's more, the harsh living and working conditions of those employed in the Exploration and Production (E&P) sector and a perception that the oil and gas industry is dirty and dangerous have damaged its ability to attract young talents.

The industry needs to understand the work ethics of younger people. In general, the millennial generation has been characterized as adept at multitasking, and technologically savvy, but also as having a sense of entitlement, less loyalty towards organizations, and preferences for immediate benefits over long-term rewards. However, the ILO report points out that they also have higher motivation to transfer what they have learned during training back to their jobs, and higher learning-goal orientation – a concept defined as a person's focus on acquiring knowledge for the sake of learning itself rather than just performing. Though, in general, these younger workers are reluctant to persist in pursuit of long-term goals through difficult times, they appear to

be more motivated to utilize knowledge they have acquired.

These findings suggest that the oil and gas industry can leverage the preferences and motivational patterns among young people of this generation through training courses designed to quickly advance the necessary skills.

Women in Energy

The oil and gas industry has also been known for not responding to a gender conundrum in a flexible way and at a fast-enough pace. The industry has not managed to hire a large number of women workers.

Many female employees face various work-related challenges from their male counterparts. These stem predominantly from the male-focused culture and practices that permeate many aspects of organizational life in the industry, including demographic composition, assumptions, values, and every day practices. At the Abu Dhabi International Petroleum Exhibition and

within IOCs and national oil companies through strict policies and regulations.

In addition, oil and gas companies should adhere to ILO standards in salary matrix, which can easily be adopted by determining the amount of salary based on job descriptions and performance, and not on gender. This will further attract more women to the industry and pave the way for more skillful workers to join the sector.

People with Disabilities

Through its 'Disability Program,' The ILO further promotes equality of opportunities and treatment for people with disabilities in vocational rehabilitation, training and employment. These are reflected in the Vocational Rehabilitation and Employment (Disabled Persons) Convention, 1983 (No. 159), and the ILO Code of Practice on Managing Disability in the Workplace, adopted in 2001.

Under the Program, the ILO has established the Global Business and Disability Network, which is a voluntary group

"I want to inspire young women to come into the industry. Women have technical excellence, the ability to multitask and to think through complex problems."

Eileen Wilkinson, Vice President for Exploration in MENA at Shell

Conference held in November 2016, Vice President for Exploration in MENA at Shell, Eileen Wilkinson, highlighted the important value that women bring to the energy workforce. In this sense, Wilkinson stated: "I want to inspire young women to come into the industry. Women have technical excellence, the ability to multitask and to think through complex problems."

Hence, the oil and gas industry could be more ambitious and more efficient when it comes to female colleagues. One way to tackle this opportunity is to create a climate of diversity, which could prevent harassment and discriminatory practices against women.

It is an indisputable fact that women have joined the industry and succeeded in it, General Manager of Operations & Communication Systems at Petroleum Pipeline Company (PPC), Engineer Amal Mansour, exclusively told Egypt Oil&Gas. Even, at the times of leaves, such as maternity leaves, women ensure that they accomplish their tasks. In this sense, she said: "Before going on a leave, women make sure that they prepared all work that will have to be complete at the time of their leave. Women tend to train people who will be in charge [during their absence], to guarantee that nothing will go wrong." Additionally, awareness training for all male and female workers needs to be implemented, as well as effective complaint procedures on a confidential basis. Due to the male-dominated nature of high ranking positions in the oil and gas sectors, women are presently less likely to be involved in decision-making processes. Thus, fair and equal gender representation must be reconsolidated

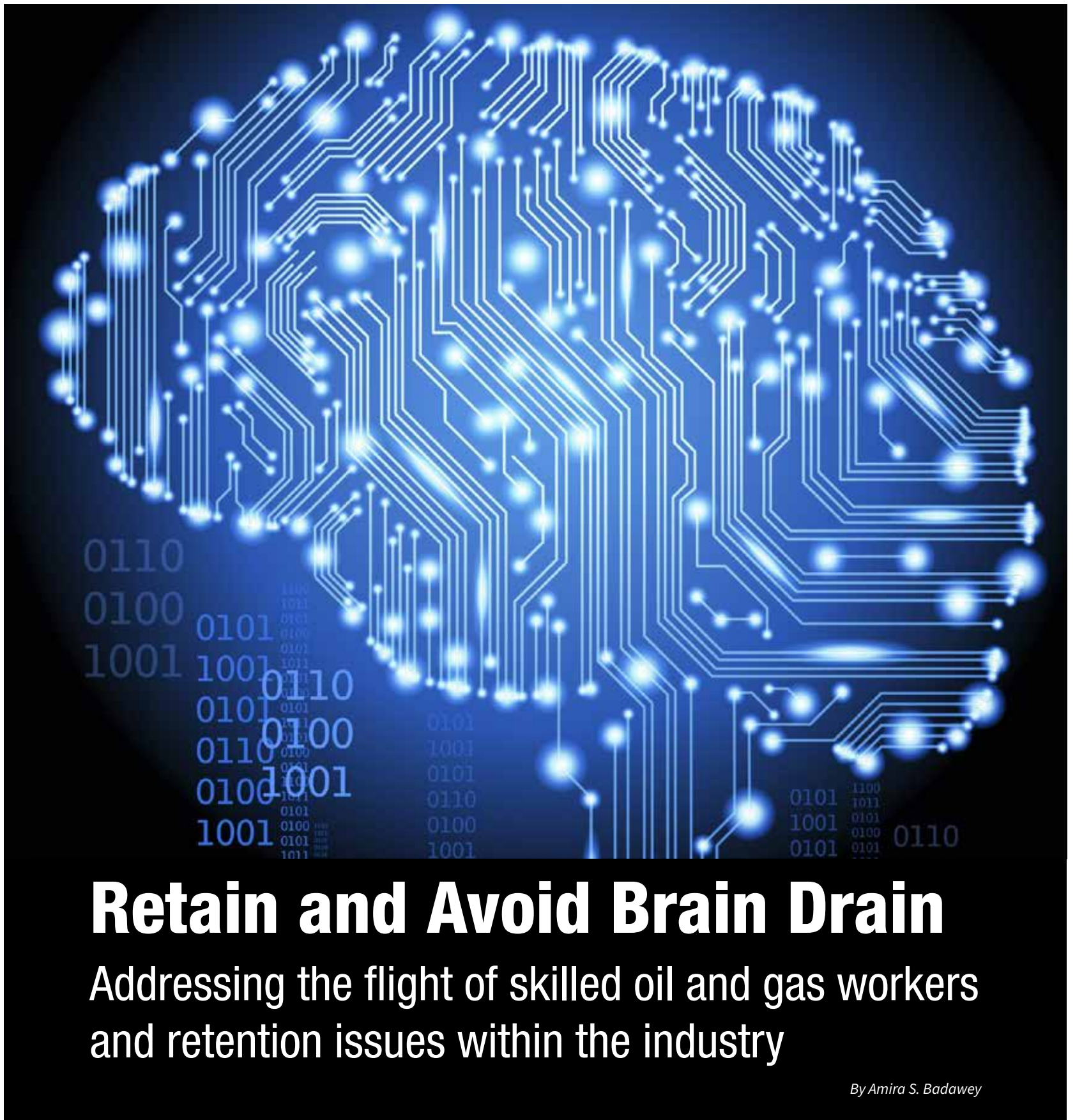
of representatives from multinational enterprises, employers' organizations, business networks, and selected non-governmental and disabled persons' organizations interested in incorporating diversity of disabilities in the workplace and in their strategic business plans.

At the time of writing, only one oil and gas company was known to be a member of this network, namely Sasol, an international integrated chemicals and energy company headquartered in South Africa. Sasol strives to apply affirmative action measures to ensure that people with disabilities are afforded reasonable accommodation, if and where appropriate. Greater participation by oil and gas companies in this network would demonstrate the industry's determination to make progress in their commitment to achieve workplace diversity.

Given the increasingly competitive oil and gas industry, effective human development strategies are important to ensure high quality of work. This, in turn, requires recognition of skills and competencies, and their greater utilization in the workplace. To be effective, the strategies listed above must be linked with the policy agendas of the IOCs and local firms that would ensure all high-level training schemes are implemented, the transfer of skills is enforced, and both genders as well as people with disabilities are employed. Working capacities must simply be developed and even pushed beyond.

"Not all the national workers in the Gulf countries are skilled enough to meet the region's ambitious growth plans."

Samy Fahmy, Senior Contracts Engineer at Mubadala Petroleum



Retain and Avoid Brain Drain

Addressing the flight of skilled oil and gas workers and retention issues within the industry

By Amira S. Badawey

Human resources, or more aptly human capital, is a vital component to delivering quality services. The impact of people on an organization's output can multiply the efficiency of production tools, or on the other hand, render them useless.

Although the act of extracting petroleum resources from below the surface of the earth is called production, it has little to do with traditional manufacturing processes adopted in factories. Oil and gas upstream activities involve a series of specialized services in drilling, engineering, and operations. These professions require functional academic studies as well as ongoing practical training. Oil & Gas UK Demographics Report states that

the average age of offshore workers is around 40 years old, signifying the number of years it takes an upstream engineer to accumulate necessary competencies and skills.

Within the global oil and gas market, companies have been witnessing brain drain due to restrictive investments and downsizing brought upon by the decline of global oil prices. The large scale exodus of highly educated, skilled, and talented people can result from turmoil within a country, from better professional opportunities in other countries, or from seeking a better standard of living. In addition to occurring geographically, brain drain may occur at the organizational or industrial levels, when workers perceive better

pay, benefits or upward mobility within another company or industry.

The Economics of Brain Drain

The phenomenon of brain drain has left some harmful effects on developing countries because the talented and skilled professionals have immigrated to richer nations. Consequently, some of the outcomes of brain drain have resulted in lagged rates of development and production.

If investors struggle to find suitable local personnel to explore and develop discoveries, they will either rely on costly foreign expertise, or simply move their investments elsewhere. In this instance, brain drain will have a circular cause-and-effect outcome. Skilled labor turns to overseas

opportunities because they cannot find meaningful employment in their home countries. As a result, the market suffers from a shortage of appropriate skills. Accordingly, this can discourage investors from injecting funds into the country, which in turn limits employment opportunities. On the other hand, Gavin Wallis concluded in his study on The Effect of Skill Shortages on Unemployment and Real Wage Growth that increased skill shortages lead to an increase in real-wage growth, while reducing unemployment, which is advantageous to those professionals remaining in the country. Although the initial annotation is to believe that brain drain would have only negative impacts on the country that is

losing the talent, yet it may also bring about numerous benefits for source countries. Expatriate remittances play a significant role in supporting a country's Gross National Product (GNP). Case in point, the Egyptian government issued high yielding certificates of deposit (CD) in foreign currencies after devaluing the EGP in early November. Accordingly, the government hopes to increase hard currency influx from Egyptians working abroad.

In addition, Eng. Mohamed Badr, Chairman of Oil & Gas Skills (OGS), a training and consultation company established by the Ministry of Petroleum in 2005, stated that "qualified Egyptians working abroad are a national wealth because they provide USD income for the country. Exporting knowledge workers relieves the government from the burden of unemployment because this opens up opportunities for new graduates."

Brain Drain in Oil and Gas

A deficiency in capable human capital can occur in any sector within any country or region. Yet, for the oil and gas industry, there are specific challenges that have led to brain drain in certain areas.

"Oil and gas industry at the moment is full of redundant positions due to the declining market prices, the cancellation or freezing of many projects, and the exploration activities."

Samy Fahmy, Senior Contracts Engineer at Mubadala Petroleum

The industry already suffers from a skills shortage, recognized by all to be a threat to future growth and a potential major risk for employers.

Europe's oil and gas industry has been suffering from a brain drain of skilled workers to regions such as the Middle East and Russia, which are investing heavily in building infrastructure and can afford to pay 'top dollar'. Furthermore, many countries, particularly in Asia and South America, have focused on campaigns designed to repatriate skilled workers currently working abroad to solve their own skills shortages. These campaigns, backed by generous remuneration packages from employers 'back home', further contribute to skills shortages in the European host countries.

Retaining skilled labor and increasing skilled workforce are the two main challenges impacting African oil and gas operators in the low oil price environment. Similar situation emerged in the MENA region.

"Knowledge transfer goes without saying. When staffs from different companies go through the same training systems and have similar positions and career paths, then skilled workers can be moved from one company to another to address skill gaps."

Geologist Mostafa El Bahr, OGS' Senior Consultant and Agiba Petroleum Company's former Chairman and Managing Director

In 2015 during the third GCC Leadership Conference, titled Developing Energy Leaders, Bahrain's Energy Minister at the time, Abdulhussain Mirza, stated that Bahrain and other Gulf countries were facing a brain drain in the energy industry, with fewer young people seeking jobs in the field. He said more is needed to be done to attract young people to careers in oil and gas, adding that a shortage of potential recruits was a serious concern, both locally and at the global level.

This situation was amplified by a wave of layoffs, as organizations cut headcount to keep overheads down. HAYS, a leading global professional recruitment group warns that such organizations risk damaging their ability to attract talent when the industry picks back up. Eng. Samy Fahmy, Senior Contracts Engineer at Mubadala Petroleum, agrees: "Oil and gas industry at the moment is full of redundant positions due to the declining market prices, the cancellation or freezing of many projects, and the exploration activities. Many oil and gas operators and service providers had to lay-off many of their highly skilled professionals simply to reduce their operating expenses."

Retain and Mitigate Brain Drain

According to HAYS Oil & Gas 2016 Compensation, Recruitment, and Retention Guide, the industry risks losing considerable knowledge and expertise as older workers retire without training the next generation. Thirty-six percent of employers cited a lack of succession planning for knowledge transfer and skills retention as the contributing cause to the skills shortage, with Engineering & Design, Operations & Maintenance, and Petrochemicals suffering the most.

A succession plan is a great way to attract candidates as well as bolster confidence with existing staff. Devising a succession plan does not have to be a costly or complex exercise and should be looked at as a key component to a long-term growth plan.

Mubadala's Fahmy stressed that "oil and gas firms should deal with their highly skilled professionals as assets to be developed, rather than expenses to be cut." He also pointed to the importance of job

security, which "is a key towards long term stability and outstanding performance," as he explained.

OGS' Eng. Badr concurred. He stated that employee retention depends mainly on "work atmosphere and work environment." In his view, the oil and gas companies should use "clear career paths, people development plans, competitive compensation, and special bonuses, linking pay to performance and acknowledging the importance of technical employees" as tools to retain qualified staff.

Additionally, the looming retirement of thousands of older workers had companies trying to plug the gap by training younger employees and recruit outside the industry. Furthermore, the firms were left to entice veterans to hang on longer in order to benefit from their experience as these employees have spent years trying to prepare for their leading roles, as an article by Alex Nussbaum and David Wethe, titled 'Oil Industry Dealing with Brain Drain,' clearly stated.

Senior Contracts Engineer, Fahmy, added that "motivating skilled professionals and allowing them to think differently of smart alternatives to cope with market challenges, will definitely increase their loyalty being part of the decision making process."

In line with that, Baker Hughes Inc., the oilfield services company, runs a mentoring program for young engineers. Exxon Mobil Corp. has spent about \$2.6 million on workforce training initiatives in the Gulf coast over the last decade.

What's more, some companies have expanded benefits thought to attract younger employees, offering more flexible work schedules, on-site gyms or stripped-down medical plans with lower premiums.

Human Capital as a National Wealth

Enticing and retaining young professionals has been implemented in a more complex way through various national schemes. It is important to acknowledge that governments have had macro-impacts on retaining skilled professionals within a country through enhanced investment environment, governance, transparency. Numerous African governments demonstrate this noticeably.

Governments of Nigeria, Tanzania, South Africa, and Kenya have responded to the challenges by passing bills aimed at attracting investments. Nigeria's federal government has pledged to restructure the state-owned Nigerian National Petroleum Company to improve transparency and corporate governance and to build trust with foreign investors.

Similarly, the Egyptian government has taken positive steps to develop an encouraging investment environment to attract international oil companies (IOC) and motivate them to inject additional funds into the Egyptian market. The ministry is working on liberalizing the gas market, while promoting the privatization of midstream and downstream oil companies. Furthermore, the government has floated the Egyptian pound against the US dollar and opened up the foreign exchange market to address the shortage of hard currency. Accordingly, these steps will help IOCs improve the efficiency of existing fields, while expe-

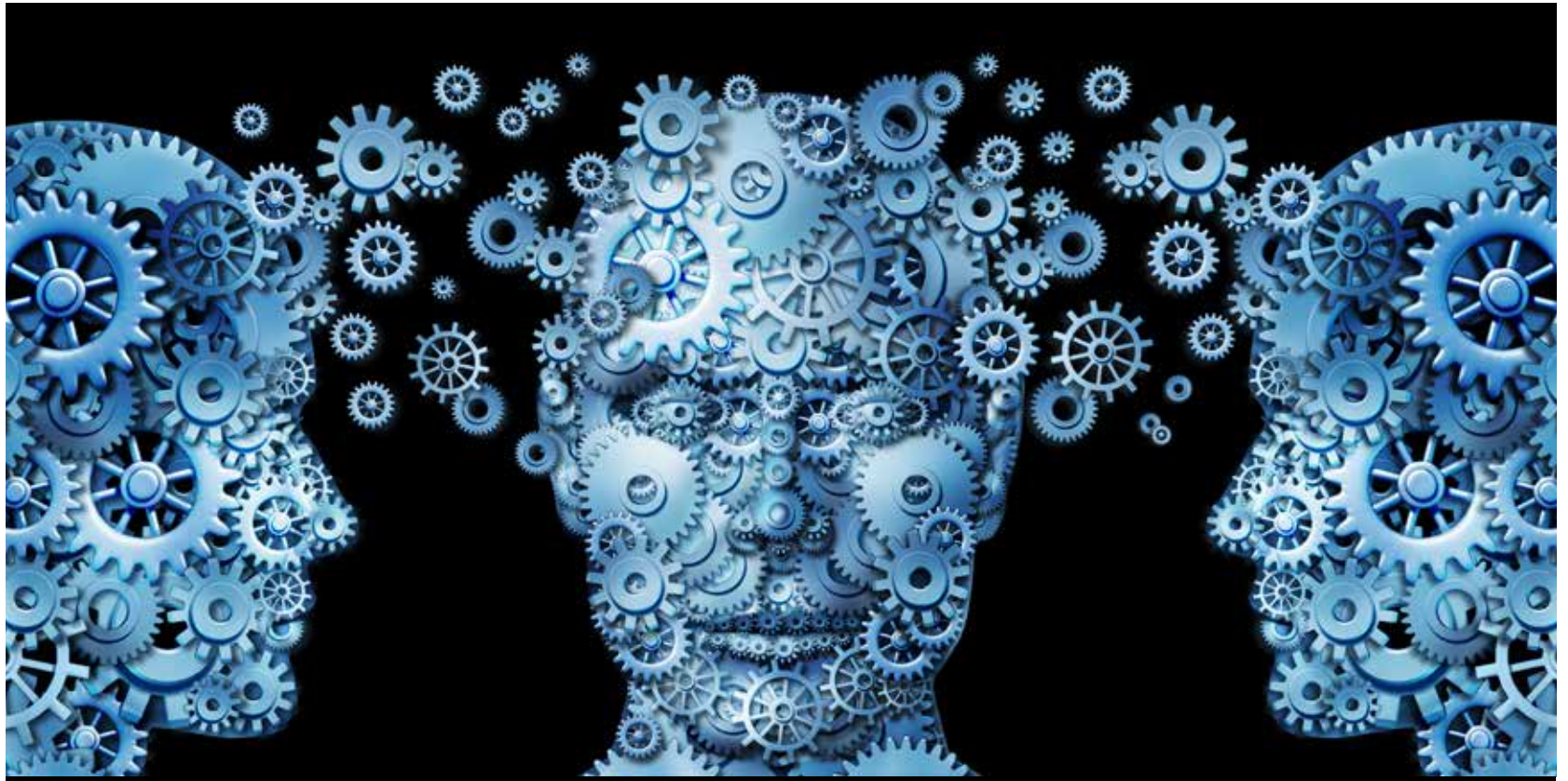
diting future explorations, thus, creating additional employment opportunities within the field.

Egyptian General Petroleum Corporation's Deputy CEO of Production, Daa El-din M. Kassem stated in an interview with Egypt Oil&Gas that the country is embarking on a complete overhaul of the oil and gas sector under the Ministry of Petroleum and Mineral Resources' Modernization initiative. In explaining the scope of the project, Kassem said it encompasses "every aspect." "We are talking about upstream, downstream, legality, people, everything. Putting the teams together and getting these people involved with the companies, and having companies help each other." Under the strategic initiative, which will be implemented by OGS, Egypt will promote knowledge sharing among various firms working in the field. OGS' Senior Consultant and Agiba Petroleum Company's former Chairman and Managing Director, Geologist Mostafa El Bahr, said that under the modernization framework, "knowledge transfer goes without saying. When staffs from different companies go through the same training systems and have similar positions and career paths, then skilled workers can be moved from one company to another to address skill gaps."

Albeit, Fahmy sees the state playing more of a regulatory role: "Governments are not supposed to directly intervene in the way firms are managing their skilled resources, they should use their powerful tools to empower highly skilled professionals through decent labor laws and strong labor unions. Emphasizing legislations that control the minimum wages, benefits, and separation packages of skilled professionals will not only attract the highly skilled professionals in oil & gas industry, but will also retain them within the country."

At the end, it is in the best interest of everyone involved, from governments, oil majors, and professionals, to work together on implementing mechanisms to ensure a balance of necessary skills within the oil and gas sector. El Bahr eloquently stressed that "Egypt has a wealth of resources, whether natural or human. Accordingly, human resources required preparation. We need to invest in people from childhood." He added that "IOCs maintain the quality of oil and gas technical skills in the market by transferring their global knowledge and know-how to national personnel. They do this because it has a mutual benefit, as the IOCs will be able to maintain efficient quality operations at local prices for the cost of salaries."

Even in times of low investments, IOCs will not be able to stop income-generating production activities, accordingly, they continue with people development plans. As a result, companies such as OGS provide ongoing training programs to meet market needs in order to sustain foreign investments in the country's human capital. This is only made possible while IOCs remain operating in Egypt as long as the government maintains a healthy investment environment. In light of all this, influxes of skilled Egyptian recruits keep the sector prosperous.



Perplexities of Petroleum Engineering Education

An In-depth Look at the Quality and Structures of the Egyptian Oil & Gas University Programs

By Nataša Kubíková

Oil and gas industry experts, businessmen, government officials, and academics often disagree when it comes to discussing the quality and suitability of the existing university education programs for the sector.

Concern in focus is how well the programs are structured to meet the needs of the industry. Their perspectives on the subject matter necessarily differ. According to some, petroleum engineering programs generate highly skilled graduates, whereas others claim that the theoretical knowledge that students gain hardly suffices to meet the requirements on sites.

What they all share, nonetheless, is a common objective to enhance the industry's output. With this goal in mind, they are trying to modify the higher education system in the petroleum engineering in such a way as to better satisfy industry's demand.

Promoting STEM-Based Studies

Research degrees in science, technology, engineering, and mathematics (STEM) are generally seen as less desired by young people when they are choosing from among all possible career options. In order to increase the number of those who would be enticed to undertake STEM-based studies some suggest that it is important to include a stronger foundation for it within the education systems. Training Magazine quoted one such expert, Jim Spohrer, Director of IBM Global University Programs, who explained that "STEM skills need to play a bigger role in our curriculum at all grade levels."

Education trends in the Middle East seem to be following this global direction in that universities see lower number of candidates within STEM studies. There is much left to be done in that regard. Students should be encouraged more to consider STEM-oriented career paths. The training of young people for promising careers in the oil and gas industry is essential for the countries in the region, given their economies' dependence on hydrocarbon production. The pressure is building up to impact on both the quantity of energy professionals that universities produce and necessarily the quality of the education system itself.

Some Gulf countries currently record a substantial shortage of workers in the industry who would possess technical or vocational qualifications in the electrical, production processes, mechanical, pipe-fitting, drilling operations, and plant construction, noted Sean Price, Head of Direct Delivery at Pearson Education, the world's largest learning company, already in 2014. The challenge remains to tackle the lack of educational institutions that would provide qualifications in these focused skill sets, according to Price.

This is critical in light of "the wide-held view of both the industry and independent analysts that there will be a rise in the number of workers needed in the hydrocarbon sector over the coming decade and beyond. This is in part due to an increase in demand for oil and gas, as well as a rise in the number of conventional and non-conventional en-

ergy fields being developed, all around the world," Price explained citing world renowned analyses by multinational oil and gas consultancy firms.

It is therefore paramount for oil and gas producing countries to attend to this dilemma and introduce appropriate improvements in the energy-focused university programs.

STEM-related fields such as petroleum engineering are dynamic, which is another reason why high quality university education is crucial to establish a foundation for future oil and gas experts. What is more, this academic field proved demanding even in the post-university period. Hence, even when the number of students in related subjects increases, curricula get expanded and updated, there will be a continuous pressure on STEM university students, graduates, and even professionals to keep up with the technological developments. Spohrer added to that account that "professionals must make continuing education opportunities a priority to stay informed on the latest technical advances." And this is relevant to all industry professionals.

The State of Petroleum Engineering Education

Unlike some countries in the Middle East, Egypt has been renowned for the excellence of petroleum engineering university programs, which promise to boost capacities for the key energy sector.

"Egypt has about 29 governmental uni-

versities and 39 private universities. Most of them offer B.Sc., M.Sc., and PhD Degrees in several engineering disciplines such as Petroleum Engineering, Chemical Engineering, Mechanical Engineering, Electrical Engineering, and Civil Engineering," Professor at the Petroleum Engineering Department, Faculty of Engineering, Cairo University (CU), Mahmoud Abu El Ela, outlined in an email interview with Egypt Oil&Gas. It is no surprise that the expectations are higher within the sector in Egypt when it comes to the quality of oil and gas human capital.

Currently, three governmental universities, each with more than 50 years of practice, generate graduates in Petroleum Engineering up to the PhD level - Cairo University, Suez Canal University, and Al-Azhar University. In addition, three private universities - American University in Cairo (AUC), British University in Egypt (BUE), and Future University, with some 10 years of experience, provide B.Sc. Degrees in the subject, Prof. Abu El Ela explained.

"As the Egyptian universities teach sciences and theories of different engineering disciplines; Electrical, Mechanical, and Civil, the graduates from these programs can provide support in the design and operations of the surface facilities in the oil and gas fields."

There are other engineering programs directly related to the industry. "Cairo University, Suez Canal University, and Alexandria University generate Chemical Engineers and Refining/Petrochemical Engineers who have the capabilities

to design and operate the downstream facilities and plants in the oil and gas industry in Egypt and in the Middle East," further stated Prof. Abu El Ela.

Egyptian Universities' Dynamics

The foundation for the Egyptian oil and gas industry thus appears to be well rooted in terms of structures and diversity of specializations. Some experts and practitioners, however, seem to disagree on the point that the quality of the Egyptian education programs for the industry is sufficient.

According to Eng. Shehab Ali Abouel Kasem, Senior Petroleum Engineer at Agiba Petroleum Company, who spoke to Egypt Oil&Gas, there exists a gap between the requirements by the industry and the content of the university programs. "The scientific content at some engineering colleges is far away from the real field needs," he said, as students are allegedly taught about the 1970s technologies that have long been outdated.

Academics from Cairo University, however, elaborately counter this argument showing that the design of programs is dynamic reflecting on the development in the industry. "The curricula in the Petroleum Engineering Department at Cairo University are continuously reviewed by the teaching staff to make sure that all topics are covered and updated," clearly and decisively stated Prof. Abu El Ela. Similarly, his academic colleague, Dr. Mohamed Elahmady, Associate Professor of Practice at the Department of Petroleum and Energy Engineering at the American University in Cairo also affirmed to Egypt Oil&Gas in an interview in New Cairo that AUC adopts most recent curricula and "graduates from the Petroleum Engineering Faculty gain advanced theoretical skills for their future careers."

Nonetheless, both academics agree that the universities still face a challenge to strike a balance between theoretical knowledge and practical skills. And there are, no doubt, other aspects of university education, which raise further questions.

When it comes to the theory vs. practice conundrum, "a lack of practical experience before graduating from master degrees still needs a lot of room for improvement," stressed Dr. Elahmady. Linking theories to practice is thus of a paramount concern, equally for the public sector in Egypt as for the private one, because this gap can have extensive implications for the advancement of the Egyptian oil and gas industry as a whole.

Having recognized the need to bridge this gap, Dr. Elahmady chose to tackle this challenge and accordingly altered the approach to his teaching commitments. In his courses, among others in Petroleum Economics and Production-Sharing Agreements, Dr. Elahmady adopted a holistic approach. He divided his modules into several tiers in such a way that it allows him to incorporate visiting lecturers from among industry practitioners into his program. Industry executives come to AUC to speak to

his students about immediate practicalities and applications of theoretical know-how.

He explained the routine in details: "Through a semester my students get the basic knowledge they need in addition to practical trainings. I have invited several engineers from different companies who introduced their work in the field from their specific angles and expertise. In another class, for instance, a country manager of a foreign company talked to students about his perspective on production-sharing agreements."

Problem-Solving Direction

As Dr. Elahmady further emphasized, attempts to create such a sustainable connection between practical applications of theoretical understandings should focus, in particular, on "problem solving skills."

"With an aim to direct the scientific research to solve operational problems in the oil and gas industry, Cairo University has launched new postgraduate engineering programs," Prof. Mahmoud Abu El Ela said. The university thus aspires to project a future that goes even further beyond the objective of linking theories to the applications of new technologies in the oil and gas industry. Key to such an ambition lies in a multidisciplinary approach.

Professor Abu El Ela elaborated on the point saying: "The main challenge is to have postgraduate engineers with multidisciplinary knowledge. The Petroleum Engineering Department at Cairo University has successfully launched two such new professional and multidisciplinary programs under the Mining Studies and Research Center (MSRC). The first one is Natural Gas Engineering Diploma, and another is M.Sc. in Natural Gas Technology." This shows that Egypt's education structures in petroleum engineering field respond actively to the development in the country's hydrocarbon industry and keep up with dynamic and shifting trends.

This multidisciplinary initiative came also as a result of an effective protocol and cooperation between Cairo University, MSRC at the Faculty of Engineering, and the Ministry of Petroleum, along with oil and gas operating companies and organizations in Egypt such as EGAS, EGPC, GANOPE and others, which suggests that the inter-sectional collaboration in the country can generate further benefits.

Professor Abu El Ela noted that "in general, the relationship between the universities and the oil and gas industry is excellent when it comes to the teaching staff at the CU's Petroleum Engineering Department. Many of them have practical industry experience and are still active in continuing education work and training as well as in industry consulting in cooperation with local and regional oil and gas companies."

Inter-Sectoral Cooperation

The cooperation between the higher education and industry entities could, however, benefit from more effective

"As the Egyptian universities teach sciences and theories of different engineering disciplines, the graduates from these programs can provide support in the design and operations of the surface facilities in the oil and gas fields."

Prof. Mahmoud Abu El Ela, Petroleum Engineering Department, Faculty of Engineering, Cairo University

and more efficient patterns. As Dr. Elahmady put it, "there should be a much broader reach-out from the faculties to the industry and the other way round," which would improve the environment on both sides to the degree that Egypt would be able to retain its oil and gas trained work force and prevent recently recorded 'brain-drain' scenarios.

With his extensive consulting experience in this area, Dr. Elahmady further insisted that this objective can be achieved through closer education/training cooperation between universities, foreign companies, and the three national umbrella entities – the Egyptian General Petroleum Corporation (EGPC), Egyptian Natural Gas Holding Company (EGAS), and GANOPE.

"We need to have an overarching image of staff, whether it is training within the industry or academic production for the industry, in order to replace the current system of rather disintegrated channels of cooperation among individual companies. Instead, we should merge these elements together under the leadership of the Egyptian governmental authorities."

The universities would thus benefit better from a direction that these authorities would provide them with based on their assessment of available data on all companies present in the market. Dr. Elahmady believes that "through this holistic approach, EGAS, EGPC, and GANOPE, as the key stakeholders, possess soft power needed to efficiently channel all present efforts of universities, students, foreign oil companies, service companies etc."

Under the tutelage of the governmental entities, "the universities will be able to establish a bottom-up approach and through these 'baby steps' such as conducting a series of pilot projects with their students, they will contribute to expanding the education system with additional seminars followed up with practically oriented workshops with industry practitioners," Dr. El Ahmday convincingly described a viable proposition.

In order for this idea to become a reality the three entities should "tap into their leverage that would enable to design a framework under their mandate to ensure a proper implementation of an apt university education system for the industry as a whole," AUC's expert elaborated. He sees this as an opportunity to enroot consistency into the schemes.

In light of that, on his side, Eng. Mohamed Badr, Oil and Gas Skills' (OGS) Chairman noted to Egypt Oil&Gas that

some of these governmental entities are following the suit. "OGS offers training programs to university students, which motivates the pre-graduates to attend these courses on their own to gain experiences that will help them find employment."

Cooperation of all involved parties, most importantly from the private sector in Egypt, can help the universities to further improve in other areas as well. At this point, larger contribution is requested from the private firms and foreign investors. Professor Abu El Ela told Egypt Oil&Gas that for instance "at Cairo University the laboratories need to be improved by adding funds and sponsorships from the oil and gas companies."

On the other hand, Dr. Elahmady from AUC noted that "their faculty has excellent labs, better facilitations, and extra-curricular activities for students, additional projects, soft skills training, and a good environment to help excellent graduates to succeed." Yet, in this case, as he put it, "foreign companies can dig into their large human and capital resources to further Egyptian university production."

Prospect for Skills Development

"The Egyptian universities supply the local petroleum industry with about 400 national and specialized petroleum engineers every year," Cairo University's Professor Abu El Ela stated clearly. "The qualified graduates from engineering disciplines can provide the required support in the subsurface activities of the oil and gas industry in Egypt and in the Middle East as they have appropriate capabilities, background, knowledge, and skills to work in the operating and service companies."

However, AUC Professor further added that "the skills of the graduates can be improved further by extending the duration of their practical training at the operating companies, which will improve the performance of the graduates and will ensure that the graduates are able to link the theories with the applications of the new technologies to the highest professional standards."

While some experts believe that currently there is no staff/skills shortage in the Egyptian oil and gas industry, a constant urge to assess the changes within and to project such an education system that would guarantee a pool of diverse talents remains. Experts advocate for a flexible way to modify the structures for the hydrocarbon companies' interests not only for present needs, but also for the future.



Towards Gender Balance in Hydrocarbon Fields

By Sarah Samir

Oil and gas has always been a male dominated industry. Yet, although working conditions in the oil and gas sector are harsh, women are becoming more present in the field. As they accepted the challenge and started playing an active role in such a promising area, women can be more often seen as role models in the industry. Still, however, the percentage of women in oil and gas remains low, globally. The overall number of females working in the industry is still less than 25% of the total workforce.

A Gulf Intelligence Special Report 2015 - 'New Policies Needed to Accelerate Gender Balance in Oil & Gas Industry' mentioned that women occupy only 11% of seats on the boards of directors of the world's 100 largest oil and gas companies. In the US, women in CEO positions in energy firms are represented by merely 6%, according to Korn Ferry, a global advisory firm.

In Egypt, the numbers are somewhat higher. The country's Ministry of Petroleum records 18% of female employees, while the percentage of women at the Egyptian General Petroleum Corporation and other Holding Companies is estimated at around 22%, according to the ministry's website.

The statistics, nonetheless, raise a question whether the industry is only tough for women's physique or whether the social barriers of the collective consciousness are affecting the workforce on a greater scale.

A Variety of Challenges

It is no secret that women encounter a larger number of challenges in the industry than men. These are related not only to the harsh nature of hydrocarbon areas and production processes, but also to societal barriers and psycho-social factors that surround women on daily basis.

Geological nature of upstream fields, often located in remote areas, is ruthless in itself, and weather can make working conditions even harder. But this is not the only obstacle. While working in an upstream field, employees face countless dangerous situations, as Rebecca Ponton elaborated in her article 'Breaking the Gas Ceiling: Women in the Offshore Oil & Gas Industry.' Workers need to be wearing "gas masks to prevent their exposure to deadly hydrogen sulfide gas." In cases of accidents, they face danger in the form of explosions and burning rigs. In offshore fields, they have to wait for emergency helicopter to evacuate them, which further increases the risk that they may be harmed, injured, or even killed.

The oil and gas industry is thus considered dangerous to bodily health of women. "There are a lot of dangerous products, dangerous emissions, and dangerous gases, which affect women's bodies and health, especially if they are pregnant or in their period," said Assistant Under Secretary for Economic Affairs at the Kuwaiti Oil Ministry, Nawal AlFuzai.

This is an indisputable fact. Immediate danger for personnel is undoubtedly a decisive factor for both men and women to decide to join the industry. But the reasoning related to women's biological nature can build up assumptions and prejudices and in effect result in a scenario when the argument, that women are in fact capable of working in the oil and gas industry, is simplistically rejected.

What is more, women face a series of other challenges when they want to become petroleum engineers that stem from society's perceptions, as Eng. Amal Mansour, General Manager of Operations and Communications Systems at the Petroleum Pipelines Company (PPC) affirmed.

Social limitations are an important factor in women's decision to opt for such a career and the beginnings may be further discouraging. Eng. Mansour remembered her early work days in an interview with Egypt Oil&Gas: "When I was assigned to prepare operations applications work, the assigned team had to take an operations training in Suez for a week, and the company provided residential units for the employees. However, as the only woman, I faced social barriers related to the concept of woman's reputation. Yet, I accepted the challenge and kept moving on a daily basis back and forth between Cairo and Suez."

Similarly, Gabriela Arias, Business Development Manager at Halliburton,

did not shy away from the opportunity and entered the industry. She recalled speaking at the 2015 Offshore Technology Conference (OTC) that "one of my challenges was when I first entered the industry. I was the only girl working in the field."

These women did not allow society affect their professional life and future. But this is not the case across the entire industry. In some countries more than in others, women have traditionally been underrepresented in hydrocarbon business due to a collective perception that they should focus on bringing up future generation and establish families, as Kelly Services Company's article - 'Attracting More Women to the Oil and Natural Gas Industry' read. Hence, some women felt insecure because of the common beliefs that oil and gas is rather a place for men.

A survey conducted by NES Global Talent in 2014 asking about women's position in the oil and gas showed that 45% of females in the industry did not get the same recognition as men. Neil Tregarthen, CEO at NES commented on the survey's outcome stating that women further stated that "they are paid less and have fewer opportunities than their male counterparts, and have to work harder than men to prove themselves."

An alerting factor is that the discrepancy between men and women in the industry begins already in first stages of their career paths. Students in Gha-

na shared these stories. In the government's sponsorship program aimed at students who wanted to join various oil- and gas-oriented courses, "fewer females were sponsored compared to males" in the studentship rounds between 2010 and 2015. According to the African Centre for Energy Policy, as many as 221 boys were assisted in contrast to 49 girls who were given a similar chance.

Based on that, one would find it less surprising that the oil and gas industry has the lowest representation of female employees in comparison to other professions or sectors worldwide, as latest reports by Reuters have revealed.

On top of physical, bodily, and societal issues, the hardships that women face in the oil and gas industry is also linked to so called "socio-psychological challenges," according to Gas Strategy and Master Planning Unit Manager at the Abu Dhabi National Oil Company (ADNOC), Fatema Al Neaimi, who most recently spoke at the 2016 ADIPEC conference on the Women in Energy panel. Most people "associate engineering fields with male, while they associate humanities and arts fields with female," she said. This collective consciousness psychologically affects life choices of many women. According to the book 'Why So Few? Women in Science, Tech-

which, in and of itself, is not necessarily prosperous for the industry. But despite lack of encouragement, there has been a recent trend when women started confronting these social paradigms. By doing so, they effectively pointed to the need of fresh workforce in the industry, which can be achieved by introducing new inclusive policies. If successful, this may generate larger benefits for all those who are involved in the hydrocarbon business from the public and private sectors alike.

Inclusion & Diversity

Undoubtedly, the global oil and gas industry is currently in need of an increased number of female employees. "Diversity [of workforce] is becoming more important as the energy sector is going through fast transformation and as gender balance is becoming a factor in organizational success," according to female leaders speaking at ADIPEC 2016 conference.

Gender diversity in workforce is crucial because the industry does not "just need all types of energy, [but it] needs diversity of thought" in order to be able to meet the demands of the shared energy future, eloquently stated Shell's Vice-President for Exploration in MENA, Eileen Wilkinson at ADIPEC.

Calls for workforce gender balance in the industry become more urgent "with

Gas Ceiling: Women in the Offshore Oil and Gas Industry.' "There are things you do not learn from a textbook. The men were too busy with their own jobs. I had to teach myself and I learned by trial and error. I was terrified; one mistake and I could have shut down a rig." Yet, she did learn, and not only that, she succeeded in her career.

Pat Thomson was, however, not the only woman, who against all odds, became a respected employee. Many other women tell their success stories; some of them in the upstream sector working in offshore fields. In Australia, Yassmin Abdl-Magied, who works as a well-site drilling engineer, was named Queensland Young Australian of the Year in 2015. In an article about her career 'Yassmin Abdel-Magied: Formula One Expert, Oil Rig Engineer, Change Charger' she commented on her job saying: "Not only do I find it fun working on the rig, meeting different people, travelling constantly, but it also fits my intentions."

These inspiring role models from among successful women in the petroleum industry are to be found not only in the US or Australia, but also in the third world developing countries.

In 2016, President of Mozambique, Filipe Nyusi, appointed Leticia Klemens as Energy Minister. Previously, she was a Chairwoman of Mozambique's largest commercial bank, the International Bank of Mozambique, headed the Association of Mozambican Businesswomen, founded and led the Association of Mozambican Women Entrepreneurs. In Egypt, some women also became leading representatives in the oil and gas industry. For example, Eng. Amira El Mazni, who joined the Egyptian Natural Gas Holding Company (EGAS) in 2005 and worked in the Planning & Projects Division, succeeded in her career and was later promoted as Vice Chairman of Gas Regulatory Affairs at EGAS. Her responsibilities include planning and designing the legal framework of the country's entire gas sector. Eng. El Mazni's role is also to document the developments in order to establish Egypt's new Gas Regulatory Authority in line with the government's overhaul in the hydrocarbon sectors.

Similarly, Eng. Amal Mansour was the first female IT Engineer to join PPC and to be assigned to prepare operations application scheme. Eng. Mansour was later promoted to be the Head of Systems Development, the Director of the Department of Systems Transfer and Development, and the Assistant General Manager of Operations Systems, to finally reach a post of PPC's Honorary General Manager of Operations and Communications Systems in 2015. Eng. Mansour convincingly told to Egypt Oil&Gas: "Women have joined the oil and gas industry and can succeed in it as much as men."

These cases show that it is only a question of time before governments the world over create a framework, under which women will be welcome to the industry. If efficiently implemented, such a design can paint a brighter future for the industry as a whole and bring about

direct benefits to the economies of hydrocarbon-rich countries.

Attracting Women to Oil & Gas

Global and local efforts to build such an inclusive, gender diverse work environment cannot succeed without individual companies pitching in to help governments in attracting women to the industry.

As respondents to the NES' survey said, companies' task is to reach out to women and inform them early about career opportunities in the oil and gas industry in that they will be encouraged to apply for positions within. "Engaging with young women both at school and at university, providing role models and an opportunity to see for themselves what the sector has to offer through visits and paid internships, will ensure that oil and gas companies will benefit from the untapped talent of those female engineers whose skills will, otherwise, be recognized and rewarded elsewhere," Professor of Science Engagement at the School of Mathematical and Physical Sciences at the University of Reading, Averil Macdonal, said in an interview with Industry Insight.

In addition, the private sector is expected to give women a chance to take on more challenging roles, such as those in the offshore sector. Encouraging women to join the oil and gas arena and take on more responsible roles within would bring forward a series of competitive advantages.

Lastly, oil and gas firms should outline mechanisms that would guarantee equal benefits and opportunities for their female employees. "The existing labor law in relation to women in the oil and gas should be revised to suit their needs better and to come in parallel to the Egyptian Labor Law," May Shoukry from PPC proposed. Accordingly, "some companies like the Cairo Oil Refining Company (CORC) had asked for the permission from the Egyptian General Petroleum Corporation (EGPC) to apply a certain law, based on which the company would be allowed to appoint an employee to a higher position, if all other staff, who had been hired in the same year, were already promoted."

Henceforth, promotions should be granted upon "scientific tests and human skills' tests to assess potentials of the employees. This will not be useful only for women, whose promotions are affected by lawful leaves, but also for men in their career path," according to Eng. Amal Mansour.

It appears almost necessary that oil and gas producing countries and companies in the industry would stop wasting time pondering about the bodily suitability of women for the profession. Instead, they should merge their efforts to design sustainable legal, managerial, and operational frameworks for the inclusion of female employees into the structures. Adopting such a proactive and positive approach would enhance capacities in individual countries to withstand demanding challenges that the global oil and gas industry has been facing.

"Women have joined the oil and gas industry and can succeed in it as much as men."

Eng. Amal Mansour, General Manager of Operations and Communications Systems at the Petroleum Pipelines Company

nology, Engineering, and Mathematics' by Catherine Hill, Christianne Corbett, and Adresse St. Rose, "implicit bias is common, even among individuals who actively reject these stereotypes. This bias does not only affect individuals' attitudes toward others, but also influences women's likelihood of cultivating their own interest in math and science." Thus, the common beliefs evidently have the power to discourage women from pursuing their dreams to work with hydrocarbons.

In the case of the Egyptian industry, "the general mentality in dealing with women is not equal to that of dealing with men at work," May Shoukry, IT Specialist at PPC told Egypt Oi&Gas. "For example women are not allowed to work overtime hours. Thus, when there is a training that will affect a woman's career path, it is instead granted to men. This is not because men can do better in their roles, but because they will work extra hours."

Similarly, May Shoukry explained, "the Egyptian law grants women vacations like a maternity leave. However, according to the oil and gas labor law, an employee should work for consecutive two years in order to be promoted. Thus, a woman who is working for more than ten years could be deprived of promotion just because she had to go on a maternity leave."

In this way, women are forcibly put in front of an option to choose between their career paths and their families,

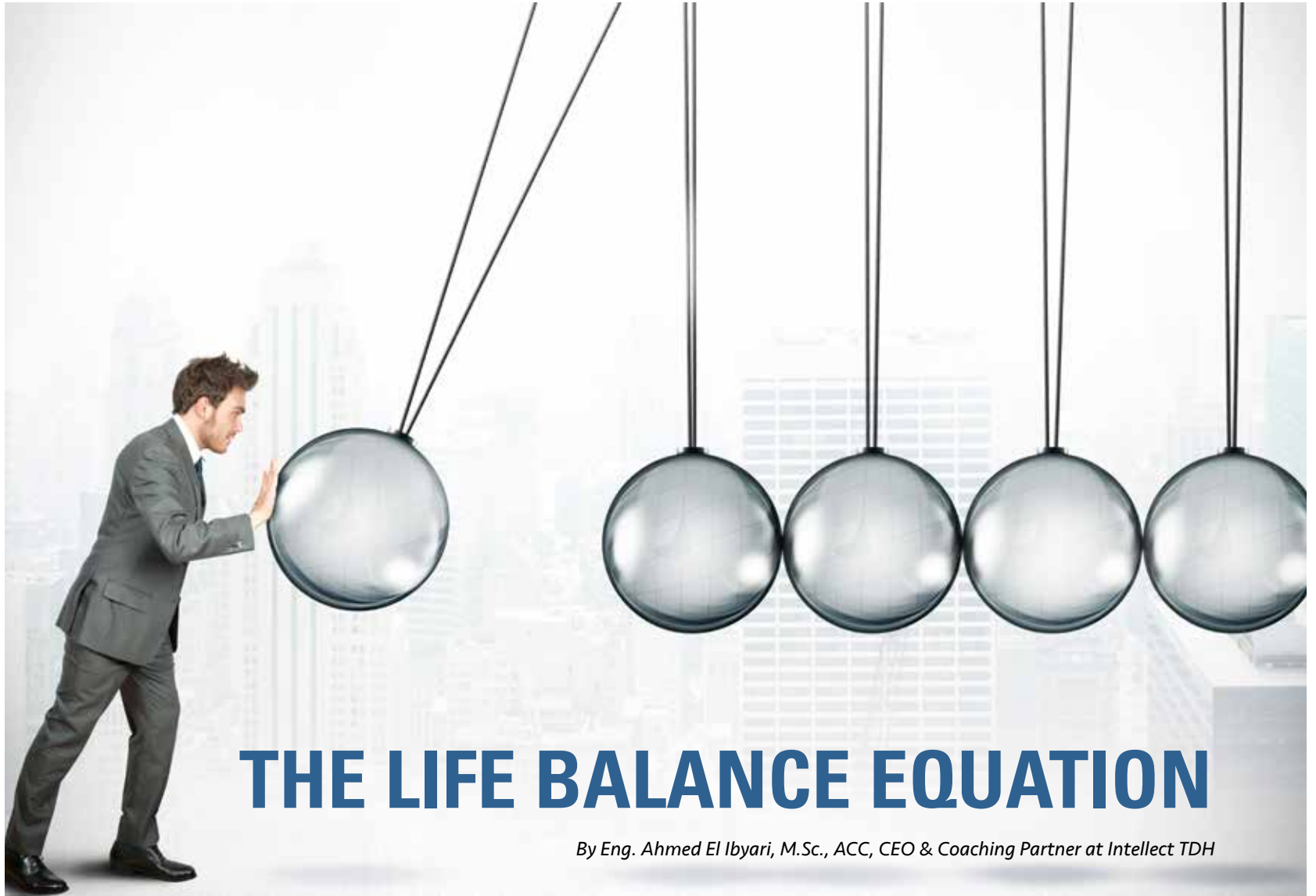
demand for engineering expertise far outstripping supply and half the experienced engineering workforce set to retire in the next decade," as Neil Tregarthen explained. In his view, "the sector is facing a crippling skills shortage," which needs to be addressed.

Adopting policies that would create a more inclusive work environment for both male and female employees in the industry provides a straightforward solution. Hence, rejecting the fact that the percentage of women in the industry simply need to increase makes little sense nowadays.

Women as Role Models

The petroleum industry is, nonetheless, familiar with female leading figures already, who are able to overcome the hardships in the industry as much as men and succeed. 'The Black Island' documentary by a Dutch filmmaker, Rob Rombout, talks about women who became successful in the field. The movie opens with a quote stating that "eighty men and one woman work around the clock in search of Black Gold."

This one woman was Pat Thomson. She worked as a Materials and Logistics Supervisor. While she was being employed until she was 72 years old, Pat Thomson had responsibilities as a mother of three, a grandmother of nine, and a great-grandmother of two. She retired first in 2013. Today, Thomson eloquently describes her experience from the fields in a book 'Breaking the



THE LIFE BALANCE EQUATION

By Eng. Ahmed El Ibyari, M.Sc., ACC, CEO & Coaching Partner at Intellect TDH

In my line of work as an executive and business coach, I get the chance to work closely with employees across all levels of the organization. One of the main challenges that most people face is finding the right balance between the different aspects of their lives. The common question that I usually get when I deliver work-life balance workshop for employees or business owners is this “Can it be done?”. Many started to feel that the life balance is a myth and they do not see any good examples around them. The work-life balance is becoming an important area of focus of companies who care about the well-being of their employees. At the end of the day, a healthy, happy employee is much more productive than one who is frustrated and constantly in a fire fighting mode.

When You Are Off Balance

The people around you normally notice that you are consumed in work and getting off balance before you even notice. If you are spending most of your time working you have little time to reflect on your life and re-evaluate how you are going. The feedback and sometimes complaints of family members and close friends are warning signs that you should consider. I am talking here about the early signs of an unbalanced life, if you are in advanced stage, most probably you have already started to have bumpy relationships, some minor or major health issues and you are certain that you cannot stay like this forever.

A Balanced Life

Another question that I get a lot and I always give this answer: “It depends.” The authentic balance is a balance that fulfills your values on both short and long terms. The balance that you know that none of the important areas of your life are neglected and you put more time and energy in what fulfills you, not what you are forced to do. Having an authentic balance feels like you have some sort of control over the important areas of your life, not running in a vicious circle. Our values are our drivers and they set our priorities. If one of our core values is not fulfilled we will feel that we are not doing a good job. The tricky part of values is that they are dynamic; the order of importance of each value can change with time and even with situations. Also values have different definitions from one person to another and they have so many ways to be fulfilled.

Let me give you an example, a fresh graduate who just started his/her new job might have important values like achievement, career, mastery, and recognition in the beginning of his/her career. Later on, in the same career, maybe the values of developing others and transferring knowledge and experience might become more of a priority than personal mastery or recognition. The value of achievement used to be fulfilled when this employee did a good job, but after changing the priorities of values, it can be fulfilled by seeing the people, he/she helped, doing a good

job. My point is that the priorities of values and how each value gets fulfilled is a dynamic process. The same act can fulfill more than one value and makes you feel more fulfilled.

The life-balance is not the goal here, the goal is to be more aware of the priorities to your values and have a plan to fulfill the core values without reaching the area of burnout.

Putting in a Plan

One of the famous coaching tools is the wheel of life, a simple yet very much an eye-opener tool that helps people to take a snapshot of their current situation from a satisfaction point of view. The wheel of life consists of 8 aspects. The first aspect is the spiritual life. This is the area related to nurturing and refueling the soul. It differs from one person to another. It differs based on beliefs and practices. Each person has his/her own definition and way to fulfil this area.

The second aspect is the self-growth. This is where the mind grows and broadens the horizon of mental and intellectual capacity. This can be a book you read, an inspiring person you meet, a conference you attend, an exploration trip, exposure to different cultures and so on.

The third aspect is the health and fitness. It is divided into two main sub-categories; mental health and physical health. We use a simple spectrum to assess the level of satisfaction of the mental health. This is not for any medical diagnostic purposes. The spectrum

is inner peace and a calm mind on one end, and anxious, irritated mind on the other end. The physical health consists of food you eat, water intake, the quality of your sleep, physical exercise, and activities you do.

The fourth aspect is love and family. One of the easy measures is the face-time you spend with your family and, of course, the scope of presence while you are with them.

The fifth aspect is the social life. Here come real friends, colleagues at work, extended family, and effort to grow your network. The simple measure here is related to important social events that you attend and the quality of relationships you have.

The sixth aspect is career. I know this comes as a shock that career is only one aspect out of eight. That is why I prefer to use the expression “life balance” not “work-life balance.” Here a simple measure is to recall why you are working and if this career is fulfilling this purpose. Career satisfaction can be related to the position you reach, the nature of the work you do, the prestige you get and so on. It is different from one person to another.

The seventh aspect is the finances. Five main subcategories to measure your financial satisfaction are your income, expenses, saving, investments, and debts.

The eighth and final aspect is the leisure or fun aspect. What you do for yourself just for the sake of being happy. It can be a hobby or a reward system

for yourself. The point here is that you have something related to you only and you do it for your own pleasure.

The Wheel of Life

Rate the level of satisfaction in each of the eight aspects of the wheel from 1 being extremely dissatisfied and 10 being extremely satisfied. The visual itself can give you an indication of the aspects that are causing imbalance or where you should put more effort and time.

Here are some questions to ask yourself after filling your wheel of life: What is the one aspect that, if improved, can have the biggest positive impact on my life? What is a priority for me that has been neglected for a long time? How can I improve the score by one point in each aspect? This is where you start to put small goals to get you moving forward.

Facing Reality without Having Control

Let us face the reality. We do not always have control over our life and time, but we do have responsibilities, deadlines, overload at work. We cannot simply say: "It's ME time. I will leave everything and go relax somewhere." There are two important checkpoints that you should consider if you believe that you cannot control your working conditions or you believe you should control your working condition.

The first step in facing the reality is to check if you have a victim or victor mindset, this can be a game changer:

• **Victor Mindset**

A victor mindset believes in choice

and consequences. A victor is in a certain position because of choice, not because of external factors. The victor knows the difference between the circle of control, where we have the power of change; the circle of influence, where we can facilitate change, while the final outcome is not in our hands; and the circle of concern, where we have no control or significant influence over the outcomes. The victor chooses his/her jobs, with the pros and cons, and accepts the consequences. The victor reminds him/herself when things get tough and they are in this position by choice, not by chance. The powerful question the victors use is: "What's possible?"

• **Victim Mindset**

A victim, on the other hand, is a master of blaming and making sure that whatever is happening is the fault of someone else. The victim focuses on the circle of concern and totally forgets about the circle of control and influence. They believe that life is unfair and that they are paying the price by their misery. The victim feels that they deserve better and they are not appreciated enough, maybe without putting any effort, they have a false sense of entitlement. The limiting questions the victims use is: "Who is to blame?"

The second step in facing the reality is to become creative and make sure that you are not using one of the unhelpful thinking patterns. The most common unhelpful thinking pattern in life balance is 'All or Nothing' thinking. The 'All or Nothing' thinking sometimes seems

very appealing and makes sense: "I either have time to go to the gym and workout or I cannot be healthy and fit." The 'All or Nothing' cuts all the middle ground and creative options. It is a form of polarized thinking that leads to diminishing your options and shifting your focus to only one solution - impossible in many cases. If we borrow the powerful "what is possible?" question from the victor mindset, we can start to create new solutions and instead of "my way or the highway," we can use "all roads lead to Rome" thinking.

Useful Tips to Achieve a Life Balance:

1. Remind yourself of the reasons you choose to be in this job to avoid falling into the trap of a victim mindset.
2. Ask yourself how I can improve each aspect of my life, even if I do not have the time or energy. Ask yourself about the middle ground solutions.
3. Explore your priorities and have the courage to admit them. Sometimes your priorities will be different from the social norms. If you are not aware of your priorities, you will always feel that there is something missing although you might be living your authentic balance.
4. The 8 aspects of life are interrelated. Some people feel they are improving the quality of their relationships when they take care of their health, others see healthy family connections helps them in the spiritual aspect. Make these

5. Eliminate the time wasters, have a general overlook on where you put your time and energy. Being at work does not mean that you are working. Check how many hours are wasted and how you can make the best of the commuting time.
6. Ask yourself what will matter most in five years, and what will be destroyed if I keep living like this. Your gains and pains can give you a good boost to manage your balance.
7. Audit your relationships and make sure you have good quality time with those who matter. This can be irreversible, if neglected. Eliminate the energy suckers out of your life.
8. Stop comparing yourself with others. Your balance is different from everyone else. Focus on yourself and compare yourself against your current values and potential.
9. Learn to say 'NO' to distractions. Do not be part of the agenda of everyone and lose yourself in the middle.
10. You should be your own priority. If you are drained, you are no good for anyone else. Make sure to take the time you need to recharge your energy before start focusing on others.

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PEOPLE DEVELOPMENT Challenges in MENA Region

Egypt Oil&Gas had a pleasure of participating in Team Misr's 22nd annual conference on Training and Administrative Development held in Cairo in November with the presence of the Sudanese State Minister of Human Resource Development, Dr. Adam Abdallah Al Nour.

Oil and gas industry, like any other business, operates in an ever changing environment and under the stress of increased competition. It is therefore imperative for companies to establish viable policies to govern their internal development of human capital, stated Chairperson and General Manager of Team Misr (TEAM), an Egyptian independent engineering and management consultancy firm, Dr. Helmy Sallam.

In the wake of these challenges, the TEAM's 2016 conference focused on a crucial aspect of human development, namely Measurement Based Management. It sought to tackle the timely relevance of management vs. measurement and it also addressed other urgent human development issues in the industry.

The conference brought together Human Resource Management (HRM) experts from the Arab region to discuss topics ranging from the concept of measuring effective management to human capital development to systems used in measuring organizational and individual performance.

Management Effectiveness

The MENA region is known to lag behind in general management effectiveness as well as in applying global trends in performance and people management, according to some experts.

"Egypt and the Arab region suffer from a crisis of management. There are fundamental and essential aspects that haven't been implemented," Dr. Nabila A. El Shall, TEAM's Deputy Chairperson and Director at the Arab Center for Women in Development said in an interview with Egypt Oil&Gas. Yet, "there are various frameworks and models to measure intangible factors such as job satisfaction and employee engagement." Therefore, the role of the involved entities is "to adapt these models to our Arabic culture and adopt them as managerial habits to drive continuous improvement," Dr. El Shall noted.

Embracing Generational Gap

Overcoming generational gap is one of the models that need to be revisited in the region. Experts at the conference have identified the gap as a major factor in human capital development and stressed that there exist managerial mechanisms designed to tackle this issue. These would need to be incorporated into the present structures and processes within the industry.

At the conference, TEAM's Primary Expert and Consultant for Human Resource Development, Dr. Medhat Moustafa Ragheb, presented a managerial model that aims to integrate senior and junior employees in companies through transformational methods in order to achieve a harmonious effect within an organization that will help it accomplish its objectives. In this way, senior generations will be able to transfer their expertise to younger employees more efficiently.

In doing so, companies should pay particular attention to young talents. Younger generations, have, in fact, different requirements, noted Dr. Hanan Abd El Moniem, Midor's HR

Executive General Manager: "Junior staff are tenacious. Therefore, we need to fix this young generation. We need to understand their motivations and needs in order to best utilize their capabilities." As she noted further there is an immediate need to "create a win-win situation between junior staff and senior management."

Speaking about the organizational development difficulties in the Egyptian oil and gas sector in particular, Dr. Ragheb told Egypt Oil&Gas that "the primary challenge is the organizational culture and management's conviction about change. Oil and gas leadership should support change and eliminate barriers to organizational development. This will facilitate the transformational process," which is much needed in the current market conditions.

It is no doubt that there is a massive potential and human capacity present in the country to achieve this. As Dr. Ragheb stressed, the oil sector employs the best human minds in Egypt. It is, therefore, possible for them to champion monumental changes for the entire country.

Future Leaders in Petroleum Sector

These changes can become real through continuous efforts in people development programs, most significantly through Future Leaders education. In line with this strategy, Egypt's Middle East Oil Refinery (Midor) and Tharwa Petroleum Company have built up a joint training scheme both for future leaders and other employees with a goal to better face challenges ahead and to absorb changes as the situation requires. Added value of this initiative is that it helped the companies to reduce their overall training budgets.

As the program revealed, in order to manage change, it was crucial to first shift employees' paradigms about teamwork and cooperation, emphasized during her presentation Dr. Abd El Moniem from Midor. Furthermore, the program has adopted an inclusive approach for all attendees to best achieve intended outcome of building integrated and complex managerial structures. "We didn't rely on training, but on workshops to encourage attendees' participation in the learning process. As a result the trainees became our partners in success."

Dr. Abd El Moniem added that key factor to this joint initiative was "the commitment of top management in both companies, Midor and Tharwa."

Competency Mapping

Competency mapping is another important aspect of developing capable human capital. The initial step is to identify required level of skills for company's business objectives, measure employees' competency levels, and then highlight gaps in the as-is. Companies can then work on addressing these skill gaps through training and development programs.

For the Egyptian oil and gas industry specifically, "it would be very easy and quite beneficial to develop such a map, because the technical competencies for engineering position, for example, will be the same across different petroleum companies," according to TEAM's Expert in Administrative Development, Dr. Walid Abdallah Kamal. He

added that the oil and gas sector will benefit in the form of "identifying where there are competency gaps. Therefore the sector can focus on building this skill through training and development programs."

Undoubtedly, "the competency map is a useful tool as an inventory of skills within the sector, from which second line management can be sourced."

This can be facilitated through a unified competency dictionary for Arabic nations. The MENA region could benefit from it greatly. TEAM's Chairman, Dr. Helmy Sallam, further elaborated saying that such "competency dictionaries must align to the organization's strategy in order to be effective."

Lessons from Sudanese Performance Assessment

Business entities are further eager to revamp Performance Assessment system, as participants agreed, having learned from the Sudanese experience.

Advisor to the Sudanese Minister of Oil, Dr. Mohie El Din Nayeem Mohammed Saeed, presented a case study on the Sudanese Petroleum Corporation (SCP) and its efforts to move from a confidential one-directional appraisal procedure to a more inclusive transparent method.

During the discussion panel, Dr. Saeed stressed the importance of including the employee in the appraisal process and providing constructive feedback on performance, which as the case of SCP shows, helped the company to improve its output. As he eloquently noted, "improvement has no end, it is a cycle" that can be enabled by feedback loops.

The transparency of the new system was an important key success factor as praise for positive behavior and improved performance was done publicly, thus encouraging others to do better. Yet, reprimand for undesirable behavior and declined performance was done privately to provide feedback to the employee in a safe and judgment free atmosphere.

Dr. Saeed concluded that the fundamental challenge in the Arab region is developing second line managers. "We should assess managers based on whether or not they created a real second line. This will enable the region to accumulate truly developed human capital."

In Egypt, the sector's competence "is evident in the fact that it was resilient in facing the difficult-ties of previous years with all the challenges. Therefore, it is a primary candidate to implement organizational development within Egypt," as Dr. Ragheb convincingly stated.

Hence, given the Egyptian industry's resilience, it appears that there never been a more suitable time to embrace the potential and capacities in human capital development in the country. With the present economic challenges Egypt is facing, the time is ripe to start drawing on the existing and innovative models. This active approach promises to effectively and efficiently incorporate all essential elements of people capital development for the benefit of the entire country.



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EYES OF THE WORLD FOCUS ON EGYPT'S OIL AND GAS SECTOR NEXT FEBRUARY

'The Egypt Petroleum Show' held under the high patronage of the President, His Excellency Abdel Fattah El Sisi, and support of the Ministry of Petroleum and Mineral Resources promises to be the largest oil & gas industry gathering North Africa has ever seen taking place in Cairo from the 14th -16th February at the Cairo International Convention Center.

His Excellency, Tarek El Molla, Minister of Petroleum and Mineral Resources Arab Republic of Egypt, affirmed that holding the conference and exhibition in Cairo reflects Egypt's continuous efforts to promote new projects, attract investments in the petroleum sector, and consolidate communication with foreign investors and large international corporations, which are foremost on the investment opportunities map. New prospects in oil and gas production, along with partnership opportunities, not only signify vast investment opportunities in new petroleum projects, but also target boosting energy supplies, and are one way the government aims to build the economy while securing the country's energy needs for long periods to come. From his part, Christopher Hudson, President of DMG Events Global Energy, the company responsible for organizing the 'Egypt Petroleum Show 2017' stated that "The 3-day exhibition and conference promises to be the most sought after meeting place for all oil and gas professionals in the North African, Mediterranean, and the South European region with leading global oil and gas players exhibiting across three halls and 70% of the exhibition sold out."

Exhibiting companies include Egyptian & Middle Eastern NOCs, such as EGAS, EGPC, Ganope, EICHEM, BAPCO, and BANAGAS. Government entities participating include MIDOR, NOGA Holdings, and GPIC. IOCs from all over the world are attending, with ENI, BP, ExxonMobil, Apache, Shell, and Edison exhibiting at the 2017 event. A comprehensive list of world-class service providers exhibiting EGYPS encompasses the likes of Schlumberger, Halliburton, Baker Hughes, Weatherford, Aveva Solutions, DNV GL, and AkzoNobel. At the local level, renowned firms such as ENPPI, Petrojet, Petroleum Marine Services, EPHH Rig Manufacturing, Ruhrpumpen Egypt, SHOTEC, Maridive Group, and the Ayadsons Group are all appearing in the exhibition halls.

Hudson said: "We have worked tirelessly over the last eight months to create a world-class event for Egypt. We are encouraged to see, as we anticipated, great interest from global, regional, and local players, including government ministers, IOCs, NOCs, and a host of the sector-leading service providers. Egypt has enormous potential, and the eyes of the world are focused on this exciting market. In this prolonged period of low oil prices, it is gratifying to see so much excitement being generated by EGYPS."

"Not only is EGYPS gearing up to be the largest oil and gas exhibition in the country, but also the largest industry technical conference, including 28 technical confer-

ence sessions across the event's three days, covering over 10 technical categories and a one day dedicated Women in Energy conference to host 8 sessions," he added.

EGYPS is to also host two days of strategic industry conference sessions and panel discussions including ministerial dialogue and a global business leaders' panel, where the future of Egypt's exciting oil and gas sector will be firmly under the spotlight. The EGYPS Petroleum Club is an exclusive, private business meeting and networking zone exclusively for C-level industry players, sponsored by Exxon Mobil.

"We see the Egypt Petroleum Show as a unique opportunity as it brings together key players in our industry, since the conference's Executive Committee aims at ensuring the strategic development and future growth. As such, several multi-disciplines ExxonMobil Egypt employees are participating as members in the key committees, such as technical, investment, CSR & media committees, thus providing knowledge and expertise to help shape the structure of the conference. By making EGYPS become the leading petroleum show across Egypt and North Africa, we help develop the Egyptian economy," said Eng. Hesham El-Amroussy, Chairman and Managing Director of ExxonMobil Egypt, also a member of EGYPS Executive Committee.

Eng. Hussein Fouad El Ghazzawy, Vice President and General Manager - Schlumberger Egypt, South Sudan and East, also a member of EGYPS Executive Committee said: "Our aim of being part of the EGYPS 2017 is to demonstrate our unwavering commitment to Egypt, its people and local talent to further enhance the country's aim to be a vital regional energy player. We truly believe in the oil and gas potential of Egypt to the extent that we have invested in one of the largest projects for Schlumberger in recent years. Our Egypt Center of Efficiency, a 100,000 sq meter operating base in 6th of October will be inaugurated in 2017."

Christopher Hudson said: "We are extremely grateful for the support and understanding we have received from the President and the Minister of Petroleum and Mineral Resources in ensuring the inaugural EGYPS 2017 is a success. Having the Minister himself as Event Chairman underlines Egypt's commitment to bringing energy security to all."

"It is also testament to the event's importance that we have the backing of Exxon Mobil as diamond event sponsor, BP as platinum sponsor, Schlumberger as gold sponsor, and Halliburton as silver sponsor, and finally MIDOR and Baker Hughes as bronze sponsors. EGYPS

2017 is positively looking to attract over 800 conference delegates and 10, 000 visitors across the three days of the show," he added.

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ACG-ITF

The first private sector company in Egypt to organize trade exhibitions, ACG-ITF group was founded in 1986 as an active professional group with expertise and commitment for organizing and running international and specialized trade fairs.

Thanks to the profound experience of multinational professional team and network, the group has staged so far more than 150 international shows that drew thousands of exhibitors, and millions of visitors from Egypt, Africa, and the Middle East covering several sectors such as printing & packaging, plastics, textile, automotives, real estate, furniture and many others.

The group has established a firm and high reputation within the regional market with a bunch of branded exhibitions in both B2B such as AUTOTECH, HEAVY DUTY, ITCE, PLASTEX and B2C shows such as AUTOMECH FORMULA and CITYSCAPE EGYPT.

Shell Advocates for Innovation, Collaboration, and Sustainability

Shell Lubricants Egypt held its Fifth Annual Shell Technology Leadership Conference (STLC) that tackled the world's biggest energy challenges. More than 100 leading companies and authorities in their fields joined Shell to pioneer best practices in solving the world's greatest energy challenges now and for future generations.

Egypt's top companies, academic institutions, and entrepreneurs partnered with Shell Lubricants Egypt and energy experts to explore global sustainability innovations. The summit, which undertook the theme **'ENERGY - WATER - FOOD: INNOVATION AND COLLABORATION FOR EGYPT'S FUTURE CHALLENGES,'** took place at Steigenberger Al Dau Conference Centre, in the nation's premier Red Sea destination, Hurghada on 17-20 November, 2016.

The event focused on the complex issues posed by increasing pressure on our planet's essential resources. Shell believes cross-sector collaboration and leadership will be essential in helping meet the world's future energy needs, while also finding sustainable solutions to overcome the challenges of the energy-water-food stresses.

The planet's energy, water and food systems comprise a tightly interconnected nexus. Water is a vital component in almost all energy production, while energy is needed to treat and transport water; and both water and energy are necessary when cultivating food.

Therefore, all three areas must be sustainably managed in order to shape a future where energy remains an abundant resource for all. Shell's overarching goal of the conference was to foster cross-sector collaboration, as technological leadership will be essential in helping meet the world's future energy needs. Attendees were also tasked with discussing sustainable solutions to meet challenges presented by energy-water-food stresses.

Among keynote speakers were Aidan Murphy, Shell Egypt VP, Country Chairman & Managing Director; Saher Hashem, Managing Director Shell Lubricants Egypt; Wael Fakharany, Managing Director of Careem Egypt and Senior Vice President Government Relations; Dr. Andrew Hephher, Vice President of Shell's Downstream Global Commercial Technology; Dr. Tarek Tawfik, Deputy Chairman of the Federation of Egyptian Industries.

Aidan Murphy shared Shell's goal for the 2016 STLC edition for Egypt. As he said: "Together; through current and potential strategic partnerships, I hope we can use this forum as a springboard for coming up with practical innovative solutions that would positively contribute to Egypt's energy future, which is also in line with the country's strong drive - demonstrated by the recent economic reforms - to help meet the energy needs, therefore providing a better life for Egyptians."

Energy Visions

Speaking at the conference, Wael Fakharany presented some of the world's most groundbreaking solutions in several fields including electricity and energy production. He introduced energy visionary Makani and its project in constructing

more cost-effective floating wind power turbines to replace traditional wind farms. According to Fakharany, the best ideas come from learning important lessons when innovators fail. "Innovation has a long history in failure. So embrace it and learn those hard lessons. Treat your idea or invention like you would a startup, all the while staying focused on having a real impact on your communities, and maybe the world at large."

In a similar vein, Shell VP of Downstream Global Commercial Technology, Dr. Andrew Hephher, spoke about Shell's commitment to investing heavily in alternative and clean energy projects to mitigate the effects of climate change. Shell believes achieving a carbon neutral society means organizations will need to make major gains in efficiency and new technologies, such as renewable energy and carbon capture and storage systems.

"We at Shell believe it is our responsibility to be leaders in this field as we fully appreciate the globe's need for efficient solutions that exceed our customers' expectations. Our job is to save you money, time and trouble when it comes to running your business. Summits like this are a fundamental part of promoting collaboration that will eventually produce new and exciting technology to help meet the energy challenge," said Dr. Hephher.

Dr. Tarek Tawfik from the Federation of Egyptian Industries gave perspective on the seriousness of the world's food issues. He also discussed novel ideas designed to change how we eat, grow, and monitor our food supplies, including desalination nanotechnology, waste and biofuel recycling, portable solar pumps, hydroponics, food & water sensors, and beneficial microbes.

He elaborated on the subject drawing a link to both global and regional food security. "Every year 1.3 billion tons of food is wasted worldwide. New innovation and research in food security is promising, and major advancements in this area are projected to materialize over the coming decade. Innovation will be a game changer and with all the challenges forcing Egypt, it will be interesting to envision how we will fit in the global picture," stated Dr. Tawfik.

Nour El Assal, CEO of Tagaddod, is one such innovator. His homegrown Egyptian company is constructing the first regional facility that transforms food waste into biodiesel. "At Tagaddod, we see waste as humanity's chance to reintegrate in a universal sustainable system. Think of replacing oil reservoirs with the waste of the world," noted El Assal in an inspiring way. Building on this idea, Lifesource's CEO, Mohamed Samir, discussed global water issues running the gamut from mismanagement and misuse, water poverty, mechanical meter issues to increasing costs.



Lifesource is looking to change this via the LifesourceSmart IoT System, which consists of smart meters, alarms, and database control servers designed to improve water management.

"By using smart water system depending on IoT and ultrasonic sensing technologies, we will manage, monitor, and control water resource in residential, governmental, industrial, and commercial sectors to rationalize consumption, detect leakages, protect users' entities and homes from sinking, and save monthly billing. We feel that this is going to disrupt the marketplace, allowing us to gain 25% of the Egyptian market by 2020. We offer customizable analysis and solutions for clients big or small for effective interaction with his water network to reduce non-revenue water and take instant actions regarding any unusual behavior regarding his network like pipe burst or damaging or even water theft. We will deploy this smart system for more countries across Africa like Ethiopia, Kenya, Sudan, and South Africa that suffer from water problems mismanagement, misuse, leakages, and water poverty," as Samir convincingly presented his company's strategy.

Finally, Dr. Saad El Gyoshy, Egyptian former Minister of Transport, discussed innovations in concrete pavement manufactured by CEMEX Research Group. Not only does concrete pavement last longer, it also has lower lifecycle costs, less heat retention/light reflection and superior aesthetics. "Concrete pavement is the next big thing in road construction for Egypt. It is much more reliable than conventional asphalt, and beneficial for environment and energy savings," added Dr. El Gyoshy.

"STLC centers on Egypt's many success stories in the arenas of innovation, sustainability and energy. It is clear that

Egyptian entrepreneurs are at the forefront of this technology after seeing our guest speakers in action. We are certain that the weight of Egypt's business sector will render Egypt one of the most important innovators of energy solutions, and our role today is to promote collaboration between established firms and smaller startups looking to gain a foothold in the market. This market must stand on its own two feet if we are to see a bright future for generations to come," concluded the conference Saher Hashem, Managing Director Shell Lubricants Egypt.

Shell Group is a world leader in the research and development of renewable energy solutions. Between 2011 and 2014, Shell spent over \$100 billion to support new power production. Earlier in 2016, Shell launched New Energies, a Shell subsidiary focused on investing in renewable and low-carbon power projects.

Relying on its exclusive portfolio, the company believes that the Annual Shell Technology Leadership Conference will continue generating new ideas for Egypt and enhance energy development in the country through innovation and collaboration towards sustainability.

Aidan Murphy Shell Egypt VP, Country Chairman & Managing Director stressed that "as a global leader in energy and innovation, Shell aspires to drive progress in the development of a better future energy system which cannot be seen as separate from that of food and water. We also believe that progress within the nexus cannot be achieved without cross-sector and public-private collaboration. Through the Shell Technology Leadership Conference, we aim to make a positive contribution to the understanding and dialogue on this very important topic for Egypt."



Energy in the Middle East The Big Picture for 2017

By Hugh Fraser, Office Managing Partner, Andrews Kurth Middle East

We are heading towards the end of one of the most transformational years in living memory: at the start of the year, the ink was barely dry on the Paris COP21 Agreement on climate change, the Iran Joint Co-Operation Agreement brought Iran back into the world of international petroleum trade and the oil price slumped to \$28; we moved onto the unexpected Brexit result in June with fears of a domino effect across the European Union; Syria became the theatre for a return of the

Cold War; and the year ended with the arrival of a Trump presidency with his campaign commitments to reversing COP21, cancelling the Iran Agreement and calling into question the future of NATO. What a year.

So what is the big picture for 2017 and how should companies with a focus on the Middle East move forwards?

Impact of Oil and Gas Prices on Investment and Cashflows

The IMF has been projecting that the

Governments of the six GCC countries among them may accumulate in the region \$800 billion to \$1 trillion of deficits in the next five years. This is staggering and will have a major impact on investment levels and cashflows up and down the industry supply chain. However, this may be offset by privatization proceeds (with the Saudi Aramco IPO at the forefront), bond issue receipts and IMF and development bank financing; Saudi Aramco has recently re-stated its intent to spend \$33 billion a year on

its petroleum industry, Egypt is set to benefit from \$12 billion of IMF funding and Iraq has secured \$4.5 billion from the same organization. On the supply side, OPEC may finally act to curtail oil production to stabilize oil prices, but the truth remains that large volumes of stored petroleum will need to be washed through before the supply/demand equation can be rebalanced. On the demand side, there are genuine concerns that the \$152 trillion of public and private debt recently identified

by the IMF will severely curtail world growth for decades to come, especially in China. This bodes for a difficult and challenging 2017.

Brexit and Trump

The Brexit and Trump “shocks” have still to play out their full implications. The UK has not yet deployed its official notice of withdrawal from the EU and the world awaits to see how much of Trump’s campaign rhetoric will play through to Trump the US President (with a Republican Senate and House of Representative), and especially with a resurgent Russia flexing its muscles in the region. Perhaps the biggest impact on Middle East energy dynamics would be a greater drive towards US security of energy and the opening up of US energy exports. Recent polling favorable to right wing parties in France, Hungary, Poland, and Austria suggests that the Brexit tsunami wave may have considerably more distance to travel, but, ironically, the destabilization of the EU block and the weakening of the pound and euro may accelerate UK and European companies to further invest into the Middle East.

Security and Cyber Security

The Trump effect will most certainly ripple out into the Middle East security dimension. However, will the “Pax Americana” that has underpinned security in the region since the Second World War continue or will Trump retract behind a metaphorical defense

wall, forcing NATO and regional partners to commit greater resources and develop new strategies to their own defense? Northern Iraq, Syria, Yemen, and Libya all remain ‘no go areas’ for foreign investment and an attempted coup last summer and its aftermath has put Turkey into a new era of instability and disharmony with its western allies. But Saudi Arabia, Southern Iraq, Iran, Kuwait, the UAE, Qatar, Oman, and Egypt all remain open for business so long as security and political stability persist. With the lowest production costs in the world, the security of Middle East supply remains critical to security and affordability of energy so it seems unlikely that the US and EU will turn their backs on the region. An additional dimension to the security issue is the combating of cyber security, which perhaps threatens more extensive and devastating impacts to the regions production and processing facilities than bombs and bullets if left unchecked. It was fitting that this year’s ADIPEC 2016 dedicated a full day conference to the cyber security theme.

Gas Demand and Supply, Diversification of Supply and Climate Change

The region’s balance of gas demand and supply has been severely challenged in recent years. Although approximately 40% of the world’s gas reserves are located in the region, these are disproportionately located in Iran and Qatar. Saudi Arabia, Qatar, Oman, Kuwait, Iraq and Egypt all have faced significant

gas supply challenges forcing the UAE to develop its sour gas resources and Saudi Arabia, Egypt, Kuwait, and Oman to focus on gas exploration and production projects, with unconventional gas an increasingly strategic focus. The return of Iran to the international trade community will of course have a major positive impact. However, the increased investment in nuclear, solar, and onshore wind projects in the MENA also bears witness to the need to diversify energy supply sources, while at the same time preserving petroleum output to meet domestic demand and/or export revenues, and acknowledging that COP21 has changed the world and put climate change control at the centre stage of strategic planning.

Localization, NOC Reforms and Economic Diversification

The region remains characterized by young and growing populations, most notably in Iran, Egypt, Turkey, and Saudi Arabia. This will continue to drive a strategic need for “localization” and its mix of training, job creation, local manufacturing and technology transfer, most notably with the In-Country Total Value Add (IKTVA) program in Saudi Arabia, an inherent part of it Saudi Arabia Vision 2030 and National Transformation Plan. The dual need for economic diversification and non-public sector job creation will be magnified if, as expected, NOC structural reforms remove the traditional “job for life” culture. This is most evident currently in

the reforms sweeping through the AD-NOC Group in Abu Dhabi. The strategic objective of localization will inevitably feed the drive for technology transfer focused joint ventures.

Technology Transfer

The characterization of the region’s energy industries as “low cost, low tech” remains stubbornly persistent in some areas, but in many other ways the technology transfer train is at full speed. Advanced seismic, reservoir management, smart well completion, and intervention and enhanced oil recovery technologies are at the forefront of raising petroleum recovery rates up from 30% to 60-70%. Sour gas, heavy oil, unconventional gas and deepwater production systems all now play a major role in the region and the next technology in-roads will surely have energy efficiency and energy storage in poll position.

As we now move ahead from ADIPEC 2016 and begin to focus on EGYPS 2017 in February in Cairo as our next major check-in point, there can be little doubt that the above six themes are set to dominate the 2017 Middle East energy horizon. Those companies, which continue to succeed, will be those who best insulate themselves from the negative impacts that may emerge and best position themselves to identify and benefit from the opportunities. If change is opportunity, the changes of 2016 will be severely put to the test in 2017 and beyond.



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Learning to Manage Change as a Fixed Component

By Nataša Kubíková

Two Egyptian companies, Middle East Oil Refinery (Midor) and Tharwa Petroleum Company, launched their alternative Leadership Development Program (LDP) some 11 months ago. The joint initiative has marked a significant success for both partners.

The training managers of Midor and Tharwa, Dr. Hanan Abd El Moneim, HR Executive General Manager, and Rania Ahmed Helmy, are persistent in their effort to continue with the program despite imposed cost reductions and remain determined to complete it by December 2016, as initially scheduled. Midor & Tharwa managed to create it in a way that proved financially sustainable in the current economic environment.

“There is one plan for both companies,” as Rania Helmy clarified. The plan contains a large scope of training modules which mainly target the middle management. Their innovative curricula are based on internationally recognized programs that were designed to meet specific needs of oil and gas companies.

The Concept of Change

Most recently, managers of both companies attended a highly relevant training module in Change Management. There were 15 participants - seven from Tharwa and eight from Midor, who took part in the five-day course in May and June in Cairo, in addition to Midor's employees from Alexandria.

As Sara El Gammal, Tharwa's Training Section Head, told Egypt Oil&Gas, the structure was prepared jointly by Tharwa and Midor, while Team Misr devel-

oped course material. “We chose the course that was suitable for both partners on different levels,” she added.

Understandably, Change Management module was prioritized by the two companies' HR/Training managers, given the current economic conditions that bring turbulent changes to the industry on daily basis. For instance, following the devaluation of the Egyptian currency, the companies see a considerable change on the horizon that they need to tackle. And this reflects clearly on what Amr Helmi Sallam, Deputy General Manager of Team Misr, who advocated for the course selection, firmly stated: “In today's world, the only thing that is fixed is the change itself.”

The course material designed by Team Misr, the Egyptian engineering and management consulting company, reads that “managers traditionally have the task to contribute to the effectiveness of their organization while maintaining high morale. Today, these roles often have to be balanced out with the reality of implementing changes imposed by senior management.” In today's Egypt, it seems that abilities of middle and top managers, especially in the oil and gas industry, are being tested more than ever before. “The industry has been seeing continuous and dynamic changes in applied technologies, shifts from oil to gas consumption, fluctuation of prices, and in raising awareness of safety, environmental responsibility, as well as in growing standards of products,” explained Amr Sallam in an interview with Egypt Oil&Gas. It is therefore that Change Management

module was introduced. “It is a part of Midor&Tharwa's LDP because one of the major role of any leader is to learn to adapt the organization to changes in order for it to improve in performance and culture,” added Deputy GM of Team Misr.

Change Management for Oil&Gas Industry

There is a common perception that “managers who have an understanding of the dynamics of change are better equipped to analyze the factors at play in their own particular circumstances, and to adopt practical strategies to deal with resistance to accept the change,” elaborated Amr Sallam.

In the case of Midor, for instance, the expansion plans worth billions of dollars, as Midor's Deputy Manager of Technical Planning Department, Ayman Elmo-handis, previously revealed in an interview with Egypt Oil&Gas, mean that the size of the refinery's management will grow. Amr Sallam believes that “the company's production will likely triple, its international contacts will necessarily intensify, for which Midor will need to almost triple its management structures.”

Changes in the oil and gas industry happen rapidly. But not all of them depend on individual companies or domestic economic relations. Imported and externally imposed changes are more difficult to accommodate. In fact, “the Egyptian oil and gas industry has transformed its internal culture into a multinational one with many foreign companies becoming partners in the market,” said Amr Sallam. The industry

is thus more open to external forces. It is therefore crucial, noted Amr Sallam, to acquire skills in Change Management for companies' heads to make the most of incoming changes. A good strategy is necessarily to follow changes in a way that the companies can draw as many benefits from them as possible in the long run.

The training module thus offered multiple tips for participants to start adopting changes in their daily work routines, according to Wael Bazid, Assistant General Manager for Agreements at Tharwa. “From day one they [instructors] were giving us easily applicable and useful tips. The three principles are: Work as best as you can. Difficulty is the mother of greatness. To avoid criticism means to say nothing, do nothing, and eventually be nothing.” Bazid praised these additional light touches of Team Misr's trainers, which he claimed became a part and parcel of his new approach to his work and his team.

Resistance to Change

Amr Sallam is nonetheless convinced that the remaining difficulty is that “people are generally speaking rather reluctant to accommodate change and alter their habits for many reasons.” People may fear their failure when facing a challenge, they may be afraid of the unknown, or they may simply feel secure within the existing situation and prefer to remain in their comfort zone. Resistance to adapt to change impairs the ability to go through with it. There are various functioning strategies how to deal with this unwilling attitude, as the Change Management modules

“In today’s world, the only thing that is fixed is the change itself.”

Amr Helmi Sallam, Deputy General Manager of Team Misr

taught the participants.

Nonetheless, there are also people who are in general terms neutral to change, and also those who accept change, and even those who welcome it. The latter see change not as a threat, but as an opportunity, further explained Amr Helmi Sallam. This is the mindset that Change Management is trying to achieve with its trainees from Midor and Tharwa. And as it seems, they have been doing it successfully, as some of the attendees confirmed.

Wael Bazid spoke to Egypt Oil&Gas about the positive effect the training has had on him on both personal and professional level. “It taught me that people should not be frightened by change. It also showed me how to think out of the box and out of my comfort zone. It guided me to get along with the idea of change.”

Seeking Acceptance

Furthermore, the participants discussed the notion of gaining acceptance from people and implementing decisions that would lead to change in companies. “The idea behind the training sessions was that when change happens, one needs to be flexible enough to change the strategy to adapt

ideas for how to implement changes in daily routines and companies’ performance.

In order to achieve this, managers in oil and gas companies may need to “bring in so called ‘change agents’ that would help them execute their intended plans.” The important feature of this mechanism is to establish an understanding that accommodating change is not an individual task of managers only, but relies heavily on the ability of an entire team.

Hence, role plays were introduced in the training sessions as these would help participants see the benefits of team work. The general understanding is that change is easier to be successfully integrated into companies’ outputs through cooperative team work with members who accept and welcome change, than through individual directions. “A group of people with different minds and mentalities can contribute more than individuals to the decision making processes and help design viable strategies to deal with change,” concluded Amr Sallam.

Cycle, Pace, and Trends of Change

Overall, in order to counterbalance resistance, attention should be paid to



to the emerged circumstances,” said Amr Sallam.

There are two key strategies to overcome resistance to change. “One strategy is to make people accept and adopt change by showing them the benefits that they will gain from it, on both personal and corporate level. This strategy focuses on one aspect - reducing the fear of change. Another possible strategy is called Participatory Strategy. It means that those who may be reluctant to accept change will be included into the processes of assessment and evaluation. Inclusion will turn reluctant team members into promoters of change as they will be put on spot to generate

the cycle of change, the pace of change, and trends of change. These elements become highly important factors.

According to Amr Sallam, in the oil and gas industry, “the aptness of a gradual change, as opposed to a sudden change, is based on the fact that managers are able to evaluate outcomes of each stage on its own before they decide to proceed further.” This appears to be a suitable mechanism to avoid undesirable or unplanned side effects as well as to minimize resistance to change.

Practical Implications

Graduates of the Midor&Tharwa LDP initiative seem to have acquired the-

“Managers who have an understanding of the dynamics of change are better equipped to analyze the factors at play in their own particular circumstances.”

Amr Helmi Sallam, Deputy General Manager of Team Misr

oretical understanding and practical skills to actively seeking change and make it a part of their internalized productivity package, not only passively seeing it through.

Having had an opportunity to test their capabilities through a guided process with Team Misr’s instructors and execute their purposeful training projects in their workplaces, they appear to have reached even beyond what LDP training curricula originally outlined to achieve. And this is no doubt to the benefit of the two companies as well as to the entire oil and gas industry’s prospects in the country.

For instance, a training project proposed by Wael Bazid at Tharwa is “a

Management training he proposed a series of technical changes in his team and formulated a project on agreements. Moreover, he then pondered how to act in his department and build milestones ahead in order to achieve his goal. His approach is simple, but useful: “I’m guiding my team step by step through changes seeking general acceptance from my team.”

Change Writing a Success Story

The training has been successful. In both Alexandria and Cairo, Change Management module gained good scores and excellent feedback, according to Sara El Gammal, Training Section Head at Tharwa. “Employees were satisfied with the course as it helped them

“I am actively looking for change even when things are stable in order to prepare for things to happen within the period of five to ten years in the future.”

Wael Bazid, Assistant General Manager for Agreements, Tharwa Petroleum Company

comparative study between our agreements with Egyptian shareholders and agreements used in Saudi Arabia.” The aim is “to find out which of the two models is better and if we can apply the Saudi model or elements of it or not.” As Bazid further added, his intention is to see “how to get the best benefits of the agreements for the entire country,” therefore he hopes to be able to share his findings and assessments with the Egyptian General Petroleum Corporation (EGPC) at a later stage. “I hope we will get good results by the end of the program in December 2016 and we will find out what may need to be changed in our agreements.”

The Change Management training module accomplished something even more than this. As Wael Bazid revealed, he started actively “looking for change even when things are stable,” with a strategic mindset that would allow him “to prepare for things to happen

enhance their ability and skills to adopt changes that they believe would allow them to improve their performance at work and increase outputs.”

For Wael Bazid, the course helped him “organize the way of thinking.” Despite the fact that he had been familiar with 90% of the concepts that the instructors presented, the sessions enabled him to turn his theoretical knowledge into tangible results. “It changed a lot in my thinking. I believe in it.” The most interesting and useful for him was to think about “who I was going to choose to implement the change strategy with in my team, how I will plan for a change, prioritize, and modify my strategy.”

In order to be able to deal with obstacles, companies’ managers’ achievements are often dependent on the ways in which they build up their team. Midor’s and Tharwa’s participants have learned how “to change their managerial approaches to people and thus



within the period of five to ten years in the future.” This translated into Bazid’s daily routine in the workplace, as he explained further.

Tharwa’s Assistant General Manager takes team work seriously. He rightly sees that without his team his plans for accommodating change would not be easy to materialize. Bazid shared with Egypt Oil&Gas that after the Change

build up strong teams in an interactive communicative manner and keep evaluating various proposals for changes,” Wael Bazid concluded.

It is now for Midor and Tharwa to await visible results from their managers. They all seem to believe that they will be able to showcase the efficiency of the Change Management training module already in some months to come.



Self-Management Targets Corporate Success

By Nataša Kubíková

The Egyptian oil and gas industry has been challenged most recently over its people development structures and processes. Schemes for the development of technical and non-technical employees can translate into companies' success or failure. Middle East Oil Refinery (Midor) and Tharwa Petroleum Company have realized the need of people capital development. That is why the two companies' HR departments designed a comprehensive program to provide different training for all their employees. The training modules vary. The complex set includes courses such as Self Management, Conflict Resolution, Team Work Dynamic, and other soft skills sessions in Presentation, Negotiation, Communication, and Interpersonal Skills, and Labor Law, as Dr. Hanan Abd El Moniem, HR Executive General Manager at Midor and Rania Ahmed Helmy, Training Manager from Tharwa, listed. According to Rania Helmy, "we give priority to other employees outside of the middle and top management structures to attend additional trainings." And Tharwa goes a step further beyond the joint initiative as it organizes regular technical, financial, operational, and safety trainings. Midor & Tharwa employees enjoyed two inspiring courses in Self Development & Self Management and The 7 Habits of Highly Effective People. These courses were designed to alter "the ways of thinking and seeing" that would help people not only to improve professionally, but also "to lead a better life" based on 'see, do, get princi-

ple,' Amr Helmi Sallam, Deputy General Manager of Team Misr explained in an interview with Egypt Oil&Gas.

Self Development & Self Management

This four-day course for the two companies' employees came with an idea in mind to enhance personal capacities of staff, which can then translate into enhanced productivity in their workplace. The notion that training in personal qualities engages closer with participants and make them more receptive of presented concepts for work environment, has been applied successfully by Team Misr.

The Self Development & Self Management course proved that this approach is highly effective. Under this framework, Team Misr delivered training in Time Management, Conflict Resolution, and Building Self Esteem and Assertiveness.

Time Management

Time Management session aimed at helping leaders organize and prioritize for the benefit of a more efficient workplace. It taught skills in setting goals, using planning tools, managing work flow and workload, and delegating work.

A key element of effective and efficient time management is to learn to delegate work to others. According to Amr Helmi Sallam, Deputy General Manager of Team Misr, "delegation means that a manager gives up some of his/her responsibilities to some of his/her subordinates in order to free him-/herself to perform tasks that others cannot do. This allows him/her to manage the time better in order to ac-

complish more tasks."

But delegation is an ambiguous mechanism at work. Some managers are reluctant to entrust work assignments to others for various personal, professional, or practical reasons. But this seems rather counterproductive. As Amr Sallam put it: "The first problem is with a generally adopted perception based on which some managers feel that delegating some of his/her authorities sends a signal to the top management that subordinates are capable of performing certain tasks alone and the manager is easily replaceable."

In parallel to this is the idea about knowledge control. If a general understanding of a manager is that he needs to control sources of information and protect it from other colleagues, it becomes difficult for the manager to delegate workload to others in a team. "The fear of losing source of information, position, and authority reveals why some managers may be reluctant to go down this road," said Team Misr's Deputy GM. But what is at stake is less threatening to managers, in fact, and more damaging to the companies. "A manager delegates the authority, but not the responsibility," emphasized Amr Sallam, hence, tasks that are assigned to other people in a team grant them the right to make decisions, to bring in new information, and to evaluate it. The overall responsibility remains in the hands of managers themselves and with it the desired authority.

In corporate cultures that rely heavily on centralization of management, delegation becomes difficult for structural

reasons as well. Amr claimed that "the more the organizations' structures are decentralized, the easier it will be to introduce delegation patterns."

Midor and Tharwa philosophy is to educate and train future leaders in Egypt's oil and gas industry. The approach of the two companies is that their people development scheme introduces new practical exercises within interactive training sessions. Team Misr delivered this aspect of training through role playing games. The intention, as trainer Sallam noted, was to show that "delegation is a basic, highly important, and an efficient tool for managing staff to be able to evaluate performance of those who were authorized to accomplish a task."

All in all, as Amr Sallam put it, "a single person should not be a key factor that would determine success or failure of a company, instead a well-functioning system of role delegations is to be adopted, as it guarantees success for a company in a consistent way." Delegating work to others is undoubtedly a key feature of efficient management and a functional tool to manage oneself.

Conflict Resolution

Another key segment of Self Development module focused on developing techniques for employees across the corporate hierarchies to resolve conflict situations. The course material introduced the general setting by stating that "a vast majority of people cannot avoid interactions with a wide range of personality types including those who are more complicated to deal with. But success sometimes depends on manag-

“The more the organizations’ structures are decentralized, the easier it will be to introduce delegation patterns.”

Amr Helmi Sallam, Deputy General Manager of Team Misr

ers’ ability to work well with stubborn, inconsiderate, or difficult behavioral patterns.” But this relates to all professionals regardless of their position. With this understanding, the course instructed participants about how to handle complicated work relations. Team Misr has designed a simple five-step process. Although some may believe that these are straightforward principles of daily socializing patterns, many seem to not be able to perform them fully. Amr Sallam summarized them in the following way: “We should believe and accept that people are different; start reading others to quickly know what type of personality our co-worker is by observing his/her reactions; understand the needs of others; choose a strategy to deal with different styles

that people have; and evaluate whether selected strategy brought intended results.” Wael Bazid, Tharwa’s Assistant General Manager for Agreements, shared his thoughts about the ongoing joint training program and revealed to Egypt Oil&Gas that his improvement comes as “a gradual process.” He added that “with each training course I am receiving one piece of a cake and by the end of the training program, with its additional sessions, I will be able to execute changes in my workplace.” As it seems, there is only a simple advice and that is to keep reminding ourselves of the five key steps and search for other innovative approaches to enhance our performance.

“A single person should not be a key factor that would determine success or failure of a company.”

Amr Helmi Sallam, Deputy General Manager of Team Misr

The 7 Habits of Highly Effective People Course

One such approach is to adopt The 7 Habits of Highly Effective People, an additional training course that Midor&Tharwa offered to their employees. It aimed at delivering seven key commandments of an effective professional. Instructors encouraged participants to be proactive; begin with an end in mind; plan and prioritize accordingly; think in a win-win scenario; seek to first understand, then to be understood; synergize, and sharpen the soul. The matrix is rather logical, yet its implementation in daily routine may pose some challenges to everyone who tests

it. Nonetheless, this training, held in energetic atmosphere of engaged people, was concluded with an excellent feedback. Success of these various training modules by Midor&Tharwa depends on the fact that “the continuation of training is based on on-site monitoring and monthly evaluation of the progress that Team Misr and participants are achieving,” stressed Tharwa’s Training Section Head, Sara El Gammal, who submits regular reports. The dedication and efforts of the two HR teams inevitably promise to translate into tangible outputs in both Midor and Tharwa.



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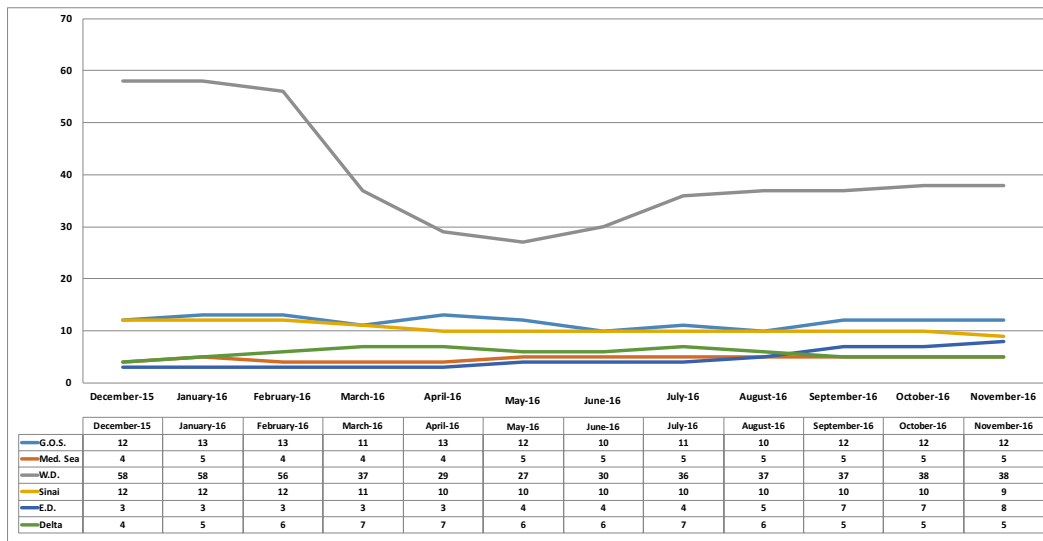




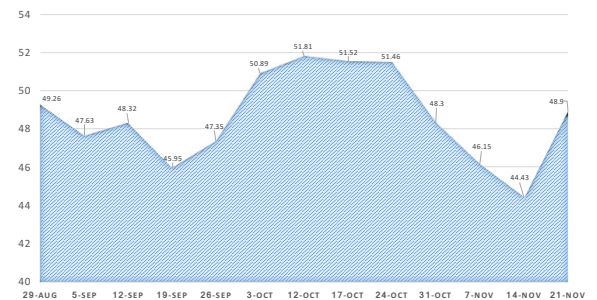
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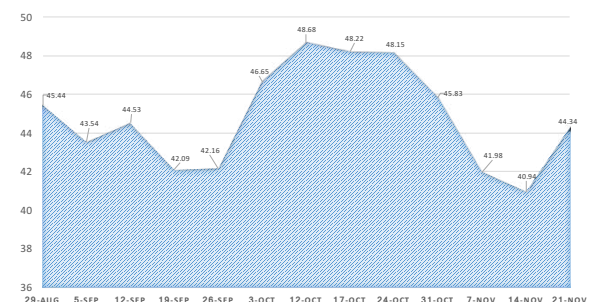
Changes in Rigs by Area- December 2015 to November 2016



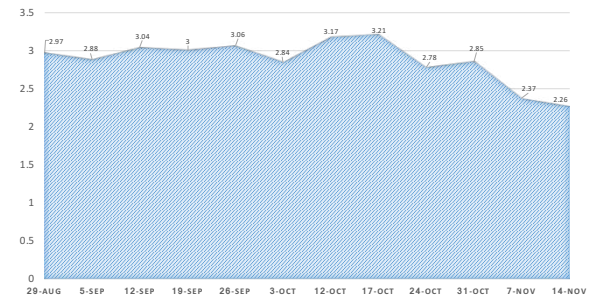
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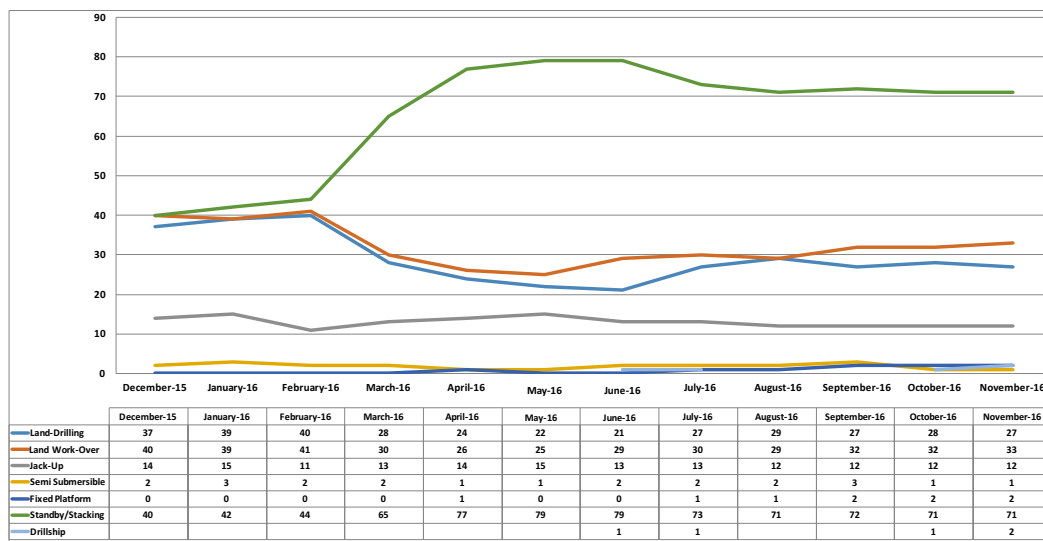
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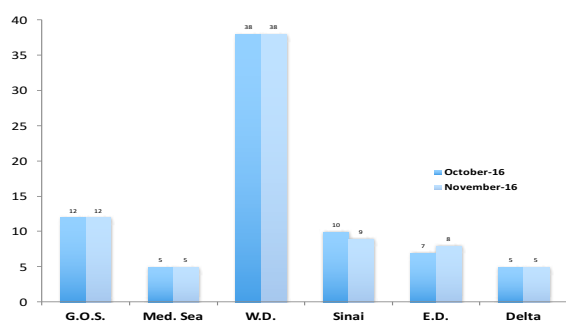
Changes in Rigs by Type - December 2015 to November 2016



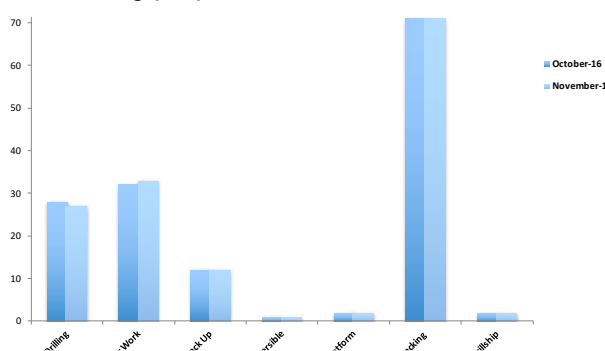
Production - October 2016

	Crude Oil	Equivalent Gas	Liquified Gas	Condensate
Med. Sea	-	9775000	173326	600682
E.D.	1907332	18036	4219	1440
W.D.	9534872	7646429	758131	1481052
GOS	4125232	608571	240415	79049
Delta	28743	5715536	118437	404810
Sinai	1772343	1250	35253	25053
Total	17368522	23764822	1329781	2592086

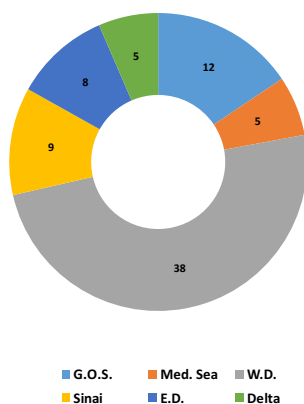
Rigs per Area - October - November 2016



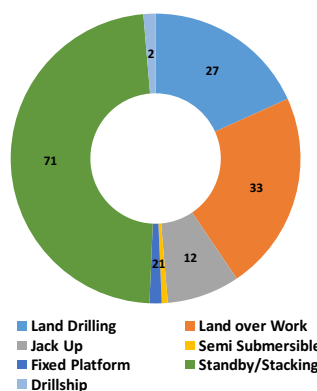
Rigs per Specification - October - November 2016



Rig Count per Area - November 2016



Rigs per Specification - November 2016



Unit: Barrel

Rigs per Specification - October - November 2016

Location	October-16	November-16
Land Drilling	28	27
Land over Work	32	33
Jack Up	12	12
Semi Submersible	1	1
Fixed Platform	2	2
Standby/Stacking	71	71
Drillship	2	2
Total	148	148

Rigs per Area - October - November 2016

Location	October-16	November-16
G.O.S.	12	12
Med. Sea	5	5
W.D.	38	38
Sinai	10	9
E.D.	7	8
Delta	5	5
Total	77	77



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100% operator of Zora Field development
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