EGYPT OIL&GAS NEWSPAPER

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EGYPT PETROLEUM SHOW
14 - 16 February 2017

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MODERNIZATION AS A NEW STRATEGY

His Excellency **ENG. TAREK EL MOLLA** introduces Egypt's Oil and Gas Sector Modernization Program.

PEOPLE DEVELOPMENT ROUNDTABLE

Communicating & Engaging in New Solutions for Developing Human Capital

- RATIONALE BEHIND OIL&GAS SECTOR IMPROVEMENTS
- EGYPT'S 'INVESTMENT ATTRACTION' FORMULA
- OIL & GAS ORGANIZATIONS IN THE FUTURE
- EGYPT, THE KEY TO THE REGION'S OIL&GAS FUTURE
- UPGRADING PEOPLE DEVELOPMENT AGENDA


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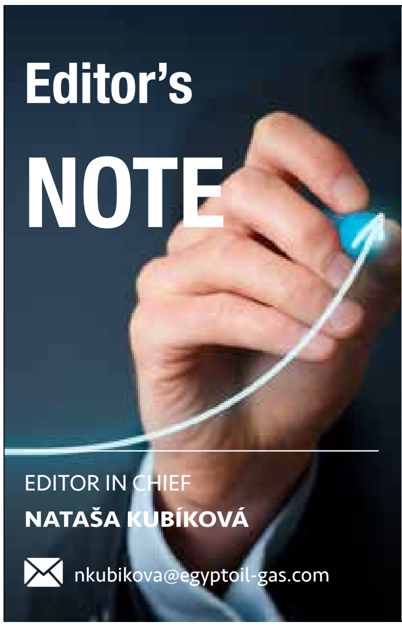

Editor's NOTE

EDITOR IN CHIEF
NATAŠA KUBÍKOVÁ
nkubikova@egyptoil-gas.com

2017 marks a new milestone for Egypt's Oil and Gas Industry. The magic formula is called Modernization Program.

EOG had an honor of speaking with His Excellency Oil Minister Eng. Tarek El Molla, about the new ambitious strategy that will transform the business environment for local and foreign players. The goal is to unlock all the potential and employ the existing capacities towards a successful story that will boost development and enhance economic profile of the entire country.

Indeed, Egypt's oil and gas sector is forming a new legacy at the end of which will emerge a new efficient, self-sustainable, and profitable organization that will lead the country to a prosperous future.

With a five-year time frame, the ministry is currently aligning all people in the sector to reach its vision to create an attractive, competitive, and business-oriented industry. This will entail addressing all existing challenges, attracting new capital, upgrading organizational structure, developing human capital, expanding downstream infrastructure, enhancing upstream performance, and fearlessly compete for the role of a regional oil and gas hub.

With all the six initiatives, the oil and gas sector is aiming to position itself on the global economic map through new partnerships and expanded investment portfolio.

In this issue, EOG team has researched and analyzed the upcoming novelties that the sector will work to implement through consistent efforts. In addition, we bring you a full coverage of the December EOG roundtable that addressed the most urgent subject of the sector – People Development, at which all industry leaders with a massive attendance developed new measures to improve structures and processes of human capital.

With the first issue of 2017, we present to you a new face of Egypt Oil&Gas Newspaper that incorporates novel sections such as politics of oil and gas, later to come also energy country profiles, and much more. On a personal note, I would like to take this opportunity to thank the entire team of EOG for their tremendously hard work in the previous year and their positive contribution to the editorial production that made this magazine such a success.

We thank you all for your readership in 2016 and hope for your continuous support in the new year.

EOG team wishes you a Happy and Prosperous New Year 2017!
Let it be filled with many new oil and gas discoveries!

inside this issue

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Publisher **MOHAMED FOUAD**

This publication was founded by **Mohamed Fouad** and **Omar Donia**.

15B/1 Repeated, Extension El Laselky St. Behind USAID, New Maadi, Cairo, Egypt

www.egyptoil-gas.com
info@egyptoil-gas.com
(+20) 2 25164776
(+20) 2 25172052
(+20) 2 25172053

Eni Agrees to Sell 30% of Shorouk Concession to Rosneft

Italian Eni agreed to sell 30% stake in Egypt's Shorouk Concession to Russia's Rosneft for $1.125b, according to a press release on Eni's website. The sale will reduce Eni's stakes to 60% in the concession from the initially owned 90% through its joint venture Italian Egyptian Oil Company (IEOC). Additionally, Rosneft has an option to buy a further 5% stake under the same terms.

Rosneft would repay investments already paid by Eni, which has reached a total of around $450m, reported Reuters.

Finalizing the agreement and consequent transaction is pending the fulfillment of certain standard conditions, including all the required approvals from the Egyptian authorities.

This came a few weeks after Italian Eni had agreed to sell 10% of its stake in the Shorouk concession to BP for $375m. BP, which has an option to buy another 5% before the end of 2017, when Zohr is slated to start production, under the same terms, will also reimburse Eni for around $150m of past costs.

Italian Eni's CEO, Claudio Descalzi, stated that the company is currently in talks with various parties in order to cut its stake in Egypt's Zohr field to 50% operating interest instead of owning the entire stake in the concession, reported Reuters.

The deal gives Eni much-needed cash as part of its $5.3b divestment plan to continue investing and paying dividends despite weak oil prices, as well as deepens BP and Eni's partnership in Egypt, where they announced a significant gas discovery in the East Nile Delta in June. Moreover, a stake in Zohr, one of the biggest ever gas discoveries, will raise BP's exposure to the gas market, just months after rival Shell became one of the world's biggest gas traders by acquiring BG Group.

The Shorouk concession includes supergiant Zohr gas field in the Mediterranean Sea, which was discovered by Eni in August 2015 and is the largest natural gas field ever found in the Mediterranean, with a total potential of 850bcm of gas in place.

The approval process for development of the field was completed in February and first gas is expected by the end of 2017. Sources with the Egyptian Ministry of Petroleum confirmed that drilling and development processes are ongoing in accordance to the scheduled timeframe to start production within 2017, and will not be affected by the two transactions, reported Amwal Al Ghad.

Eni to Finish Phase I of Gas Plant in 2017

Italy's Eni will complete the first phase of its gas treatment plant for Egypt's Zohr field's production by October 2017. Phase I represents up to 24% of the facility with a treatment capacity at 650mcf/d of gas, reported Daily News Egypt.

A source from Eni estimated that total investments required for completing the entire treatment plant, including all development phases, will reach $4b. Upon completion, the facility will be able to process a total of 2.7bcf/d of gas by 2020.

Additionally, the Egyptian Ministry of Environment approved the study to build a 220km pipeline with a 26 inch diameter in order to move production from the Zohr gas field to an onshore processing station in Port Said Governorate, reported Ahram Gate.

Head of Environmental Affairs Authority, Ahmed Abu El Seoud, stated that the approval was granted after evaluating

the presented study and data to ensure they commit to the terms and conditions with Article 4/1994 in the Environment Protection Law.

The environmental standards include getting rid of the Hydrostatic water in a healthy correct way and ensuring the safety of workers, as well as their protection from the project's noises. The standards further include not exceeding the maximum air polluting triggers and the importance of maintaining a healthy work environment.

Eni Drilled New Well at Zohr

Italian Eni finalized digging an additional well to the development plan of Egypt's Zohr field. The new well will be linked to production in the project's second phase, reported Daily News Egypt.

Furthermore, Egypt Oil&Gas informed that Eni will start its development plan for production from the Zohr field in the Shorouk Concession located in the East Mediterranean within the Q4 of 2017 with total investments of $15.6b to produce not less than 1bcf/d of gas in the given time frame.

Eni has invested a total of $12b in Zohr, drilling seven wells during the first phase of the field. Zohr's total production is expected to reach 2.7bcf/d of gas in 2018/2019.

The source from the company further stated that Eni has finished drilling seven wells before the scheduled deadline, reported Al Borsa. It is noted that deepwater drilling costs for a single well at Zohr is about $100m.

Zohr's gas in place was estimated at 30tcf discovered through the seismic studies conducted in the field.

Shell to Boost EDCO's LNG Exports

Royal Dutch Shell has exported three liquefied natural gas (LNG) cargos through its EDCO plant for liquefaction since September 2016, after obtaining 200mcf/d of gas from production at the Burullus fields, reported Daily News Egypt. A senior source with the Egyptian petroleum sector stated that according to EDCO's current supply rates, Shell plans to export LNG shipments every 20 days. EDCO is required to export 22 LNG shipments per year, in order to reach a balance between its revenues and expenditures. Furthermore, the company has agreed with Egypt's Oil Ministry to gradually increase its LNG exports from its the liquefaction plant to 250mcf/d in order to settle a $2b loan through around $200m in annual installments, reported Al Borsa.

Egyptian Firms Increase Gas Production

Pharaonic Petroleum Company finalized the third phase of its development operations for Ras El Bar field located in Ras El Bar Concession in Nile Delta with an investment of $265m as the company succeeded in producing 110mcf/d of natural gas, which is expected to increase as high as 500mcf/d, reported Egypt Oil$Gas. Moreover, Egypt Oil&Gas informed that another Egyptian company, North of Sinai Petroleum Company (NOSPCO) has completed phase 2B of the development of North Sinai field with total investments of $48m as it succeeded in producing 70mcf/d of natural gas. The company is expected to increase the field's total production to 200mcf/d of natural gas in 2017.

Egypt's Gas Consumption, Production to Increase

The Egyptian Natural Gas Holding Company (EGAS) estimates Egypt's demand of gas to reach around 5.3bcf/d in 2017, while production is projected to reach 5bcf/d by the end of 2017, with a rising tendency by 2020 as North Alexandria and Zohr production will be linked to the national grid. This comes as EGAS confirmed that Egypt's natural gas production in November rose from 4.35bcf/d to 4.45bcf/d, reported Al Borsa. A source with EGAS stated that the country added new wells to production with a capacity of 100mcf/d of gas. Egypt thus decreased its gas imports to 950mcf/d divided into 850mcf/d as through the two floating storage regasification units (FSRUs) in Al Sokhna Port and 100mcf/d of gas through the FSRU located in Jordon's Aqaba Port.

EGPC to Launch Fuel Tender

A source with the Egyptian General Petroleum Corporation (EGPC) stated to Egypt Oil&Gas that EGPC is launching a tender to receive 700,000 tons of benzene, diesel and mazut to be paid for in US dollars in order to compensate for the non-received Aramco shipments and to cover citizens' demands of petroleum derivatives. EGPC decided to launch tenders to buy derivatives until March 2017. The tenders will cover import volumes that were to be received from Saudi Aramco. EGPC will also be importing 500,000 tons of butane every month to cover demand.

Egypt to Pay EGP 16b in Fuel Subsidies

A source with the Egyptian General Petroleum Corporation (EGPC) stated that Egypt's petroleum subsidies' bills will exceed EGP 16b in Q2 of the current fiscal year 2016/2017, because of crude Brent price is still higher than the $40 that was planned in the general budget and because of the EGP devaluation, reported Al Borsa. It is noted that global oil prices had reached $52.5 per barrel early December, following the Organization for Petroleum Exporting Countries' (OPEC) agreement to curb production rates. The source added that the petroleum subsidies' bills will further exceed EGP 35b in the fiscal year 2016/2017 despite of all the efforts exerted by the Egyptian government in increasing fuel prices.

Egypt Accepted 6 IOCs' Oil, Gas Bids for $200m

The Egyptian General Petroleum Corporation (EGPC) has announced results of the bid rounds for the exploration and production of oil and natural gas for 2016 in the Gulf of Suez and Western Dessert, Egypt Oil&Gas reported citing a press release. EGPC has accepted six offers from international companies to drill 33 wells in six different areas for a total investment of $200m. The companies that won the bids include Royal Dutch Shell, British Petroleum (BP), Apache, and Apex International Energy Corporation.

BP is to invest at least $46m to drill three wells in the area northeast of Ramadan, with $5m bonus signature.

Apache was awarded concessions in two areas; in the northwest Razzaq for the total investment of at least $60.6m for the drilling of ten wells, and the southern flag Shawish to drill four wells for $12m in minimum investments, with $30m and $10m bonus signature for each area, respectively.

Shell is to drill seven wells in the northern provinces of the country for a total investment of a minimum of $35.5m, with $18m signing bonus.

The offer of Apex to drill three wells in West Badr El Din is to reach a minimum investment of $19.4m, in addition to at least $5.26m of investment for six wells in South East Meleiha, with $1.7m and $3.5m in bonus signatures. The company specified in a press release to Egypt Oil&Gas that it has been awarded Blocks 8 and 9. Apex is committed to invest $27. 4m during the first exploration phase to acquire and process 3D seismic and drill six exploration wells. Block 8 West Badr el Din and Block 9 South East Meleiha are both located within the prolific Abu Gharadig Basin in Egypt's Western Desert.

The announcement is in line with the Ministry of Petroleum's strategy to encourage and attract new investments from international players to search for oil and natural gas in order to intensify research and exploration to boost country's current reserves and increase domestic production of oil and gas.

Egyptian Parliament to Discuss New Gas Law

The Energy Committee at the Egyptian Parliament was to start holding discussions on the New Gas Regulatory Law in mid December. The committee planned to hold three meetings that were to go in parallel to the Parliament's plenary sessions, reported Al Wattan News.

Furthermore, the Energy Committee was to discuss the new regulation with the Economic Affairs Committee, the Planning Committee, the Budget Committee and the Legislative Affairs Committee.

The step comes as the Legislations Department at Egypt's State's Council submitted a draft for the new gas distribution law along with a draft for the tenders and bidding law to the Egyptian Parliament in early December, reported Al Borsa.

In related news, Egypt's Petroleum and Mineral Resources Ministry had announced its plans to finalize the New Gas Law before the end of 2017, according to Oil Minister, Tarek El Molla. The new gas law is to 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.

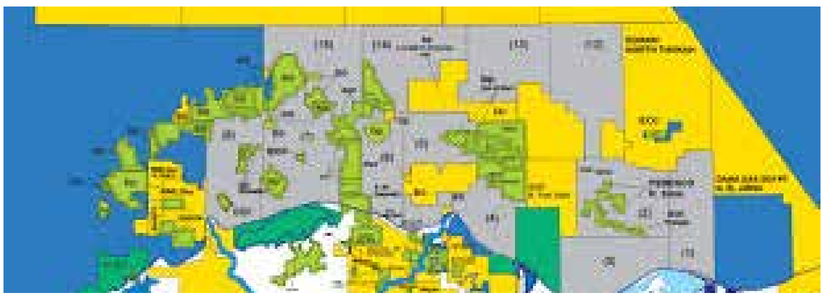
Shell to Stop Gas Output in Rosetta Field

Royal Dutch Shell will halt gas production from Egypt's Rosetta field in Rashid concession in July 2017. The field produces 40bcf/d of gas, yet Shell will cease investments in the development while dues owed by the Egyptian government continue to accumulate, reported Daily News Egypt. A source with the Egyptian Natural Gas Holding Company (EGAS) stated that the development of Rosetta gas field required significant funds. However, the field is not proving economically viable to the foreign partner according to current gas price, informed Al Borsa. This came as Shell has allocated $22.7m for the operational costs of Rosetta field.

Egypt, China Signed $2.6b Currency Swap Deal

Egypt and China signed a currency swap deal for $2.6b. This enables Egypt to increase foreign reserves after the EGP devaluation, reported Bloomberg. Chinese Regulator stated that the Central Bank of Egypt (CBE) along with the Chinese Central Bank signed the 3-year swap agreement, with the option of further extension. Egyptian officials stated that CBE is studying the possibility of negotiating another loan swap with one of the G7 countries in order to decrease the demand for the USD, reported Al Borsa. They added that the exchange rate will be decided according to the official exchange rates announced by CBE.

Ganope Extended Its Exploration Tender



Ganoub El Wadi Petroleum Holding Company (Ganope) announced the extension of the closing date of its international bid round for 2016 on 10 Blocks. The tender has been extended two and a half months, with a closing date on 15th of February 2017, reported Egypt Oil&Gas citing Ganope's press release.

Ganope's Vice Chairman for Agreements and Exploration, Osama Farouk, stated to Egypt Oil&Gas that the company decided to delay the closing date because the bidding firms requested an extension to have enough time to study the areas included and assess whether they are economically valuable. Ganope also want to give more time for additional companies to offer their respective biddings.

In related news, in early August, Ganope had issued the international tender for the exploration of ten areas including five sites within the southern region of the Suez Canal. The launched tender included ten sectors, five of which are located in the south of Gulf of Suez Gulf, west of Gebel El-Zeit, south-east of Ghara, east of Jesom, Taer El Bahr, and the other five sectors were located in the Western Dessert of Egypt in south of Al Kharga, east and west of Al Messaha.

Kuwait Energy Seeks $100m for Egyptian Fields

Kuwait Energy Oil and Gas Exploration Company is currently planning to finalize a reserve-based lending (RBL) loan facility of up to $100m by the end of 2016. The fund will be used to finance operations in Egypt's Abu Sennan, Area A, Burg El Arab and East Ras Qattara fields, reported Gulf Business. The company is likely to obtain the financing on a bilateral basis from the European Bank for Reconstruction and Development (EBRD), yet other lenders were also being considered, reported Gulf News. Meanwhile, a press release to Egypt Oil&Gas stated that the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, received Kuwaiti Ambassador to Cairo, Mohamed Saleh Al Zoewakh, in early December, to discuss bilateral cooperation in oil and gas.

Egypt Seeks $30b in Oil, Gas Investments

The Egyptian oil and gas industry seeks $30b in foreign investments within the next three years based on the government's strategy to aim for mutual commitment in cooperation with the international oil companies (IOCs), an official source in the sector stated to Egypt Oil&Gas. The last meeting between the IOCs' CEOs and Egypt's Petroleum officials included agreeing on paying a part of the arrears in order for the IOCs to sell their oil and gas to Egypt. Additionally, they agreed to continue explorations and development processes in the existing concessions to increase country's daily hydrocarbon production.

Apache to Drill 20 Gas Wells in Apollonia

US Apache announced it intends to invest $100m in horizontal drilling on 20 wells in the Apollonia field located in the Egyptian Western Desert in order to produce around 40mcf/d of gas from limestone, reported Al Borsa. Apache will move forward with the investments once trails on vertical wells prove successful.

Khalda Petroleum's CEO, Mohamed Abdel Azzim, stated that Apache and Shell, along with the Egyptian General Petroleum Corporation (EGPC), have signed an agreement to explore for gas from the limestone in the Western Desert.

Abdel Azzim added that the budget for the Apollonia tests reached $24m allocated for drilling 3 vertical wells and connecting them to facilities. Furthermore, the company is currently preparing the second well with hydraulic fracturing technology to be brought online early January.

This comes as Apache had finished drilling 2 horizontal wells with total investments of $7m in order to take samples to study the nature of the tank, which will help in deciding on the suitable drilling and hydraulic fracturing programs.

Additionally, the company drilled 2 vertical wells in Apollonia with investments of $14m.

Previously, Khalda Petroleum had finished the drilling of the first in July 2016 with production capacity 6.5mcf/d of gas. The well's production increased to reach 680mcf/d of gas in October 2016 due to the usage of the hydraulic fracturing technology.

In November, the company stated it plans to invest up to $900m in drilling a total of 97 new wells in Egypt's Western Desert during the fiscal year 2016/2017. The company will drill 74 development wells with investments of $552.5m, in addition to 23 exploratory wells at a cost of $346.4m, reported Daily News Egypt.

Khalda Petroleum, Apache's joint venture in Egypt, will allocate three rigs for drilling a number of exploratory wells during the first half of 2017 in order to increase oil and gas production rates. The company aims to boost production to more than 146,000b/d of oil and 810mcf/d of gas.

In related news, Apache's joint venture in Egypt, Khalda Petroleum, reduced the cost of oil produced from its concession located in the Egypt's Western Desert from $5 to $4.5 per barrel during Q1 of the fiscal year 2016/2017, reported Daily News Egypt. Khalda announced that the cost reduction was possible over obtaining discounts on the contracts of services and equipment used to carry out drilling operations, wrote Al Borsa.

BAPETCo, Shell in Talks over Alam El Shawish

In a statement to Egypt Oil&Gas, Badr El Din Petroleum (BAPETCo)'s CEO, Emad Hamdy, stated that the company is in talks with its foreign partner Royal Dutch Shell on linking production from a new discovery at North Alam El Shawish concession, BTE-2 well, to Badr-3 gas process facilities that is located 40km away from the well.

BAPETCo will use one of the pipelines near the new well to transport gas from BTE-2 to the facility, where it will be mixed with process gas to meet standards set forth by the Egyptian government.

A press release to Egypt Oil &Gas stated that during the execution of Egyptian Badr El-Din Petroleum (BAPETCo) development plan for the Alam El Shawish concession in the Western Desert area, the tests results of the new discovery well BTE – 2 showed a production capacity of 20mcf/d of gas and preliminary estimated reserves of 500bcf.

The company later informed that BTE-2 well is expected to produce as much as 40mcf/d of gas already during its first phase. In the second phase, the company initially planned to drill 6 development wells, and increase the capacity of the carbon dioxide extracting unit to be able to treat the gas produced from BTE-2.

The promising test results have further encouraged Shell to increase the number of rigs from 2 to 4, and agreed to drill at least 9 exploratory wells in 2017, subjected to increase depending on seismic scans that will be completed in Q1 of 2017.

In August, Shell had discovered the gas field in Alam El Shawish concession area in the Western Desert. Shell's Chairman, Aidan Murphy, had stated that the new well (BTE-2) was estimated to contain 0.5tcf of gas, with the possibility that the quantities may increase, rendering it the biggest gas discovery in the Egyptian Western Desert in the last few years.

DRILLING

BAPETCO

BAPETCO, a joint venture between EGPC and Shell, has completed drilling a new exploratory gas well in its concession area in the Western Desert. The natural gas production in November was 2,301,578 barrels.

OBA J14-B

The well was drilled at a depth of 14,967ft utilizing the EDC-51 rig. Investments surrounding the project are estimated at $5.529m.

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 production rate of Qarun in November 2016 was 1,104,070 barrels of oil.

EBS-19

The well was drilled at a depth of 7,450ft utilizing the EDC-64rig. Investments surrounding the project are estimated at $1m.

MISADA-6 ST

The well was drilled at a depth of 8,215ft utilizing the EDC-67 rig. Investments surrounding the project are estimated at $1.02m.

KUWAIT ENERGY

KUWAIT ENERGY, a research and exploration company is drilling a new oil well in its concession area in the Eastern Desert.

SHU NW-11

The well was drilled at a depth of 2,959ft utilizing the ECDC-1rig. Investments surrounding the project are estimated at $1.29m.

PETROSILAH

PETROSILAH, a joint venture between EGPC and MERLON International, has completed drilling new oil development wells in its concession area in the Western Desert. The production rate of PETROSILAH in November 2016 was 254,285 barrels of oil.

N.SILAH 2-3

The well was drilled at a depth of 8,093ft utilizing the IPR-1 rig. Investments surrounding the project are estimated at $1.4m.

KHALDA

KHALDA, a joint venture between EGPC and Apache, has completed drilling new oil development wells in its concession area in the Western Desert. The production rate of Khalda in November 2016 was 4,514,128 barrels of oil.

PTAH-13

The well was drilled at a depth of 13,500ft utilizing the EDC-57 rig. Investments surrounding the project are estimated at $1.4m.

WD-33-21

The well was drilled at a depth of 12,000ft utilizing the EDC-1 rig. Investments surrounding the project are estimated at $2.177m.

M.RZK-165

The well was drilled at a depth of 6,850ft utilizing the EDC-66 rig. Investments surrounding the project are estimated at $1m.

NORPETCO

NORPETCO, a joint venture company between EGPC and Sahari Oil Company, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of NORPTCO in November 2016 was 2,657,788 barrels of oil.

ABRAR S-8

The well was drilled at a depth of 6,798ft utilizing the ECDC-2 rig. Investments surrounding the project are estimated at $1.019m.

RASHPETCO

RASHPETCO, a joint venture between EGPC and BG, has completed drilling a new crude oil development well in its concession area in the Mediterranean. The production rate of RASHPETCO in November 2016 was 218,036 barrels of oil.

SIENNA-DC (ST)

The well was drilled at a depth of 8,170ft utilizing the SCRAB-6 rig. Investments surrounding the project are estimated at $21.959m

AGIBA

AGIBA, a joint venture company between EGPC and IEOC, has completed drilling a new crude oil development well in its concession area in the Western Desert. The production rate of AGIBA in November 2016 was 1,347,786 barrels of oil.

NAYA-2

The well was drilled at a depth of 6,300ft utilizing the ST-8 rig. Investments surrounding the project are estimated at $900,000.

NE-22 (DEEPING)

The well was drilled at a depth of 11,102ft utilizing the PDI-92 rig. Investments surrounding the project are estimated at $2.79m.

NE-50

The well was drilled at a depth of 8,000ft utilizing the ST-8 rig. Investments surrounding the project are estimated at $1m.

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Head Office
Marhaba Tower, Fouad St., Off Horeiya road, Alexandria 21131, Egypt
Tel.: +2033913820 (10 lines)
Fax: +2033913829

Warehouse
Free Zone - Al-Ameryia - Alexandria - Egypt.

Cairo Branch
8 Al Adeeb Ali Adham St., Sheraton Bldgs. Heliopolis
Cairo - 11361 - Egypt.
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OPEC Agreed on Output Cuts

Organization of Petroleum Exporting Countries (OPEC) agreed to cut its collective output down to 32.5mb/d, a cut of about 1.2mb/d from October levels. But they leveraged those cuts to bring some key non-OPEC producers on board; including Russia, for an additional cut of about 600,000b/d. Russia alone will cut 300,000b/d, according to Oil Price.
Prior to the organization's meeting, Iran's Oil Minister, Bijan Zanganeh, said that the country was prepared to leave its oil production at levels that the OPEC had agreed at its September meeting in Algeria, reported Reuters.
The OPEC deal triggered frenzied trading, with Brent futures trading volumes for February and March, when the supply cut will start to be visible in the market, hitting record volumes.
The March 2017 Brent futures contract traded a record of 783,000 lots of 1,000 barrels each, worth $39b and beating a previous record of just over 600,000 reached in September, which is more than eight times daily world crude oil consumption.
Crude oil prices steadied around $50 a barrel, holding onto big gains made after the agreement, Reuters reported. Nevertheless, prices are still only at September-October levels – when plans for a cut were first announced, and prices are at less than half their mid-2014 levels, when the global glut started.
The freeze plan deal is OPEC's first oil output reduction since 2008 after de-facto leader Saudi Arabia accepted "a big hit" and dropped a demand that arch-rival Iran also slash output. The deal also included the group's first coordinated action with non-OPEC member Russia in 15 years.
Following the meeting, OPEC's Secretary General, Mohammed Barkindo, announced that the group was to meet non-OPEC countries in Vienna to finalize a global oil production cut agreement early December, Ecofin Agency reported. Oman, Azerbaijan, Kazakhstan, Mexico, Bahrain and other non-OPEC producers were expected to join the deal.
This came as OPEC's oil output set another record high in November, helped by higher Iraqi exports and extra barrels from Nigeria and Libya, which are exempted from cutting supply.
Supply from OPEC increased to 34.19mb/d in November, up from 33.82mb/d in October, according to Reuters survey based on shipping data and information from industry sources, informed Oil Price.

Iran to Sell Crude at $50/b in 2017/2018

Iran expects to sell its crude oil at around $50/b over the next Iranian calendar year that starts on March 21st, 2017, Press TV reported.
This is a 25% increase when compared to the budget for the current Iranian calendar year that started in March, during which Iran had anticipated, as per its budget bill, to sell its oil at approximately $40/b, informed Al Bawaba. Accordingly, the Persian Gulf country drafted a version of its budget bill for the next year at a total income of over $33b from selling 2.42mb/d of crude oil at $50 each.
Iranian President, Hassan Rouhani, emphasized that the prospects will be specifically positive in light of the country's recent "victory" in OPEC to move ahead with its crude oil production and export plans with no limitations.
The OPEC talks over a proposed plan to cut output and help boost prices late November culminated in a deal that allowed Iran to continue with its oil production at the current capacity, while forcing major cuts on other suppliers.

Iran to Launch Upstream Tender Early 2017

Iran will launch its first new-style tender to develop oil and gas fields after January 2017, noting that the deadline to submit pre-qualification documents has been extended, Reuters reported.
National Iranian Oil Company's (NIOC) Managing Director, Ali Kardor, said that 50 international oil companies have submitted their documents for the tender so far. He added: "We will assess the documents for a month and after that, probably after January, the first oil tender will be held for South Azadegan oil field."
This comes as Indonesian companies showed interested in joining Iran's upstream projects fields like Ab Teymour and Mansouri oilfields, according to Shana. Deputy Petroleum Minister in International Affairs and Trading, Amir Hossein Zamaninia, met with Chairman of the People's Consultative Assembly (MPR) of Indonesia, Zulkifli Hasan, early December to discuss cooperation avenues in economic and energy grounds. During the meeting, Zamaninia voiced Iran's readiness to sell crude oil and liquefied petroleum gas (LPG) to Indonesia.

Libya Continues Loadings at El Sidra Oil Terminal

Libya's National Oil Corporation (NOC) continues loadings at El Sidra Oil Terminal, despite having evacuated non-essential staff from the port after reports of military clashes nearby, Libyan Express informed. NOC has not declared force majeure on oil loadings pending further information. However, NOC said it had held emergency meetings with subsidiaries and had begun emergency measures near the fighting. In the first week of December, Libyan militias that were expelled from the eastern city of Benghazi had been advancing toward the country's vital oil terminals, seeking to establish control over Libya's primary revenue source, reported PennEnergy.

Israel Approved Karnish, Tanin Gas Fields Sale

The Petroleum Council of Israel has approved the acquisition of 100% of the Karish and Tanin natural gas fields by Energean Oil & Gas from Delek Drilling and Avner Oil for $148m, Reuters reported. The Karish and Tanin fields have 2C gas resources of about 2.4Tcf. The development of Karish and Tanin is expected to involve about $1b in investments. The Israeli government required Delek Drilling and Avner to sell off some assets in an effort to open the sector to competition. Furthermore, Energean will submit to the Israeli authorities a development plan for both fields within six months, as the company plans to start production in 2020, informed Offshore Engineering Today.

Iraq Started Basra-Aqaba Pipeline Bid

Iraq has invited energy companies and investors to bid to build and finance the first phase of a pipeline that will eventually connect the southern city of Basra with Jordan's Red Sea port of Aqaba, Reuters reported. Iraqi State Company for Oil Projects (SCOP) said the first phase includes the engineering, procurement, construction, and financing of oil and gas pipelines linking the Basra fields to a connecting energy station near the city of Najaf. According to Jordanian Minister of Energy and Mineral Resources, Ibrahim Saif, the phase is scheduled start in 2017, informed Anadolu Agency.

Saudi Oil Production Reached 10.72mb/d

The Kingdom of Saudi Arabia (KSA) pumped 10.72mb/d of oil in November, a record-high up from 10.625mb/d in October. This came as the Organization of Petroleum Exporting Countries (OPEC) pushed for a global deal on production cuts, Reuters reported. The rise in November output indicates that Saudi Arabia, OPEC's biggest producer, will have a bigger task in complying with a plan to cut supply starting in 2017. Saudi crude exports have been at elevated level in recent months, reaching 7.812mb/d in September.

Sound Energy to Buy 75% in Moroccan Licenses

Sound Energy PLC has won regulatory approval from Moroccan authorities to take control of 75% interest in the Sidi Mokhtar onshore licenses, The North African Post reported. The acquisitions consisted of a 50% operated interest in the Sidi Moktar licenses from PetroMaroc Corporation Plc and the acquisition of a 25% working interest in the Sidi Moktar licenses from Maghreb Petroleum Exploration S.A.. Following the acquisitions, the remaining 25% interest in the Sidi Moktar licenses is held by Morocco's Office National des Hydrocarbures des Mines (ONHYM), according to Your Oil and Gas News.

Leviathan Field to Start Gas Output by 2019

Partners in Israel's Leviathan gas field approved a development plan for the field with a target production date at the end of 2019, Reuters reported.

The group declared that the plan includes first stage 1A development for production of about 12bcm/y at a cost of $3.5-4b, according to LNG World News. This comes as the local partners in Israel's giant Leviathan field say they have signed commitment letters with two major banks for up to $1.75b in financing, Oil Price reported.

Israel's Delek Drilling and Avner Oil Exploration, which is the smaller partners in the field alongside US Noble Energy, said the commitment letters were from HSBC and J.P. Morgan, and the funds of between $1.5b and $1.75b would be used for the A1 development phase of the field.

The first phase of the project involves an initial investment of $4b to produce 12bcm/y of gas for domestic customers as well as, initially, for Jordanian, Palestinian and Egyptian markets, informed Engineering News-Record.

In the first phase, partners are to conduct the drilling of eight production wells, which are to be linked to an offshore production-and-treatment platform and, from there, by undersea pipeline to two entry points along Israel's central coast. Delek Drilling's CEO, Yossi Abu said: "About 60% of the project has already been finalized, including much of the procurement."

Furthermore, Delek Group and partners have signed $2b deal to supply gas from the Leviathan natural gas field located in the eastern Mediterranean Sea area, off the coast of Israel to Or Power Energies (Dalia), Energy Business Review reported.

Under the terms of the deal, Or Power Energies will purchase 8.8bcm gas over a 20-year period. The gas will be used to operate Or's future power station.

However, the plans to build the power station have not yet been approved, according to Arutz Sheva.

The eventual investment in Leviathan and related export gas pipeline projects could surpass $10b, with further possible customers in Turkey and Europe.

The Israeli partners in Leviathan, one of the world's biggest offshore natural gas discoveries of the past decade, include Delek Drilling and Avner Oil, each with a 22.67% stake, and Ratio Oil with a 15% stake. A final investment decision in the project will also require approval from the field's operator, Texas-based Noble Energy, which has a 39.66% share.

Meanwhile, the Israeli Energy Minister, Yuval Steinitz, announced bids for 24 new offshore oil-and-gas exploration licenses. The tender is expected to close in April 2017. Winners will be chosen in July, reported Reuters.

Turkey to Ship Cypriot, Israeli Gas in 3 Years

Turkish Zorlu Energy Natural Gas Group's General Manager, Fuat Celepci, said that a minimum of three years is needed to ship gas to global markets via Turkey from the Aphrodite Gas field in Greek Cyprus and the Leviathan field in Israel, Forbes informed.

Celepci added: "The expected steps were taken between Turkey and Israel in the context of normalization, but Mediterranean gas is not just Israeli gas. We need to take concrete steps and present it to world energy markets." He explained that the route to be used for the transfer of Israeli gas would pass through the exclusive economic area of Greek Cypriot administration, informed Daily Sabah. He asserted that it appeared impossible to develop the project without resolving the existing problem between the Turkish and Greek administrations in Cyprus.

Earlier in 2016, Turkey and Israel announced plans for diplomatic reconciliation after several years of heightened tensions between the two countries. Israeli Prime Minister, Benjamin Netanyahu, and Turkish Prime Minister, Binali Yildirim, announced the agreement nearly six years after relations between the two countries soured following an Israeli raid on a flotilla that left eight Turks dead.

Sonatrach, Eni Extend Cooperation

The Algerian state-owned company, Sonatrach, and Italian Eni signed several cooperation agreements in various energy areas, reported All Africa. Sonatrach's CEO, Amine Mazouzi, and Eni's CEO, Claudio Descalzi, signed the deals that allow the extending of exploration both in Algeria and abroad, namely the development of renewable energies, refining, petrochemicals, and research and development.

Furthermore, the agreements come as part of the strengthening the long-term relations in the upstream activity and the marketing of natural gas and liquefied natural gas between the two companies, according to Energia 16.

In related news, in mid November, Eni announced that it would continue to buy Algerian gas in 2017 with the same vein as its purchases for 2016. Descalzi said that the company had discussed its expected volume purchases with Sonatrach every year.

Accordingly, the Italian company had increased its gas imports from Algeria significantly in 2016, volumes averaged 46mcm/d in the first ten months of the year, compared with an average of 19mcm/d with the same period in 2015.

Algeria looks to bolster energy exports after years of stagnation, with exports expecting to grow further with a new supply deal, Engineering News reported.

The agreement will provide Italy with 10bcm/y of natural gas each, covering about 16% of the southern European country's demand through the Transmed pipeline, according to Forbes.

Iran to Explore for Oil, Gas in Oman Sea

The National Iranian Oil Company's (NIOC) Deputy Director for Exploration Affairs, Bahman Soleimani, expounded on new oil and gas discovery projects in the Sea of Oman saying that "NIOC seeks to carry out exploration activities in Oman Sea region in the future," Mehr News reported. Soleimani added that plans are underway to extend oil and gas development until 2021 for the search of hydrocarbon deposits in the region. Soleimani went on to stress that a relevant research project in has yielded proper results, yet the exact amount of oil and gas resources in the Sea of Oman is still unknown, but showing satisfactory estimations.

Qatargas, RasGas to Merge

Qatar Petroleum's (QP) CEO, Saad Sherida Al-Kaabi, said that Qatar will merge state-owned liquefied natural gas producers Qatargas and RasGas Co Ltd, Reuters reported. The transition, which will result in a single company called Qatargas, will take around 12 months to complete and will begin before the end of 2016. The merger comes in line with QP's recent cost cutting efforts to adjust to low oil prices globally, according to LNG World News. Qatargas is the largest liquefied natural gas (LNG) producing company in the world, with an annual output capacity of 42m tons a year, while RasGas has a production capacity of about 37m tons a year.

Nigeria Exempted from OPEC Output Cuts

Nigeria was granted special concessions as the Organization of Petroleum Exporting Countries (OPEC) reached the much-sought consensus to cut oil production by 1.2mb/d, which is about 4.5% of current production, to 32.5mb/d, effective in January 2017, informed Premium Times.

The African nation was exempted from OPEC's production freeze plans as a result of strategic negotiations. The country's Oil Minister, Emmanuel Kachikwu, who led Nigeria's delegation and negotiation at the OPEC meeting, added that Nigeria was accommodated due to some of the damage on its oil and gas facilities by militant attacks in recent months, informed Vanguard.

Nigeria has lost over 130m barrels of crude oil from January to November this year to the activities of 32 militant groups in the Niger Delta region since the resurgence of militancy in the oil-producing region in 2015, This Day informed.

In early November, Nigeria's oil production had fallen by at least 200,000b/d as a result of a militant attack that has forced the closure of the major Trans Forcados Pipeline (TFP).

The Vice-Chairman of the Security Subcommittee of the Oil Producers Trade Section (OPTS) of the Lagos Chamber of Commerce and Industry (LCCI), Shina Bankole, stated that between January and November, around 58 incidents of sabotage were recorded where oil and gas facilities belonging to the oil companies were vandalized. At the height of this crisis, Nigerian production dropped to 1.1m b/d, affecting the economy and making the country lose

its position as Africa's top producer to Angola last March.

The Nigerian President had announced a roadmap for the petroleum industry to assist in stabilizing the region for the oil and gas sector, reported Ecofin Agency. However, the Nigerian government is struggling to reach a consensus with the militants who are demanding a greater share of energy wealth to go to the swampland region.

Nonetheless, Nigeria is actively seeking new crude export deals to counterbalance drops in revenues. In early December, Indian state-run oil refiners have indicated interest to increase total crude oil import volumes with additional 2m tons to be shipped from Nigeria in 2017, informed Vanguard. The current contracts involve the export of around 1.17mb/d of Nigerian oil.

The deal will also have the Indian government make an upfront payment amounting to about $3.85b for the purchase of Nigeria's crude on a long-term basis.

VAALCO Increased Stake in Gabon's Offshore Field

VAALCO Energy has finalized the acquisition of a further 3.23% participating interest in the Etame Marin Permit located offshore of the Republic of Gabon from Sojitz Etame Limited. The transaction will boost VAALCO's net production by about 11% post-closing and will increase its participating interest to 33.58%, informed Ecofin Agency.

VAALCO is the operator of the fields in the Etame Marin block, which encompass approximately 28,700 gross acres in shallow water, Offshore Engineer reported.

There are four production platforms and nine wells currently producing in the concession, including three subsea well tiebacks. Production from the fields currently averages about 13,500b/d.

VAALCO's COO and Interim CEO, Cary Bounds, said: "At Etame, we have identified 21 low risk development and step-out drilling opportunities with about 65 million barrels of gross unrisked recoverable contingent resources."

Meanwhile, France's CGG announced that the final processed depth volumes from its recent 3D BroadSeis multi-client survey in Gabon's South Basin are now open for license, informed Ecofin Agency. CGG acquired the broadband seismic survey of over 25,000 sq km to support Gabon's 11th licensing round, Globe Newswire reported.

CGG's CEO, Jean-Georges Malcor, said: "The Gabon deep offshore is one of the last underexplored areas of the West Africa Atlantic Margin. The final data sets we have just delivered from our survey show a spectacular uplift in subsalt imaging. We believe these images will revolutionize the industry's understanding of deepwater Gabon and be a valuable resource for clients to de-risk and unlock the potential of this promising exploration arena."

Congo Projecting Oil Output to Rise

Congo Republic expects oil output to rise to a peak of 300,000b/d in 2018, up from current volumes of around 250,000b/d, as a new deep offshore field, the Moho Nord, is due to come online in 2017, Reuters reported.

The operator of the field is France's Total, which said Moho Nord will produce some 140,000b/d of oil.

Congo's Oil Minister, Jean-Marc Thystere-Tchicaya, said: "From mid-2017 we can already count on an increase in production and then reach a peak in 2018 with 300,000b/d. We hope that the cost of a barrel of crude will stabilize on the market and allow us a good budget."

In a bid to stimulate further investment in the industry, Congo recently reduced royalties for oil and gas. Oil royalties were cut from 15% to 12%, while gas royalties were slashed from 15% to 5%. According to a legal adviser to the Oil Ministry, the move was prompted by the fact that a lot of producing fields in the Congo Republic had reached maturity, but could still contain extractable hydrocarbons that needed more investments. Also, deepwater reserves need to be explored and exploited, which also requires a lot of money.

The country is already about to overtake Equatorial Guinea as the third-largest oil producer in sub-Saharan Africa, informed Oil Price.

Sudan Delayed Block 2B License Extension

The government of Sudan has delayed an extension to Oil and Natural Gas Corporation Limited (ONGC) Videsh's license on Block 2B as it seeks higher royalties, tax, and profit, Ecofin Agency reported. The license for Block 2B expired in early December and an automatic 5-year extension is available. However, Sudan, whose revenues have been hit with a drop in oil prices, wants higher taxes and royalties before it agrees to the extension, informed Business Standard. In 2003, ONGC Videsh Ltda (OVL), the overseas arm of ONGC, bought a 25% stake in Greater Nile Oil Project (GNOP), which comprises of Block 1, 2 and 4 in Sudan. The project produces about 50,000b/d of oil.

BP Grew Oil Production Offshore Angola

BP Angola has announced that the Grande Plutonio (Great Plutonium) oil field, located in Block 18 in Angola's offshore areas, reached a new production milestone of 500m barrels of oil, Macauhub reported. The field, with an estimated gross production of 160,000b/d, is shared equally by Sonangol Sinopec International and BP Angola, informed Ecofin Agency. The Grande Plutonio field, which became operational in October 2007, is 310 meters long, has a storage capacity of 1.77m barrels, 24 production wells, 22 active water wells and three gas injection wells, and an installed production capacity of 144,000b/d of oil.

Sonangol Delayed Cash-Calls to Oil Majors

Angola's state oil company Sonangol has amassed hundreds of millions of dollars in debts and deferred payments to oil majors and contractors while its new Chief, Isabel dos Santos, attempts to reform its operations, Reuters informed. It was reported that Sonangol owes money to oil majors Chevron, Total, BP, ENI, and ExxonMobil, with Chevron demanding $300m in unpaid cash calls. Dos Santos said that the company needs to undergo financial restructuring and $1.569b to guarantee payments until the end of this year, Macauhub informed. Revenues from Sonangol have been falling since 2013.

Lekoil Pumped Oil from Nigeria's Otakikpo

Lekoil in its operational update, announced that oil is flowing at the Otakikpo marginal field in Nigeria to onshore storage tanks, where it will later be transferred upon completion of an offshore pipeline, Ecofin Agency informed. The offshore pipeline leading from the storage tanks to the tanker offloading manifold is 80% complete, Offshore Energy Today reported. Upon completion, the joint venture partners expect to start transporting to the export terminal and subsequently, be able to gradually ramp up production to 10,000b/d. The Otakikpo marginal field is operated by Green Energy International with 60% interest, while Lekoil is a technical and financial partner in the field with the remaining 40% interest.

Mozambique Approved LNG Deals with Anadarko, Eni

Mozambique's cabinet has approved changes to liquefied natural gas (LNG) contracts with US oil major, Anadarko Petroleum Corp, and Italy's Eni to allow the two companies to sell the government's share of gas from projects in the Rovuma Basin, Reuters reported. The LNG contracts are related to Anadarko's Dolphin Tuna project and Eni's South Coral project in areas 1 and 4, informed Ecofin Agency.

Mozambique's National Petroleum (INP) expected new oil and gas prospecting contracts by early 2017 to test for hydrocarbons across the country to reach $30b in total investment, Reuters wrote.

Eni's final investment decision on its LNG project was expected by the end of 2016, while Anadarko's investment decision is scheduled for 2017. Yet, it is likely to take at least five years after final investment decisions before gas production begins.

After the changes were approved by the cabinet, "the government opted to relinquish its right to receive in kind its quota of available gas as well as the gas production tax. The aim is to turn the projects viable. The concessionaires commit themselves to a joint-sale of liquefied natural gas in order to offer huge volumes and get better prices at the market," according to an official statement.

Anadarko and Eni discovered deposits containing more than 180tcf of natural gas in prospecting blocks in the Rovuma basin in northern Mozambique. When the deposits start being under exploration, Mozambique will be one of the largest gas producers in the world.

In addition, in a fifth round of competitive bidding for Exploration and Production Concession Contracts, INP has awarded a total of four blocks offshore Mozambique, some of those to other oil majors such as ExxonMobil and Rosneft. Some 14 national and international companies in total have submitted bids for the development of industrial projects that make use of liquefied natural gas (LNG) in the country, Ecofin Agency reported. In a statement, the Ministry of Mining Resources and Energy said proposals had been received from Mitsui, Engro Fertilizer, Shell Mozambique BV, Electricidade de Mocambique, Yara International, Marubeni, Gal-Africa Energy, Muinvest, Auto Gas, Epsilon, Jiangsu Sinochem Construction Co. Ltd., Union-JNC-JSPDI-VBC-SALT consortium, Gas Nosu, and Motse SA, Macauhub informed.

Kenya to Launch New Pipeline by April 2017

Kenya Pipeline Company (KPC) has pledged to launch the new oil pipeline by April 2017 to ease the flow of petroleum products in the country, informed Business Daily. KPC's Managing Director, Joe Sang, said the overall project completion is at 68%, while construction of the actual pipeline is 90% complete, reported MediaMax. The focus now is on construction and installation of equipment at the new pump stations. The 450km 20-inch diameter Mombasa-Nairobi pipeline is a Vision 2030 flagship project to replace the current 38-year-old Mombasa-Nairobi pipeline. The installed flow rate for Phase One is 1m liters/h by 2017, Phase Two is 1.9m liters/h by 2023, and Phase Three will be 2.6m liters/h by 2044.

South Sudan, India Negotiate Oil Blocks Revival

The government of South Sudan has initiated talks with India to revive its oil blocks closed in the wake of a civil war in 2013, Mining Weekly informed. South Sudan during initial discussions between the government representatives of the two countries, compensated ONGC Videsh for the period that the blocks were closed, reported Ecofin Agency. The transition government of South Sudan plans to increase oil production to the at least 500,000b/d, level being produced at the time that the country was divided. However, Indian officials have pointed out that any move by ONGC Videsh to resume operations would follow only after a fresh assessment of "ground conditions in and around the oil blocks."

Hyperdynamics Enhanced Assessment Offshore Guinea

Hyperdynamics Corporation has received an improved exploration risk assessment of the Fatala 1 and Buried Hill 1 deepwater prospects, increasing its chances of a successful drilling operation offshore Guinea, Ecofin Agency reported.

The company has also signed a definitive drilling services contract with Pacific Drilling to engage the Pacific Bora drillship, Offshore Energy Today informed.

The assessment came after the reprocessing of 3D seismic data by eSeis on the two prospects, by means of a more advanced technology that produced perfect images of the geologic characteristics of the projects. Through this imaging, Netherland Sewell & Associates (NSAI) was able to increase the chances of success for the Fatala 1 prospect from 25% to 31%, and for the Buried Hill 1 prospect from 20% to 24%.

Concerning the drilling, the company will use the drillship for a drilling campaign offshore the Republic of Guinea, starting in Q2 of 2017.

Meanwhile, Hyperdynamics has announced that it has signed a letter of intent (LOI) with South Atlantic Petroleum Limited (SAPETRO) farm-out part of Hyperdynamics' oil and gas concession offshore Guinea, informed Ecofin Agency.

The LOI, which is non-binding, calls for SAPETRO to take a 20% participating interest in exchange for paying 40% of the costs of the upcoming Fatala well up to a $50m cap of predicted total well costs. Above that amount, SAPETRO would pay its proportional 20% share, PR Newswire reported.

Tullow to Drill Kenya's Erut Well

Tullow Oil will commence drilling of its Erut well in Kenya's Block 13T in South Lokichar Basin by mid-December, informed Ecofin Agency.

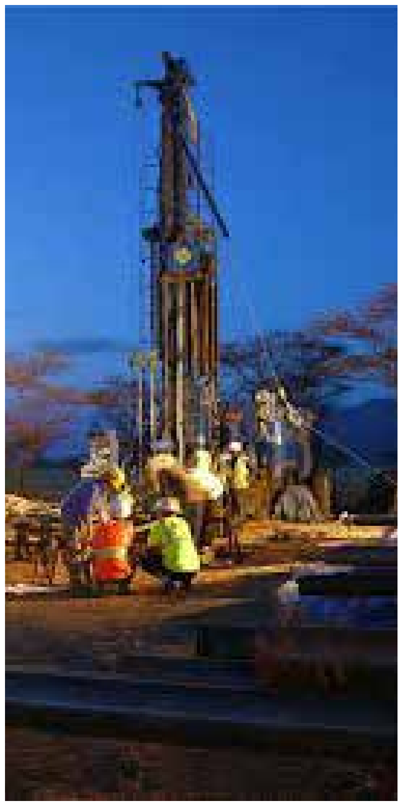
According to Tullow's Kenyan Exploration Manager, Kevin Christopherson, the well has the potential to de-risk the northern prospects and will target the depth of less than 1,600 meters, Oil News Kenya reported.

Upon completion of the Erut well, the company will forge ahead to drill the Etete well, which is set to be drilled in January 2017 to the southern side of the Etom complex.

Additionally, the appraisal of the Ngamia and Amosing Updips fields in Blocks 13T and 10BB are expected to start in February and March, respectively.

Tullow Oil also plans to evaluate the Lopara and Ekosowan North prospects that will test large stratigraphic trap between Amosing and Ekosowan. The Lopara and Ekosowan prospects have potential to add significant resources and extend Amosing trend. The stratigraphic trap is capable of retaining hydrocarbons, formed by changes in rock type, unconformities, or sedimentary features such as reefs.

Tullow Oil has discovered resources of over 760m barrels of oil with an upside of 1.6b barrels in the South Lokichar Basin in Kenya.



MODERNIZATION AS A NEW STRATEGY

Speaking with Egypt Oil&Gas, His Excellency **ENG. TAREK EL MOLLA** introduces Egypt's Oil and Gas Sector Modernization Program.

Egypt Oil&Gas had a pleasure of talking to Egypt's Minister of Petroleum and Mineral Resources, Eng. Tarek El Molla, on the 1st of January, 2017, which in a symbolic way set a new milestone for the country's sector.

Egypt's Modernization Program for the oil and gas industry is a unique, overhaul transformation plan that the Oil Ministry designed to unlock all the potential the country has to boost development and enhance the economic picture. The plan to rationalize the energy sector bears within itself an ambition for Egypt to become regional oil and gas hub within the next five years.

Modernization as a Courageous Strategy

As the Minister firmly stated, "Modernization is not just a word. Beyond the word lies a huge strategy. The strategy has been developed by industry people with six major initiatives in order to achieve the desired vision."

The challenges that this program aims to resolve are currently being reviewed, yet what is clear is that the main objective of the program is "to see our oil and gas sector heading into a big success with big aspirations," said the Minister. What this means for Egypt is rather unprecedented as it fearlessly targets the overall framework in which the sector has been rooted.

"The major idea is to transform our oil and gas from the usual legacy, which is a service driven oil and gas sector, into a profitable value added oil and gas sector." Touching upon a legacy is a brave move, which represents "a change of mindset" that will lay down an important milestone to the industry in Egypt, which in itself would be a major achievement."

The Minister has thus presented a new approach to modernization that reaches beyond any previously unimaginable measures as he is determined to link the change to the industry culture to a clearer vision and through a consistent work build upon it with "a joint objective to create a profitable organization." The Minister enthusiastically added that "this will make a big difference to the oil and gas industry in Egypt."

Ambitious, yet Realistic Timeframe

The strategy is set for five years, but as the Oil Ministry watches the current state of affairs in the industry with a sense of urgency, there is strong push to complete all the segments of the strategy already in a three-year span. In the last weeks of 2016, the Minister has toured various organizations in the country to present and launch the program. He expressed his hope that the industry will see positive outcomes, given people's support. "I have seen enthusiasm from young generation and staff in the oil and gas sector, which has encouraged me to say that we will be able to achieve the three year plan."

The Minister acknowledged that "having the people in the oil and gas sector aligned and motivated to target one single strategy reaching towards a joint vision is not easy, but it is our objective that will certainly turn to a strong asset." However, the realization of the three-year plan will be restrained to frequent revisions of the detailed program as all the initiatives start rolling.

Towards Competitive Industry

"The most important part of the program is to address the inefficiencies" that the oil and gas sector has seen in the past years. In the first phase, the sector needs to identify its problems and find a set of solutions to improve them with a goal to speed up the process in order to excel, as the Minister further stated. This implies to turn Egypt's oil and gas sector into an attractive, competitive, and business oriented industry.

"Part of this is to review all the processes from the start of the bid rounds to the implementation of production from our wells, which means the entire supply chain together with all its processes in order to ensure that each and every single step we follow is revised and optimized to the extent that we do not see any inefficiencies left that would slow down our progress on the way."

New Organizational Framework

The modernization plans come with an unseen element of structure reform. The minister embarked upon this road bearing in mind the ultimate vision of building the oil and gas sector that can be "benchmarked against any other international oil and gas company." To achieve this, "we have to understand that double-headed role [of state bodies] is not sustainable." Therefore, the reorganization of the sector entities was identified as a key aspect of success.

The Minister explained an intended organization framework. "The Ministry of Petroleum would be the policy and strategy maker, while we will have the state corporations – EGPC, GANOPE, EGAS – as the oil and gas entities focused on doing profitable business in upstream, midstream, and downstream. The third body will be an independent regulator that will play the role of setting prices, fees, tariffs, subsidies, and preventing monopolies."

This shows the rationale behind the structure reform. "Segregating the roles and responsibilities is the main objective of reaching an ideal organizational structure." While the processes related to this segment of the transformation will come in parallel to the other five initiatives, "we will not see the final outcome of it except at the final stage."

Investments under Upgraded Terms

In this way, if all the above is achieved, "we will be able to attract more investors and partners into the sector."

This necessarily entails to revise the existent forms of agreements. The Minister clearly stated that "for the time being, the production-sharing agreements model has been proved successful."

As he further explained, "the production-sharing agreements is merely a title, but there are many details incorporated into this model and part of it are the processes themselves, with which we have the flexibility to amend them in order to implement the best practices within or to improve any less ideal parts of these processes." In such a way, the ministry will be able to provide so to speak an upgraded version of the production-sharing agreements, "to have a better model in place," as the minister put it, and thus attract more investors into the country's promising energy sector.

"Modernization is not just a word. Beyond the word lies a huge strategy."

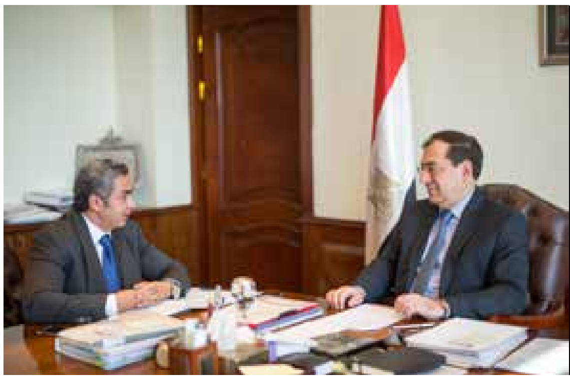
As for the near future, it appears to be more beneficial when amendments to any terms come through a mutual discussion with industry players. “Part of our modernization program is to get a feedback from our partners and to ensure that we capture all remarks and ideas that can be used in order to improve our processes.” The ministry will thus be able to develop more beneficial processes and build up a more suitable model of agreements in joint efforts with all its partners to lure new investments.

Yet, when speaking about an inflow of fresh capital, “we are not going to stand by the idea of being able to attract foreign investments as we did in the past two years based on several initiatives that have proven successful. We would like to achieve sustainability in investment attraction.”

The Minister disclosed the plans in more details: “We would like to have our partners investing more and putting a bigger part of their portfolio to reside in Egypt. In doing this, we have to make sure that we are having proper criteria, agreements, pricing, processes, and cycles for the permits and approvals, whereby any upstreamer would be able to gain permits to do some seismic works or exploratory drilling or production wells in a reduced timeframe.”

Upstream’s Targets

The Modernization Program further aims to upgrade performance of the upstream sector in a specific way, less through new explorations. Instead, “the part of the upstream in the Modernization Program is talking about improving the current production levels through existing reservoirs, concessions, whereby we need to improve and maximize output.”



“The major idea is to transform our oil and gas from the usual legacy, which is a service driven oil and gas sector, into a profitable value added oil and gas sector.”

There is already a clear tactic in place that describes the steps the ministry will take. It includes “introducing new technologies, EOR, work overs, best practices globally.” With these means, there is a huge room for improvements, which will also depend on the scope of transformation in human capital development.

Building World Class Human Capital

The Minister has affirmed that “capacity building is something inevitable and it is a key for success of the program,” therefore People Agenda is one of the six major initiatives.

Therefore, during his townhall discussions, the Minister focused on motivating people who became believers in this ambitious proposition. “We have been able to let people have their aspirations translated into plans and motivate them by including them be part of this plan.” There is a strong belief that people will identify new enablers for the program to succeed, execute them and find new ways of doing business that can prove profitable for the country’s sector.

“I am very optimistic and confident that our staff will unite in order to successfully embark upon an important milestone for our oil and gas industry in Egypt and make this a success story,” added the Minister in a highly positive tone.

Competing for Regional Oil&Gas Hub

The Modernization Initiative set a clear path for Egypt to confidently compete for a new ambitious position in the global market as a Regional Oil&Gas Hub.

The Minister stated convincingly that while Egypt has a unique geographic location to play such an important role in the region, it in itself is not enough as the competition coming from several countries in the region is fierce.

Egypt is able to “qualify for a hub using our infrastructure, both the existing and the expanded facilities.” “Part of our infrastructure is currently being developed,” His Excellency added, including refineries’ capacity. Hence, the energy hub aspirations relate not only to natural gas, but to petroleum products and LPG as well as to a trading hub that includes electricity. “With the new Siemens power plant under construction, Egypt will be in the position to have extra capacity of generated electricity.”

This strongly suggests that the Oil Ministry is not developing its modernization program in isolation rather through intensive inter-ministerial debates. A Modernization “Committee includes different ministries and authorities that will work together in order to create and develop the industry and put Egypt into a position of a hub globally.” The work of the Committee started in the last week of December and we will take the advantage of having our first EGYPS 2017 event to introduce the energy hub initiative as the first exposure globally.”

Held under the patronage of His Excellency President Abdel Fattah El Sisi, EGYPS 2017 Petroleum Show thus aspires to reach the level of major international oil and gas conferences and exhibitions. “We are trying to position ourselves on the global scene and to show that we are back into the economic oil and gas map.”

At the event, Egypt will “exhibit its success stories and the opportunities for investors to do business in the country.”

With the Modernization Program, the ministry intends to showcase its transformation plans and build upon it in terms of forging partnerships with the neighboring countries as well as other international stakeholders.

RATIONALE BEHIND OIL&GAS SECTOR IMPROVEMENTS

SETTING A CLEAR STRATEGY AND A REALISTIC DIRECTION FOR FUTURE MODERNIZATION OF THE EGYPTIAN OIL AND GAS INDUSTRY

By Nataša Kubíková

Months of diagnostic analyses, weeks of assessment sessions, hours of interviews, thousands of survey data, hundreds of verification calculations, and dozens of townhall meetings mark the launch of an overhaul Modernization Program starting in 2017 that the Egyptian oil and gas industry has embarked upon for the next three to five years at an average investment of $30 to $40 million.

All these efforts signify the new beginning for a committed engagement in upgrading the hydrocarbon industry, the flagship of Egypt's economy. The objective of this program, outlined by the Oil Ministry is "to design and implement an integrated transformative program for Egypt's oil & gas sector to enhance its contribution as an engine of economic growth and to reinforce its role," explained in an exclusive interview with Egypt Oil&Gas, Osama El-Saadawy, Marketing Manager at Oil&Gas Skills (OGS) and Team Leader for the Program's People Agenda Initiative.

A comprehensive outlook of the program demonstrates a large scope of activities that lie ahead of the industry's actors. Industry leaders have set their sights on achieving an efficient, self-sufficient, and empowered sector. According to the mission of the Modernization Program teams, there are four key aspirations based on preliminary assessments. These would lead to establishing a well governed and functioning industry environment with a steady flow of investments and world class human capital, a basis for securing improved performance of the sector.

The country's vision, according to Oil Minister, Tarek El Molla, is for "the oil and gas sector to continuously unlock the sector's full value chain potential as a growth and a sustainable development engine for Egypt to achieve financial sustainability, become regional oil and gas hub and a role model for the future of modernized Egypt by 2021."

Diagnostics, Assessment

Public and private companies, individual industry executives participated in the three-month-long assessment process led by Wood McKenzie from August to October 2016. "Data collection and interviews with different stakeholders were essential for the sector to identify the main challenges and leverage points" and help decipher the current state of sector's health and performance, further noted El-Saadawy.

To identify the direction of the program, an appointed project management unit verified and facilitated

> **"We need to balance between the long term strategies and objectives, and quick wins that may happen, affecting certain, soon, and positive impacts."**
>
> **Osama El-Saadawy,**
> Marketing Manager at
> Oil&Gas Skills

work across the companies including IOCs, taking stakeholders' management's diagnostics into consideration. The Oil Ministry stated it held "a series of day-long workshops to chart the path forward for the sector engaging some 50 leaders" with an intention to collectively define a clear vision. The executives participating in the diagnostic stage of the Modernization Program proposed "61 improvements, which were synthesized into 11 actionable initiatives and consolidated into 6 programs to modernize the sector," the ministry's presentation shared exclusively with Egypt Oil&Gas revealed.

A follow-up workshop with mid-level management came as a part of monitoring progress and sharing information with future leaders from across the sector for awareness and buy-in discussions.

As a result of these concentrated endeavors, the Oil Ministry and Modernization Program Realization Office (RO) have been preparing a comprehensive road map that will set dozens of milestones in efforts to improve the industry's state of health in each and every segment.

Rationalizing the organization in a way that will best help to achieve set objectives and come closer to the stated vision will determine the looks of the industry in the future and its success. RO is thus searching for apt ways to generate new ideas, include a new generation in designing the sector's future, and in such a decentralized environment create stand-alone profitable organizations that will positively contribute to the overall macro-economics of the hydrocarbon sector in Egypt.

> **"This project creates confidence in Egypt oil and gas sector and its future outlook, especially with regards to specific benefits to international partners."**
>
> **Tarek El Molla, Minister** of Petroleum and Mineral Resources

Modernization Program Structures

The Modernization Program stands on two main pillars: sector governance and organizational health on one side and enhanced performance on the other.

"I believe that the sector health is the core of this modernization. If we succeed in creating a healthy system, it will have a great impact on performance of companies and help transform these companies into profitable units," stressed Osama El Saadawy. Corporate governance will indeed play a role and offer opportunities to companies to form permanent sustainable structures.

The Modernization Program, as summarized by the Oil Minister, relies on key action areas. They range from "tailored investment vehicles to attract diverse investors given new growth opportunities" to "simplified sector structure with autonomous and independent entities focused on operations across value chains segments." Furthermore, as the Oil Minister, Tarek El Molla, stated in his presentation at US Business Mission Forum in 2016, strength of the program relates to "adherence to international governance standards with high performing boards and performance transparency" as well as "streamlined portfolio of affiliated companies able to compete in the free market." Notably, "world class talent management that recognizes performance and encourages entrepreneurship" will remain one of the government's priorities.

Egypt has thus identified six major initiatives (Table 1) to tackle and successfully resolve industry's challenges, according to an Oil Ministry's presentation material.

Under the first pillar that revolves around sector's healthy governance, there are three initiatives. The first is Investment Attraction that is envisioned to "streamline current concession processes and expand concession agreement portfolio." The second, entitled Sector Structure Reform aims to "establish an independent regulator, create single SOE coverage across the value chain, and rationalize portfolio of both operations and companies involved in the Egyptian industry." The third initiative targets People Agenda and seeks to "introduce comprehensive talent management system and redeploy people to drive efficiency."

The second pillar forms an umbrella for actions regarding sector's performance in Downstream and Upstream. The ministry seeks to "optimize downstream and petrochemical sourcing, output and mass balancing." "To drive operations performance transformation" is an effort identified for both sectors. The last sixth initiative talks about Egypt as Regional Oil&Gas Hub, which is to be achieved by "optimizing and leveraging existing oil and gas transport and storage infrastructure."

However, the Modernization Project "will not take a step forward without the engagement and cooperation of oil and gas leaders together with the support of our international partners," as Minister El Molla said in his speech, presented by Eng. Mohamed Mounes, Undersecretary for Production at the Oil Ministry, at Egypt Oil&Gas' People Development Roundtable held in December 2016.

And it is indeed both local and foreign experts' knowhow and experience that the program will rely on. "Their [international partners'] own experience in similar projects will guide us in such change," Eng. Mounes continued in presenting the Minister's words.

Furthermore, this program is closely linked to the Oil Ministry's strategic pillars and action areas (Table 2), as the Oil Minister had previously outlined in his presentation at the US Business Mission Forum. The pillars target energy security, financial sustainability, and sector governance. The action plans thus endorse Egypt's 2030 vision to build up a modernized and self-sustainable industry. And with this in mind, arrears and subsidies will remain the priority to consider.

Nonetheless, there is no doubt that "this project creates confidence in Egypt oil and gas sector and its future outlook, especially with regards to specific benefits to international partners," as the minister's message at the December roundtable sounded. It will thus "ensure the smoothness and governance of any projects with them [international partners] and build trust leading to a feasible business and investing environment in Egypt," Eng. Mounes added.

Steps Ahead

As the assessment and diagnostics are progressing towards the formulation of a road map, some of the initiatives have been given a more concrete form and a fixed timeframe under the three-to-five year plan. For instance, the ministry insists that industry players will see a streamlined concession process already by the end of 2017, including concession agreement portfolio. In other areas, some work should be ready and completed for instance in demarcating sector roles of the government's entities.

EGYPT'S OIL&GAS SECTOR MODERNIZATION PROGRAM

1. Investment Attraction
2. Restructuring
3. People Agenda
4. Downstream
5. Upstream
6. Regional Oil&Gas Hub

Moreover, other areas of interest continue being evaluated at this stage to see if these are worth include in the overhaul agenda at all such as information, communication technologies, standardization of application, bidding processes, and reporting.

Launching such a massive plan implies that the Oil Ministry would need to gain support from each and every leader in the industry, and each and every company or entity in the sectors. The endorsement by people is essential. In the end, the overall objective is to generate improvements for them. For this purpose, a list of fast-track actions has been prepared to showcase for people how the project will contribute to a strategic direction that the Egyptian industry will take and what economic benefits it will bring.

Therefore, as for the impact of the program, "we need to balance between the long term strategies and objectives, and quick wins that may happen, affecting certain, soon, and positive impacts," clarified Modernization Program member, El-Saadawy.

RO is thus entering 2017 with a lengthy to-do-list encompassing activities such as stimulating debate, addressing route causes, designing, engaging, and encouraging people's initiatives. In simple words, the Program Team needs to "create the case for modernization that will be sustainable in terms of profitability and good governance," concluded Osama El-Saadawy.

MINISTRY'S OIL&GAS STRATEGIC PILLARS and ACTION AREAS

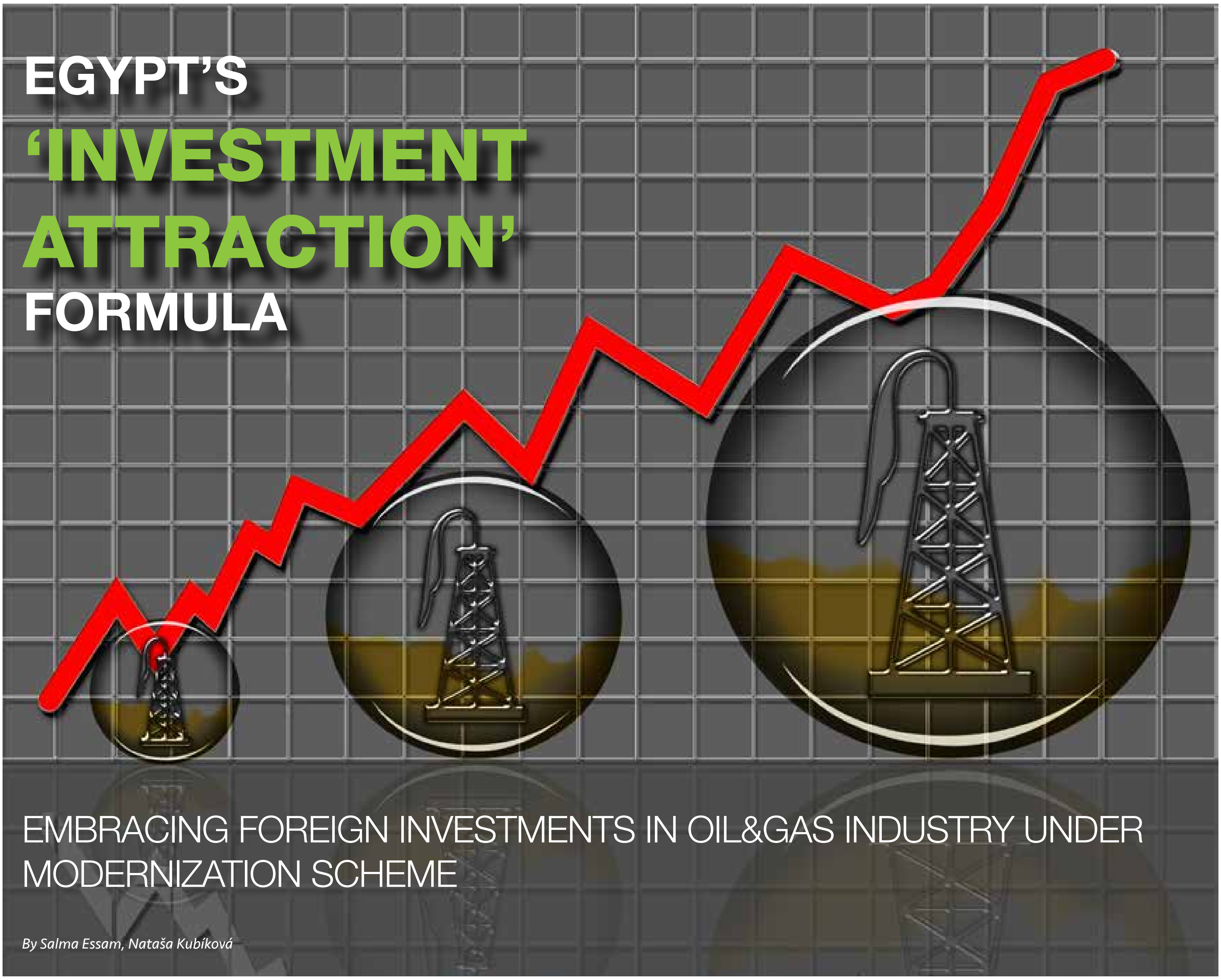
ENERGY SECURITY
- Boost energy supply
- Diversify energy supply
- Manage energy demand

FINANCIAL SUSTAINABILITY
- Address historic debts
- Reform energy subsidies
- Address internal debts
-

SECTOR GOVERNANCE
- Improve sector governance
- Boost private sector investment

Source: A presentation by His Excellency Eng. Tarek El Molla at the US Business Mission Forum, 25th October 2016

EGYPT'S 'INVESTMENT ATTRACTION' FORMULA



EMBRACING FOREIGN INVESTMENTS IN OIL&GAS INDUSTRY UNDER MODERNIZATION SCHEME

By Salma Essam, Nataša Kubíková

Following a period of economic and political restructuring, Egypt's oil and gas industry has stabilized relative to where it was. The Egyptian government is taking huge steps to bring in more foreign investments predominantly, but not exclusively, in the upstream sector, as further discoveries are being made. The buzz word is a safer investment climate for exploration and production, which is in line with the Oil Ministry's new Modernization Program.

The 1st Initiative of the Modernization Program – Investment Attraction – takes upon itself to create safe and appealing investment environment and lure in international oil companies' (IOCs) capital. This initiative is a cornerstone of future progress and tackles the challenges of production-sharing agreements as well as structures and processes of operations in Egypt for foreign companies.

It is a truth acknowledged that the decline in investment in Egypt, following the events of 2011, was not solely due to the state of political unrest. The global prices of oil that fell in mid-2014 were clearly a decisive factor in the game. Diaa Eldin M. Kassem, Deputy CEO for Production at the Egyptian General Petroleum Corporation (EGPC), explained this dynamic in an exclusive interview with Egypt Oil&Gas, saying: "The decline in investment happened in Egypt and the global market as a whole due to the decrease in oil prices."

Nonetheless, in a recent couple of years, Egypt has signed 70 new upstream exploration concession agreements with a minimum commitment of $14.9 billion in investments and further new blocks are have been offered by EGPC, EGAS, and GANOPE. Most recently, EGPC has stridden steps to bring in a total investment of $200m after accepting six offers of drilling six wells from different foreign investors including BP, Apache, Shell, and a new player Apex International Energy.

What will further help Egypt to succeed with the Investment Attraction formula is the approved OPEC freeze plan. The global oil and gas market has marked the beginning of its revival. Therefore, foreign investors are likely to open up to new opportunities and expand their operations in new markets and unexplored locations across the globe. Egypt is one of the countries that will have to compete for this international capital at stake. Especially, as Egypt is a country witnessing exponential growth of the consumption of natural gas and petroleum derivatives. It urgently needs to increase its exploration and production activities to meet the local demand. But this will not happen without luring foreign investors to bring in fresh capital to the country and develop the existing fields, while launching a robust search for new hydrocarbon reserves.

Hence, the Modernization Program comes in an apt time for the country and is a key to success. In line with the new overhaul program, the aim of the 1st initiative is to "expand concession agreement portfolio and streamline current concession processes," explained Osama El-Saadawy, Marketing Manager at Oil & Gas Skills, in an exclusive interview with Egypt Oil&Gas. It will provide an upgraded framework, in which foreign IOCs will operate in the country,

Fit-for-Purpose Agreements

The Modernization Program is thus to help regulate legal framework, as one segment of an overhaul transformative effort. Revising the predominant production-sharing agreement type will come under scrutiny as a priority.

At this stage, the intention of the Oil Ministry is merely to review the production-sharing agreements and

> **"We will listen to our partners to know what terms in our agreements should be reviewed and how to better atmosphere for investments."**
>
> **Eng. Abed Ezz El Regal,** Vice Chairman for Production and Fields Development at EGAS

once again re-assess their efficiency and suitability. In parallel to that, this type of agreements will be further re-evaluated comparatively to other available models such as those that proved profitable in countries like Brazil, Argentina, Venezuela, and South Africa. The aim is to establish if and how alternative models may be beneficial, while being in line with the principle of investment attraction on one side, and equally, and maybe even more importantly, being in favor of the financial stability of Egypt's economy in the long run. The ministry will thus seek to find out "how we can attract more investment in the future through offering different types of good agreements," said People Agenda Team Leader under the Modernization Program, Osama El-Saadawy.

"We need to unify the upstream team in one entity and create a regulatory form for the agreement, exploration, and pricing."

Osama El-Saadawy,
Marketing Manager at Oil&Gas Skills

There is an understanding that offering different types of joint agreements for various foreign partners, while accommodating a plethora of projects in their specificities, will likely encourage investors' presence in the country. Without this, many foreign investors may refrain from striking deals when they see that the models of agreements are not fit for purpose. This is the reason why governments all over the world tend to actively modify the legal frameworks they offer both locally and internationally, in efforts to attract foreign IOCs through favorable terms. The Egyptian government has also opened up a fruitful discussion to address this issue in an efficient manner, at a fast pace, and with a higher intensity under the Modernization Program.

The production sharing agreements (PSAs) in the contemporary Egyptian oil and gas legal system hold within some schemes that are deemed unfavorable for some foreign IOCs. PSAs impose certain limitations and constraints such as the governance control over the industry and organizations, and the continual supervision of the operations. Osama El-Saadawy explained that "some foreign companies, especially US-based state companies like ExxonMobil and ConocoPhillips, are not keen on production-sharing agreements; instead they prefer such models that would allow them to penetrate in fully self-governed projects."

In addition to supervision, PSAs place all the financial risks of the exploration and production phases on the foreign investors, which make foreign investment less appealing at times of market depression. Therefore, offering packages and balancing models of agreements tend to be challenging. Furthermore, finding a suitable model of agreements for various partners and their diverse projects "may require some legal amendments," Modernization Program Team Member, El-Saadawy noted, in addition to "investment appeals, investment attractions, stakeholders' engagement in different local and international forums that will allow Egypt to offer different types of agreements like tax royalty agreements as the case of BP in West North Delta showed."

The Egyptian government has various alternatives to consider for its amended legal framework. The tax royalty model is merely one of them. Yet, it can facilitate the agreement between the government and the foreign partner with the fixed returns agreed upon. This means that with the use of tax royalty model, the risk of investment loss may be reduced. Independent Oil and Gas Consultant, Nagy Iskandar, believes that the tax royalty model, if it is deemed suitable at all to replace or upgrade the PSA scheme, would bring in more foreign investments since that they are more common in the world.

Therefore, Country Manager for Egypt in Rockhopper Exploration, Samir Abdel Moaty, said in an exclusive interview to Egypt Oil&Gas in August 2016 that the Egyptian government would need "to re-think the role of tax royalties," as one step in the overhaul transformation endeavor.

The ongoing debate led to initial revisions of concession agreements, which have already encouraged investments in the upstream gas sector, as His Excellency Eng. Tarek El Molla, Egypt's Oil Minister stressed in his presentation at the US Business Mission Forum in October 2016.

Intensifying the discussion and evaluation of agreement portfolio may bring about major positive outcomes, especially when other involved stakeholders are invited to participate in this action. Eng. Abed Ezz El Regal, Vice Chairman for Production and Fields Development at EGAS, , who spoke to Egypt Oil&Gas in an exclusive interview, said that success within the new modernization initiatives necessarily means to "listen to our partners to know what terms in our agreements should be reviewed and how to better atmosphere for investments."

Hence, the Egyptian industry is confident that the Modernization Program's first initiative will help pave the way for re-assessment of legal framework and thus encourage an inflow of new capital to the country.

Streamlining Concession Processes

Bringing in investments to the Egyptian oil and gas industry necessarily encounters a series of bureaucratic processes that the Modernization Program also tackles. The Oil Ministry has taken an active approach to this dilemma with a determination to resolve it, being aware of the obstacles that are implied in these procedures.

Currently "investors may need long time to speak to EGPC, EGAS, GANOPE going around a long cycle in order to gain access to available information and proceed with their business plans," noted Modernization Program Team Leader El-Saadawy. Therefore, the goal is to simplify the set mechanisms through fast track processes. Fast-tracking major upstream projects thus comes down to "overcoming the standard bureaucratic procedures that take a long time and focus instead on offering incentives," said in an exclusive interview with Egypt Oil&Gas Eng. Abed Ezz El Regal, Vice Chairman for Production and Fields Development at the Egyptian Natural Gas Holding Company (EGAS). This approach clearly translates into major savings for the country, for instance, when we talk about expenses for importing natural gas for domestic consumption.

Similarly, with an objective in mind to ensure easier access to information for foreign investors, under the Modernization Program, the Oil Ministry ponders another positive step, which is to unify the authority responsible for the upstream sector. "We need to unify the upstream team in one entity and create a regulatory form for the agreement, exploration, and pricing. This might be an independent regulatory unit that will be managing all oil and gas activities on behalf of the ministry," further clarified Osama El-Saadawy.

The ministry targets all these measures with a clear idea to ensure inflow of investments. In the upstream sector this hinges upon efficient rationalization.

Rationalizing Upstream Investments

The upstream sector will achieve modernization in a consistent manner by "reviewing all aspects of the sector including challenges related to production, while seeking ways to improve them through available quick win scenarios," Team Leader of the 5th Initiative under the Modernization Program, Upstream Sector, Eng. Mohamed Mounes, the Undersecretary for Production at the Ministry of Petroleum and Mineral Resources, told Egypt Oil&Gas. This means that the Modernization Program team will "review, study, and evaluate most of the upstream companies and present short- and long-term solutions to all their existing challenges; a process that started already in October 2016, which is to be finalized shortly."

Openness, flexibility, and active approach of the ministry come with the realization that all these complexities can be resolved in a partnership environment. "It is not about solving problems from one side. We talk about all the present issues with involved stakeholders," stated Eng. Mounes.

"[The upstream sector will achieve modernization by] reviewing all aspects of the sector including challenges related to production, while seeking ways to improve them through available quick win scenarios."

Eng. Mohamed Mounes,
Undersecretary for Production at the Ministry of Petroleum and Mineral Resources, told Egypt Oil&Gas.

As he further noted, in addition to exploration challenges, "improvements of the upstream oil sector require revision of any bottlenecks such as facilities, production, work over, and drilling, with a special attention paid to the mature fields." Moving ahead with the existing concessions is to be undertaken in order to increase production, which is the crucial objective of the Oil Ministry.

On the other hand, upstream investments in natural gas under the Modernization Program come in clear terms. They are related to "three major ongoing development projects with committed investments of $30 billion during the next three to four years," explained Oil Minister, Eng. Tarek El Molla, at the October Forum. According to his presentation, upstream platform for growth calculates with major investments of $16 billion for the Zohr field, $11 billion for North Alex, and additional $3 billion for Atoll concession and targets peak production rate at 5.1bcf/d from all three projects.

Given the clear scope of investment package for the natural gas sector, the Upstream Sector Team

Member under the Modernization Program, Eng. Abed Ezz El Regal, defined the objective eloquently. The aim is to "define the opportunities, think out of the box, see all the obstacles, and identify the ways how to prevent them."

Looking ahead into 2017, the three chief upstream gas projects have been given a precise timeframe and clear production targets. Eng. El Regal noted: "The first phase of the North Alex project is to be completed by the end of Q1, which will come with 600mscf/d of gas. In Q4 of 2017, we will have the first phase of the second gas project, Zohr, which will range from 200mscf/d to 350mscf/d, and by December 2017, it will increase to 700mscf/d. The third project, Atoll, which is a BP's concession, is expected to have another 200mscf/d of natural gas. We are talking about 1.5bcsf/d in total to be added to the current production before the end of 2017."

This tight time frame is highly realistic, because the projects had started some time ago, and they enjoy existing facilities and infrastructure thanks to which they have demonstrated fast progress to date. On this account, EGAS' Vice Chairman, Eng. El Regal, affirmed that "the three projects have been approved a long time ago and they were set up in an untraditional way that helped to resolve their problems. All of these projects have been dealt with as fast-track units and at a high level to bring natural gas in as soon as possible."

What is more, for the next couple of years, other key projects are already in the pipeline as well. "We hope that during exploration of new blocks belonging to BP, Edisson, Dana Gas, Total, which we have high expectations for, new activities will be launched very soon," convincingly stated Eng. El Regal. People, technologies, and equipments are already in place, while the missing ones will be contracted at a fast pace and the projects are being evaluated on regular weekly and monthly basis with the top state officials to ensure successful implementation of the development plans.

Strategic Pillars of Modernization

Meeting domestic demand and boosting the country's income from the oil and gas industry represent two key objectives of the Egyptian government. Oil Ministry's strategy is thus to design "tailored investment vehicles to attract diverse investors given new growth opportunities," emphasized Oil Minister, Tarek El Molla, at the US Business Mission Forum.

Hence, the Modernization Program is a robust, complex, and ambitious prospect for the country, signifying the strength of the Egyptian industry to external actors and reinforcing its standing domestically. The key pillars and action areas thus revolve around a combination of energy security, financial sustainability, and sector governance.

Under energy security, as the minister further stated in his speech at the Forum 2016, Egypt aims to "boost and diversify energy supply, and manage energy demand." In relation to financial sustainability, the country is seeking to "address historic external and internal debts and reform energy subsidies." To achieve this, the ministry is to "improve sector governance and boost private sector investment," concluded His Excellency Eng. Tarek El Molla.

With this projection in mind, the country is still to address other challenges; consumption patterns and regional/global market competition.

A prominent status of Egypt in the global industry can be defended even amid a fierce competition from other countries in the region. Some Gulf countries may be more tempting for international investors thanks to their high rates of oil and gas reserves. But Egypt has a large bulk of unexplored hydrocarbon reserves, which means that if the country continues on the same path it has embarked upon to bring in foreign investments, the balance may tilt in its favor quicker than anticipated.

> **The Oil Ministry targets "tailored investment vehicles to attract diverse investors given new growth opportunities."**
>
> **Tarek El Molla, Minister** of Petroleum and Mineral Resources

If we add to it the new complex efforts under the Modernization Program umbrella, an integrated transformative scheme that aspires for a well-governed and functioning sector, the Egypt is on the right track to achieve efficiency and self-sufficiency of the oil and gas industry and manifest its leadership in the country's economic picture and ensure the economic growth.

In this way, Egypt is highly likely to soon augment its role on the regional, international, and domestic scenes.

OPEC FREEZE PLAN TO INCREASE ENERGY SUBSIDIES

The decision taken by 12 countries from the Organization of the Petroleum Exporting Countries (OPEC) to decrease petroleum production between 700,000b/d to 800,000b/d had affected Egypt's finances in regards to energy subsidies in the new budget.

The decision will definitely shake the current EGP 35b allocated for energy subsidies in the state budget because the production decrease will raise the global barrel price. As a result, Egyptian energy subsidies are to rise between EGP 60b and EGP 80b in the new budget of the fiscal year 2017/2018. This will be caused not only over OPEC's decision, but also over foreign currency exchange rates, which are expected to increase.

The Egyptian energy subsidies have been facing a crisis for 30 years because the government sells petroleum derivatives at lower prices that do not cover production costs, as the fair price is EGP 6 per 1 barrel of benzene.

Governmental officials and sovereigns have to set an official timeline for the generalization of fuel smart cards, which will achieve social justice in distribution of benzene and diesel to citizens all over the country's governorates. Additionally, the smart cards will overcome black market's mafia entirely, because the electronic system is hard to be hacked. The smart cards have been applied for years in Arab and European developed countries that succeeded in solving energy subsidies problems.

Egypt's PM Ismail's cabinet thus should divide subsidies between low income citizens, middle income citizens, and high income citizens.

The recent decision of fuel price increase in Egypt that is based on the country's economic reform strategy came ten years late. Yet, the government is still subsiding petroleum derivatives despite the price rise in the market. Therefore, the Egyptian government should fully eliminate subsidies from rich citizens without affecting the low income citizens. The government should use the EGP 35b allocated for energy subsidies instead for subsiding health and education sectors to develop Egypt.

I can understand why the petroleum authorities moved fuel prices suddenly in order to not cause any confusion in filling stations and to ensure that the black market mafia will not store fuel and then sell it at higher prices.

However, I do not agree with the decision to lift subsidies completely, especially energy subsidies, as it is better to be lifted gradually while ensuring the rights of low income citizens.

At the end, I would like to thank the Minister of Petroleum, Tarek El Molla, for trying to attract $8m in foreign investments during the fiscal year 2016/2017 as those investments are the main reason behind the stability of the oil and gas sector and make it the only sector able to benefit the national economy.

By Eng. Abd Allah Ghorab, Former Minister of Petroleum

EGYPTIAN POUND IS DYING

The last three months witnessed a disturbing relationship in the pricing of Egyptian pound compared to US dollars. As a result, the government interfered so that the dollar would not defeat the weak Egyptian pound and thus to save it from its recent disease.

At the first glimpse, the Egyptian pound seemed to recover its downfall after the government tried to promote the currency and attract more investors. But would these attempts truly help the currency to recover? And has the government overcome the real reasons for this downfall? If we take a look at the real reasons for this disease, we will discover that Egyptians are crying over spilt milk.

Let's see how this deterioration happened. In the weeks following the revolution's success, individuals and workers' unions held demonstrations to raise wages and to improve their financial status.

The government agreed on protestors' demands, which caused the first drawback of the currency. Strikes and protests followed successively demanding just trials for the 25th of January martyrs' killers and for the revolutionaries' right to the governmental seats.

Meanwhile, looting and robbing of public property and the destructive practices affected the national currency. Therefore, the army, the police forces, and civilians stood along to control those destructive actions. These unstable conditions cast away tourists and investors, which meant losing one of the most important sources of foreign currency, which was the last straw that broke the camel's back.

The pound continued to deteriorate and corruption crept out and became rooted in the Egyptian economy. It destroyed any hopes to restore the value of the currency and it was clear to everyone that a crisis is going to happen. The government did not have any other choice other than devaluing the currency and strictly monitor the currency exchange and regulate harsh penalties to violators.

From my perspective, using violence and strict punishments will not be useful in the short term or in the long run. The best solution is to solve the reasons of the problem from its roots and to relate wages with productivity and lift subsidies.

We should attract tourists and investors and produce basic goods and stop luxurious products. We have to conquer corruption and eliminate its roots and take back our rights. We have to stand together and prioritize the greater good for the country.

We have to continue our strife in teaching ethics and principals like equality and justice to our children.

By Sameh Moustafa, Production Engineer at EGPC

FROM OUTPUT DECLINE TO FEEDSTOCK BOOST

OVERCOMING CHALLENGES OF THE EGYPTIAN DOWNSTREAM SECTOR CAUGHT BETWEEN ARREARS AND A LACK OF FEEDSTOCK

By Salma Essam

The Modernization Program promises a new approach, yet, with every positive step comes a challenge. Egypt's main objective for the downstream sector is to attract foreign direct investments to counterbalance the fact that the country's refining output declined by 28% from 2009 to 2013, according to the World Refining Association's report – The Future of Egypt's Downstream Industry, published in 2015.

Facts Global Energy has linked the decrease in the output to the Egyptian government's policy that permits the foreign oil producers to export more crude oil as a form of reimbursement for the Egyptian General Petroleum Company's (EGPC) financial arrears. As a result, the volume of domestic crude oil allocated for domestic refineries dropped. This is one of several challenges that the Oil Ministry's modernization agenda seeks to tackle in a comprehensive way.

Following the events of 2011, the finances and available capital presented a major concern. The state of political unrest has rendered the investor less confident in the Egyptian industry. Many foreign investors were wary of getting involved in a country where the political situation was not completely stable. Therefore, many projects found it difficult to obtain necessary investments for developments, including those in the downstream sector.

The confidence of foreign investors lagged behind even after the partial economic recovery that Egypt has seen. The main reason being the large amount the country spends on oil subsidies, which have turned out to seriously impact economic revival. In the fiscal year of 2013-2014, the Egyptian government spent $18.2 billion on oil subsidies. In the following year, the plan to lower the cost, subsidies carved out almost 50% less from the state budget in the total amount of $9.2 billion. Even though the subsidies expenditure is decreasing, they still add to the government's budget deficit, which in effect contributes to the EGPC's incapability to repay its dues for foreign investors.

Whilst bringing down subsidies is one of the novel challenges Egypt has taken upon itself to tackle at a gradual pace, the impact of this measure could accelerate downstream development projects. In other words, the government would then be able to grant more money to EGPC necessary for its dues to foreign companies and open a door for new development projects. This would lead to further investment commitments and more petroleum products would reach the Egyptian market, reducing costly imports of petroleum derivates. Yet, this operational framework encounters further challenges on logistics level.

A key issue of concern is a severe lack of feedstock. Most of Egypt's petrochemical capacity is set up to use natural gas as its feedstock. World Refining Association's report said that electricity production has the lion share of natural gas utilization, which accounts for over 60%, leaving Egypt's petrochemical producers with a sever lack of feedstock. Furthermore, the country has witnessed a sharp decline in natural gas production that had turned Egypt from an exporter to a net importer. From 2012 to 2015, natural gas production declined from 60.9 billion cubic meters to 45.6 billion cubic meters. Couple this with the fact that considerable natural gas discoveries in deepwater have been undeveloped since that the government offered IOCs low prices to produce the gas and the scope of this challenge mounts and can only be tackled through an all-embracing program.

The access to feedstock has been another major point of concern for all refining and petrochemical industries in Egypt. Many of the country's refineries operate under their real capacity due to the age of the refineries and the old technologies used. National refineries' annual operational capacity is 33mt/y of petroleum, yet they are currently using merely 26.3mt/y, which, in essence, leaves the estimated unused capacity at 6.7mt/y of crude oil. The Oil Ministry's new strategy introduces a broad program that would enable the downstream sector to successfully resolve all these challenges.

In order to achieve this, yet another aspect of downstream activities is left to be addressed; a lack of efficient communication between the government and IOCs with regards to the performance and the need of the market. Communication is essential for stimulating foreign investments since that it helps paint a clear picture of the status of the Egyptian downstream industry. When there is inefficient exchange of critical information between the two sides, investments may be lower than the potentiality of the market. For example, if the demand on polypropylene is twice as high as supply and this information is not delivered to investors, it is highly likely that production will not be adjusted to cover the gap. In contrast, if communication channels are designed purposefully, it is highly likely that an investor who is considering building a factory would increase his production to meet the demand.

Given the complexity of the Modernization Program and how the Oil Ministry mastered to interconnect different segments of the oil and gas industry transformation, it appears that the government is doing its best at containing all the existing challenges in a timely and efficient fashion.

Even though the lack of feedstock remains a question for the refining sector, Egypt estimates to hold some 4 billion barrels of proved oil reserves, which, in combination with new oil discoveries, will likely increase the country's feedstock capacity in the near future. At present, Egypt's natural gas industry is witnessing a prosperous period as the new discoveries, like Zohr, proved to be game changers. During the fiscal year 2015/2016, EGAS recorded 14 new discoveries that made the total reserves reach 31.5tcf of natural gas and 38mb of condensates. The increase in natural gas reserves will inevitably increase the refineries' feedstock.

Similarly, the country has begun to pay back the huge debts owed to international operators. The government has partially resolved this issue by reaching an agreement with IOCs to pay back regular monthly amounts that were agreed upon. This will lead to a reduction of the amount of domestically produced oil that foreign producers can export. Hence, there is optimism for foreign investors. And the International Finance Corporation (IFC) confirmed this by stating that "Egypt is as an attractive market," also in downstream projects. If giant IOCs such as BP and Eni are able to develop their projects and sell their output at better prices to the local Egyptian market, then the downstream sector, represented in the refineries and petrochemical plants, will benefit from added feedstock.

By reforming the subsidies and paying government debts, Egypt should no longer have problems with delayed or cancelled payments. The attractiveness of the investment landscape in Egypt for the IOCs is inevitably on the rise. It is thus fair to say that the future of Egypt's downstream industry looks positive.

OIL & GAS ORGANIZATIONS IN THE FUTURE

By Osama Elsaadawi, Marketing Manager, Oil & Gas Skills

PEOPLE CONTRIBUTION TO SUSTAINABILITY AND EXCELLENCE

Today's oil and gas organizations were developed in a time of resource scarcity. To get at those hard-to-find, difficult-to-develop resources, companies built large, complex organizations with strong centralized functions. This model allowed them to tackle terrific technical challenges, manage great operational risk, and deploy scarce talent across its operations. While these reasons were all valid during a decades of high growth, this organizational journey also led to substantial complexity for large players, adding cost, stifling innovation, and slowing down decision making processes.

This organizational model is no longer sustainable with oil prices below $50 a barrel. More important, though, it is no longer necessary. We are now entering a time of great change, with major societal, technological, and economic trends reshaping the environment, in which oil and gas companies operate.

Compounding the issue is the fact that many existing human resource management systems are outdated and contain inconsistent and incomplete reporting on skills, job histories, and performance data. That makes it hard for managers to make an objective portfolio assessment of employee performance as well as their talent.

The future outlook of Egypt oil and gas production is now shaped through new exploration in Mediterranean offshore, which will play a greater role in supplying the growing demand.

The Zohr Deepwater gas field is expected to start production in 2017 and reach full production capacity in 2019, with estimated proven reserves of 32tcf.

The technological trends and high risk after the accident at the Deep Water Horizon drilling platform in the Gulf of Mexico has forced many companies to review their approaches to safety measures, how people are talented and leaders have influence. These can drive for more sustained organizations and operations with excellence.

His Excellency, Egypt's Minister of Petroleum and Mineral Resources, Tarek El Molla, is also concerned with people talents and sustained organizations. That is one of the strongest reasons that the Ministry of Petroleum launched the Modernization Project in September 2016. A very optimistic vision has been identified to drive the sustainability and development by 2021. And it is aligned with Egypt's Vision 2030.

The People Development agenda in the Modernization Project will encourage companies to seek opportunities to apply best in class talent management process and leadership at higher level.

A rapid performance management system can both help oil and gas companies fairly and transparently address their near-term workforce needs while laying the groundwork for a more sustainable performance management system in the future. Through a combination of organizational forecasts, data mining, fact-based review, and transparency, companies can make the most of a difficult situation and build a stronger organization.

By retaining the right talent and modeling under-performers, oil and gas companies can significantly improve financial and operational performance. Research across industries has demonstrated that in high complexity jobs—like technical roles in oil & gas companies—high performers are 8 times as productive as average performers. Properly applied, a rapid individual performance management system

	Stable Backbone	Dynamic Capabilities
STRUCTURE	• Simple structure as a backbone, contestant over time • Clear expectations, Accountability	• Everyone reports to an Asset/Business Manager with ability to form and dissolve team on task basis • Leadership as role, not title: people contribute and make decisions based on expertise and experience, not a position in the hierarchy
PROCESS	• Industry standards used as default, with an application tailored by asset type • One source of truth; easy data access for all employees paired with simplified and standardized reporting • Daily work built around instant access to full company knowledge base and all experts	• Up to the minute performance data with immediate intervention • Decisions made once by people in a room • Rapid prototyping of new design, strong tests, evaluation and training
PEOPLE	• Shared culture and values as foundation of trust base, decentralization in decision-making processes	• Crowd-sourced employee reviews • Entrepreneurial "can do" mindset equally as important as technical and leadership skills

can help oil and gas companies retain and reward their top performers even in the midst of industry-wide cuts.

Five Big Ideas for Our Oil & Gas Organizations in The Future

1. Organizational Agility

The relentless pace of change puts a premium on the ability to adapt quickly to changing conditions, in other words, to be agile. In our view, agility combines two distinct concepts: dynamic capabilities

and a stable backbone. Dynamic capabilities entail the ability to rapidly form cross-functional teams and reprioritize tasks to adapt quickly. A stable backbone of core value-adding processes and cultural norms that provide resilience, reliability, and relentless efficiency is another element.

While other industries are further away from the agility curve, many oil and gas companies have already acquired pockets of agility. An oil and gas company, for instance, took inspiration from the software-development world and used a "scrum" approach to simplify drilling standards from 1,000 pages to fewer than 100. As a result, the company completed this exercise in a matter of weeks and cut drilling cost by 30%.

At the same time, agility is not meant to be chaotic. For the dynamic elements to succeed, they must be linked to a stable backbone. This will include a small number of simple but mandatory processes that are universally followed, a common culture to allow faster collaboration, and instant access to reliable data and company's full knowledge base.

Aggressively standardizing and simplifying processes can allow companies to react quickly to unforeseen events, while improving safety and productivity. For example, Schlumberger identified the relocation of its people as one of its central processes, as it ensured that the company can deploy talent as rapidly as possible anywhere in the world. By rigorously standardizing the process, deployment time was reduced from two to three months to two to three weeks.

Perhaps the biggest change required in the backbone is to repackage and structure work to enable small teams to form, take a defined task, and execute it quickly. An example here is the default use of industry standards—with applications tailored by asset type—to create and enforce a simple but strong backbone. Such ideas are gaining traction in the industry, with 17 international oil companies (IOCs) and national oil companies (NOCs) currently working together, through the World Economic Forum, to agree on standardized procurement specifications and pilots for ball valves, subsea trees, and low-voltage switchgear.

Agile Organizations Will Differ in Several Dimensions

2. Digital Organizations

Organizations have been digitizing for decades, but the digital revolution is still only just in the beginning. Within a few years, the Internet of Things will consist of more than a trillion sensors that generate and share data. Artificial intelligence and machine learning are no longer science fiction, and human–machine interaction is becoming ever more frequent. These innovations are about to change the way oil and gas companies work in three substantial ways.

A step change in safety and productivity will result from digitizing both technical and nontechnical work in a way that automates 60 to 90% of routine manual activity, while identifying true best practices. This means better safety both because fewer people will be at risk and because automation is reducing the risk of human error.

It also means great improvements in workforce productivity. For instance, an engineering, procurement, and construction (EPC) firm was able to use advanced analytics to sift through thousands of capital projects and discover a few simple practices that improved engineering productivity by more than 20%.

Digital is also an important enabler of organizational agility, for example, through instant access to information for frontline decision makers or via the real-time deployment of maintenance teams linked to predictive-maintenance algorithms.

There will be new ways of managing people and performance. Many human-resources functions are already investing in advanced analytics to mine large data sets about their workforce—training history, productivity, calendar and email, surveys, social-media profiles etc.—to identify the drivers of employee performance, recruitment, retention, and employee engagement.

3. Young Age-Managed Organizations

Young aged employees are no longer a small group of new university graduates; in many oil and gas companies, they occupy managerial roles and are starting to climb into the executive ranks. As they rise through the organization, millennials will bring their own ideas about collaboration, accountability, and the use of technology. Leading companies will design an environment that meets the expectations of millennial leaders.

It will create more flexible employment structures, horizontal career moves, and a flexible take on career progress as well as a new working environment and culture. These could include technology-enabled remote work and flexible working hours allowed by a results-oriented mindset. Similarly, the application of social-media tools in the corporate setting will become a part of the process. For example, NASA, the Royal Bank of Scotland, and Virgin, among others, already use social networks such as Facebook, Slack, and Yammer instead of traditional intranet and file-sharing tools.

4. Decentralized Organizations

Over the past 15 years, the corporate centers of most oil and gas companies grew significantly, as a way to manage risk, leverage scale, and share scarce technical talent. However, many of the forces underpinning the drive to centralize have now eroded. The collapse in crude prices has made large overhead costs unaffordable, and slow decision making has become a threat to long-term viability.

However, this will not be consistently felt across assets. Managing risk—technical, commercial, and operational—is still a compelling reason to centralize and is particularly evident for high-complexity plays such as Deepwater, and liquefied-natural-gas (LNG) assets. We will likely see new mergers. Acquisitions to form profitable organizations have been on the stage with two dominant models: lower-risk and higher-risk assets. The former employs a very lean corporate center with highly autonomous asset teams, whereas the latter, more-capital-intensive assets, employs a much stronger center with deep functional capabilities and a strong emphasis on risk management

5. Redefining the Core

Companies are thinking again about what activities they need to control in-house versus those they manage via partnerships and supply-chain relationships. We believe the future oil and gas company will more closely resemble today's industrial manufacturers, with a move away from tactical contractual arrangements, leaning more toward long-term strategic partnerships with a network of tier-one and tier-two suppliers. For example, prior to its acquisition by Shell, BG Group signed a long-term strategic alliance for front-end project engineering with KBR, an EPC company.

Similarly, in a world of plentiful resources, access is no longer a key strategic differentiator, and large oil companies may increasingly rely on specialized explorers rather than in-house exploration teams for reserve replacement.

Any one of these ideas would have far-reaching implications for oil and gas organizations. However, many of these ideas could be self-reinforcing. For instance, as oil and gas companies adopt a more agile way of working, they could become magnets for top millennial talent. Millennials will accelerate the adoption of digital technologies, which could facilitate the reforms, which in turn allows for an even more agile workplace.

UPGRADING PEOPLE DEVELOPMENT AGENDA

OVERVIEW OF KEY ELEMENTS IN ENHANCING HUMAN CAPITAL IN EGYPT'S OIL&GAS INDUSTRY

By Amira S. Badawey

In an industry such as the petroleum sector that spans the entire spectrum of the value chain, starting with the extraction of crude materials from beneath the surface of the earth, to delivering products to end consumers, the human element plays a unique and pivotal role. In order to meet demands for such a diverse and challenging industry, the oil and gas industry employs an array of highly capable people in various fields. It also strives to sustain its human capital in an efficient and effective manner in order to guarantee the continued success of Egypt's oil and gas gains that fuel industries and, therefore, are strategic to the nation's prosperity.

In recognition of the critical contribution of human capital to the oil and gas sector, the Egyptian Ministry of Petroleum and Mineral Resources dedicated a specific dimension of its Modernization Program to the development of people within the sector and across segments under the People Agenda. Osama M. Mobarez, Undersecretary for Minister's Technical Office at the Ministry of Petroleum, described people agenda, the 3rd Initiative of the Modernization Program as "the cornerstone and a major pillar of the modernization and development of the sector."

The ministry's three-year People Development Roadmap, with the slogan 'Improve Talent Management Program,' centers on six main pillars covering the entire gamut of human capital management functions, according to Osama El-Saadawy, Marketing Manager at Oil & Gas Skills. El-Saadawy introduced the Modernization Program's People Agenda at the Egypt Oil&Gas' People Development Roundtable held in mid-December 2016 and explained its key structures, processes, and mechanisms.

Crafting and Instating Talent Management

The aim of the People Agenda is to "craft and instate" a talent management program that is aligned with the Egypt's 2016-2021 vision to "unlock the [oil and gas] sector's full value chain potential as a growth and a sustainable development engine for Egypt." This will be achieved though the improvement of the sector's overall talent management processes to better equip the industry with qualified and capable workforce. As Tarek El Hadidy, Egyptian General Petroleum Corporation's (EGPC) CEO, put it, "equipment, assets have no value without people."

The roadmap was developed after the ministry conducted a deep dive diagnostic expedition that was carried out in October 2016 to uncover major challenges facing the petroleum community in Egypt. The results of this diagnostic analysis yielded that the oil and gas sector is currently experiencing a limited strategic role for human resources due to a lack of clear strategic direction for oil and gas people.

Furthermore, the diagnostic study showed that Egypt's oil and gas organizations face a shortage in management potentials. El-Saadawy emphasized that it is vital for the sector to act now in order to avoid near-future leadership gaps due to lags in hiring within the executive level.

Although the sector is currently focusing on continuously strengthening technical capabilities within the upstream segment of the market, in the near future the ministry aims to ensure balanced competency development to include other areas such as gas production and petrochemicals. Stressing on the importance of inclusion during the December roundtable, EGPC's CEO, Tarek El Hadidy, affirmed that employees in the industry, at different levels and with diverse expertise, should become a part of the overhaul agenda. He emphasized that "the oil and gas sector is not only engineers, but also technicians, administration, and accounting employees."

Accordingly, the ministry has developed the People Agenda Initiative within the Modernization Program to remedy ailments that stem from lacking coherence in the sector's Human Resources Management systems. The integration of performance management with competitive salary structures and incentive schemas is also lagging behind.

Therefore, the Initiative will "combine the strategic human resources (HR) approach into the process and identify different types of activities starting from acquisition and hiring to the performance evaluation and sustaining these talents," El-Saadawy clarified the scope in his presentation.

The core of the Initiative is to address six main aspects of people development: Leadership; Talent Acquisition; Competency Development; Performance Management; Succession Planning; and Efficient HR System.

Start and End with Leadership

The sector has begun several leadership initiatives through its people development partners such as Oil & Gas Skills, with the company's Chairman and CEO, Mohamed Badr, describing it as "the arm of the Ministry of Petroleum in developing people to work on capacity building programs across the value chain." However, El-Saadawy called for furthermore collaboration within the sector to cover leadership capabilities at all levels, not only for top management, but also for middle-management and frontline operations.

Accordingly, under the patronage of the Minister of Petroleum, Tarek El Molla, the ministry will launch its Leadership Center of Excellence to focus on fast tracking the acceleration of leadership development of high potentials in regard to three knowledge and skill clusters based on international trends and methodologies. These clusters are context, complexity, and connectedness. They in turn will concentrate on leadership skills to safeguard emerging managerial talent with an understanding of the every changing nature of the business

> **"[People Agenda is] the cornerstone and a major pillar of the modernization and development of the sector."**
>
> **Osama M. Mobarez,**
> Undersecretary for Minister's Technical Office at the Ministry of Petroleum

environment in general, and the Egyptian oil and gas sector in particular. Thus enabling them to respond to external challenges and opportunities with agility and effectiveness, survive and succeed in situations of low certainty and low agreement, while comprehending the wider economic landscape and building effective networks with concerned stakeholders.

Placing Leadership within the People Agenda is an important step, as a certain mindset with the sector's management will be fundamental to the program. It is also chief to the success of the entire Modernization Program.

Attracting and Sustaining Talent

Hiring is one of the critical objectives for the ministry under the roadmap's Talent Acquisition pillar.

> **"Equipment and assets have no value without people."**
>
> **Tarek El Hadidy,** Egyptian General Petroleum Corporation's (EGPC) CEO

With a population of over 90 million, there is no argument that Egypt has a wealth of people who can bolster the country's development programs. This is even more evident in the oil and gas sector, as Egyptian universities, both public and private, offer adequate training for oil and gas engineers.

The Talent Acquisition dimension aims to develop competitive guidelines and practices to hire and retain competent staff covering the wide range of jobs and positions across different levels within the sector. The program will provide hiring guidelines together with necessary processes for restructuring competitive pay-scales, while allowing firms the "freedom-of-action" in implementing predefined measures. The roadmap will also focus on creating a five-year sectoral manpower plan in order to provide visibility on current and future recruitment needs and identify the way forward in building the sector's human capacity. Signifying the importance of this dimension, El-Saadawy said that "this should be the way of living inside the oil and gas community."

> **"[Leadership Development is] the arm of the Ministry of Petroleum in developing people to work on capacity building programs across the value chain."**
>
> **Mohamed Badr,** Oil & Gas Skills' Chairman and CEO

Competency Development

Hiring based on competency is instrumental in ensuring that the sector is employing the right people and placing them in the right place to maximize their potential. In order to achieve this, the sector must document and catalogue the desired skill-sets for various positions within the industry, while specifying the required mastery level for each position.

This will come as part of the Competency Development pillar of the roadmap. The specification of competencies is based on business needs and market trends within the framework of a competency based management (CBM) system for human resources, a framework that is adopted by international firms the world over. The skills and competencies covered by the CBM will also extend to operators and technicians, while taking into consideration the industry's occupational health and safety regulations and guidelines.

It is paramount that the inventory of skills within the oil and gas sector remains up-to-date through accredited training programs. Accordingly, the program will work on developing a list of approved training providers across Egypt to include those in Alexandria and the Red Sea, as well as Cairo. This will guarantee quality training services, knowledge sharing among industry players, and provide learning opportunities across the sector.

Speaking on the behalf of the Minister of Petroleum during the roundtable, Eng. Mohamed Mounes, First Undersecretary for Production at the Ministry of Petroleum and Mineral Resources, said that "we aim to be a role model for other sectors in the country." This can be achieved by providing the sector with approved CBM guidelines, where a sectoral competency dictionary can be shared with similar sectors and industries such as the Electricity and Renewable Energy.

Succeeding on Performance Management

With the right people in the right place, staff is empowered to carry out their job effectively and efficiently. In order to reach the heights of desired performance, organizations must ensure that human resources are able to utilize the inherent and acquired knowhow to the benefit of the company.

Accordingly, the Performance Management pillar will focus on cascading individual performance metrics from corporate and sectoral strategic objectives, while designing and implementing reward and recognition systems that enable and encourage high performance.

Employee evaluations and annual renumeration will be tied to the performance management system. This in turn will provide staff with comprehensive feedback on how well they are doing, in addition to giving organizations robust tools to measure their gains from investing in the collective knowledge of people through training, coaching, mentoring, and other improvement initiatives.

Succession Planning

Consequently, organizations can further map out competency gaps required to fill fundamental roles by augmenting employee capabilities with internships and development programs offered throughout the sector. However, as apparent from the diagnostic analysis, the sector's ability to swiftly meet leadership demands is hindered by "inadequate succession planning," as stated by El-Saadawy during his address.

"We have to build succession planning program for sustaining the pipeline of leaders, also for sustaining the middle management," People Agenda's Team Leader further explained. As a result, the ministry has developed a Succession Planning pillar.

Under this pillar, the ministry aims to design a two-year succession plan for the oil and gas industry. The plan will not only focus on top performers, but will encompass major roles within the industry on the executive and middle-management levels, as well as apply lessons learned from global models.

The Succession Planning pillar will also assist the ministry in sustaining talent within the industry and the country by providing employees with clear career path trajectories and competitive opportunities.

Creating Synergies and Continuity

The five pillars on which the ministry's People Agenda is based interact and impact one another. Therefore, it is vital that the ministry creates a cohesive Human Resources Management Systems (HRMS) that promotes effectiveness, efficiency, and governance.

The sixth and final pillar, Efficient HR Governance System, will create the desired synergies and ensure the continuity of the deployed solution. Furthermore, the HRMS will extend to other aspects within organizations such as sustainability, Corporate Social Responsibility (CSR), and operational excellence.

This dimension will epitomize the ministry's efforts into a cohesive model that will "rejuvenate" oil and gas companies in terms of jobs and positions, hierarchies and structures, accountability and empowerment, and lead to the development of profitable organizations.

> **"We have to build succession planning program for sustaining the pipeline of leaders, also for sustaining the middle management."**
>
> **Osama El-Saadawy,** Marketing Manager at Oil & Gas Skills and People Agenda's Team Leader

The Egyptian oil and gas community, from national oil companies to international firms, agrees that Egypt has a wealth of competency and highly skilled petroleum professionals. The ministry's three-year People Agenda confirms that "we [the Ministry of Petroleum] are planning well for the implementation," according to El-Saadawy.

It is in the best interest of all stakeholders to work together on the continual development of sectoral human capital. Such a feat will not happen on its own or by the effort of a few. The entire oil and gas community must come together to ensure the successful implementation of the People Agenda that will be a cornerstone of the entire Modernization Program.

PEOPLE DEVELOPMENT ROAD MAP SIX PILLARS FOR SUCCESS

- Leadership
- Talent Acquisition
- Competency Development
- Performance Management
- Succession Planning
- Efficient HR System

SHIFTING THE COURSE OF EGYPT'S DOWNSTREAM SECTOR

By Nataša Kubíková, Salma Essam

Despite the political unrest, Egypt has maintained the highest refining capacity in Africa since 2011. The estimate stands at 726 billion barrels of petroleum products per day from 2011 to 2015, according to OPEC Annual Statistical Bulletin 2016. And Egypt is well equipped and eager to write an even more successful story for the years to come. What is the future of Egypt's downstream sector?

To date, Egypt has injected a package of investments in the downstream and is expected to witness a promising future in the petrochemical segment of the industry. In line with the new Modernization Program, the Oil Ministry incorporated the downstream section into the overhaul transformation scheme under the 4th Initiative. It aims to purposefully "optimize downstream and petrochemical sourcing, output and mass balancing" on one side, while "driving downstream operations performance transformation" on the other. Egypt is thus presenting an insightful combination to modernize reaching out to industry's efficiency and self-sustainability.

Exporting Value Added Products

The Egyptian industry leaders are well aware of the need to address the downstream sector's performance and structuring within an overhaul transformation strategy towards a prosperous decade. This requires strength and determination to see through the process of modernization in light of global standards in downstream performance, structures, and processes. Whereas in previous decades, the oil and gas industry in Egypt was "concerned with exporting raw material, crude oil and gas, today, the sector is rather focusing on value added activities instead," as these proved more profitable in the long run on two crucial levels, Eng. Mohamed Badr, Chairman and CEO of Oil&Gas Skills (OGS), told Egypt Oil&Gas in an exclusive interview.

Indeed Egypt can record a massive difference in terms of national income from exports of petroleum products in contrast to the revenues from exporting raw crude or gas. On another level, production of petroleum derivatives appears more prosperous domestically as it would guarantee higher savings for the country in lieu of products' expensive imports paid for in urgently lacking foreign currency, and simultaneously meet immediate domestic needs. As an example, Eng. Badr further revealed, "Asyut's refinery can cover entire demand within Upper Egypt and help the country reach the goal of self-efficiency within the area of petrol and diesel supplies."

It is beyond doubt that once ongoing downstream projects are completed within the overhaul scheme, "these will have a significant value added and returns to the sector," said OGS' CEO, and necessarily balance domestic supply-demand matrix for decades to come. Zohr project, for instance, is expected to achieve natural gas self-efficiency for the country by 2019, with part of production oriented towards exports.

Developing Downstream Projects

The progress of the downstream development relies primarily on the existing facilities. Egypt's petroleum sector owns eight large petrochemicals projects with investments worth almost $7 billion and a total capacity of about 4.5 million tons per year of products, according to a September 2016 report by Plastics News Europe website. The projects are located in four regions including Port Said, Suez, Damietta, and Alexandria.

In 2015, Egypt's Prime Minister, Sherif Ismail, announced that an allocation of $14.5 billion for the five-year plan was approved for the downstream sector in the country. The chief attention was then clearly directed towards the expansion of the existing refineries as out of this investment package around $12.5 billion were allocated to the refining sector alone, and a bulk of $1.9 billion was earmarked as a total investment in the ETHYDCO project only.

Currently, the country sees "a number of ongoing projects in the petrochemical sector with some expansion and development of the existing refineries as well as the construction of several new ones," Eng. Mohamed Badr explained, including "a project launched with Middle East Oil Refinery (Midor), Hydrocracker in Asyut that is under engineering, a new refinery in Mostorod." "These are deemed very important as they will monumentally advance the sector in a unique way."

Hence, in 2016, the Egyptian Ministry of Petroleum adopted a multifaceted strategy to secure Egypt's oil and natural gas needs. The path towards this goal was to seek further expansion of the petrochemical facilities and thus maximize the added value, which would eventually result in transforming Egypt into a regional center for energy.

In July 2016, the Egyptian Ministry of Petroleum and Mineral Resources sought to invest $1.6 billion in an expansion project for Midor's refining facilities. It is forecast that this project will increase the refining capacity to produce 160,000b/d worth of products, up from the current 100,000b/d. The expansion is set to be completed during Q1 of 2019, which is an ambitious and major downstream project in line with the emerging government's modernization strategy.

Furthermore, August 2016 set a new milestone for the Egyptian downstream sector when President Abdel Fattah El Sisi inaugurated the petrochemical complex of Egyptian Ethylene & Derivatives Company (Ethydco) with a total annual production of 480,000 tons of ethylene and at the initially targeted investment of $1.9 billion.

Another expansion project at Misr Fertilizers Production Company (MOPCO) was also initiated in the first half of 2016, with an investment of $1.96 billion, and a total annual production rate of 2 million tons.

Modernizing the Downstream Sector

These projects are a cornerstone of Egypt's newly inaugurated Modernization Program, as Oil Minister, Tarek El Molla, revealed in his presentation at the US Business Mission Forum in October 2016.

Part of the downstream section under the Modernization umbrella is the country's second private refinery after Midor, the Egyptian Refining Company (ERC), a subsidiary to El Qalaa Holding Company. It is set to start production in 2017 with an investment of $3.7 billion and a production capacity of 4.2 million tons. This would make ERC the largest petchem facility in Egypt. The firm is set to meet domestic consumption by producing 2.3 million tons of diesel, 800,000 tons of high-octane gasoline, and 60,000 tons of jet fuel, in addition to unspecified amounts of butane gas and other products.

These pioneering action plans reflect on the government's efforts to address the increased demand of refined oil products in the local markets and further curb net annual imports to the country.

Understandably, these goals cannot be reached without an overhaul re-assessment of the status of the downstream infrastructure, which is a necessity to draw a precise picture of the most efficient ways to develop the sector with concrete individual steps.

The Modernization Program therefore looks at the ways how to improve infrastructure in place and enhance its capacities, while capitalizing on the present units. The Oil Ministry plans investments of almost $500 million for receiving, transfer, and trading of petroleum products in Egypt. The new program is searching to answer questions such as 'How to best utilize the existing infrastructure to maximize the potential on the implementation level.'

Part of this investment package in the amount of $22 million was dedicated to a new 87km pipeline from Petroshahd's charging area to crude oil receiving station at Qarun Company's fields, including Dahshour, which was opened in late November 2016. The pipeline carries 19,000 b/d of oil and the Minister of Petroleum and Mineral Resources, Tarek El Molla, launched the project to establish an additional unit. In return, this improvement is expected to boost the efficiency of the main refinery belonging to Qarun Petroleum Company.

The Egyptian oil and gas sector visibly aims to secure local needs of petroleum products and hydrocarbon demand. Developing Egypt's refineries through as many as eight projects comes at a total cost of around $8.6b, stated Minister El Molla during his meeting with Canada-Egypt Business Council (CEBC) and the Egyptian Council for Sustainable Development (ECSD) held in Cairo in December 2016.

The core of the Modernization Agenda in the downstream sector thus seeks to optimize the existing cycle of refining processes based on the actual market supply-demand dynamics.

Downstream's Ambitions

The Modernization Program provides a useful framework for these ambitions as it establishes grounds for an effective approach that can bear significant results in an intended timeframe. Hence, efficiency is a key principle that permeates the overall industry efforts and runs through the entire downstream segment as well.

The Oil Ministry is currently undertaking assessments based on preliminary diagnostic analyses to "streamline the existing platforms with an outlook for the next five to ten years," noted to Egypt Oil&Gas, Osama El-Saadawy, Marketing Manager at Oil&Gas Skills (OGS).

The Egyptian industry thus talks about the optimization process that would help use the full capacity of the eight state-run and two private refineries in an efficient manner that will imply introduction of new technology transfer across the sector and evaluation of cost impacts.

No one would be surprised to find out that the industry's utmost objective is profitability. This can be easily achieved when the downstream players would aim for the highest production standards according to international parameters defined by various entities such as the American Petroleum Institute.

"The flavor of modernization," as Osama El-Saadawy put it, thus "seeks to maximize potential of the refineries, some of which need a complete rejuvenation, in order to create a healthy environment." Such conditions are more difficult to establish if the factories are destined to rely on old technologies, outdated equipments, low production capacity, and insufficient quality of products. Nonetheless, the Oil Ministry insists that it will break the spell and build up stand-alone profitable and self-sustainable units. Foreign investors will thus soon see the performance of the downstream sector improving in leaps.

But "this scheme and technology bear their own costs that contributors may want to share with the government through public and/or private funds or through general stockholders' equity from the stock market," El-Saadawy added. This would undeniably contribute to a faster implementation of the modernization agenda.

Moreover, another factor may further help to gear up the ambitious process ahead. The Modernization Program teams are looking for ways to sustain the ongoing progress in the downstream sector in the next three to five years. Therefore, one way to hit success and turn it into a sustainable formula is to develop regular reports on market supply and demand and effectively communicate these findings to the investors, noted Program Team Member, Osama El-Saadawy in an exclusive interview with Egypt Oil&Gas. He emphasized this point saying that "these analyses should be communicated to the investors to show how the market is changing in a real time."

Furthermore, the Modernization Program stresses the importance of delivering reports on the refineries' cycles and petrochemical products to all the foreign partners. This implies that the government would need to guarantee a unified platform to store this type of information and allow an access to these data for all current and potential investors in order to smooth out the bidding process for their fresh capital. Communication between the government and foreign IOCs in Egypt remains a priority.

"Petchem factories provide value added and they supply factories with raw materials in addition to the exportation of refined products that bring return on investment for the country that can contribute to further development. The oil and gas sector will thus continuously have a significant impact on the country's progress," stated Eng. Badr, and its downstream sector is a core part of success. With the new Modernization Program, government's adherence to investing $14.5 billion and beyond in refining and petrochemical sectors promises that the country will realize its downstream industry potential, which is a good news for all involved actors.

EGYPT, THE KEY TO THE REGION'S OIL&GAS FUTURE

INSIGHT INTO EGYPT'S ASPIRATION TO BECOME REGIONAL OIL AND GAS HUB

By Amira S. Badawey

With recent offshore gas discoveries in the Mediterranean Sea, such as Egyptian Zohr and Cypriot Aphrodite, in addition to Israeli Tamar and Leviathan, the talk of creating a Regional Gas Hub has become a popular topic in international gas markets. Discussions are motivated with hopes of trading in a win-win situation for both gas producing nations in terms of export revenues, and importing countries in terms of cheaper fuel alternative.

The Eastern Mediterranean (EastMed) area is in the position to become the next location for a global natural gas trading hub. However, the EastMed region is in need of market mechanisms to trade gas in an efficient manner, as well as pricing schemas to determine spot rates. Currently, gas exchange is based on long-term bilateral agreements. Furthermore, the lack of established market conditions has deterred sector development and increased the dominance of certain players within the market. Therefore, creating a regional natural gas trading hub can prove critical to sustaining benefits from the region's natural resources for all involved countries.

There are a number of exporting options for Mediterranean gas including pipelines to Turkey or Greece and liquefied natural gas (LNG) plants in Cyprus, Israel, and Egypt. The most viable option would be to leverage Egypt's existing infrastructure, with the additional supplementary facilities, in order to create a regional trading hub via a gas corridor to southeastern Europe.

Egypt's government understands this potential. It is, therefore, eager to promote the country as a Regional Oil and Gas Hub under the recently announced Modernization Program agenda. The Ministry of Petroleum and Mineral Resources aims to overhaul the national oil and gas sector in order to enhance the country's capacities to stand out in the regional market as the right and one-and-only option for such a hub. As Egypt's Oil Minister, Eng. Tarek El Molla, eloquently stated to media already in August 2016 in relation to the development of the East Mediterranean gas as a whole: "I think our strategy optimally is to position ourselves as an energy hub in the region." In October 2016, the Minister further noted during the US Business Mission Forum in Cairo, that the idea of Egypt as an Energy Hub would leverage the country's central position "in the middle of resource-rich countries and major energy consumers" that would further boost international maritime trade.

With focused efforts, the ministry is strongly convinced that the strategy can materialize this vision in the relatively short term. Hence, for Egypt to soon emerge as Oil and Gas Hub in the region, the Oil Ministry is pursuing the 6th Initiative of its promising Modernization Program. It entails "developing a feasibility assessment to optimize and leverage existing oil and gas transport and storage infrastructure to build a regional hub," as ministry's presentation read.

It is no wonder that the ministry entrusted the role to lead the Hub Initiative Team to such an experienced professional as Eng. Amira El-Mazni, Vice Chairman for Gas Regulatory Affairs at Egyptian Natural Gas Holding Company (EGAS), whose years' long experience and expertise is a guarantee of success.

Gas Demand Trends

As the appetite for natural gas grows, so does the need for trading facilities to ensure consistent supplies. US Energy Information Administration's International Energy Outlook Report for 2016 stated that global consumption of natural gas is expected to reach 203tcf by 2040. Natural gas is undoubtedly the highest and fastest growing source of fuel in the world's energy consumption.

In the MENA region, demand for natural gas has also been increasing, as developing economies turned to the resource to fuel electricity generation and power the industrial sector. This is evident in global indicators of natural gas consumption, with a specific focus on the Middle East and North Africa (MENA) regions. As a result, Bloomberg informed, the region had plans to increase annual natural gas capacity by 58.2bcm in 2021, with the addition of terminals and offshore units. In the cases of Kuwait and the United Arab Emirates (UAE), demand for natural gas has been growing in order to feed their power generation, water desalination, and petrochemical industries. But both countries had to cancel or postpone some of their projects due to the lack of gas supplies, as noted Petre Prisecaru in his paper titled Natural Gas Boom in the Middle East.

In continuous attempts to counterbalance exponentially growing consumption of gas and lacking supplies, countries in MENA, led by Egypt, Kuwait, and Morocco have opted for liquefied natural gas (LNG). They aimed at boosting their import capacities at the time of low prices.

Growing demand for natural gas is not, however, limited to MENA, but extends to Europe. Accordingly, the continent has been considering the importance of Southeast Europe and EastMed regions as part of the European Union's (EU) energy strategy. Bloomberg declared that Enel SpA, Italy's largest utility, perceives North Africa to be a major supplier of natural gas. Eurogas data showed that Algeria, Libya, and Egypt provided 10.4% of the EU's total gas supply in 2012. However, these gas supplies are at risk of interruptions due to militant attacks in Libya and terrorist attacks on Algeria's In Amenas gas project.

Egypt, on the other hand, guarantees safe conduct and highly promising and long lasting reserves, given the 32tcf natural gas reservoir in Zohr field. Therefore, positioning Egypt as a Regional Oil & Gas Hub could alleviate the pain felt in Europe and in the region as a whole by providing a steady flow of both supply and demand based on open market dynamics.

Egypt's Infrastructural Capacities

Indeed "Egypt has a very important role in shaping the landscape in the North African region, the Eastern Mediterranean region, by virtue of its location and infrastructure," said CheironPetroleum Corporation's CEO, Dr. Hany Elsharkawi in The Energy Exchange's report titled The Future for Egypt's Oil and Gas Industry.

On top of that, the country has been blessed with the Zohr gas discovery. Its impact extends beyond the country's geographical boundaries and Egypt's Oil Ministry is determined to build upon this potential in an effective and efficient manner, especially in terms of facilities in place.

Currently, to support the field, Egypt is developing multiple infrastructure projects in Port Said. In addition, the country plans to rely on the existing LNG export facilities in Idku and Damietta for liquefaction, which have been sitting idle. The development of Zohr will primarily serve the Egyptian domestic gas market, making up for a rapid decline in gas production, which has left the country relying on costly imports as it increasingly struggles to meet domestic demand.

As a result, Egypt began importing LNG in 2015 via two floating storage and regasification units (FSRU) docked at the country's eastern shore, which the government purposefully intends to take advantage of. Furthermore, the Arab pipeline that goes from Egypt into Jordan, Lebanon, and Syria represents yet another strong argument for Regional Gas Hub strategists.

As Minister El Molla stated in his speech at the October Forum, the Hub strategy relies heavily on the infrastructures in place such as that of Suez Canal, SUMED, LNG facilities, and pipelines. Osama El-Saadawy, Marketing Manager at Oil & Gas Skills, stated in an exclusive interview to Egypt Oil&Gas that SUMED can be used as a model and Egypt plans "maximizing this economic model" in its entirety. Similarly, the country aims to position the Suez and Alexandria coastal cities as World Class Refining centers.

El-Saadawy convincingly affirmed: "We are in a very hot location that can permit us to serve our neighbors with a variety of activities and products." Hence, the tactic to build upon the existing massive network of facilities that Egypt possesses is the right way to go.

Interconnecting EastMed Gas Reservoirs

Undoubtedly, Egypt would be able to further leverage these facilities as part of the gas trading hub strategy, together with existing capabilities, in the entire EastMed, especially given the proximity of Zohr to both Aphrodite and Leviathan fields as well as to the Cypriot offshore gas reservoirs.

The government can benefit from these facilities for Israeli and Cypriot gas exports, even more so as Zohr's production for the first two years will be

"I think our strategy optimally is to position ourselves as an energy hub in the region."

Eng. **Tarek El Molla**,
Egypt's Petroleum and Mineral Resources Minister

dedicated to domestic consumption. And even then Zohr's production will still provide superfluous exporting capacity that can be used to advance the trading hub.

Osama El-Saadawy, Marketing Manager at Oil & Gas Skills, said that the government is considering Egypt's central location and studying the possibility of establishing additional storage units along the Suez Canal, Damietta, and Delta to service European and Mediterranean countries. "We [Egypt] have the capacity to receive gas and supply LNG."

He further emphasized value-added activities Egypt is equipped to offer to the entire region and thus establish itself as a steadfast partner for EU's energy projections.

Racing in the Regional Gas Corridors

Egypt is, however, not the only export route available to EastMed countries. The regional competition is severe.

Cyprus and Israel are also considering the construction of a pipeline through Turkey, which would act as a transit hub to reach European markets. Although this appears to be the easiest and cheapest option, this solution has stagnated for a number of years due to trilateral political friction. However, the boom in recent gas discoveries has renewed interest in this plan. Accordingly, there has been a round of talks between the Greek-Cypriot and Turkish-Cypriot leaders, as any pipeline from Israeli fields must pass through Cyprus' EEZ.

Moreover, the Turkish parliament has recently approved an agreement on the construction of TurkStream gas pipeline with Russia. This move signifies the tendency of the Turkish government to settle deals with conflicting nations, signaling their willingness to engage in trade cooperation with Israel.

Accordingly, ELektor Magazine sees Turkey as the strongest player to become the gas hub in the region, citing "the volume of its national gas market and its projected growth, as well as the level of infrastructure development and six entry points for pipeline gas and LNG." With the addition of possible pipelines from Kurdistan, TANAP, and the EastMed, Turkey will boost its position to eight entry points, thus increasing and diversifying supply. The Trans Adriatic Pipeline (TAP) would give Turkey at least one inter-connector and one exit point to Greece, thus connecting it to the southern European markets.

However, the publication notes that Turkey's domestic gas production is "very small," accordingly, it depends on LNG imports spot markets in Algeria, Qatar, and Nigeria, while Russia, Azerbaijan, and Iran are its key pipeline gas suppliers. This in turn might inflate the cost of gas from the Turkish hub and accordingly impact the price.

In strong contrast, Egypt will be able to source some gas to its hub from new gas discoveries, such as Zohr, thus economizing costs. Furthermore, unlike Turkey, which still lacks some inter-connectors, adequate storage, market liberalization and gas pricing transparency, and its regulatory systems need to be aligned with that of the EU, Egypt has presented a better balance sheet in terms of its capacities and facilities.

Claims for Regional Gas Hub come in the context of overhaul gas market liberalization measures that the Egyptian government has already decisively undertaken. This is evident in the progressive steps with the ratification of the New Gas Law and the establishment of a Gas Regulator, in addition to the devaluation of the Egyptian pound, which will boost the confidence of investors and traders in the availability of hard currency. Platt's Senior Editor, William Powell agreed, saying: "That is a very important signal for foreign investors, as they want to see the role of government limited to facilitating negotiations with other companies and as a regulator, and maybe doing some major infrastructure work."

Given its potentially prime position in EastMed thanks to the country's infrastructure and liberalized framework, Egypt, is also showing much needed willingness to work with its regional partners for the benefit of all involved countries.

Egypt's Leverage in Regional Cooperation and Beyond

It is paramount for regional countries to cooperate with neighboring oil and gas players in order to maximize their benefit from the existing resources.

Indeed, for Cyprus and Israel to build their own exporting infrastructure will be costly and time consuming. If they do not have access to adequate facilities for gas production, it will be difficult for them to yield returns on investments in the fields, resulting in monumental losses. As GDF Suez Egypt's President and Country Manager, Maqsood Sher, explained to The Energy Exchange: "All of these new emerging countries, they have discovered the gas, but they are not in the same league as Egypt is today in terms of its human resources, technical expertise and the infrastructure."

Regional cooperation shows further complexities of the Oil & Gas Hub strategy. Therefore, Cairo's openness to collaboration puts Egypt's aspirations for regional hub role in positive light.

As Ministry's Modernization Program Team Leader confirmed, Egypt is considering cooperating to a certain level with other players, which "might need a high level of political engagement," as the government has correctly recognized. As a first step, a closer inter-ministerial collaboration may necessarily be taken into account.

On the regional front, Egypt has already taken additional steps to strength ties with its partnering neighbor, Cyprus. The two countries have launched high level communication and as a result signed an agreement for the supply of gas via an undersea pipeline. The deal outlines the political framework for additional commercial agreements that will determine the details of how, where, and when the gas will reach Egypt and how, where, and when it will be shipped for exports.

This Egyptian-Cypriot cooperation will likely set a precedent for similar agreements with other countries via a network of gas pipelines in the region that may possibly involve Greece on the European side, and Jordan in the onshore MENA region.

It is therefore important to continue developing, cascading, and communicating this strategy to other actors; Turkey, Libya, Saudi Arabia etc.

What is more, noted El-Saadawy, Egypt is connected to Africa where "is high level of gas demand and building transportation oil and gas pipeline to Africa might also play a role." This opens a new gate for Egypt to boost its economic stability and capitalize on its existing facilities.

All in all, Egypt as a regional gas nexus is to become beneficial for all concerned parties. Egypt's neighboring gas producing countries such as Cyprus will have a readily available and mature platform to shuttle their gas to Egypt for exports. For Egypt, on the other hand, the country will maintain its role in the region, while adding national revenues from the oil and gas transit and trading schema.

"Egypt has the advantage of being already a mature oil player, having a large number of human resources, who are very competent to do the work. Egypt is very well placed to take this [Regional Hub] role," Maqsood Sher explained to The Energy Exchange.

El-Saadawy sees this strategy as a desired reality, likely to happen in the next five years, as Egypt is working on "Oil and Gas Hub Strategy report that

"We are in a very hot location that can permit us to serve our neighbors with a variety of activities and products."

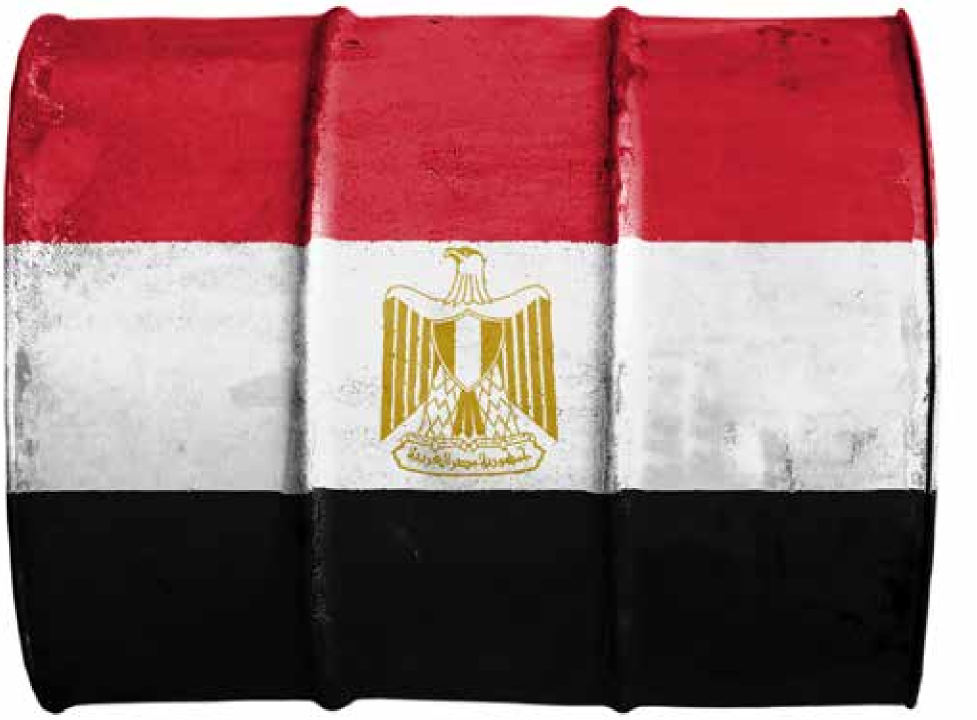
Osama El-Saadawy,
Marketing Manager at Oil & Gas Skills

will be presented during EGYPS 2017."

"This will bring us a value proposition from utilizing the infrastructure, utilizing the regional and geographic location, offering an opportunity for the economic profile to receiving and giving final products and do value proposition to transportation or refining fees."

With the available exporting capacity ready for use and an abundance of knowhow, Egypt holds the key to the region's gas future, beyond any doubt. It remains to be seen how successfully the Oil Ministry will play this card in the regional game.

ANDREWS
MIDDLE EAST KURTH



ENERGY IN EGYPT 2017

A YEAR OF TRANSFORMATION?

Hugh Fraser, Office Managing Partner, Andrews Kurth Middle East

The Challenges

2017 promises to be a year of transformation for the Egypt energy sector. The Minister of Petroleum, Tarek El Molla, speaking at the OTC Conference in Houston in May last year candidly pointed to the challenges the Egyptian Government was facing with IOC debt accumulations, the burden of fuel subsidies and the impact of currency and expatriation of funds concerns among foreign investors. However, only seven months' later the Minister led a strategic forum on the roadmap for establishing Egypt as a regional energy hub. It will be interesting to chart Egypt's progress over the full 12 months' period when OTC 2017 comes around.

The announcement in November that the IMF had given its final approval for a $12 billion funding package for Egypt, while welcome news, brought with it the requirement to float the Egyptian Pound resulting in an exchange rate which started 2016 at EGP 7.815 to the US Dollar and ended it at EGP 18 after almost touching EGP 20. While this brings huge challenges for businesses locked into funding US Dollar commitments the other side of the balance sheet will show that the commercial attractiveness of Egyptian goods, labor and assets for foreign investors has reached a new dimension. The challenges of the IOC debts and fuel subsidies remain and Shell's recent announcement that it has ceased further investment in its Rosetta development and has put the asset up for sale was a timely reminder that the unpaid IOC debts remain a brake on necessary investment.

Positive Progress and Results

However, significant progress has been made in three distinctive areas. First, the deepwater gas projects at Eni's Zohr field and BP's West Nile Delta Phase 1 development remain on track to produce first gas in 2017. With $24 billion being invested across both developments, Egypt has brought in major contracts for the likes of Subsea 7, OneSubsea, and Aker Solutions at a time when other markets have been severely depressed. Second, the recent awards of onshore acreage to Apache, BP, Shell, and Apex with apparent government concessions on the cost recovery mechanisms and relinquishment rules, demonstrated that the country's onshore oil production prospects remain positive. Thirdly, thanks largely to the impact of Siemens-led power production projects, Egypt now has moved into a healthy position of surplus power capacity.

The Deepwater Gas Bonanza

If BP's actions are to serve a barometer in confidence in Egypt's energy future, its acquisition of a 10% share in the Shorouk development, which includes the Zohr field and increase of its interest up to 82.75% in the WND project by acquisitions from RWE bode well, as does Rosneft's acquisition of 30% of Shorouk for $1.1 billion. The exploration prospects for the East Mediterranean continue to excite the international petroleum community and who would bet against Edison, who shared the stage with Eni and BP at the MOC Conference in Alexandria in April, being the next to announce major good news, given it holds the block positioned between the Zohr field and the massive Leviathan fields across the maritime border with Israel.

The Power Generation Mix

While the progress that Siemens has made in the country has been welcome, the downside may well be that the foot "comes off the gas" on other power development projects with larger question marks resting over the timing of the various nuclear, coal and renewables projects, which have been on the drawing board since the 2015 Sharm El Sheikh international investment summit as 2017 commences. The reduced pressure on Egypt's supply and demand dynamics was further demonstrated by the cancellation of the tender for the country's proposed third floating storage and regasification unit (FSRU) as the year came to a close.

Towards a Regional Energy Hub

However, this coincided with a strategic forum led by the Petroleum Minister, which set down the roadmap for Egypt establishing itself as a regional energy hub. This is a logic to this case given Egypt's refining and LNG facilities, the proposed Tahrir petrochemicals complex, the exploration and production activities in the East Mediterranean and the presence to the north of the world's third largest energy consumer, the European Union.

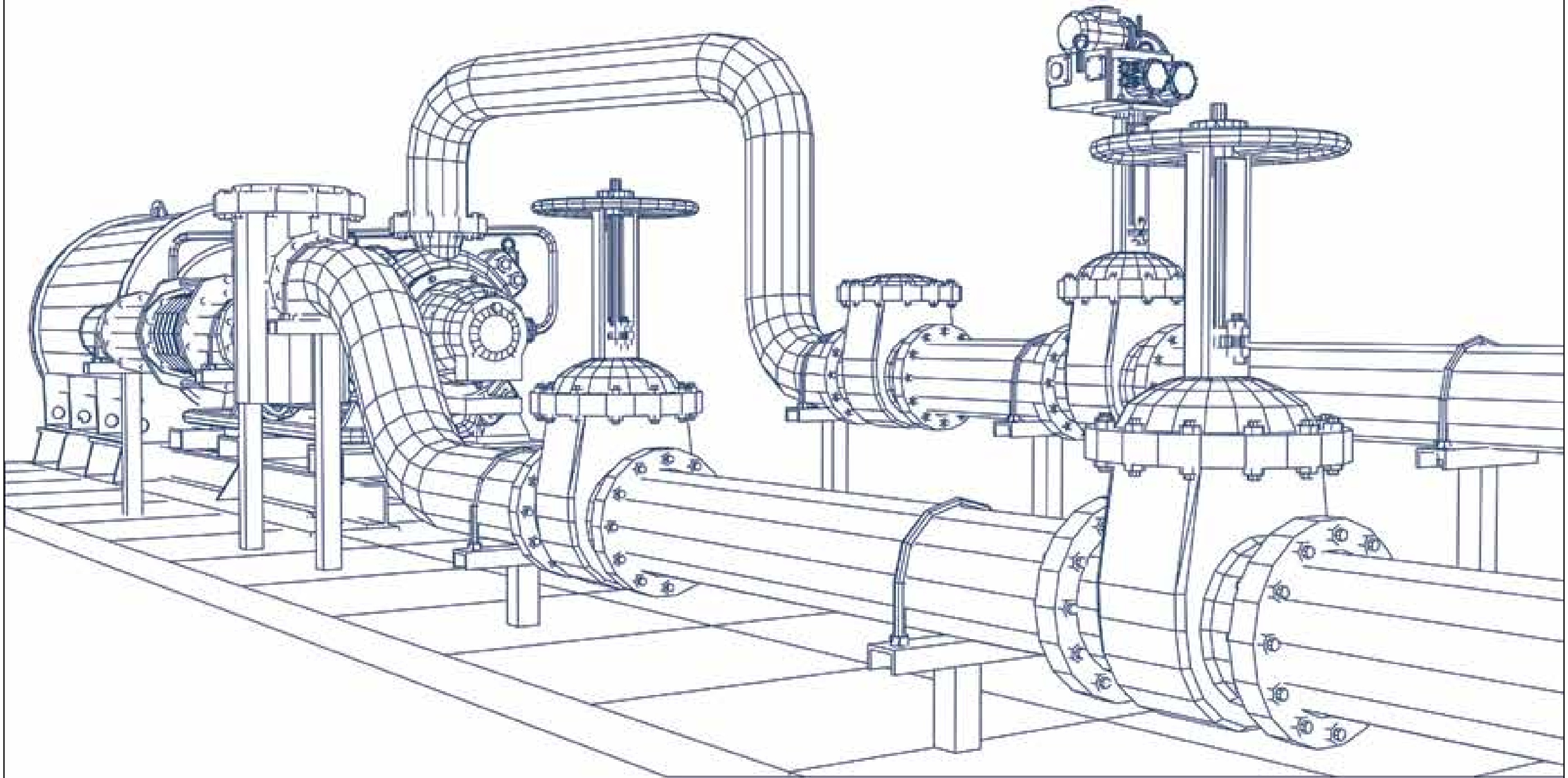
Gas and Electricity Liberalization

On the regulatory front, the Government appears to remain committed to its liberalization plans for the gas and electricity markets. These strategic objectives will offer some of the best opportunities for entrepreneurial Egyptian business to push into the market with the right financial investors and technology partners. These topics will be the subject of two strategic round tables hosted by Egypt Oil and Gas towards the end of the first quarter of 2017, which will examine the details of the recent and proposed Electricity and Gas Laws and the roadmaps for their roll out and implementation. However, these are complex and ambitious programs and the question remains whether there will be major "breakthrough" developments in 2017.

Privatization and the Development Banks

The final key dimension, which must be mentioned, is the Government's pending privatization program with IPOs being referenced for the likes of ENPPI and MIDOR with the objective of raising $10 billion of investment within the next three to five years. The privatization theme is shared regionally in Saudi Arabia and Kuwait, who are embarking on major program. This perhaps highlights the key challenge for Egypt in 2017. If the pending gas bonanza delivers genuine game changing positives for the Egyptian economy by 2020 and the energy hub strategic objective can be achieved within the same time frame, the 2015 conference may yet emerge as the trigger point, which set Egypt on the road to a better future. The key remains as to how projects can be financed and general liquidity in the energy sector improved during the next three years. Privatization might not offer a fast enough and big enough solution and so the focus in the short term must remain on the IMF funding and on the role of the development banks. The European Bank for Reconstruction and Development (EBRD) recently announcement a $140 million funding program, in association with QNB AlAhli Bank of Egypt, focused on SMEs and energy efficiency projects in Egypt. This is a welcome initiative.

In summary, can we look forward to a year of transformation in Egypt in 2017? In the short term it does appear that the "financing" issue will dominate the start of the year, but hopefully the start of revenues from the East Med gas bonanza will be the dominant topic by the year end. The first reference point will be DMG's Egypt Petroleum Show in Cairo on 14-16 February. It would be fitting for Egypt's energy hub ambitions if this event can emerge over the next five years as the "ADIPEC of North Africa," but in the short term it will be our first major opportunity to check in on how 2017 is progressing.



ERDOGAN'S
DELUSIONS OF ENERGY GRANDEUR

WHY TURKEY WILL NOT ACHIEVE 'ENERGY HUB' STATUS

By Constantinos Papaloucas, Associate with the Environment and Natural Resources Program (ENRP) at Harvard's Belfer Center for Science and International Affairs

With Erdogan's democratic countercoup enforcing temporary order and the recent rapprochement with Russia and Israel, Turkey's expected next step is to focus on its long-standing aspiration: to become a regional energy hub in the Eastern Mediterranean (EastMed).The US-Turkey negotiations for the conditional use of Incirlik Airbase by NATO forces, ongoing since 2003, and the recent EU-Turkey deal on migration have both reaffirmed that Erdogan's Turkey would not miss an opportunity to extract political rents from the West and monetize its geographic monopoly with morally ambiguous political demands. Erdogan's interpretation of a Turkish energy hub, coupled with Western inertia, has even allowed Islamic State to "enjoy Turkish money for oil for a very, very long period of time." But is a Turkish energy hub a realistic target that would help the West diversify its energy imports, or is it just another Trojan horse amplifying Western dependency on countries that use energy as a weapon?

Misconceptions and Reality

During a period of great political asymmetry between Brussels and certain EU Member States, Europe's heavy reliance on cheap and politically leveraged Russian gas provides the ground for Turkey to convert this Russian monopoly into a Turk-Russian duopoly. The new gas finds in the East-Med have initiated an intensive discussion on emerging regional gas hubs and Turkey has been proclaiming for year sits readiness to take on such a role. Little do the prognosticators and their political cheerleaders though know, an energy hub and a transit country are two different things.

On January 28th, EU Energy Commissioner Cañete gave further political legitimacy to Turkey's unbounded energy optimism during the Turkey-EU High Level Energy Dialogue meeting. He defined Turkey as the perfect location for a potential energy hub, citing the country's convenient geographic position for both liquefied natural gas (LNG) and regional gas pipelines. However, as LNG cargo can be shipped easily to any country in the region —especially to those few with the necessary infrastructure in place—what remains to be seen is whether Turkey satisfies the primary conditions to operate as an energy hub.

Domestic Ills

First, a gas hub is a trading platform for either physical or financial transactions (or both) that facilitates gas-trading activities. It requires a liberalized and a deregulated market where suppliers are free to import or produce energy and customers are free to choose their preferred supplier. What's essential for an energy hub to emerge is gas-on-gas competition. Turkey, however, has a poorly regulated energy sector with its vertically integrated state-owned Petroleum Pipeline Corporation (BOTAS)—for many an Ottoman version of Gazprom—dominating the entire natural gas sector. According to the U.S. Energy Information Administration, BOTAS accounts for approximately 80% of natural gas imports. It builds and operates pipelines, and controls most of the wholesale market and exports of natural gas. Turkey's lethargic liberalization agenda leaves no room for competition, which seriously hinders Turkish aspirations. The Natural Gas Market Law (NGML) 4646 enacted in 2001 required that BOTAS be legally unbundled and broken up into separate legal entities for natural gas transport, LNG terminals and storage facilities, trading and marketing. Despite the establishment of the supposedly independent Energy Market Regulatory Authority (EMRA), numerous drafts and laws dictating the unbundling of BOTAS, little has changed: Turkish policymakers neglected to set binding timelines for implementation, and to stop granting politicized extensions. Therefore, without an essential market liberalization policy, with protectionism in the form of entity-specific state-sponsored subsidies and institutional resistance to a cost-based pricing system, how can competitive markets be fostered and single hub pricing emerge?

The Russian/Gazprom Dimension

BOTAS was required by the NGML to gradually transfer import contracts until its market share decreased to 20% of annual consumption. Yet as of 2015, the figure was immovably stuck at 80%. What BOTAS essentially did was transfer import contracts of Russian gas to seven companies in two waves. Upon closer inspection, Russia's state-owned Gazprom controls both Bosphorus Gaz (which retains roughly 5% of Turkish consumption) and Avrasya Gaz, while it filed an application with Turkey's antimonopoly regulator to buy a controlling interest in Akfel Gaz (which holds another 4.5% of Turkish gas consumption). The seven companies (Figure-1) were in January's headlines following the Turko-Russian dispute, resulting from the downed Russian aircraft near the Syrian-Turkish border. In line with the resulting Russian economic sanctions, Gazprom notified the companies that they were no longer eligible to utilize the 10.25% discount in effect since January 1, 2015.When Turkish companies refused to pay the entire bill, Gazprom reduced gas supplies by 10%.For the record, that same discount was also promised to BOTAS, but Gazprom had been delaying implementation, insisting that Turkey first approve the proposed TurkStream project. This development compromised BOTAS' effort to reduce the gas price Energy Minister Albayrak had announced. In summation, while BOTAS' market share has barely moved over the course of fifteen years, the symbiotic relationship between Gazprom and BOTAS—along with its "remoras"—has grown into a parasitic one because of Turkey's cronyism and its self-serving interpretation of liberalization.

Neottoman Extractionism and Erdog-Anomics

Daron Acemoglu, the Turkish-born leading MIT economist and author of "Why Nations Fail" puts it this way: "the Turkish Republic … is very continuous with the Ottoman Empire." He cites a persistent concentration of power in a small group, and the extractive political institutions that left the Turkish nation ill-equipped for economic and social growth. The extractive nature of the state was built on monopolizing political power and on suppressing any form of contest for such power. In the absence of systematic institutionalization, these two factors create an enormous vacuum where checks and balances should be.

The striking economic growth that Turkey underwent in the early 2000s was the result of reforms mandated by the World Bank following Turkey's 2001 economic crisis. With the weakening or reversal of many of these reforms, the pace of economic growth has slowed. Unlike the huge credit expansion, the spike of manufacturing production was not sustained because of the lack of investment due to cronyism. Economic institutions are embedded in political institutions, the infrastructure investments are under the monopoly of the right connections (e.g. Anatolian-tigers), and the judicial system is now completely politicized leaving no space for independent adjudication.

Under Erdog-Anomics, the systematic politicization of the business sector hinders both innovation and the reallocation of resources from less to more efficient firms, thus not allowing new blood into the economy that would generate growth."Gradually, the de jure and de facto control of the ruling cadre intensified, amplifying corruption and arbitrary, unpredictable decision-making." As a result, and regardless of the incentive package expected to be introduced soon, foreigners no longer feel secure investing in Turkey long-term and consequently the extractive Turkish economy seems to be running out of steam.

Therefore, it remains highly doubtful whether Turkey has ever been committed to establishing a well-functioning legal and regulatory framework that could eliminate or at least contain the lack of transparency in the Turkish domestic market. Only such vital market reform can create the necessary deepening of its natural gas markets.

Existing Contracts Prolong Status Quo

Despite Washington's preoccupation with liberating Brussels from Gazprom's monopoly, Turkey is Russia's second largest natural gas importer after Germany, while Russia remains Turkey's largest gas supplier with sales worth around $6.5 billion annually. This formidable economic interdependency is not as fragile as initially thought. The relationship is built upon long-term gas contracts controlled via international regulations with heavy indemnity obligations for breach of contract without legal justification. Due to sizeable upfront sunk costs associated with these capital-intensive investments, long-term contracts are signed for 20-25 years including a "take-or-pay" clause that hedges risk for the seller. Therefore, as Turkey cannot stop its gas purchases from Russia without paying the take-or-pay fee, Russia cannot cut gas to Turkey. Hence both countries—unfortunately for all the aspiring LNG suitors—will have to live with this unpleasant marriage. This explains why Erdogan is currently seeking normalization of ties with Putin.

Limits of Liquefied Natural Gas (LNG)

As for proponents who view LNG as a liberator for gas dependent countries, Turkey was until recently importing 4.4billion cubic meters (bcm) from Algeria, 1.2bcm from Nigeria and buying a handful of additional LNG cargoes from spot markets.

The main reason that LNG never constituted a substantial part of Turkish gas imports is because its price is not competitive compared with piped Russian gas. According to the IEA, Turkey's annual LNG regasification and LNG storage capacity are substantially limited. This underinvestment is mainly attributed to subsidies and to weak market competition, related to the entrenched regulatory advantages that BOTAS has accumulated over the years. Could additional LNG imports be a catalyst for the liberalization of the Turkish market? After the downed Russian aircraft incident, a global chorus of strong voices was urging Turkey to exploit this opportunity and replace its imported Russian gas with LNG. In an ironic development on December 16th 2015, Turkey's EMRA unjustifiably revoked the licenses of 13 companies issued for various activities, including LNG importing. Two weeks prior to this event, BOTAS and the Qatari national petrol company urgently drafted a memorandum of understanding for a long-term LNG contract with an initial supply of 1.2bcm. According to Erdogan "Qatar Petroleum has had a bid to invest in LNG in Turkey for a long time… Both the private and public sector have LNG storage facilities. This one will be an investment between governments." BOTAS therefore remains the commercial arm of neo-Ottoman extractionism in the entire energy space.

No Need for Another Ukraine

What's raising serious concerns today is the deep disconnect between political rhetoric and policy reality. At a moment where Turkey's energy sector contrasts starkly to the European Gas Target Model (GTM) vision of liberalized EU Gas market, the EU Energy Commissioner observed "major developments to have taken place in the country since 2007," concluding that "the point that Turkey has reached is very conducive with the opening of the energy chapter of Turkey's EU accession process." But without the precondition of a liberalized marketing place, how can a hub "boost competition and efficiency" when Turkey faces so many regulatory discrepancies and demonstrates no political will to do otherwise? Thus, the perception that an energy hub should be viewed as a simple real estate case based on the projected increase of domestic natural gas demand and a number of dubious projected pipelines area the very least worrisome. Would the accomplishment of any of these projects justify Turkey's role at a minimum as a transit country or will most of them be cancelled and follow Nabucco pipeline's destiny, in full accordance with the Babylonian king's lyrical remorse?

The evolution of Turkey's doctrine of "zero problems with neighbors" into "zero neighbors without problems" remains gloomy, despite Davutoglu's resignation and the recent rapprochement with Israel and Russia. Under these circumstances, the creation of a Turkish "Transit Gas Hub" entails significant risks for both sellers and buyers that should be included in the cost calculus. Foremost, the recent pipeline attacks that led to costly interruptions in oil and gas supply are raising security costs for protecting such massively concentrated infrastructure. Second, the cost of peace between Kurds and Turks after the events in Syria is evolving into a "Lernaean Hydra" for the Turkish army. Finally, the cost of political uncertainty under Erdogan's administration is constantly rising, and can rise even further since he would never hesitate to extract heavy concessions from the West by using energy as a weapon.

The much-needed gas from the East (Near and/or Middle) will eventually reach its final European destination via alternative and less risky ways. As with Nordstream-1 and 2, the costs to contain these risks may be far greater for investors than the construction premium needed to avoid the trap of turning Turkey into another Ukraine. The Herculean task for the EU, though, is to first justify and then deal with the monopolistic character of neo-Ottoman extractionism. Primarily, it must deal with the lack of competition and transparency in the Turkish domestic market, and the breaking up of BOTAS' monopoly. Would additional EU support and the opening of the Energy Chapter help? With Erdogan's government at the helm, this remains doubtful.

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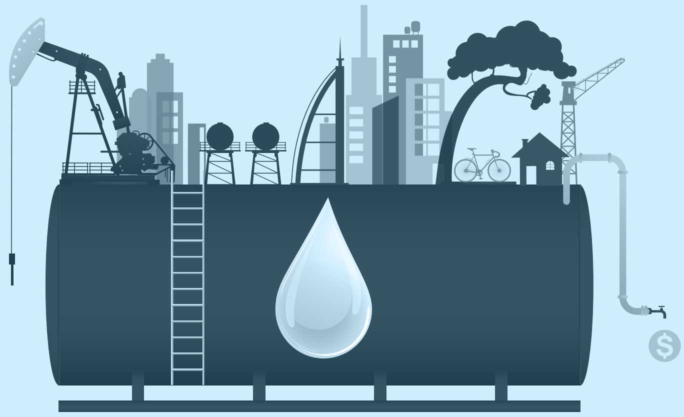
ENERGY SUBSIDIES AS A CAUSE OF EXTERNAL DEBT



Energy subsidy in the Egyptian budget is still pressuring the current Egyptian government and its predecessors. All the country's officials should understand that the energy subsidy is one of the main factors affecting the budget shortage and increasing the Egyptian external debt especially because of miscalculating financial statements. Egypt's budget is based on the estimation for the petroleum price at $40 a barrel and the US Dollar exchange rate at EGP 9. Thus, after the devaluation of the Egyptian pound and the increase of US Dollar exchange rate, the energy subsidies cost will increase.

Energy subsidies have always been in a crisis in Egypt. Whenever the government solves the annual subsidies problem, other problems erupt to prevent reducing them. The most recent obstacles to delay lifting subsidies were the devaluation of the Egyptian currency rising to US Dollar at more than EGP 18, which affected the costs of buying and importing petroleum derivatives. Egypt has to increase the EGP 35 billion allocated in the budget for energy subsidies, which is an unrealistic amount.

I think that the financial support is the most suitable solution and it is better than subsidizing consumer goods and petroleum derivatives in order to face the economic circumstances in Egypt and to prevent the waves of anger of the Egyptian street. The government should set mechanisms for energy subsidies and explain this mechanism to the public, while it follows a certain program to protect the rights of low income citizens especially as the petroleum products are still present in the local market despite the fuel prices increase.

Solving the energy subsidy crisis is the first step in the path to transfer Egypt to an energy regional hub in the Middle East, especially as the value of the energy subsidy is exhausting the national economy. Energy subsidy is further threatening the country's budget as Egypt imports not less than 40% of petroleum products per annum in order to cover local market demands that would avoid any crises in the Egyptian governorates.

Yet, in order for this to happen, Egypt must restructure the subsiding system as it is not fair for the country to offer subsidies for 6 million vehicles that represent around 2 million families, who get EGP 35 billion yearly in the budget for subsided energy. Egypt has 19 million poor families who really deserve the money used in subsiding energy. Yet, the new fuel prices that should be applied must not harm the low income families.

In the end, I want to urge the governmental authorities to protect the poor and to explain publicly who deserves subsidies. Egypt should take serious measures in dealing with rich citizens and lift subsidies from them and use these subsidies in supporting deteriorated sectors.

By Eng. Mohamed Shoeib
Energy Managing Director at Al Qallaa and Former CEO of EGAS

PEOPLE DEVELOPMENT ROUNDTABLE

Communicating & Engaging in New Solutions for Developing Human Capital

By Nataša Kubíková

The People Development Roundtable held under the high patronage of His Excellency Eng. Tarek El Molla took place in Cairo on 13th December 2016. The roundtable took upon itself a mission to identify alternative ways to transform mechanisms for building human capital for Egypt's oil and gas industry.

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In the opening speeches, the key partners Egypt Oil&Gas (EOG) and Oil&Gas Skills (OGS) defined the framework of the debate. According to Eng. Mohamed Badr, Oil&Gas Skills Chairman, "people development is the most important element of any serious development plans, which can be achieved through two positive tools; education and training." In fact, "people development has become mandatory for Egypt's future development."

"We [the government] have recognized that building a world class human capital is one of crucial assets which will remain a cornerstone of the oil and gas sector modernization success," as noted by Eng. Mohamed Mounes, Undersecretary for Production, Ministry of Petroleum, who delivered a presentation by Oil Minister, Tarek El Molla.

Indeed, "equipment and assets have no value without people," stated Eng. Tarek El Hadidy, CEO of the Egyptian General Petroleum Corporation (EGPC), and expressed hope that the event will present some directions to work towards in the future, with the help of Egyptian industry's partners.

INDUSTRY DETERMINED TO JOINTLY DEVELOP PEOPLE

"The joint participation [at the debate] clearly shows the importance of the subject in the eyes of the government" as well as other companies, added Brian Twaddle, Country Manager and Director at TransGlobe Energy, who co-moderated the roundtable.

As he explained, "the performance of the organizations, be it government entities, IOCs, service companies or JV companies is determined by the skills, competencies, motivation, and the behavior of the people," especially in the environment when all operators in "Egypt must compete for investments in the global sector for the available funding globally has been reduced by over $300 billion per annum for the past two years; that is more than 40%." "Anticipation is that this level of reduction is to continue into 2017. Therefore, there has never been a more important time to talk about the development of our people."

Moreover, it is imperative to adopt an active approach to finding viable solutions for people development. Through such a shift in attitude "we would stop asking merely about the challenges, and instead turn our attention to solutions, and present a more productive puzzle as to how to implement them," stressed Eng. Mohamed Fouad, EOG Managing Director. Such an approach will serve the benefit of the industry best.

Yet, an agreement about and implementation of new solutions cannot be achieved "without enhanced communication and committed engagement" of all involved actors, the public and private spheres alike, as these two factors will define a success or a failure of the attempts, as Eng. Fouad further noted. The industry thus calls for "an inflow of diverse ideas, which we would analyze through a comparative perspective to seek the most suitable models we can apply," he added.

MOVING AHEAD IN 2017

Therefore, according to the Oil Minister, represented by Eng. Mounes, "we plan to design an efficient people development agenda to make the best use of the existing human capital and expertise. It aims to put up an efficient and comprehensive talent management system that will be formed by and for the people in the industry through training and exchange programs that will set benchmark practices for talent management."

In 2017, "the focus of the Executive Technical Committee will move towards supporting the ministry and the government with the implementation of the new sector strategy and the modernization program," said Twaddle.

The Committee further advocates for "the participation of the younger generation in the sector, which is key to our success, as involving them in our work will not only inject new ideas, energy and drive into the efforts, it will also offer excellent development opportunities for them." Inclusion is one of main concerns that the sector addresses.

Overall, "we have a lot of challenges concerning human resources management system such as overstaffing, lack of managerial skills," according to Osama Mobarez, Undersecretary for Minister's Technical Office, Ministry of Petroleum, but these will be tackled through a new modernization scheme.

Among the present obstacles, Osama El-Saadawy, Marketing Manager at OGS, highlighted low capacity building strategy and inefficient recruitment process. He pointed out that while "technical capabilities are well developed, management skills require further development support." Similarly, "programs to identify and develop leaders have been initiated, though their impact thus far is uncertain and not aligned with succession plan."

El-Saadawy thus presented concrete structures of the People Development initiative within the Egypt's Oil and Gas Sector Modernization Strategy and Roadmap. Modernization of people development adopts "program objective, which is to improve overall talent management processes to better equip the sector with a qualified and capable workforce." This can be achieved by numerous measures. One of them aims to "refocus hiring process on recruiting qualified candidates and addressing capability gaps, another to launch detailed career progression plans for technical and managerial tracks, yet another targets an effective talent development system to upskill employees and train leaders," concluded El-Saadawy.

PRIVATE AND PUBLIC SECTORS' ROLE

"Private sector and JVs play one of the most critical part in moving our industry forward," said David Chi, Vice-President and General Manager, Apache, highlighting companies' impact in three key areas: effectiveness and efficiency of the compensation system; selection of skilled people; and transfer of knowledge within organizations.

SYSTEM OF COMPENSATIONS

In Egypt, the private sector and JVs seems to have a major say in improvements of compensation systems to see if these are working effectively "in terms of incentivizing employees to further their career development," as Chi put it. "It has been proven that compensating for high performance is a real effective motivator."

Yet, speaking of financial incentives, Mahmoud Shawkat, Director Sales and Marketing NAF, Baker Hughes, noted that the current system is not effective, because most people in the industry are guaranteed their 'bonus pay' due to lower pay scheme they are on," which instead can become a

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ENG. TAREK EL HADIDY
CEO of the Egyptian General Petroleum Corporation

"We plan to design an efficient people development agenda to make the best use of the existing human capital and expertise."

ENG. MOHAMED MOUNES
Undersecretary for Production, Ministry of Petroleum, on behalf of Oil Minister, Eng. Tarek El Molla

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"There is also an element of numbers, because our ability to offer competitive pays within JVs is to a great extent influenced by the numbers [of employees] we carry."

ENG. GASSER HANTER
Vice-President Egypt, Country Chairman and Managing Director, Shell Egypt

part of their monthly salary structures.

In fact, incentive should not represent a guaranteed bonus pay, but rather become something extraordinary. "Incentive is only made to boost the energy of the people working in the industry to drive their best knowledge, practices, and output," further clarified Shawkat, therefore this should be bound to performance based on goals for which various percentage rates of an incentive are calculated. "We need to set a correct and an attractive incentive pay scheme for the people to boost their energies and reach the set goals."

Eng. Kamel El Sawi, President of Kuwait Energy Egypt, seconded the opinion that "the incentive scheme should be linked to performance," yet, he made a clear distinction between different compensation schemes within the private sector and JVs, given the different financial backing each of them has. There are also therefore different mechanisms for assessing performance of people within private and public companies.

Further commenting on the evaluation processes and compensations, Eng. Nabil Salah, Chairman & Managing Director, Gupco emphasized that in Egypt, JVs do have measures of staff assessment with bonus schemes. "We [at Gupco] are putting goals for each quarter and review them, which may not be common in all the JVs." He then proposed an open revision process of these evaluation mechanisms among all the JVs that may be beneficial in the long run.

In contrast to a narrow focus on payments, Eng. Gasser Hanter, Vice-President Egypt, Country Chairman and Managing Director, Shell Egypt, approached the position of JVs from a different angle by looking at the issue of retention. In his view, "one of the problems in JVs is high investment in training and competence development of staff, but JVs cannot compete with the private sector." "There is also an element of numbers, because our ability to offer competitive pays within JVs is to a great extent influenced by the numbers [of employees] we carry," which needs to be looked at within the efforts to design effective compensation payment structures.

The industry thus needs to attend to the issue of retention after having invested in training of staff that goes lost to other players, while balancing out "overcompensation" that are implied.

Furthermore, as there is a big difference in salary schemes in the private sector and in JVs, "we should change our culture and mindset to evaluate our people in JVs,

despite that "budget limitation is a big issue in JVs," said Hussein Farghaly, Operations Support General Manager, Pharaonic Petroleum Co., commenting on the subject from the audience.

From yet another perspective, James Pendergrass, Deputy Exploration Manager and Board Member in Petrosilah, critically analyzed the subject and highlighted the need to make "a distinction between compensation and incentive." He emphasized a crucial point saying that "we need to address, as the industry, that what we pay our very good people in our offices is a legitimate salary that is not being uplifted by compensation bonuses. We need a good compensation and then the incentive kicks in for extraordinary performance."

Other participants noted that compensations do not necessarily have to be only in the form of finances,

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ENG. OSAMA MOBAREZ
Undersecretary for Minister's Technical Office, Ministry of Petroleum

"People development is the most important element of any serious development plans, which can be achieved through two positive tools; education and training."

ENG. MOHAMED BADR
Oil&Gas Skills' Chairman

"Better communication between the industry and universities will define certain courses and definite numbers of graduates that are required to fill skill shortages of the industry."

ENG. ABED EZZ EL REGAL
Vice Chairman for Production and Fields Development, EGAS

but come in different shapes and sizes. Training can also serve as a form of incentives in the private sector and within JVs. For instance, "Apache has a comprehensive training program," as David Chi noted, in which employees are acquiring new knowledge "not only through classroom training, but the most important part is for them to take on different responsibilities i.e. on the job training." Hence, the organizations play an important part also in developing people across the value chain.

In addition, Brian Twaddle from Transglobe noted that "there is no direct correlation between money and performance." Instead, he stated, that "one of the ways that stimulates performance is opportunities, yet, there is a lack of them within very heavily staffed organizations." Therefore, "we have to create opportunities for people… to perform, to innovate, to do new things, to change the way we work, and to drive better team performance."

Eng. Sami Amin Egypt Managing Director, Subsea7, seconded this view saying that "building a succession plan and worrying about leadership mean that we need to think how we can make the industry more attractive."

As demonstrated by Transglobe, a merger can be one of the ways available for entities to generate new opportunities that would allow people grow responsibilities, develop best practices, transfer knowledge and bring in a whole new energy.

TALENT ACQUISITION

The debate on selecting the right talents for jobs was opened with a proposition that the oil and gas companies tend to often consider talent acquisition to be identical with the recruitment, as Mahmoud Shawkat, Director Sales & Marketing NAF, Baker Hughes, pointed out. As he further explained, "recruitment is about filling vacancies, but talent acquisition is an ongoing strategy to find specialists, leaders, or future executives for a company."

As it appears, "many companies do not have strategy for talent acquisition, they hire people on rolling basis when vacancies open," said Samir Abdel Moaty, Country Manager, Egypt, Rockhopper Exploration. Therefore, confusing "strategic nature of talent acquisition" as a long-term planning with short-term recruitment processes is counterproductive. In fact, according to Shawkat, organizations should dedicate between three to six months for acquiring new professional talents, which may boost their human capital and output.

Further elaborating on the selection processes, Osama Abdel Halim, Egypt & Libya Area Manager at Halliburton, said that interviews as a method for finding new people can be insufficient. Hiring should rather be "followed by a probation period accompanied with an evaluation of hired employees' performance." The competence-based hiring processes appear essential to identifying talents based on the scope of their knowledge, skills, and abilities to perform specific jobs.

Yet, this necessarily requires the industry to devise Competence-based Management System, which is currently lacking in most of the companies. Organizations need to introduce "Competency Mapping," stated Kamel El Sawi, Kuwait Energy Egypt, which is "a process of identifying what is required in skills, knowledge, attitude, behavior, and abilities to fill a specific job and do it effectively." It is only in this way that organizations will be able to

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Chairman & Managing Director, Gupco

"In implementing quality training it is important to follow the international standards with credited and certified programs based on the industry needs."

GEOLOGIST MOSTAFA EL BAHR
Oil&Gas Skills

"[The answer to skills shortage is] not in reducing the number of university graduates rather to streamline education curricula to produce competent people."

ENG. OSAMA ABDEL HALIM
Egypt & Libya Area Manager, Halliburton

evaluate their employees' capabilities in order to "not waste a good technical talent by forcing him to take over a managerial position," as Halim argued.

"If we have talent acquisition strategy, this will help us to identify the talents, internally and externally, which might lead us to use professional help of third parties," Samir Abdel Moaty from Rockhopper Exploration stated. External consultancy would then contribute to retaining talents and in effect minimize finances that companies invest in training people that leave their posts. Hence, Abdel Moaty seconded Halliburton's Manager, saying that "finding the right match between the talent and the job is critical to retain these talents." Moreover, as Walid Nossier, Country Manager, Egypt at Weatherford, shared, companies can collaborate in exchanging pool of trained talents. "We can provide some CVs of those [talented people] that are trained from JVs for other organizations to select from them."

Searching for talents through high standard human capital development schemes will undoubtedly allow companies to find much desired innovators and changers. As Brian Twaddle noted, "our industry has changed dramatically over the last couple of years. We have to change, and we need to recruit innovators as well, in addition to desperately needed technicians, geologists, HR people, etc. Talent acquisition programs have to recognize this."

While searching for talents, universities are inevitably one place to look. In terms of selecting well-trained people, collaboration with universities was raised as an important factor that defines the role of the private sector. Therefore, improved channels of communication between the industry and universities are inevitable. Eng. Abed Ezz El Regal, Vice Chairman for Production and Fields Development, EGAS called for "better communication between the industry and universities to define certain courses and definite numbers of graduates that are required to fill skill shortages of the industry."

In this way, the currently missing link between supply and demand of talents will be created and effectively sustained. Accordingly, "we may need to resize the current number of 600 graduates if there are no jobs available for them," noted Mahmoud Shawkat from Baker Hughes. In this regard, Eng. Mounes from the Oil Ministry emphasized, that "the minister has sent out a memorandum to the authorities for higher education asking for reducing the number of petroleum engineering students by around 50%."

However, some industry leaders argued that the answer to skills shortage is "not in reducing the number of university graduates rather to streamline education curricula to produce competent people," as Osama Halim emphasized. The oil and gas companies should collaborate with universities' faculties regarding specific courses that are required in the field. The universities would thus release not only educated graduates, but also skilled talents, the ones the individual industry sectors need the most.

And in this lies a role for IOCs that can help the sector. According to Eng. Kamel El Sawi, President of Kuwait Energy Egypt, "we as Kuwait Energy initiated a talent program three years ago mainly for young professionals" through efficient communication with universities to successfully hire graduates.

It is truly essential that "the government needs to communicate with external bodies, one of them being universities, in order to solidify manpower planning,

"We all need to tap into this program and expand on that in a long-term effort, which can generate resources."

ENG. SAMEH HUSSEIN
Country Director and General Manager Egypt, Libya and South Sudan, Baker Hughes

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ENG. WALID NOSSIER
Country Manager, Egypt, Weatherford

Building a succession plan and worrying about leadership mean that we need to think how we can make the industry more attractive."

ENG. SAMI AMIN
Egypt Managing Director, Subsea7

which is one of the critical issues. This will give us the overall big picture during the next five years to see how we need to hire in terms of volumes," added Osama El-Saadawy on this account.

On the other hand, Eng. Hussein Fouad El Ghazzawy, Vice-President & General Manager, Schlumberger, believes that currently "there is a lot of engagement of private companies, JVs, and service providers to cooperate with universities in setting selection criteria for the industry's employees."

Nonetheless, for these strategies to work best "we need to modify the internal system in the companies for talented people to be allowed to grow," said Eng. Mohamed Badr, OGS.

In retaining talents, there is a need to set up a program that would allow these employees to change their positions horizontally within the industry's organizations. A certain form of talent rotation may provide some foundation for it. Santo Giannone, Petrobel Deputy Reservoir General Manager, said that "many time people are not growing up very fast, therefore, we need to set up a program to allow them to change their positions, to establish a sort of a rotation mechanism."

In addition, in support of more efficient progress in building world class human capital for the industry, training and development remain most vital parts.

TRAINING AND DEVELOPMENT

Training is a crucial part that reflects on performance culture within organizations, which can be modified accordingly. This approach offers an alternative look at people development as presented at the roundtable by Amira El Deeb, Senior Partner and Head of Organization Development Practice at Logic Management Consulting (LMC). It offers a roadmap to success in building a constructive culture, as opposed to passive/defensive or aggressive/defensive culture i.e. less productive ones. It is for the fact, as Amira El Deeb stated in her presentation that "culture is something we should start looking at to manage and enhance."

Furthermore, there are also external training programs like Amal that provides extracurricular training for recent graduates in order to transfer technical knowledge in cooperation with professionals. This helps new employees apply practical knowhow directly on sites. Amal has thus an ambition to fill the existing skills gaps, according to its representative Amr Hamza: "The core of the program is technical knowledge delivered by the professionals from the industry to expand trainees' skill set through a practical part and apply it in the industry practices directly."

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Vice-President & General Manager, Schlumberger

It is clear that in addition to a coordinated approach via university education, on the job training (on-job training) has become a key variable in people development. Engineers and technicians can be co-trained by companies themselves from an early stage as university graduates in order to prepare them for their future responsibilities on the sites.

"In implementing quality training it is important to follow the international standards with credited and certified programs based on the industry needs. These programs will have an impact on training budgets as high cost training leads to a large return on investments and vice versa," said Geologist Mostafa El Bahr, Oil & Gas Skills. To achieve this, a supervision of training should be guaranteed, hence allowing the monitoring and subsequent analysis of the training impact that would best support

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Marketing Manager at Oil&Gas Skills

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Director Sales and Marketing NAF, Baker Hughes

organizations' business objectives.

On-job training can be made profitable from the costs perspective. As industry leaders stated, improving training techniques across hierarchies in organizations could be a good solution for a complex people development program. Advocating a long-term planning strategy, leaders proposed that organizations should aim for spreading training resources across the entire organizations to the levels of lower and middle management in order to rationalize budgets as in developing new leaders for the future. "If we manage to train a smaller group of people in the middle management, they can help us spread training techniques to a wider group through beyond the job training, which could be a very good solution for the industry," elaborated Ahmed Farid, HR Manager, Shell.

In contrast to this proposition, Mahmoud Shawkat shared the experience of Baker Hughes that adopts a more focused approach. "We have an extensive program certifying talents, while looking for leaders for the future. But they come in limited numbers. Therefore, we are not spreading our efforts and resources across the organization, but we are limiting our resources to those specific talents."

Overall, the support in private sector's training schemes comes also via other channels such as the Executive Technical Committee. Brian Twaddle said that "people development has been on the Committee's agenda since its formation" [in November 2013] and it has always included "dedicated training sessions for young professionals."

Retaining these talented professionals further requires an appealing career ladder schemes.

PROMOTIONS: PROGRESSING THROUGH CAREER LADDERS

When talking about people development, there is a need to solidify a career plan for organizations' employees' future, which comes with suitable promotion schemes and career tracking for oil and gas employees.

Jonathan Kurtz, Region Manager for Human Resources & Administration at Apache, encouraged "to establish development and promotional guidelines and to clear company policies as important for staff looking to advance in an organization. Clear guidelines eliminate ambiguity and requirements for advancement."

He pointed out that "staff within Egypt's oil and gas industry has had an advancement [structure] traditionally based on time and position versus a competency based promotion system," which the panel approached critically.

Promotion is not something one is necessarily eligible for or can be bound by the time an employee served in a company. The roundtable participants agreed that "promotion represents a personal and managerial responsibility," as Eng. Tarek El Hadidy eloquently said. In order to sustain people development they have jointly recognized that the companies should give a special attention to developing employees' prospects. Therefore, instead, the industry needs to modify the promotion scheme to attract and retain needed professionals.

Indeed, developing a suitable promotion scheme has been Egypt's industry's concern for several years. The companies thus need to outline effective procedures that will resolve issues related to the existing promotion ladder by strongly binding it to performance management structures.

According to Gasser Hanter from Shell, "in IOCs we have a few tools that we deploy quite effectively in our operations in managing career progression. We look for sustained performance of the individual, we look at ability to operate at a higher job grade as a prerequisite for promotion, but more importantly we look at the business need for the job to be done at the higher grade rather than the time spent on the job."

Developing a career path is inevitably linked to talent acquisition and retention. Therefore, creating a complex interconnected strategy that will allow employees to move horizontally across the industry through different companies, can be a valuable composition.

COLLABORATION IS INEVITABLE

To achieve progress in people development, organizations should be open and willing to launch intensive cooperation. As Wael Bakr, CEO of MCS Free Zone, a private sector company working in the offshore industry, put it, "if the private sector works

hand in hand with the government companies in the oil sector, this can boost skilled personnel who can drive the industry forward."

Eng. Sameh Hussein, Country Director and General Manager Egypt, Libya and South Sudan, Baker Hughes, pointed to the private sector as an accelerator of the government's efforts.

Government's people development program should be necessarily endorsed by the private sector companies. "We all need to tap into this program and expand on that in a long-term effort, which can generate resources," Eng. Hussein added.

In other words, the major role that companies in the private and public sectors are fulfilling is to provide a platform for sharing lessons learned and jointly debating impact of their experience in a plethora of areas, people development being a crucial one. Only in this way, all involved actors can jointly evaluate alternatives of people development and mark significant and sustainable progress for decades to come.

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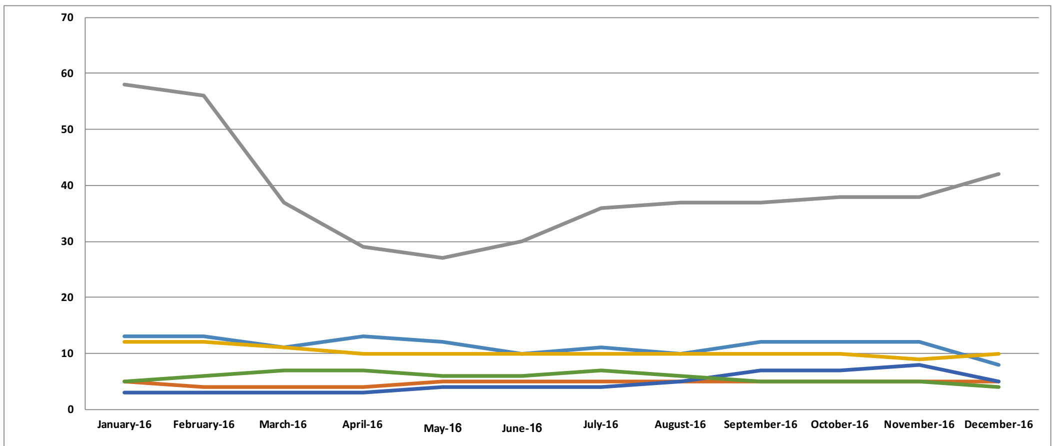
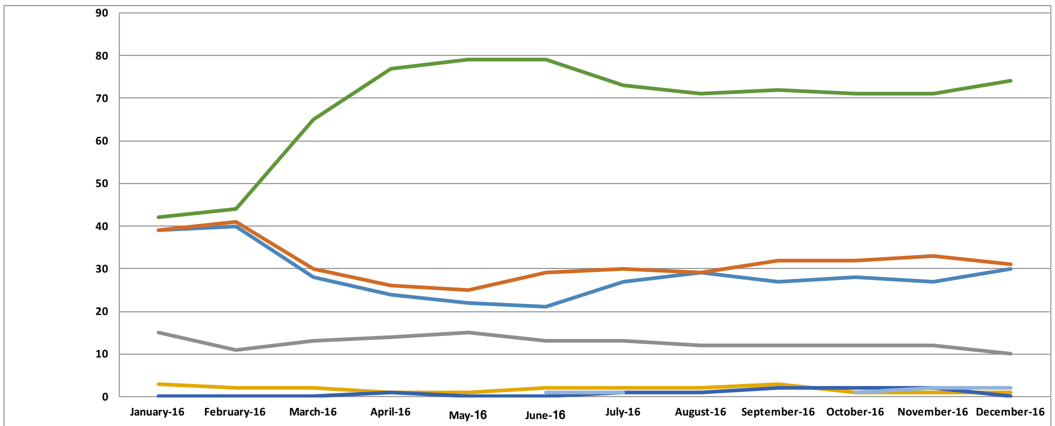
ENG. SANTO GIANNONE
Deputy Reservoir General Manager, Petrobel

Changes in Rigs by Area- January 2016 to December 2016



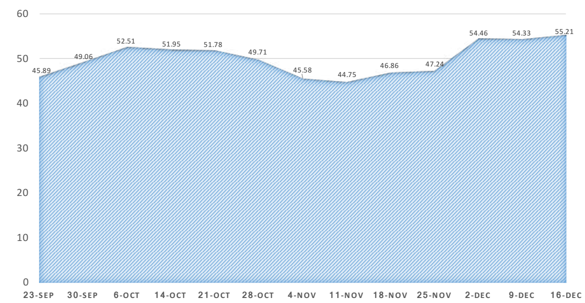
	January-16	February-16	March-16	April-16	May-16	June-16	July-16	August-16	September-16	October-16	November-16	December-16
G.O.S.	13	13	11	13	12	10	11	10	12	12	12	8
Med. Sea	5	4	4	4	5	5	5	5	5	5	5	5
W.D.	58	56	37	29	27	30	36	37	37	38	38	42
Sinai	12	12	11	10	10	10	10	10	10	10	9	10
E.D.	3	3	3	3	4	4	4	5	7	7	8	5
Delta	5	6	7	7	6	6	7	6	5	5	5	4

Changes in Rigs by Type - January 2016 to December 2016

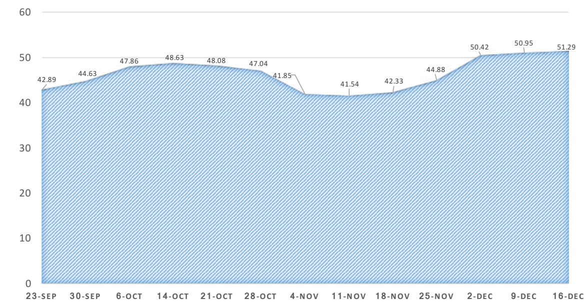


	January-16	February-16	March-16	April-16	May-16	June-16	July-16	August-16	September-16	October-16	November-16	December-16
Land-Drilling	39	40	28	24	22	21	27	29	27	28	27	30
Land Work-Over	39	41	30	26	25	29	30	29	32	32	33	31
Jack-Up	15	11	13	14	15	13	13	12	12	12	12	10
Semi Submersible	3	2	2	1	1	2	2	2	3	1	1	1
Fixed Platform	0	0	0	1	0	0	1	1	2	2	2	0
Standby/Stacking	42	44	65	77	79	79	73	71	72	71	71	74
Drillship						1	1			1	2	2

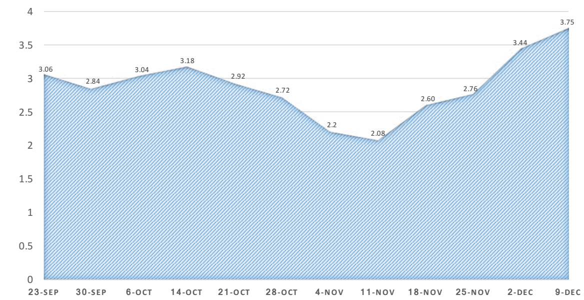
BRENT PRICES



OPEC BASKET PRICES



NATURAL GAS PRICES

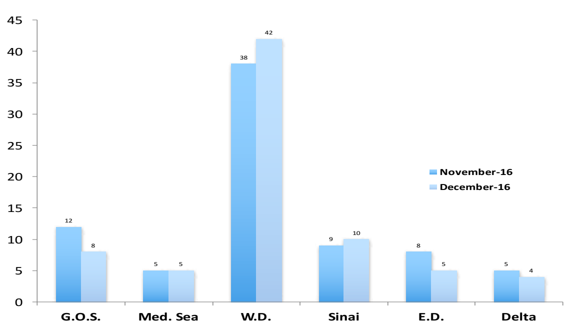


PRODUCTION November 2016

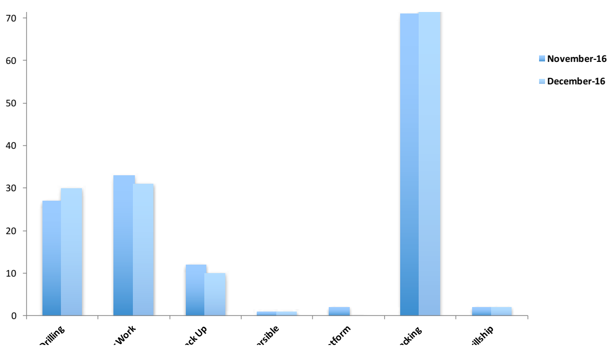
	Crude Oil	Equivalent Gas	Liquified Gas	Condensate
Med. Sea	-	9364643	162554	627513
E.D.	1888430	18929	4187	1422
W.D.	9100251	6966607	672119	1340746
GOS	3853212	603750	246083	74869
Delta	28495	5865357	105309	393568
Sinai	1626558	536	30854	23985
Total	16496946	22819822	1221106	2462103

Unit: Barrel

Rigs per Area - November - December 2016



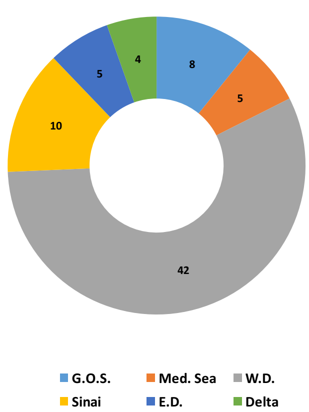
Rigs per Specification - November - December 2016



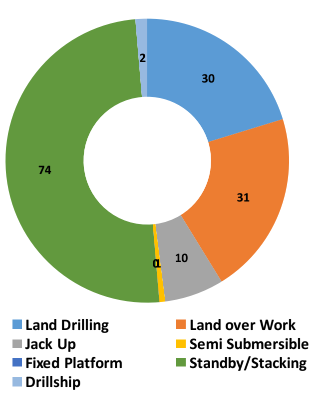
RIGS PER SPECIFICATION
November - December 2016

LOCATION	November-16	December-16
Land Drilling	27	30
Land over Work	33	31
Jack Up	12	10
Semi Submersible	1	1
Fixed Platform	2	0
Standby/Stacking	71	74
Drillship	2	2
Total	148	148

Rig Count per Area - December 2016



Rigs per Specification - December 2016



RIGS PER AREA
November - December 2016

LOCATION	November-16	December-16
G.O.S.	12	8
Med. Sea	5	5
W.D.	38	42
Sinai	9	10
E.D.	8	5
Delta	5	4
Total	148	148

DeepShield Deepwater Subsurface Safety Valve

Install fail-safe protection in deepwater completions

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

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

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

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

Applications

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

Features and Benefits

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