Egypt's Leading Oil And Gas Monthly Publication
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EGYPT OIL&GAS NEWSPAPER

OPPORTUNITIES AND CHALLENGES IN NATURAL GAS EXPORTS

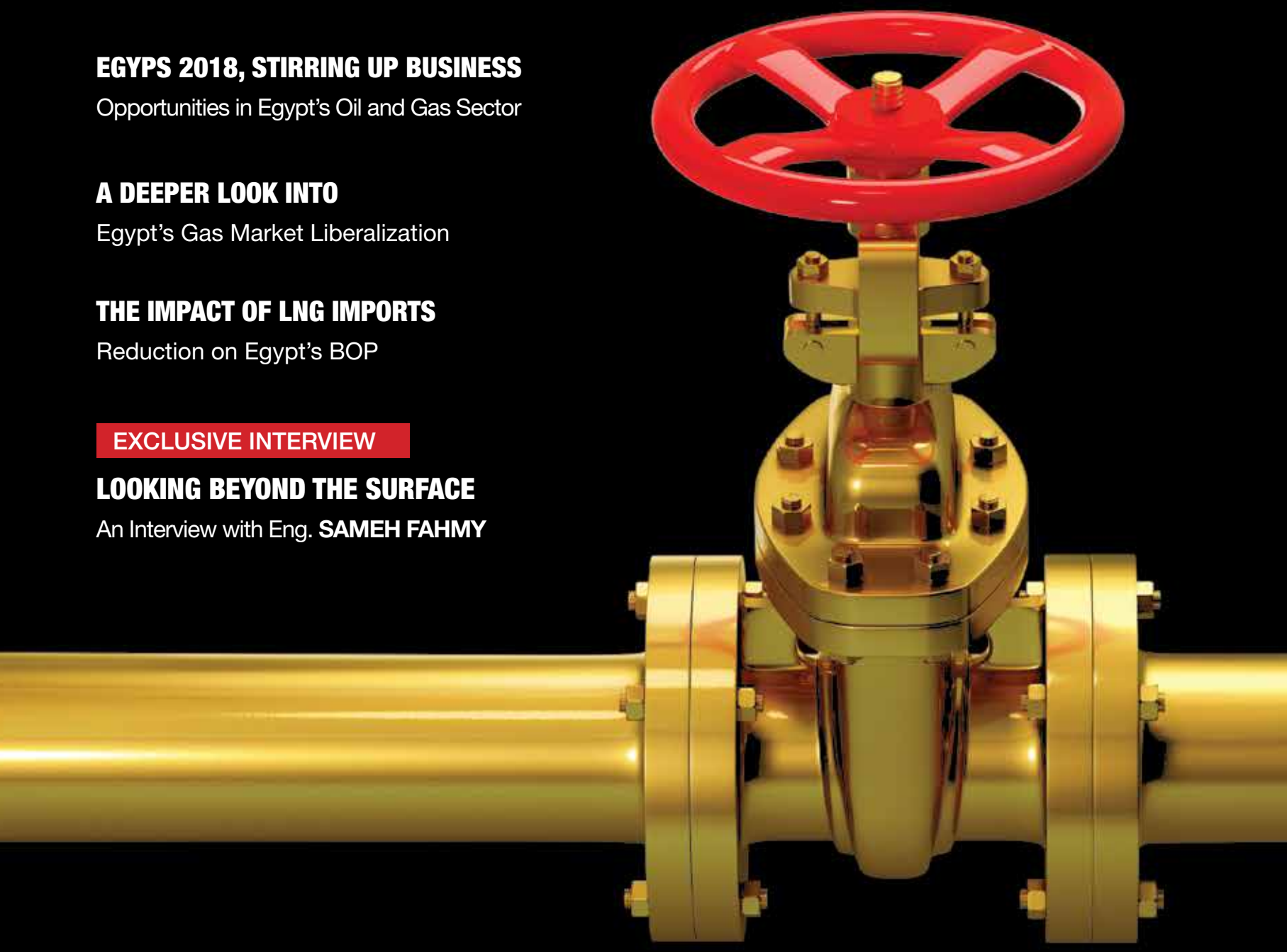
EGYPS 2018, STIRRING UP BUSINESS
Opportunities in Egypt's Oil and Gas Sector

A DEEPER LOOK INTO
Egypt's Gas Market Liberalization

THE IMPACT OF LNG IMPORTS
Reduction on Egypt's BOP

EXCLUSIVE INTERVIEW

LOOKING BEYOND THE SURFACE
An Interview with Eng. **SAMEH FAHMY**



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EDITOR'S NOTE

As new natural gas fields come online, Egypt's petroleum industry enters a new era. With natural gas output forecasted to increase by 50% in 2018 and nearly double by 2020, the country gets closer to reaching natural gas self-sufficiency and grows confidence to achieve its goal of being a regional energy hub. Although Egypt's future is bright, being a strong competitor in the gas market requires overcoming a number of challenges. Considering this, we have dedicated this entire issue to a deeper look at Egypt's maneuvers and requirements to boost its market presence in the region.

As Cairo hosted the second edition of the Egypt Petroleum Show (EGYPS 2018) – the biggest oil and gas event in North Africa and a main driver of international collaboration and investments – you will find in this issue a complete coverage of the event, as well as the Ministry of Petroleum and Mineral Resources' outstanding announcements for the modernization of the sector throughout this year.

Our interview for this issue is with Sameh Fahmy, former Egyptian Minister of Petroleum, who shared his views on the prospects of the petroleum sector and future strategies. Due to Egypt's steps to liberalize the market, this issue further brings a deeper look into the new gas regulatory law and the government's status to break the state monopoly and attract investments.

Additionally, you can have a full understanding of Egypt's ambitious plan of being back to the gas exports map, whether by exporting its own gas or by re-exporting gas from neighboring countries through its facilities, in addition to the opportunities and challenges concerning gas exports. Furthermore, this issue provides a glimpse on the impact of LNG imports reduction on Egypt's balance of payments (BOP), as well as information on imports and exports legislation. Tackling the Middle East, you can further take a look at the impact of Iran's recent demonstrations on the oil prices.

Our editorial team fully enjoyed preparing this in-focus issue and we hope you enjoy reading it as well. As always, thank you for your readership and support.

EDITOR IN CHIEF

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EGYPT'S LEADING OIL AND GAS MONTHLY PUBLICATION

EGYPS EGYPT PETROLEUM SHOW

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Egyptian Banks to Finance Oil Firms with EGP 4 B

Five Egyptian Banks have signed a financing agreement of EGP 4 billion to fund state-run Co-operation Petroleum Company (Copetrole) and Misr Petroleum Company. Each of the two companies will receive EGP 2 billion targeted at purchasing petroleum products for local market. The financing loan is aimed to be paid over seven years. The banking consortium includes Banque Misr, paying EGP 363 million for each firm; the National Bank of Egypt (NBE), with EGP 1 billion for each; QNB AlAhli, EGP 240 million for each; Commercial International Bank – Egypt (CIB), EGP 244 million for each; and the Arab African International Bank (AAIB), EGP 153 million per firm.

Egyptian Cabinet Approves Amendments in Gas Law

The Egyptian Cabinet has approved amending some annexes in the natural gas law number 217 for year 1980, during the Cabinet's meeting number 110. The amendments stated that the Egyptian General Petroleum Corporation (EGPC), along with one of the public sector companies, based on the management of the gas activity by itself or through subsidiaries or the companies contracted with them for this purpose, shall be responsible for supplying, delivering and marketing natural gas to the residential areas, factories, and power plants decided by the Minister of Petroleum and Mineral Resources.

Egypt's Government Overseeing Gas Deal with Israel

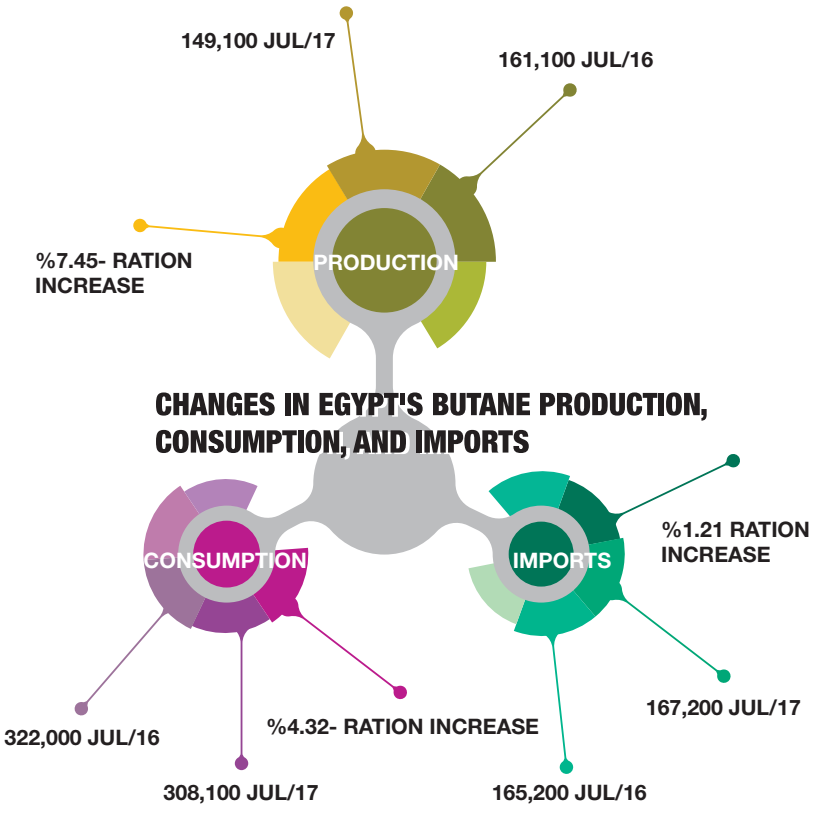
The agreement between private companies to import natural gas from Israel will be subject to the Egyptian regulations governing natural gas imports. The private sector companies' in the deal have to submit their requests for consideration in accordance with the relevant regulations. Egypt is currently implementing its plans to achieve natural gas self-sufficiency and have surplus in 2019. The country is adopting a strategy to become a regional energy hub, which involves Egypt importing of natural gas from several countries in the East-Mediterranean Sea, including Israel and Cyprus.

Egypt to Pay $250 M Arrears to IOCs in March

The Egyptian government plans to repay $250 million in arrears to international oil companies (IOCs) in March 2018. The Ministry of Petroleum and Mineral Resources has paid $300 million, and thus the total repaid arrears will increase to reach $550 million in March. The government is keen on repaying all arrears in the upcoming period, in order to encourage companies to continue exploration and production (E&P) work in the Egyptian concession areas.

Petroleum Ministry Rejects Gas Price Reduction for Factories

Sources from the Egyptian Ministry of Petroleum and Mineral Resources rejected decreasing natural gas price for factories, following natural gas self-sufficiency as the output will be used to cover local demands. Factory owners lean towards using the government's subsidized natural gas, rather than importing expensive gas, in which they will be entitled to pay different fees. Meanwhile, four sectors consumed around 40% of Egypt's natural gas production, which exceeded 5 billion cubic feet per day (bcf/d), while the biggest part of production goes to electricity generating power plants.



Four Sectors Consume 40% of Egypt's Natural Gas Output

Four sectors consume around 40% of Egypt's natural gas production, exceeding 5 billion cubic feet per day (bcf/d), with the biggest part of production going to electricity generating power plants. The four main natural gas consuming sectors include the industrial sector; petroleum and derivatives sector; households; and vehicles' filling sector. The industrial sector is the top consumer, relying heavily on natural gas to operate most of the projects.

EGAS to Import 3 LNG Cargoes

The Egyptian Natural Gas Holding Company (EGAS) arranged importing three liquefied natural gas (LNG) shipments from France's Engie, to be delivered during the second quarter of 2018. The transaction was arranged in bilateral deals through a standard tender process. Late January, EGAS arranged receiving five LNG cargoes, which will arrive to Egypt during the second quarter of 2018. French and Spanish corporations are among the suppliers. Egypt's LNG imports decreased as the country aimed to halt imports as its natural gas production jumped due to newly discovered natural gas fields.

EGAS Offers Flexible Payment Terms on Natural Gas Supply Contracts

The Egyptian Natural Gas Holding Company (EGAS) approved amending certain terms in the contract between the company and manufacturers, regarding supplying natural gas to factories, which paves the way to more benefits and incentives to the industrial sector and increases industrial growth. EGAS approved amending the value of insurance deposit to be for 30 days, instead of 60 days, for all industrial consumers over and less than 20,000 cubic meters, at current exchange rates, with the possibility of installing the payment on the basis of a 25% advance payment and installing the remaining value over 24 months instead of the 18 months, currently in effect.

Diesel Consumption Exceeds 1.2 M Tons per Month

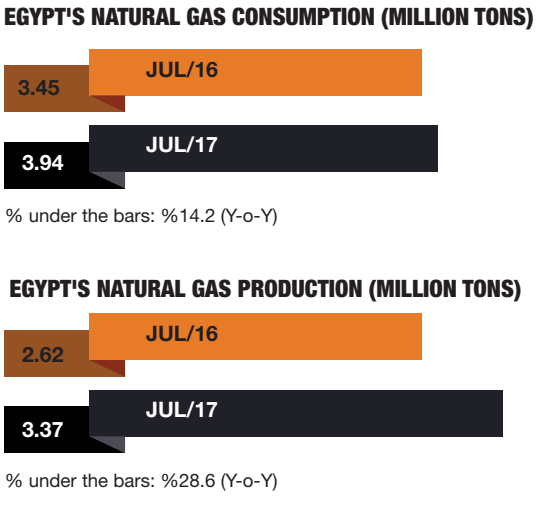
Egypt's consumption of diesel exceeded 1.2 million tons per month, across all the consuming sector. Ezz El Regal pointed out that the country produces around half of its consumption per year, reaching 600,000 tons per month, which contributes to feeding the demands of electricity and industrial sectors, as well as citizens' needs.

Petroleum Ministry Settles Disagreements between Firms

As a part of Egypt's strategy to encourage investments through settling disputes, the Ministry of Petroleum and Mineral Resources attempted to approach viewpoints between the Egyptian General Petroleum Corporation (EGPC), the Egyptian Natural Gas Holding Company (EGAS) and holding companies, and Taqa Gas Group. The ministry is trying to settle the dispute between those parties regarding the interpretation of certain articles of the contracts between them, which have been the subject of the request submitted by Taqa Group in front of the Cabinet's Ministerial Committee for the Settlement of Disputes of Investment Contracts.

Cabinet Issues Gas Law Executive Regulations

Egypt's Prime Minister, Sherif Ismail, issued the executive regulations of the natural gas meet regulating law number 196 for year 2017. The new gas law will allow private companies to directly import natural gas. The government issued the new gas law number 196 / 2017 last August. The law is an attempt by the government to liberalize the natural gas market and encourage private investment. The new law regulating gas markets is expected to bring a more flexible gas market and boost the Egyptian economy.



Women Represent 30% in Petroleum Leading Positions

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, highlighted the ministry's commitment to the country's intentions to empower women, improve their capabilities, and help them achieve their own interests in all the petroleum sector's industries. The minister pointed that women currently represent 30% of leading positions in the oil and gas sector. El Molla affirmed his trust in the capabilities of women working in the petroleum sector, highlighting their roles in developing Egypt, during his speech at the closing of the Egypt Petroleum Show (EGYPS 2018).

Egypt Announces New Benzene 25 Product

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, announced launching the new Benzene 25 product, which has been used to cope with ongoing developments in modern vehicles. The product was introduced after ensuring that it meets required standards and the Egyptian code for petroleum products. The new Benzene 25 was examined in specialized plants of the Egyptian General Petroleum Corporation (EGPC). The announcement was made on the sidelines of the Egypt Petroleum Show (EGYPS 2018), where the minister pointed out that "the new product will be launched at the current price of 95-octane benzene."

Egypt, Algeria Discuss Petroleum Cooperation

The Egyptian Minister of Petroleum and Mineral Resources, Tarek el Molla, discussed cooperation in projects with the Algerian Minister of Energy, Mustapha Guitouni, during a meeting attended by Algerian ambassador to Egypt and his accompanying delegation. The talks with the Algerian minister included cooperation in other fields, such as petrochemicals, which will be of mutual benefits for both sides.

EGAS to Launch outbidding for 11 Concessions

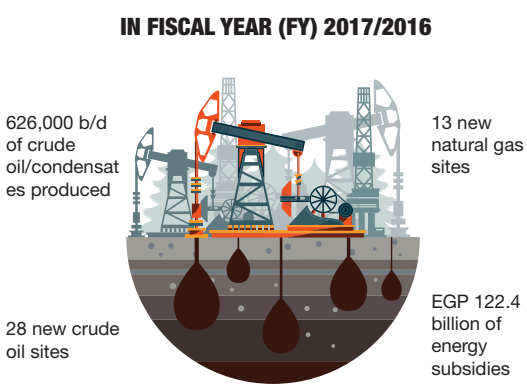
The Egyptian Natural Gas Holding Company (EGAS) plans to issue an international outbidding to explore for crude oil and natural gas in 11 concession areas before June 2018. The bids' concessions would include eight offshore areas and three onshore concessions. EGAS obtained all required security approvals in order to issue the outbidding. Additionally, EGAS will launch a bid round within a few days for nine areas, including six areas offshore the East Mediterranean Sea and three areas onshore the Nile Delta.

GASTEC to Establish Natural Gas Filling Station in Sharm El Sheikh

The Egyptian International Gas Technology (GASTEC)'s Head, Abdel Fattah Farahat, met with South Sinai Governor, Khaled Fouda, where they discussed establishing the first natural gas car filling station in Sharm El Sheikh in 2018. The governorate will set a land for the construction of an integrated filling station to provide cars with natural gas, along with a center for transferring vehicles to be working with dual fuels, natural gas and benzene. This comes as a part of the Ministry of Petroleum and Mineral Resources' strategy to expand natural gas fueling services across governorates and to increase filling stations.

Khalda to Drill 28 Exploratory Wells in 2018/2019

Khalda Petroleum Company announced plans to drill 28 exploratory wells in fiscal year (FY) 2018/2019, including three wells in Siwa Concession during the general assembly chaired by Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, to review the firm's budget plan. Khalda Petroleum's average output is planned to reach around 129,000 barrel per day (b/d) of crude oil, 26,800 b/d of condensates, 1,500 b/d of butane, and 820 million standard cubic feet per day (mscfd) of natural gas.



El Molla: EGYPS, an Opportunity for Ideas, Expertise Exchange

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, pointed out the importance of the Egypt Petroleum Show (EGYPS 2018) as an opportunity to exchange ideas and operational expertise and to get introduced to recent technologies in the oil and gas global industry. EGYPS 2018, which is planned to kick off on February 12th under the patronage of President, Abdel Fattah El Sisi, will last for three days. The event will be a chance to launch investment opportunities in Egypt's petroleum fields in front of international oil companies (IOCs), especially the national project to turn Egypt into oil and gas energy trading hub.

Sidpec Starts Operations at New Unit

Sidi Kerir Petrochemicals Company (Sidpec) has started operations at a new unit aimed to remove bottlenecks from the Ethylene factory to operate at full capacity, with $27 million investment costs. The new unit started operations successfully, without halting any of the company's factories, due to the effective role of the Ministry of Petroleum in running the project and boosting Sidpec capacity to its maximum.

Fuel subsidies Jump by 34% in H1 of 2017/18

Fuel subsidies cost has reached EGP 27.5 billion during the second quarter of fiscal year (FY) 2017/2018 based on Brent price averaging at $61.4 per barrel and USD exchange rate at EGP 17.63. The cost of Egyptian fuel subsidy has increased by 34% during the first half of FY 2017/2018, reaching EGP 51 billion, from EGP 38 billion, El Molla announced. Fuel products subsidies have reached about 51 billion pounds in the first six months of the current fiscal year.

Cabinet Approves E&P Agreements in Suez Gulf

The Egyptian Cabinet has approved a draft law to license the Minister of Petroleum and Mineral Resources to contract with the Egyptian General Petroleum Corporation (EGPC) and BP Exploration (Delta) Ltd. for exploration and production (E&P) activities in the north-east of Ramadan in the Gulf of Suez. Moreover, the Cabinet approved a draft law to license the Minister of Petroleum and Mineral Resources contracting with EGPC and Apache East Marine Corporation (LCC) to amend commitment agreement, issued by Law No. 6/1996, as amended by Law No. 170/2005 and Law No. 155/2009, to search for petroleum in the Eastern Region of the Western Desert.

Qarun to Drill 22 Wells in 2018/2019

Qarun Petroleum Company plans to drill 22 wells to expand its activities during fiscal year (FY) 2018/2019, for production to reach 11.9 million barrels during the fiscal year. The company has drilled 11 development wells and plans to add eight development wells and one exploratory well. Three wells at Beni Sweif Concession, West Nile, were added to production and are expected to rationalize drilling cost and time after using casing drilling technology.

Egypt to Connect 1.35 M Households to National Gas Grid

The Egyptian cabinet announced allocating EGP 4.5 billion to connect 1.35 million residential units to the national gas grid by the end of 2018. The Egyptian Prime Minister, Sherif Ismail, met with Minister of Petroleum and Mineral Resources, Tarek El Molla, and ministry leaders, in which they discussed all the angles related to connecting more households to the grid, as per the plans of President Abdel Fattah El Sisi. Ismail pointed out the necessity for completing this project and removing any obstacles standing in its way.

Egypt Natural Gas Output to Exceed 6 bcf/d

Egypt's production of natural gas increased by 1.6 billion cubic feet per day (bcf/d) in 2017, up to 5.5 bcf/d. Natural gas production will rise to exceed 6 bcf/d before the end of 2018. Egypt intends to cease importing liquefied natural gas (LNG) by the end of fiscal year (FY) 2017/2018, which ends late June, Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, announced on January 27th.

ERC New Processing Plant to Start Operation in Six Months

The new $3.6 billion processing plant owned by the Egyptian Refining Company (ERC) will start operation in six months. The value of total loans financing the plant's project has reached $2.6 billion, Heikal pointed out during the third "Egypt Investment Forum." Once the plant starts operations, it will decrease the country's need for diesel by around 50% and that of imported gasoline by 20%. The plant will further cover 14% of Egypt's annual liquid oil products' demands, with production capacity reaching 4.2 million tons of liquid products in addition to 600,000 tons of sulfur and coke per annum.

EBRD to Issue $200 M Loan to SOPC

The European Bank for Reconstruction and Development (EBRD) is provisioning a loan of approximately $200 million to be issued to the Suez Oil Processing Company (SOPC). The loan is designated to finance a number of energy efficiency investments, as well as installations and refurbishments at the Suez refinery. The loan concept has been reviewed and March 28th, 2018 was declared as the target board date. "The project will focus on the installation of a New Vapour Recovery Unit (VRU), the refurbishment of the old coker unit and a number of energy efficiency investments, identified to improve operational performance, environmental footprint, and utilisation rate of the refinery," the bank announced.

ITFC Opens LOC for Egypt

The International Islamic Financial Corporation (ITFC) opened a line of credit (LOC) worth $400 million for Egypt, in order to purchase petroleum products. The LOC comes in a last tranche of a finance deal worth $3 billion, which was signed in 2015. ITFC is considering a new pact with Egypt in the first half of 2018, for a new $3 billion finance deal to be used for essential commodities and petroleum products, Sonbol pointed out. Sonbol expects an increase in the trade finance portfolio of the ITFC to reach between $5 billion and $5.5 billion in 2018.

Egypt, Kuwait Talk Energy Opportunities

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, met with CEO of Kuwait Petroleum Corporation (KPC), Nizar Al-Adsani, and KPC's Managing Director, Nabil Al-Bourisli, to discuss joint cooperation and investment opportunities in the Egyptian oil and gas sector. The meeting tackled investment opportunities in Egypt's national vision to become a regional energy trading hub. The attendees further discussed SUMED expansion project in terms of capacity and maritime ports preparation to be ready to receive large shipments of petroleum products and liquefied natural gas (LNG).

El Sisi Inaugurates Zohr Natural Gas Field

Egyptian President Abdel Fattah El Sisi inaugurated Zohr giant natural gas field in the attendance of Prime Minister Sherif Ismail, Minister of Petroleum and Mineral Resources, Tarek El Molla, and Eni's CEO, Claudio Descalzi, as well other Egyptian ministers and leading figures from Eni, BP, and Rosneft. During the inauguration ceremony, El Molla reviewed the development of work at Zohr field since the contract signing in January 2014, and pointed out that commercial discovery with 30 trillion cubic feet (tcf) reserves was announced in Augusts 2015.

Diesel Output Fell by 7.8% Y.o.Y

Egypt's diesel production decreased by around 7.8% year-on-year (Y.o.Y) to 544,000 tons in November 2017, compared to 590,000 tons in November 2016. Consumption slightly increased by 0.42% Y.o.Y reaching 1.188 million tons in November 2017, from the 1.183 million tons used in the preceding year, according to statistics released by the Central Agency for Public Mobilization and Statistics (CAPMAS). Despite the Y.o.Y increase, diesel consumption had decreased by around 1.25% from October 2017, when consumption recorded 1.203 million tons. Output decreased from the 587,000 tons produced in October.

Petroleum Exports, Imports Value Decrease Y.o.Y

Egypt's oil exports value decreased by 10% year-on-year (Y.o.Y) to reach $208 million in October 2017, compared to $231 million in October 2016, while non-oil exports value jumped by 26.1% to $2.035 billion from the $1.614 billion in October 2016. The country's oil imports value fell by 9.3% to record $411 million in October 2017, compared to $453 million in the same month of the preceding year, according to statistics released by the Central Agency for Public Mobilization and Statistics (CAPMAS). Meanwhile, non-oil imports value dropped by 2.8% to reach $5.046 billion in October 2017, from $5.19 billion in October 2016.

NBK-Egypt Renews Financing Deal Worth $10 B for EGPC

The National Bank of Kuwait-Egypt (NBK-Egypt) agreed on the renewal of a $10 billion financing agreement to support the Egyptian General Petroleum Corporation (EGPC) to meet its financial needs. EGPC had previously taken a $10 billion loan from NBK under a governmental guarantee. The Egyptian state-owned body has lately repaid the loan. The governmental guarantee will still be used to renew the loan agreement. The $10 billion loan tenor is ranging between three and five years, and a huge amount of it will be delivered in US dollars. Yet, NBK-Egypt will not collaborate with local banks to secure the loan amount as the loan has a governmental guarantee.

Egypt Signs New Petrochemical Contracts

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, witnessed the signing of two urea selling and supplying contracts for Suez for Methanol Derivatives project, as well as two supply commercial propane supply contracts for Sidi Kerir Petrochemicals (Sidpec)'s Polypropylene new project. The methanol derivatives contract was signed by Head of Suez Petroleum Services Company (SUPSC), Gawdat Al Sadeq, Head of Abu Qir Fertilizers Company, Saad Abu El Maaty, and Head of Misr Fertilizers Production Company (MOPCO), Mohamed Abady. The project represents an example of integration between the oil and gas sector's companies.

ITFC Eyes Financing Petroleum Projects in Egypt

International Islamic Trade Finance Corporation (ITFC) expressed interest in financing projects of the Egyptian oil and gas sector. ITFC statements come out of confidence in the Egyptian economy, especially after implementing the reform program, which boosted the investment climate and supported the country's position within Arab and International investment maps.

Agiba Petroleum to Produce 16.4 mscf/d in FY 2018/2019

Agiba Petroleum Company plans to produce 16.4 million standard cubic feet per day (mscf/d) during fiscal year (FY) 2018/2019, which will witness broad activities of drilling 45 wells and executing 264 maintenance operations for wells. The company is implementing a plan during the second half of FY 2017/2018 to boost production from its concessions in the Western Desert and Gulf of Suez. The plan has started showing positive results through production increase in West-Meleiha, Yasmine, Deep Amry, and North Rosa fields. Test results of West-Meleiha showed production rates of around 2,500 b/d of crude oil.

Egypt's Butane Imports declined by 11.45%

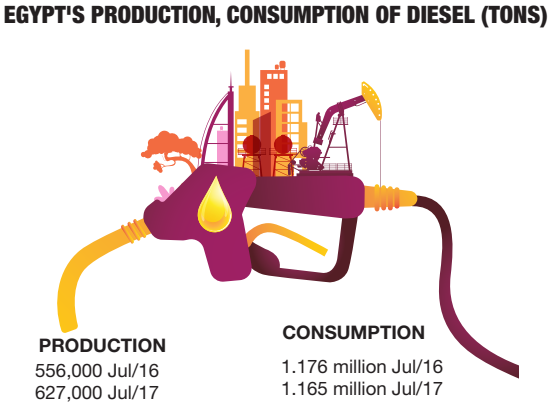
Egypt's butane imports fell by around 11.45% year-on-year (Y.o.Y) to record 193,300 tons in November 2017, compared to 218,300 tons in November 2016, according to a report by the Central Agency for Public Mobilization and Statistics (CAPMAS). Butane consumption slightly decreased by around 2%, reaching 349,500 tons in November 2017, from 356,700 tons in 2016, CAPMAS report added. Moreover, Egyptian butane output dropped by around 9.5% as the country produced 136,100 tons in November 2017, compared to 150,400 tons in the same period of the previous year. Consumption of butane surged during 2017, recording 341,200 tons in October, and stood at 314,200 tons in September.

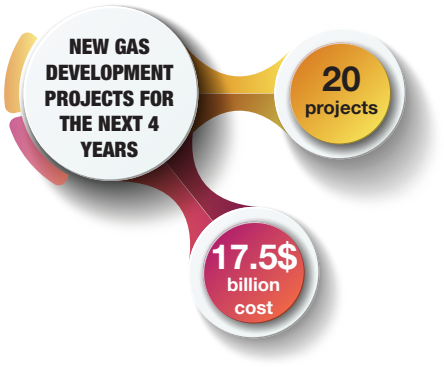
EGAS Secures 5 LNG Cargoes for Q2 of 2018

The Egyptian Natural Gas Holding Company (EGAS) arranged receiving five liquefied natural gas (LNG) cargoes, which will arrive to Egypt during the second quarter of 2018. French and Spanish corporations are among the suppliers. Egypt intends to stop importing liquefied natural gas (LNG) by the end of fiscal year (FY) 2017/2018, Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, announced on Saturday. The decision comes as the country speeds up output at newly discovered natural gas fields, enabling it to save $250 million per month, the minister pointed out.

EBRD to Support Petroleum Sector Restructuring

The European Bank for Reconstruction and Development (EBRD) has received a request from the Egyptian Ministry of Petroleum and Mineral Resource to provide technical assistance, supporting the new structure of the oil and gas sector. The assignment is expected to start during the second quarter of 2018 and last for four months, with maximum budget estimated at around $555,730. The bank's support will be focused on processing redesign areas, which aim at improving performance, business practices, and transparency. The Egyptian oil and gas sector needs to be restructured in order to align with international optimal practices, as the current structure is not.





Kuwait Energy Announces Oil Discovery in Egypt

Kuwait Energy Company announced an oil discovery in the Area A concession, located in Egypt's Eastern Desert, as the South Kheir-1X (SK-1X) stabilized at an oil rate of 1,900 barrels per day (b/d) on 64/64-inch choke size on February 6th. The well has been spud on December 11th 2017, and was tested on January 28th, at an initial flow rate of oil of 2,452 b/d from the Hamman Faraun MBR/Belayim formation at 128/64-inch choke size. "I am pleased to announce this oil discovery, which is a direct result of our technical team reprocessing old 2D/3D seismic and identifying drill-able exploration opportunities," Kuwait Energy CEO, Abby Badwi, said.

BP Starts Production from Atoll Field

UK's BP announced starting production of natural gas from the first phase of Atoll field, located offshore Egypt, seven months before scheduled time with 33% lower than the initial estimated cost. Atoll field is producing 350 million standard cubic feet per day (bcf/d) in addition to 10,000 barrels per day (b/d) of condensates. "BP is focused on delivering growth with discipline, carefully choosing and efficiently executing high-quality projects. The longstanding partnerships we have in Egypt allowed us to fast-track Atoll's development and deliver first gas only 33 months after discovery," said Bob Dudley, BP Group Chief Executive.

SDX, Sino Tharwa Sign New Rig Contract

SDX Energy Company signed a new rig contract with for Sino-Tharwa Drilling Company Sino-Tharwa for the latter's ST-6 rig to operate in Ibn Yunus-1X exploration well at South Disouq, Egypt. The rig being currently drilled in a location in the Western Desert by another operator, and is expected to be released late February 2018 to move to the Ibn Yunus field and be spud by mid-March. Upon completing work at Ibn Yunus, the ST-6 rig will be mobilized to the SD-1X discovery to drill two appraisal wells, and then it will move to the Kelvin-1X exploration prospect.

Petroleum Ministry, Baker Hughes GE Sign Cooperation Agreement

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, witnessed the signing of a cooperation agreement between the ministry and Baker Hughes GE to launch an electronic portal for online marketing of exploration and production (E&P) concession areas. The contract was signed by the Ministry's First Undersecretary for Agreements and Discoveries, Ashraf Farag, and Baker Hughes' Vice President for Egypt and South Gulf, Ayman Khattab, on the sidelines of Egypt Petroleum Show (EGYPS 2018). The agreement secures the digital infrastructure and electronic applications suitable for the project, as well as the preparation of a digital investment map for concession areas in Egypt, which will enable E&P marketing.

EGPC, Shell Sign Bapetco Development Agreement

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, witnessed the agreement signing for the development of Badr Petroleum Company (Bapetco), which comes among the initiatives announced during the opening of the Egypt Petroleum Show (EGYPS 2018) to modernize oil firms. The agreement was signed by the Egyptian General Petroleum Corporation (EGPC)'s Head, Abed Ezz El Regal, and the Vice President Upstream, Country Chair & Managing Director of Shell Egypt, Gasser Hanter, on the sidelines of EGYPS 2018. This initiative comes in light of the sector's Modernization Program.

Petroleum Ministry, Schlumberger Sign Two Agreements

The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, witnessed the signing of two agreements between the ministry and Schlumberger on the sidelines of the Egypt Petroleum Show (EGYPS 2018). The first agreement includes the conduction of a regional seismic survey in the Gulf of Suez area. The deal was signed by the Ministry's First Undersecretary for Agreements and Discoveries, Ashraf Farg, and Schlumberger's Vice President & Managing Director, Egypt & East Mediterranean Region, Hussein Fouad El Ghazzawy. "The signing of the deal came among the initiatives which were announced within the opening of EGYPS 2018," El Molla highlighted.

DEA Boosts Oil, Gas Production in Egypt

DEA Deutsche Erdoel AG announced a significant increase of production from its oil fields in the Gulf of Suez and from the Disouq gas fields in the Onshore Nile Delta. The next phase of the West Nile Delta (WND) development is intended to contribute to the company's target. DEA plans to invest about $500 million in Egypt during the coming three years. "Egypt continues to be an important factor in DEA's global E&P portfolio. With targeted investment in our key assets, we plan to double our production in the country within the next two years," said Maria Moraeus Hanssen, CEO of DEA Deutsche Erdoel AG.

Tecnimont Reviews Egypt's Investments Opportunities

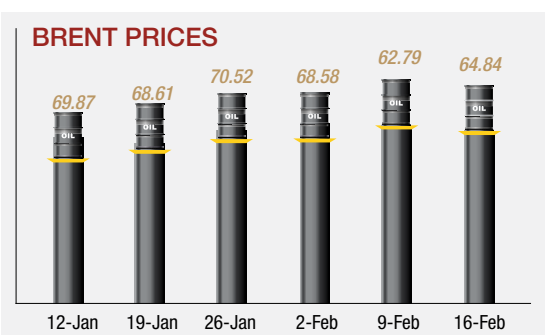
The Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, met with a delegation of top officials from Italy's Maire Tecnimont Group, including the company's Chairman, Fabrizio Di Amato, and the CEO, Pierroberto Folgiero, to discuss cooperation opportunities in implementing new petrochemical projects. The minister and his guests reviewed the oil and gas sector's available investment opportunities, in light of the ministry's strategy aimed at upgrading Egypt's petrochemicals industry and boost the value added projects. The meeting highlighted current projects, as well as expansion projects of Sidi Krir Company for Petrochemicals Company (Sidpec) and the Petrochemical Complex in Suez.

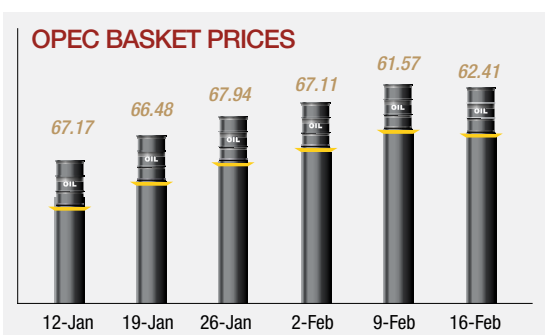
Kuwait Energy Seeks Success in Egyptian Concessions

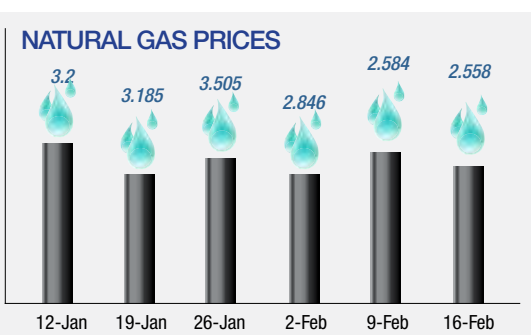
Kuwait Energy Company is looking forward to expanding its success in the company's concessions in Egypt, and participating in international oil and gas international tenders launched by the Egyptian oil and gas sector, said Manssour Aboukhamseen, Kuwait Energy's CEO. Badwi's comments came during his meeting with the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, Interim Chief Executive Officer of Kuwait Energy, Abdel F. (Abby) Badwi, and Kuwait Energy Egypt's President, Kamel Al-Sawi, in the attendance of the Ministry's First Undersecretary for Gas Affairs, Mohamed Moanes. During the meeting, the minister and his guests discussed the company's work program in its Egyptian concession, and the available investments opportunities in the exploration and production (E&P) field.

Xodus Appoints First General Manager for Egypt Office

Xodus Group appointed Salah Farid Tantawy as its first general manager in Egypt. The decision comes as Xodus plans to boost its track record in the North African country and aims for new contracts. Tantawy has 37 years of experience in the oil and gas industry, starting by the role of a project engineer and moving to a project general manager for the Amal-C platform installation, located in the Gulf of Suez, at PICO International Group, from which he moved to Xodus, Scandinavian Oil-Gas Magazine informed.







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SAUDI ARABIA

Russia has offered to support Saudi Crown Prince Mohammed Bin Salman's efforts to diversify the economy by investing in Aramco at its initial public offering (IPO). Kirill Dmitriev, CEO of the main Russian sovereign wealth fund, Russian Direct Investment Fund (RDIF), said that he expected a Russian-Chinese joint investment fund, along with a number of leading Russian banks and other investors, to invest in the Saudi oil company. **He also hinted that other Russian investors may purchase a part of the 5% of Aramco offered in the IPO.** In addition, Saudi Aramco is set to enter the major investment scheme of Arctic LNG-2, which is expected to be a part of Aramco's gas strategy.

RDIF will sign a number of investment deals with the Saudi sovereign wealth fund Public Investment Fund (PIF) and Aramco, Dmitriev announced. The deals include an investment in Russia's Eurasia Drilling, a major independent drilling company.

Saudi Aramco has approved providing 12 million barrels of crude oil to China's Huajin Chemical Industries Group Corporation based on an annual deal. Aramco's supply to the Chinese company in 2017 recorded between 6 million to 8 million barrels. Increasing the Saudi exports to china will help the former boosting its market share in China in its race against Russia.

UAE

Abu Dhabi National Oil Company (ADNOC) awards Japan's Inpex 10% stakes in its Lower Zakum offshore oil field for $600 million.The shares were awarded by the Supreme Petroleum Council of the Emirate of Abu Dhabi (SPC) in a **40-year term agreement coming to force from March 9th 2018 until March 8th 2058.** Under the agreement, Inpex's shares in the field will be operated by JODCO Lower Zakum Limited, a subsidiary of Inpex. **ADNOC awarded Inpex a 25-year extension of the Satah and Umm Al Dalkh concession for $250 million with 28% additional interest** in the Umm Al Dalkh oil field.

ADNOC granted part of its offshore concessions to the Spanish multinational oil and gas company Cia Espanola de Petroleos SA (CEPSA) for $1.5 billion. The Madrid-based CEPSA Company, owned by Abu Dhabi's Mubadala Investment Company, will acquire a 20% stake in the development rights of the Sateh Al Razboot and Umm Lulu oil fields, located in the Persian Gulf.

ADNOC awarded Indian companies another part of same offshore concessions in a deal worth $600 million. The area is split into three blocks. Currently, the company is seeking to make new partnerships with parties that will hold as much as 40% of every block.

OPEC

OPEC's oil production increased in January 2018, following an eight-month decrease, due to higher output from Saudi Arabia and Nigeria, which offset a decrease in Venezuela's output and the supply cut pact. In January, **OPEC pumped 32.4 million barrels per day** (mb/d) increasing by 100,000 b/d from December. OPEC output rose despite the increase in the number producers adhering to the supply curb deal, which rose from 137% in December 2017 to 138% in January. Experts expects that the deal between OPEC and non-OPC producers to curb oil output in 2018 will be hard to maintain.

LIBYA

Libya's crude oil output decreased by 70,000 barrels per day (b/d) due to halting production at the El Feel oil field on February 24th. Libya's National Oil Corporation (NOC) has evacuated El Feel oil field after the field's guards staged a strike over pay. The field, located in southwestern Libya, recorded a minimum output of 60,000 (b/d) in recent months and has total capacity is estimated at over 100,000 b/d.

Libya's National Oil Corporation is still facing delays in receiving budget money from the Libyan government. The company's head expects this to decrease oil output.

QATAR

Qatar Petroleum aims to increase its liquified natural gas (LNG) output from 77 million to 100 million tons per year – a 29.87% increase. The plan comes at a critical time as Qatar Petroleum is working hard to maintain its position as a global LNG leader.

IRAQ

Iraq considers exporting 60,000 barrels per day of Kirkuk fields' oil to an Iranian refinery through tanker trucks. Iraq will export the oil in a swap deal to receive refined oil from Iran to Southern Iraq. **The two countries are further planning to establish a pipeline** to carry the oil from Kirkuk. The new planned pipeline might replace the current export route from Kirkuk via Turkey and the Mediterranean. Iraq is set to **establish a new export pipeline from the Kirkuk oilfields**, to replace the old damaged section of the Kirkuk-Ceyhan pipeline. The new pipeline will connect oilfields near Kirkuk to the Fish-Khabur border area with Turkey.

US Oil Company, **Chevron Corporation, restarted its drilling operations at its Sarta 3 well, Kurdistan region of Iraq,** after it had stopped in October 2017 due to tension between the semi-autonomous area's government and Iraq.

Iraq's government is to negotiate with Turkey over the possibility of transporting oil once more from federal territory to reach a port located on the Mediterranean Sea. The Iraqi Minister of Oil plans to visit Turkey, upon at the invitation of the Turkish oil minister, to discuss the matter to have the oil moved via the Turkish Ceyhan Port exclusively through Iraq's state oil marketer SOMO.

KUWAIT

Kuwait's oil price has increased by 0.525% after mid-February. The price reached $61.24 per barrel on February 19th, compared to $60.92 per barrel on February 15th.The Brent price increased globally by 1.28% to $65.67 per barrel on February 19th, compared to $64.33 per barrel on February 15th. The price has fluctuated since February 19th, recording $65.25 per barrel on February 20th, $65.42 on February 21st, and 64.89 on February 22nd.

Kuwait Petroleum Corporation (KPC) announced its plan of reaching 4.75 million barrels per day (b/d) in 2040 as it currently produces 3.15 million b/d. Although the country estimates the budget deficit, which has been existing for three years, to continue for fiscal year 2018/2019, the firm will spend $500 billion to reach this goal.

Kuwait Oil Company (KOC) plans to sign contracts for the next round of offshore drilling in March 2018. The tender aims to explore six different locations at the Kuwaiti Bay before the end of 2018. **KOC has invited Halliburton, Baker Hughes and Schlumberger to present their offers.**

IRAN

Russia's Zarubezhneft Oil Company signed a Memorandum of Understanding with the Iranian Industrial Development and Renovation Organization (IDRO) for the development of the Susangerd Oil Field. A joint expert task force will be formed, and then the two firms will work with Iran National Oil Company, if a final agreement is reached, in order to negotiate and seal the agreement. IDRO scheduled to present the technical proposal of the development of this oil field to the National Iranian Oil Company in late February.

Iran's liquefied petroleum gas (LPG) exports decreased to between 358,500 tons and 402,500 tons in February 2018. This represents a substantial decline from the post-sanctions high of 520,000 recorded in January.

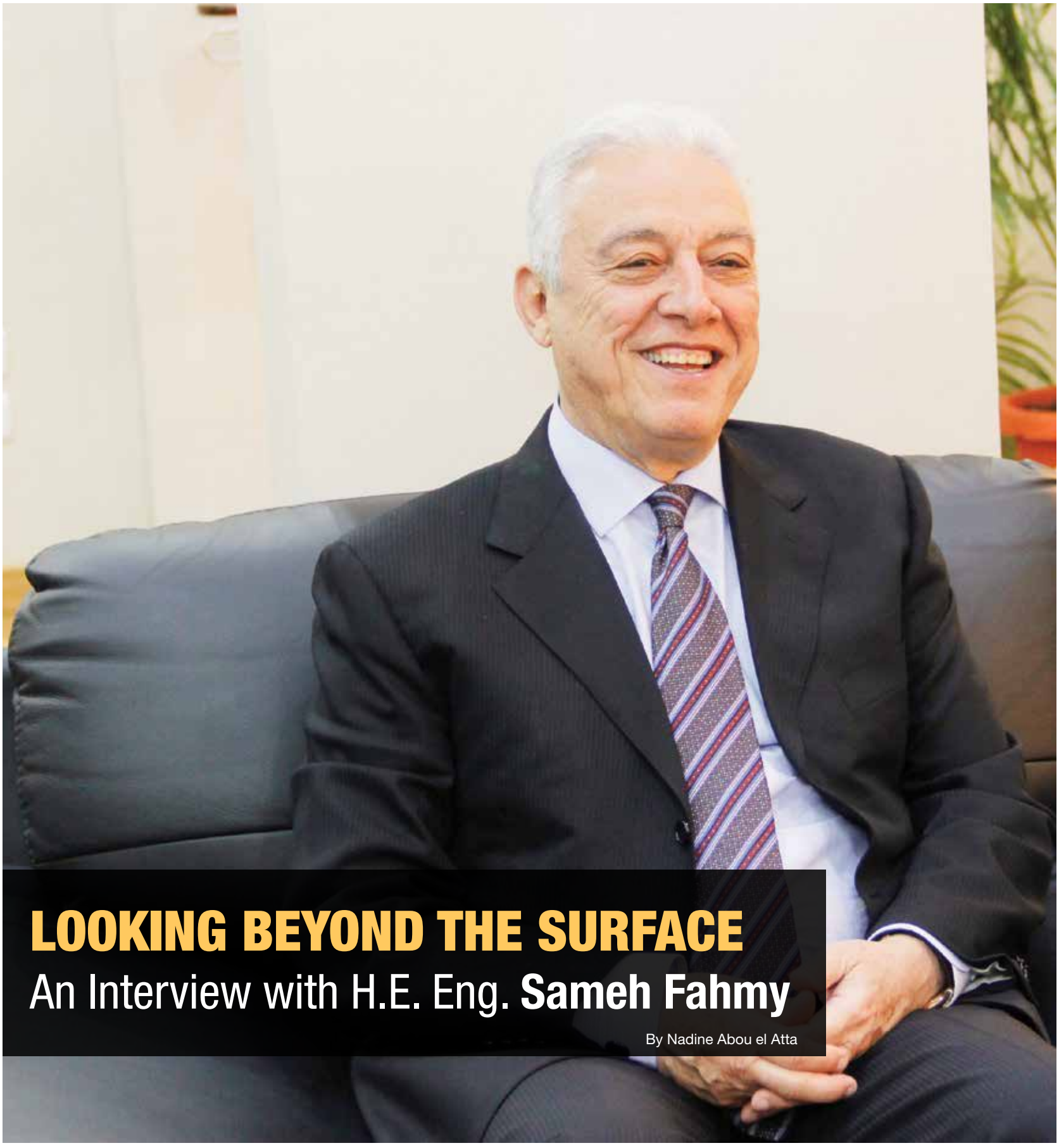
Naftiran Intertrade Company (NICO), a subsidiary of the National Iranian Oil Company (NIOC), **loaded a 44,000-ton evenly-split shipment from Iranian Gas Commercial Company (IGCC) at Assalouyeh on February 17th**, which has now reached the southwestern coast of Sri Lanka.NICO was about to load an IGCC cargo containing around 11,000 tons of butane and 33,000 tons of propane, directed to Mailiao in Taiwan.

MOROCCO

SDX Energy Company has completed drilling the KSS-2 well on the Sebou permit in Morocco at 1293 meters total depth. The company faced 8 net meters of high quality reservoir interspace in the Gaddari and Guebbas sequences. Although **KSS-2 was not commercially successful, the company is still proceeding in drilling the final three wells in the program** and reporting on their results. **SAH-2 will be the following well to be drilled** and it is expected to be commercially charged.

OMAN

Meethaq Islamic Banking and Hydrocarbon Finder E&P (HCF) have signed an Islamic financing facility for the development of HCF-operated oil and gas fields in Block 7 of Oman. Meethaq believes that the agreement will boost Oman's development in the light of the country's 2040 Vision.



LOOKING BEYOND THE SURFACE

An Interview with H.E. Eng. **Sameh Fahmy**

By Nadine Abou el Atta

Perhaps ever since Egypt's first crude discovery, the petroleum industry has served as one of the strongest pillars of the country's economy. As key market players and analysts alike expect the nation as well as the sector to enter a new dawn of propelled potential, the need to understand the foundation and history of this industry grows.

In efforts to look deeper into the inner workings of the country's hydrocarbon sector, Egypt Oil & Gas sat with former Minister of Petroleum and Mineral Resources, Eng. Sameh Fahmy.

Given your strong history in the industry serving in many roles, before we begin the interview, can you tell our readers what inspired you to enter the field of oil and gas? And in your opinion what is the greatest lure of the sector?

Throughout my life, it always seemed that God was directing me to enter the petroleum industry. Everything in my life inspired me to enter this interesting sector; beginning with my upbringing.

I grew up in the city of Suez, the petroleum capital of Egypt at that time. My family lived in a petroleum compound that belonged to an international oil company. The compound's club offered residents many activities –social and sports wise; an option that gave me the

opportunity to integrate well with the sector's community, which led to a great sense of belonging to this important and vital sector. This sense of belonging and feeling of respect for this industry was a key element for me in joining the Faculty of Chemical Engineering at Cairo University, as an essential step to enter this sector.

During that time, the petroleum sector flourished, seeing the two largest crude oil discoveries in the history of Egypt, namely the Balaiem offshore field discovered by ENI in 1961 and the Morgan offshore field discovered by Pan America in 1965, both residing in the Gulf of Suez (GOS).

One of the other huge inspirations for me was the late Minister Ahmed Hilal, whom I consider the best ever Egyptian petroleum minister. He was appointed as the first Minister of Petroleum in 1973 which coincided with my graduation year from the Faculty of Engineering. I considered him to be my idol, he was a colleague and a friend of my father's, and he was also a chemical engineer like me.

As an expert in planning, how can strategic crafting be utilized to enhance FDI influx into the sector?

As someone who worked in planning from the seventies until the end of the last century, particularly during my employment in the department of planning and projects in the Egyptian General Petroleum Corporation (EGPC), I had the privilege of working under the leadership of some of the most capable petroleum leaders.

I made it a point, when I was appointed in 1999 as the Minister of Petroleum and Mineral Resources, to benefit from my previous experience working with a group of competent and experienced colleagues, and developed an integrated national strategy for the petroleum sector; the implementation of which began at the turn of this century. My main principle and vision while implementing this strategy was steering away from reinventing the wheel, instead we simply focused on maximizing our benefit from the expertise, plans, and achievements of our predecessors.

The focus of this strategy was to ensure that it reflected on the efforts of all the sector's employees. We worked on planning a powerful Egyptian petroleum industry that can compete strongly in the region, as well as cautiously compete globally.

It is worth noting that most of the main objectives of the set strategy have been achieved successfully, and with high accuracy. This strategy was the main engine for attracting direct and indirect foreign investments to mega projects and major events in the petroleum sector during this century

Throughout the period in which I was responsible for this sector, I was confident that the strategic planning –based on the sector's resources as well as the experience of the people working in it—were the only way to achieve success.

Young professionals are the foundation of the coming period; in your opinion, what skills need to be developed to ensure both the private and public sector companies perform at globally competitive levels?

I agree with this opinion 100% and I recommend working hard on developing several skills such as leadership, problem solving, planning skills, cost and schedule control, self continuous improvement of capabilities, information technology, language skills, social and business communication skills, project management and team working, and finally economics and international relations

" THE INDUSTRY SAW MANY MORE DISCOVERIES, INFRASTRUCTURE EXPANSIONS, AND AGREEMENTS IN THE EVERY YEAR THAT FOLLOWED, REACHING THE MEDITERRANEAN'S LARGEST EVER DISCOVERY OF ZOHR IN 2015."

As new areas in the Red Sea are planned to be tendered soon, and given that neighboring countries such as Saudi Arabia and Sudan had very different results from exploring the region, how do you define the potential of this area?

It is a matter of figures. Referring to the latest edition of Egypt Oil & Gas' concession Map and analyzing its details carefully, we can conclude that Egypt recently has 171 active agreements in the Mediterranean Sea, the GOS, Western desert, Sinai, Nile valley, Eastern desert, and the Delta. Furthermore, the country has seen 131 valid production licenses in the same mentioned locations. Continuing on with the figures, there are about 27 companies involved in the Mediterranean, Western Desert, Nile valley and the Delta in exploration and production (E&P) activities. In addition, there are about 26 companies involved in the GOS, Eastern desert and Sinai exploration and production activities, as well as the six companies that are involved in Upper Egypt's E&P activities.

Over the past 60 years the country has witnessed significant finds within its borders, beginning with the GOS's major finds, followed by, El Alamein field, the first discovery of crude oil in the Western Desert by Philips in 1966, as well as the Abu Madi field, the first natural gas discovery in Egypt's Detla in 1966, just to name the first few discoveries.

The industry saw many more discoveries, infrastructure expansions, and agreements in the every year that followed, reaching the Mediterranean's largest ever discovery of Zohr in 2015. From that we can easily conclude that Egypt has a mature oil and gas sector, which allowed it to become a perfect hydrocarbon hub in Africa, Middle East, and the Mediterranean area.

Furthermore, Egypt enjoys well established facilities that will enable it and its international partners to play a very important role in the global sector, in terms of investment opportunities, especially in non-explored and non-developed areas and locations such as the Red Sea. This vision is supported by the Red Sea economic sea borders agreement, signed between Egypt and Saudi Arabia. The agreement allows each country to issue laws for their economic borders, and to carry on E&P activities, eventually resulting in more hydrocarbon resources for both countries.

Moreover, Egypt has taken practical steps in this direction by signing a multi-client agreement to proceed with seismic activities and resource-assessment studies in the Egyptian offshore borders, international and economic.

Accordingly, in my humble opinion, the red sea will represent a very important part in the future of Egypt's oil and gas sector, as well as the country's hydrocarbon resource pool.

As an emerging market, the potential for expansion and growth is vast. In your opinion, which areas would propel if they receive more investment and attention?

In my opinion, there are four major areas that would propel if they received more investments and attention; the first of which is upstream E&P activities, especially in the Mediterranean Sea and the in the Red Sea International and Economic Offshore Zone.

Secondly, the Egyptian refining industry will certainly boom by adding at least three new complex refineries equipped with the latest European standards, and capable of producing high quality petroleum products.

Thirdly, upgrading of the country's national natural gas grid. It is of significant importance in order for the grid to accommodate planned and future expansions in the power, industrial, commercial, and residential sectors.

Finally, I recommend that a vast part of the Egyptian petrochemical national plan should be accomplished as soon as possible to add value to the natural gas sector, and to boost and support the industrial sector in Egypt as well.

Finally in closing, if the readers could take only one thing from this interview what would it be?

My answer is simply: developing strategies and valuing people.

EGYPS 2018, STIRRING UP BUSINESS OPPORTUNITIES IN EGYPT'S OIL AND GAS SECTOR

As Egypt's oil and gas sector embarks in a new era of technical and strategic developments, Cairo launched the second edition of the Egypt Petroleum Show (EGYPS 2018) under the High Patronage of His Excellency Abdel Fattah El Sisi, President of the Arab Republic of Egypt, and support of the Ministry of Petroleum and Mineral Resources. The three-day event, held between February 12th and 14th at the Egypt International Exhibition Center, provided a promising platform for novel opportunities and innovative solutions in the Egyptian oil and natural gas industry.

EGYPS 2018 brought more than 1,000 conference delegates and 150 industry expert speakers together, in order to provide valuable insights through Technical, Strategic, Women in Energy, and Security & HSE in Energy conferences. The 20,000-gross-square-kilometer halls accommodated more than 400 national and international exhibiting companies, as well as 12 country pavilions, providing a prominent opportunity of business network to over 15,000 attendees.

NEW INITIATIVES

EGYPS' Official Opening Ceremony was attended by H.E. President Abdel Fattah El Sisi; Egypt's Prime Minister, H.E. Sherif Ismail; Egypt's Minister of Petroleum and Mineral Resources, H.E. Tarek El Molla; the Secretary General of the Organization of the Petroleum Exporting Countries (OPEC), H.E. Mohammed Sanusi Barkindo, and a number of ministers, deputies, and executive leaders.

During the opening, El Molla delivered a speech in which he announced five new initiatives to increase the efficiency of performance in oil and gas activities and attract investments in 2018. The first initiative consists of cooperating with international companies engaged in marketing petroleum products, aiming to improve the quality of fuel and offering a new gasoline product to cope with modern developments. The second initiative announced was an agreement to conduct seismic surveys in the Gulf of Suez, which still has great exploration and production (E&P) potential to attract foreigner investment and increase the country's reserves.

The third initiative is the signing of a memorandum of understanding with a consortium of leading international companies to establish the Egyptian Gateway for Exploration and Production, a geological information center to promote research in areas offered by the ministry. El Molla pointed out that the fourth initiative is related to improving the E&P efficiency of joint ventures and international companies operating in Egypt, aiming at lowering operations costs. Meanwhile, the fifth initiative consists of launching an electronic portal to enhance communication between workers, serving as a reliable source of information, allowing the exchange of experiences and ideas, and enriching the spirit of teamwork within the sector.

In this line, EGYPS 2018 was the scenario of the signing of important new agreements, including an agreement of cooperation between the Ministry of Petroleum and Baker Hughes Global Company to launch the Egyptian Portal project for online marketing of exploration and production (E&P) concession areas. The agreement secures the digital infrastructure and electronic applications suitable for the project, as well as the preparation of a digital investment map for concession areas in Egypt, which will enable E&P marketing and attract international oil companies' (IOCs) investments.

El Molla further witnessed the agreement

signing for the development of Badr Petroleum Company (Bapetco), in addition to two agreements between the ministry and Schlumberger. The first agreement with Schlumberger includes the conduction of a regional seismic survey in the Gulf of Suez area, while the second includes a project for launching an Egyptian website to market the petroleum areas and exploration through establishing a database that will contain the exploration and production (E&P) activities. The website aims to collect, process, update, and monitor all data, using latest technologies. It is further expected to prepare data packs to announce concessions, and process the new seismic data while enhancing the old ones to determine the promising geological combinations.

BOOSTING TECHNICAL PERFORMANCE

With technical development as a pillar for the oil and gas industry's success, EGYPS Technical Conference, set across the three days of the event, offered more than 30 sessions within 11 categories, gathering over 110 speakers from 45 countries. The categories included operational excellence, maintenance, and HSE; drilling and completions; E&P geoscience; oil and gas unconventional field developments; project management, engineering technology and implementation; gas processing technology and operations; offshore technology and operations; marketing and distribution of refined products; power generation technology and operations; downstream operations; and connected performance technology and services.

According to Abded Ezz El Regal, Head of the Egyptian General Petroleum Corporation (EGPC), the technical conference was a good chance "to exchange successful stories and learn from the flaws committed by others." The exchange of ideas and of what each operator has reached would definitely increase E&P opportunities, as he further noted.

During the conference, British Ambassador to Egypt, John Casson, stated his belief that it is important for Egypt to consider gas processing. "Part of moving from short-term stability to long-term success is extracting real value from Egypt. The oil and gas sector is not just about exports and dollars, it should be about building an industrial base for Egypt," he stated.

Within the sessions, speakers further reviewed efficiency and improvements in oil and gas. "What we need in the oil and gas sector is more empowerment for the Egyptian employees to take on leading roles when it comes to partnerships with international companies", Rami Nabil, Geologist at Khalda for Petroleum, noted. "We also need more educational courses and hands-on experience trainings to benefit us and expand our knowledge", he added.

With the petrochemical industry as an important income resource in the downstream sector, presentations further tackled ways of integrating renewable resources in petrochemicals, as well as various aspects of diversifying the downstream value chain. EGYPS Technical Conference equally brought important insights on connected performance technology, injection redistribution optimization using rapid data driven physics modelling, and data centric execution, among other topics.

"The technical presentations will definitely have an impact. When companies operating in Egypt see how other companies work, they have some sort of knowledge sharing. When each company learns from the other, this enhances the opportunities for everyone to do better, and this eventually reflects on the companies and the country itself," Haitham M. Al-Attar, Exploration Geophysicist and Technical Lead at BP North Africa, Egypt, affirmed.

"LONG-TERM DECISIONS AND POLICIES ARE ONE OF THE PRIORITIES OF OUR GOVERNMENT."

H.E. ENG. TAREK EL MOLLA, MINISTER OF PETROLEUM AND MINERAL RESOURCES OF EGYPT

SETTING NEW OIL & GAS STRATEGIES

EGYPS 2018 further offered its attendees two days of high-level Strategic Conference, enabling the petroleum industry's global business leaders to actively discuss the successful development and growth of the industry, promote strategic partnerships, investment opportunities and enhance industry collaboration in the region and globally.

H.E. Manuel Salvador Quevedo Fernandez, Minister of Petroleum of the Bolivarian Republic of Venezuela, stated that "events like EGYPS represent for everybody in the world the importance of the oil and gas market for producers, consuming countries, and investors. The balance between every actor is very important. There are a lot of challenges ahead and there are opportunities that we can achieve in order to grow and provide development for our people."

From his side, H.E. Mustapha Guitouni, Minister of Energy of the People's Democratic Republic of Algeria, affirmed on Fernandez's words and stressed on the importance of EGYPS. "It is an exceptional event," he noted. As for South Africa, H.E. David Mahlobo, Minister of Energy, mentioned that "from a South African point of view, energy is important for economic growth. South Africa is one of the net oil and gas importing countries; therefore, our participation here [EGYPS 2018] helps us to have a discussion and collaborate with other partners."

Discussing Egypt's economic reform and its implications on the oil and gas industry, Egypt's Petroleum Minister, Tarek El Molla, stated, "Since 2013, we were really looking after real reform and sustainable energy positioning [.....] Subsidy reform is a challenge for most of the developing countries. I think we have been suffering a lot from long-term subsidy strategy." El Molla further highlighted that the reform that started in 2016 is a long-term decision, as the country is aiming to attract extra investments in renewable energy in order to diversify its energy mix. "Long-term decisions and policies are one of the priorities of our government," he added.

From his side, Fernandez mentioned that Venezuela is currently developing joint ventures (JVs) with more than 20 oil and gas companies. "We are planning to provide stability for investors." Meanwhile, Guitouni stressed on the importance of creating a long-term balance in the market. "It is a matter of balance between demand and supply," as he stated.

Mohamed Moanes, First Undersecretary for Gas Affairs at the Egyptian Ministry of Petroleum and Mineral Resources, outlined the progress made by Egypt over the last few years, citing the increase of production measuring 4.6 billion cubic feet of gas since the start of 2017. "This is the best time to invest in Egypt. There is no doubt that Zohr's production will save [the sector] around $60 million a month. In addition, we expect this amount of saving to increase up to $2-3 billion a year after completing all the phases of this project," he added.

Maurizio Coratella, CEO of Edison International Spa, affirmed that "Egypt has all the ingredients to play the role of hub in the region. It has infrastructure, storage, refineries, fertilizer companies, and its geographical position; these provide the backbone to materialize the project."

Building on Coratella's comment, William Coates, CEO of ONE LNG, stated that "Egypt succeeded in attracting leading [oil] companies' attention due to its high potential to be a regional oil and gas trade hub, in addition to the recent discoveries that is expected to attract foreign investments."

On the importance and success of partnerships in the industry for the growth of both companies and nations, Maria Moraeus Hanssen, CEO of DEA, affirmed that "those who handle partnerships best can be the most successful." Ali Al Jarwan, CEO of Dragon Oil, echoed Hanssen's sentiments, noting, "You must keep relations with government, understanding what the government wants exactly." Al Jarwan added that "the efficiency of human resources must be maintained. As long as there are skilled and efficient workers and employees, the work is at a steady pace."

Demetris Fessas, Executive Director of the Cyprus Hydrocarbons Company, stated that "regional cooperation is related to prices in the market," highlighting the importance of paying attention to local needs when considering fruitful partnerships.

Highlighting the importance of human capital in the oil and gas industry, Hatem Soliman, Senior Advisor to the CEO at Schlumberger, mentioned that investors are more confident about Egypt's oil and gas sector than before.

Tackling the ministry's Modernization Program, Osama Mobarez, Undersecretary for Minister's Technical Office, Egypt's Ministry of Petroleum and Mineral Resources, stated that the project has "taken into account the financial independency [of the sector], as we are aiming to turn it from a governmental entity into a commercial entity."

Ashish Khanna, in charge of the Suitable Development Program at the World Bank, noted that "the success of this program is mainly depending on empowering employees, especially in the middle management level, in addition to restructuring the sector in a transparent and credible processes to gain the confidence of the employees and solve any problems that might occur, using faster and more flexible solutions."

"EVENTS LIKE EGYPS REPRESENT FOR EVERYBODY IN THE WORLD THE IMPORTANCE OF THE OIL AND GAS MARKET FOR PRODUCERS, CONSUMING COUNTRIES, AND INVESTORS."

H.E. MANUEL SALVADOR QUEVEDO FERNANDEZ, MINISTER OF PETROLEUM OF THE BOLIVARIAN REPUBLIC OF VENEZUELA

SECURITY & HSE

With security and HSE strategies playing an increasingly integral role in the petroleum industry's operations, EGYPS' inaugural one-day Security & HSE Conference addressed the key and growing issues around security, health, safety, and environment in the sector. Through the conference, attendees gained valuable insights on cyber and infrastructure security, emergency response planning, system vulnerabilities, and sustainable production across the value chain.

"The safety and health of our employees, contractors, assets, and the environment are our number one business value across the oil and gas sector. We are proactively striving to integrate workplace safety fully into our daily business operations, with management and all employees taking a hands-on approach to safety and security, demonstrating leadership and direction to ensure the safest possible working conditions. Our ultimate goal is zero accidents," El Molla stated.

Considering the high sensitivity of oil and gas data, Sherif Hashem, Vice President, Cybersecurity at the National Telecom Regulatory Authority Egypt and Chairman, Executive Bureau at the Egyptian Supreme Cybersecurity Council, announced that the "International Communication Union (ITU) came up with a model of cyber security index that include regulatory and legal aspects, organizational aspects, capacity building , international collaboration and human resources development." According to him, these aspects and pillars are used by ITU to measure the readiness of a country. "In Egypt we are very proud to get a high rank in terms of cyber security readiness. We rank 14th among 103 countries, which is very impressive," he highlighted.

Dina Arafa, Regional IT Manager at BP North Africa, commented that "safety comes as a behavior to oil and gas. Anyone who is working in the oil and gas sector knows that by heart." Accordingly, "the control has shifted from the IT hands to everyone who holds a device that connects to the network."

"In Egypt we are very proud to get a high rank in terms of cyber security readiness. We rank 14th among 103 countries, which is very impressive."

SHERIF HASHEM, VICE PRESIDENT, CYBERSECURITY AT THE NATIONAL TELECOM REGULATORY AUTHORITY EGYPT

EMPOWERING WOMEN IN ENERGY

Building on the success of the Women in Energy Conference of the first edition of EGYPS, 2018's edition offered a one-day forum to continually enable over 200 oil and gas professionals to network, share their knowledge and discuss achievements on female participation, as well as encourage inclusion and diversity across all sectors of the energy industry.

Commenting on steps and challenges to increase the percentage of women working in the oil and gas sector, Iman Hill, Technical Director, General Manager UAE, President Egypt at Dana Gas and former Chair at Shell Egypt, stated, "we need to encourage women to think that they can compete just as well, if not better, in all of these kinds of really technical and science-based disciplines, which is what the core of oil and gas industry is."

"The planet is graduating more women from universities. We have a human obligation to make sure that the totality of the world population finds some place for themselves in the global economy," Natalia G. Shehadeh, Vice President and Chief Assurance Officer at Weatherford International PLC, commented.

During the conference, Minister Tarek El Molla, along with the Minister of Social Solidarity, Ghada Wally, witnessed the inaugural Women in Energy Awards, a step forward the recognition of both individual leadership and high performance, plus corporate response to inclusion and diversity within the oil and gas industry.

Nihad Shelbaya, Public and Government Affairs Manager at ExxonMobil Egypt, was the winner of the Women in Leadership Award. Additionally, Nelly Abbas, EEG Recruiting & University Relations Manager- Human Resources at Schlumberger, won the NEX-GEN Female of the Year Award, while Shell won Employer of the Year Championing Inclusion & Diversity.

"We need to encourage women to think that they can compete just as well, if not better, in all of these kinds of really technical and science-based disciplines, which is what the core of oil and gas industry is."

IMAN HILL, TECHNICAL DIRECTOR, GENERAL MANAGER UAE, PRESIDENT EGYPT AT DANA GAS

NETWORK & BUSINESS OPPORTUNITIES

Besides the mind-set rich environment promoted by EGYPS conferences, the event further offered a unique opportunity for attendees and over 400 regional and international companies to connect and expand their global business portfolios.

Attendees expressed enthusiasm with the exhibition, describing it as an amazing feature for future oil and gas opportunities. “The exhibition was amazing and included a large variety of companies. It will hopefully result into successful cooperation and growing investments,“ Lobna El Mougy, Deputy CEO at EGPC, stated.

Business Development Manager at Xodus, Mohammed Khalil, mentioned that the company has witnessed an increasing number of opportunities in the Egyptian oil and natural gas sector resonating from its participation in EGYPS. “This is the second year Xodus is exhibiting in the Egypt Petroleum Show and we have witnessed an increase in opportunities in the Egyptian oil and gas sector. The important work we have delivered over the last couple of years resulted to the expansion of existing contracts, and helped us identify new opportunities with new clients. This is an important period for Egypt’s energy sector and we are looking forward to being part of it,” Khalil stated.

Commenting on the prospects of the event, Minister Tarek El Molla pointed out that EGYPS is a promising window for upcoming years to attract both more attendees and participants, whether they are interested in the exhibition or the conference itself. The minister further emphasized the success of the petroleum sector in attracting investments and playing an efficient role to meet the demands of Egypt and the region in the nearest future.

Additionally, El Molla noted that EGYPS 2018 witnessed great momentum and international presence due to the success of the first edition. According to the minister, EGYPS 2018 significantly expanded in size, number of attendees, and number of panels and discussions compared to the previous year.

With EGYPS as one of the implementation elements of the ministry’s strategy to welcome international cooperation in Egypt’s journey towards becoming an energy hub, as El Molla stressed, the third edition of the event is confirmed for next year. EGYPS 2019 will take place in Cairo between February 11th and 13th, at the Egypt International Exhibition Center. Call for papers are already open, as well as the opportunity to book a stand in the exhibition halls.

“EGYPT SUCCEEDED IN ATTRACTING LEADING [OIL] COMPANIES’ ATTENTION DUE TO ITS HIGH POTENTIAL TO BE A REGIONAL OIL AND GAS TRADE HUB, IN ADDITION TO THE RECENT DISCOVERIES THAT IS EXPECTED TO ATTRACT FOREIGN INVESTMENTS.”

WILLIAM COATES, CEO OF ONE LNG

“THE EFFICIENCY OF HUMAN RESOURCES MUST BE MAINTAINED. AS LONG AS THERE ARE SKILLED AND EFFICIENT WORKERS AND EMPLOYEES, THE WORK IS AT A STEADY PACE.”

ALI AL JARWAN, CEO OF DRAGON OIL

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A DEEPER LOOK INTO EGYPT'S GAS MARKET LIBERALIZATION

By Omnia Farrag

The Egyptian government has embarked on a policy of market liberalization in all sectors since the 1970s. It was not until recently, however, that the idea of liberalizing the energy market was placed on the table. In 2015, natural gas decreasing production and growing demand forced the former natural gas exporting state to start importing natural gas. As Egypt received its first imported cargoes in May 2015, the Egyptian Natural Gas Holding Company (EGAS) and the Egyptian General Petroleum Corporation (EGPC) announced the Gas Market Law, a piece of legislation aiming to liberalize the gas sector in Egypt, which was in July 2017 as law 196 for 2017.

As per official announcements, the government aims to ease the burden of supplying natural gas from its shoulders. In this line, the new law enables private sector companies to ship, transport, store, market, and trade natural gas using the national grid. At the same time, EGAS would continue to act as one of the gas providers alongside the private sector under the regulation of an an independent authority.

So far, TAQA Arabia, Fleet Energy, and BB Energy received initial permissions to distribute natural gas in the local market and four other countries are in the process of getting permission, including Toyota, based a statement from Vice Chairwoman for the Gas Regulatory Affairs, Amira El Mazni, to Egypt Oil & Gas in October 2017.

Main Features of Gas Market Law

The law recently issued 35-article law consists of four sections. The first section is a glossary of the terminologies mentioned in the law.The second

section is concerned with the establishment of the Gas Market Regulating Authority (GMRA) as an organization entitled to supervise all activities related to the natural gas market, and protect the market from monopoly to ensure a healthy competitive environment.

The entity is responsible for ensuring the availability of gas and the efficiency of the national grid and other crucial infrastructure. In addition, it will be solely responsible for regulating and planning the market activities of the companies, such as issuing and renewing licenses, establishing the regulations of using natural grids, facilitating the transportation process of natural gas, and establishing mechanisms for the calculation of tariffs.

THE OPERATION OF PIPELINES REQUIRES HIGH FIXED-COST INVESTMENT AND RELATIVELY LOW OPERATIONAL AND MANAGEMENT CHARGES.

The following section of the law outlines the rights and obligations of different parties in the natural gas market alongside providing a breakdown of different operational stages and possible parties. The fourth section sets out the penalties in case of violations. It gives the GMRA employees with judicial control officer status.

Liberalizing the Sector

Opening the market for competition should be implemented in all levels starting from the upstream exploration, transmission to downstream production, Shell wrote in a report. First, the government should open exploration to private countries, a move recently taken by the Egyptian government.

There were 13 new natural gas explorations by both state-run and private companies in the 2016/2017 fiscal year (FY), according to Egyptian General Petroleum Corporation (EGPC) CEO Abed Ezz El Regal's statement in September 2017. The past five years witnessed the signature of many gas exploration agreements between the Egyptian government and international companies. There were 83 agreements with private companies for oil and gas exploration and production between June 2013 and September 2017, El Molla told Egypt Today.

The Shell report noted that opening the market for this number of companies should be watched and regulated carefully by the government, since these companies would have a significant effect on the country's government. It is worth noting that most of the Middle Eastern countries do not pay enough attention to this, Shell wrote.

Because of the nature of the gas industry, it is hard for monopolies to occur in upstream and downstream sectors; however, monopoly is common in the midstream sector. Shell noted in their report that midstream sector monopolies hinder the efficiency of upstream and downstream sectors, since companies face difficulty transmitting and storing their products.

The operation of pipelines requires high fixed-cost investment and relatively low operational and management charges. This exhibits the characteristics of natural monopoly. That is why the Shell report recommends that midstream operations should not be subject to market pressure. In this line, describing pipelines as dominating the market, the report further recommends that regulations should prevent companies from monopolizing them. If monopolized, regulations should prohibit companies from abusing this power by ensuring third party access (TPA) to the pipelines. Finally, the government should investigate the actual operational costs of pipelines and similar infrastructure, which would allow them to set fee standards and gauge reasonable profit levels for the operators.

According to chapter 2 of the law, the midstream sector in Egypt is divided into various facilities. First, the gas transmission system is defined as the national network of high-pressure pipelines, including compressor stations, equipment, measuring devices, purification, and other facilities, through which natural gas is transported within the country.

Second, the gas distribution system is described as a low or medium pressure pipeline network, in addition to all related pressure reduction stations, equipment, measuring devices, purification and other facilities.

Third, regasification facilities are defined as facilities used for liquefying, exporting, unloading or re-diversifying gas, including auxiliary services and temporary storage required for the process of reallocation and the subsequent delivery to the transmission network.

Fourth, storage facilities are described as underground or aboveground storage containers or depots that are used to store gas whether it is liquefied or compressed. The law differentiated between storage facilities and storage depots associated with the production processes or used by gas transportation operators to perform their duties.

In Egypt, these four types of infrastructure are monopolized by the government; however, the previously mentioned chapter allows one legal entity or more to operate any of them under the condition of not blocking other market players from accessing the infrastructures.

Separation of Activities: Unbundling

The law's chapter three is about the separation of activities. These rules prevent organizations operating facilities or networks from personally benefiting from them. Under this chapter, article 44 introduces the idea of unbundling, which refers to the separation between energy supply and generation on one hand and the transmission network on the other. Unbundling is a fundamental concept for the market to act freely without the control of any of its players or without denying any of them the right to access infrastructure.

"If any legal entity licensed to engage in a gas market activity wishes to engage in another additional activity, it shall comply with [three conditions]," article 44 of the law states. First, in case the entity is licensed to do a service activity and it wants to perform a beneficiary activity, the entity should do that through an independent legal entity with a separate organizational structure. This condition is applicable if the gas used in the beneficiary activity is owned by the entity. Second, the two activities it performs should be service activities. Third, none of the activities it performs should be subject to the Gas Market Law.

The concept of unbundling is currently inapplicable in Egypt, since the government owns all the facilities and networks; however, as previously mentioned, chapter 2 of the law allows private operators to operate these infrastructures. Accordingly, unbundling should be considered carefully through this process in order to avoid ending up with monopoly control over infrastructure like in the cases of Japan, South Korea, and China.

Clash of Interest

Article 45 prevents clashes of interest between market personnel. It prohibits persons responsible for the management or operation of any service activities from participating directly or indirectly in the beneficiary activities. On the occasion that an operator is part of a multi-activity entity the shareholders or owners may approve the annual plan of the operator and set limits on its debts; however, they would not have the right to instruct the operator regarding the day-to-day operation.

Pricing Reforms

Pricing reforms are another important requirement for a liberal market. The law differentiates between two types of customers: qualified and unqualified. Qualified customers are eligible to choose their gas suppliers and can negotiate the price with them, while unqualified customers get gas supplies according to regulations and prices approved by the Council of Ministers.

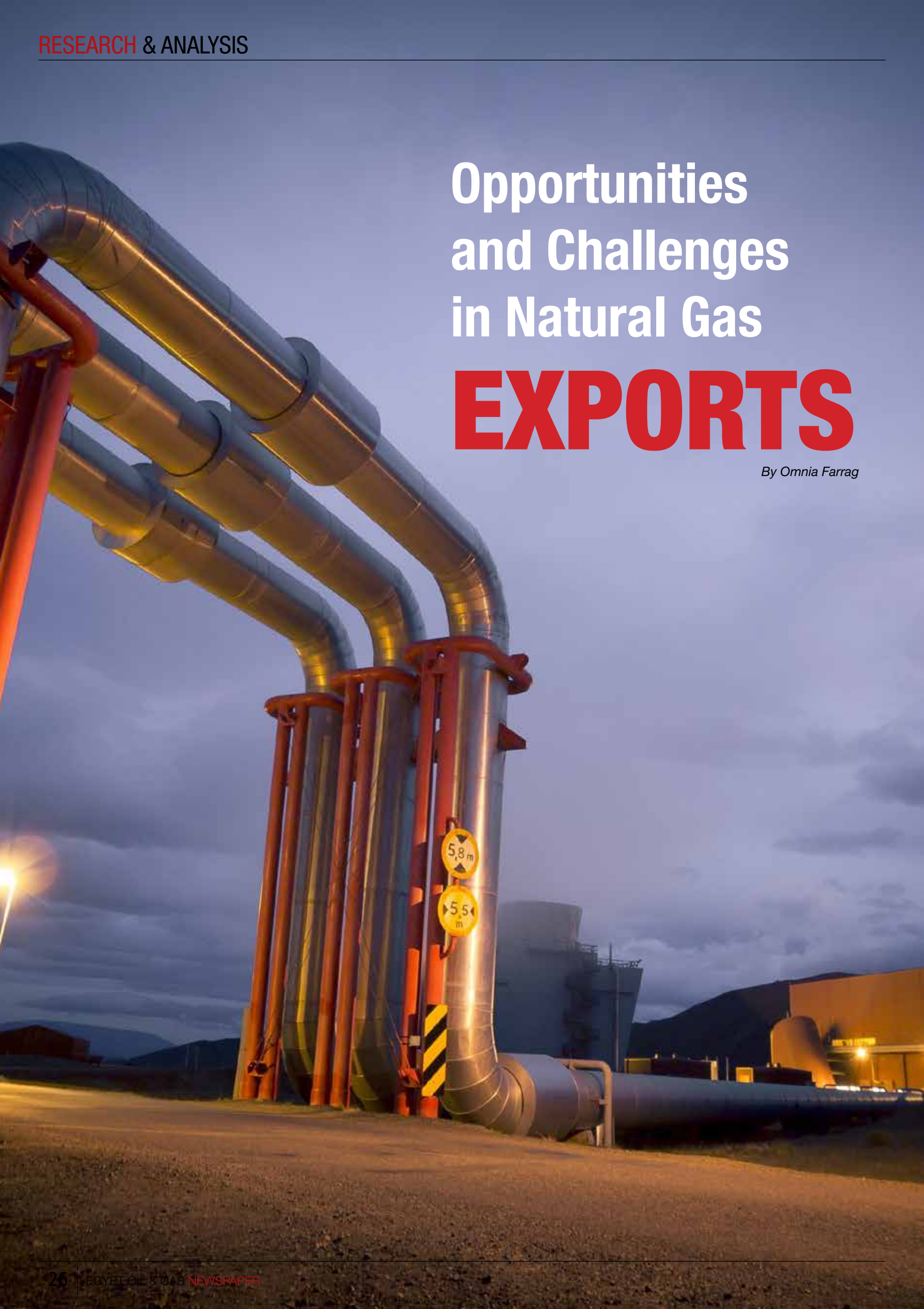
While the law does not elaborate more on how the prices would be freed, examining how price reforms have been conducted internationally may serve as a benchmark for how the process will work in Egypt.

There are three types of pricing mechanisms found in the main global importers of natural gas, according to the Shell report. The first type depends completely on market-driven prices, such as the type encountered in the US and the UK. These two cases are a perfect example of the mature and unregulated market. The second type relies on the market value of alternative energy sources after deduction of transport, storage, distribution and similar costs to determine an upstream price. The third approach, which is used by Japan and South Korea, sees prices pegged against the price of imported oil.

The process of liberalizing the natural gas market is a long and complicated journey. If not applied properly, the process may lead to the creation of a market monopoly in the midstream sector, which would threaten to reduce its efficiency. This liberalization process has taken decades for some countries, and in some cases the governments have not managed to completely liberalize the market even after years of regulations and deregulations. It took the US, for instance, 20 years to reach an optimal situation of gas pipeline liberalization. For some European countries, it took around 10 years. In countries such as China, Japan, and South Korea the market is still monopolized by oligarchies after years of market liberalization, which is why the executive regulations of the Gas Market Law should include detailed regulation of how to achieve each of the previously mentioned goals.

Opportunities and Challenges in Natural Gas EXPORTS

By Omnia Farrag



Liquefied natural gas (LNG) exports have represented a burden on the Egyptian economy for the past few years. During 2017 the Egyptian government developed plans to achieve natural gas self-sufficiency and start exporting natural gas.

Egypt is expected to reach self-sufficiency by the end of 2018, based on Minister of Petroleum and Mineral Resources Tarek El Molla's latest announcement on December 13, 2017. This statement was followed five days later by another declaration that Egypt will be back in the international natural gas market as natural gas exporter in five years.

The Egyptian Natural Gas Holding Company (EGAs) launched tenders for fewer LNG cargoes compared with previous years. Egypt will import 12 LNG cargoes in the first quarter of 2018, and the EGA is hoping that Egypt will only import 80 cargoes in 2018. These figures show that Egypt is taking steps to lessen its dependency on LNG imports; however, there are many other factors to be considered in order to evaluate Egypt's potential for natural gas exporting. These factors are: recent discoveries, consumption rates, infrastructures, and regional competition.

Recent Discoveries of Mammoth Fields

Recently, there have been several mammoth onshore and offshore natural gas discoveries in Egypt. Zohr, along with several fields at West Nile Delta and North Damietta concessions, represent the most important recent discoveries that will help Egypt increase local natural gas production.

Zohr was discovered in August 2015 by the Italian company Eni and is located in the Shorouk concession. As the biggest natural gas field in the Mediterranean, the mega field is considered a game changer for Egypt. It includes an estimated 30 trillion cubic feet (tcf) of natural gas, which increases Egypt's total natural gas reserves by about 40%, based on the Italian company's official statement. The gigantic field started production on December 16, 2017 with an initial capacity of 350 million cubic feet per day (mcf/d), which will contribute to decreasing Egypt's imports. An official from EGAS stated that Zohr production will reduce Egypt's import bill by around $50-60 million monthly.

The Mediterranean mega field's productivity is to be increased gradually, enabling Egypt to eventually start exporting. Nonetheless, Zohr was not the only field that started production in 2017. That year witnessed the beginning of natural gas production from the first two fields of the West Nile Delta concession, Taurus and Libra. These two fields, which were discovered by British Petroleum (BP), are an example of many other discoveries that BP has made in the West Nile Delta.

In the past two decades, BP discovered a series of fields in this area which are expected to contribute significantly to Egypt's natural gas grid. The Taurus, Libra, and Fayoum fields were discovered in 2000 and 2001, according to Offshore Technology (OT). They were followed by the Ruby discovery in 2002, which was further appraised in February 2009 and October 2013.

In 2004, two discoveries were made: the Raven field (with a flow rate of up to 37.4 mscf/d during the initial test) and the Polaris field. After three years, the Giza discovery was made, which contains around 1 tcf of natural gas. Three years later, Hodoa field was discovered, OT wrote. In 2013, 2015, and 2017 three more fields came up in the North Damietta concession area, namely Salamat, Atoll, and Attameya Shallow-1, respectively.

In 2017, BP announced that production would be starting in the Taurus and Libra fields eight months ahead of the previously scheduled start-up dates. The West Nile Delta is being developed as two separate projects and is expected to be fully on-stream in 2019. Taurus and Libra were scheduled to deliver an average of more than 600 mscf/d. Now, the fields' productivity is over 700 mmscf/d, which is 20% higher than the planned sales natural gas plateau.

The North Alexandria project, operated by BP, contributed to increasing the overall natural gas output when it started production in 2017. It increased Egypt's daily natural gas production rates to around 5.1 bcf in 2017 compared with 4.4 bcf in 2016.

Another recent offshore discovery around the Nile Delta is the Nooros field. It was discovered in July 2015 by Eni and began production in September of the same year. The field contributes significantly to the Egyptian national grid and its daily production increased from 900 mcf to 1 bcf in May 2017, based on MENA reports.

El Molla believes that these new discoveries will enable Egypt to reach self-sufficiency by the end of 2018. "The fields of Zohr, North Alexandria, and Nooros are among the most important projects that will increase natural gas production ... and will contribute to [Egypt's] natural gas self-sufficiency by the end of 2018," he stated in July 2017. Reaching self-sufficiency by that time signals that Egypt may achieve its goal of exporting LNG.

Export Potential: Production vs. Consumption

Exploration and production (E&P) are not the only factors determining Egypt's ability to export natural gas, since consumption levels are increasing as well. BP's report shows fluctuation in consumption figures during the past five years with a significant decrease in production levels.

In the past, production of natural gas used to override consumption. However, since 2013, the gap between production and consumption has continued to shrink due to increasing demand and decreasing production rates. Research conducted by BP found that 1,815 bcf was consumed in 2013, while only 1,981 bcf was produced that year. This gap became smaller in 2014 when 1,695 bcf was used and only 1,723 bcf was consumed. Consumption rates remained similar in 2015 with 1,688 bcf. As for 2016, rates were alarming as consumption dramatically increased to record 1,811 bcf while production significantly decreased to 1,476 bcf.

In November 2017, natural gas production witnessed a 14.11% year-on-year increase, according to statistics released by the Central Agency for Public Mobilization and Statistics (CAPMAS). Natural gas consumption increased 10.4% in November 2017 compared to same month of 2016, CAPMAS reported.

By January 2018, Egypt's production is forecasted to reach 5.4 bcf/d compared to 5.1 bcf/d during 2017, based on the expectation of the Egyptian General Petroleum Company's (EGPC) chairman, Abed Ezz El-Regal. National consumption is anticipated to be covered by June 2018, when Egypt's production of natural gas is to hit 6.4 bcf/d, according to Gamal Kaliouby, a leading international energy expert and professor of petroleum engineering.

The real challenge is that the increase of production will be met with an increase of consumption as well. Natural gas demand is anticipated to hit 6.37 bcf/d in 2018 according to CI Capital. Increasing demand for natural gas will be a major obstacle for achieving self-sufficiency and, of course, for the government's ambitions of exporting by 2022.

Export Potential: Infrastructure

As a previous natural gas exporter, Egypt already has some of the necessary infrastructures that will help the country follow its plan of exporting natural gas through the already existing pipelines and agreements. In addition, it can also utilize the recently chartered Floating Storage Regasification Units (FSRU) to export natural gas.

As for pipelines, Egypt already has the Arab Gas pipeline (AGP), through which it used to export its natural gas to Jordan, Syria, and Lebanon. In addition, the AGP has an underwater pipeline to Israel. Furthermore, Egypt has pipelines in Sinai through which it used to export its gas to Israel.

Compared to other regional competitors, such as Turkey, Egypt needs to establish more pipelines in order to achieve its goal of becoming a regional natural gas hub. Nonetheless, experts believe that reactivation of the already existing pipelines enable Egypt to export its natural gas at a competitive coat. "The AGP is very important since Egypt used to export natural gas to Jordan and other countries through it. If activated again and extended, it could be used to transport natural gas to the EU, which will be a better option for the EU than the East Med Pipeline," said Tharwat Hassane, Professor of Petroleum Engineering and Energy and Advisor in the Committee of Energy in the Egyptian Parliament.

Beside pipelines, EGAS chartered two FSRUs: Höegh Gallant and BW Singapore. The former arrived in April 2015 with a regasification capacity of 0.5 bcf/d, while the later was delivered in September 2015 with a peak regasification capacity of 0.75 bcf/d. Both units have a total rental value of $320,000 per day.

DEMAND IS ANTICIPATED TO HIT 6.37 BCF/D IN 2018 Source: CI Capital

Only half of the capacity of the two FSRUs is utilized by Egypt and it is anticipated that the country may use even less, Mohamed Khafagy, General Manager of Natural Gas and Economic Affairs at EGAS told Egypt Oil & Gas.

FSRUs can be used for natural gas exporting in the near future, helping Egypt to turn into a regional natural gas hub. "FSRUs are essential for this to happen, as it will take long time and large finances to establish onshore LNG terminals," said Osama Kamal, former Petroleum Minister to Egypt Oil & Gas.

In a phone interview, Constantinos Filis, the Head of the Russia-Eurasia & SE Europe Centre at the Institute of International Relations, pointed out the importance of Egypt's FSRU in turning it to an energy hub and connecting it to Europe. According to him, the country can use them to transport its own natural gas or Israel's and/or Cyprus's to Europe. He added that the Egyptian FSRUs can also connect to Greece's Alexandroupolis FSRU terminal, which is still under establishment in the northern Aegean Sea.

Although growing natural gas consumption can represent a challenge to Egypt's plans to export gas, the country's already-existing pipelines and FSRUs are a strong card in Egypt's deck to avoid losing exporting potential. Yet, existing facilities might not be enough to beat competitors, requiring Egypt to invest in more infrastructure to meet its target of becoming a regional energy hub.

NATURAL GAS EXPORTING VS. RE-EXPORTING:

MAXIMIZING EGYPT'S REGIONAL COMPETITIVE ADVANTAGE

By Mahinaz El Baz

With bright prospects in natural gas production, Egypt is willing to regain its position as a natural gas exporter. In order to reach this target and successfully reduce the gap between supply and demand, the country is taking serious steps towards increasing exploration and production (E&P) activities, in addition to diversifying energy mix. Yet, extraordinary paths are needed to ensure the sustainability of natural gas reserves and maintain production. One of these paths is maximizing the benefits of Egypt's unique Liquefied Natural Gas (LNG) infrastructure and reviving the regional cooperation by re-exporting the natural gas of other neighbor countries.

The Easy Option: Resuming Natural Gas Exports

Egypt used to be a net natural gas exporter before starting to import LNG in December 2012. In 2014, the country completely halted exports, turning into a net natural gas importer in fiscal year (FY) 2015/2016, with a hydrocarbon external deficit of $3.6 billion compared to a surplus of $5.1billion in FY 2009/2010, according to BNP Paribas' study on Egypt's oil and gas industry in 2017.

In August 2015, the discovery of the giant Zohr gas field by Italy's Eni brought a decisive turning point to the country's status in the natural gas market. The field, with its recoverable reserves of 30 trillion cubic feet (tcf) of natural gas, represents around 50% of Egypt's estimated 60 tcf of natural gas reserves, according to the Minister of Petroleum and Mineral Resources, Tarek El Molla.

The size of Zohr suggests that, at maximum production, a surplus could be set aside for export, allowing Egypt to resume its role as a regional exporter by 2020, as noted by Tareq Baconi in his policy brief to the European Council on Foreign Relations (ECFR). Additionally, there is optimism that, given the wealth of resources in the Eastern Mediterranean region, additional offshore reserves on Egypt's western coastline might be discovered, which could increase Egypt's export capacity.

However, BNP Paribas' study highlighted that, in order to free up natural gas capacity for exports, the country has to diversify the energy mix away from fossil fuels - hydrocarbons made up more than 95% of primary energy consumption in 2015. Although Egypt launched an ambitious renewables strategy aiming to increase the contribution of solar and wind resources to 20% of power output by 2022, progress has been rather slow and restricted to public projects rather than Independent Power Producers (IPPs). "As renewables accounted for only 0.5% of Egypt's power generation mix, it will effectively take a long time for the country to reduce its dependence on natural gas for power generation," according to the study.

Egypt's energy dependency on natural gas led the country to liberalize the natural gas market through a new gas regulatory law. The Egyptian Natural Gas Holding Company (EGAS), alongside the Egyptian General Petroleum Corporation (EGPC), announced in May 2015 the decision to allow private companies to use the state-owned national gas grid to import, transfer, and distribute natural gas to the local market. After years of deliberation, the gas regulation law was finally issued in July 2017. The provisions of the legislation shall be applied to regulate the activities of the natural gas market in Egypt, with the exception of petroleum concession agreements, which follows the law number 20 for 1976.

"With new discoveries and the new market regulatory law, there is a guarantee that Egypt will export natural gas," Professor in Petroleum Engineering and Energy Advisor in the Egyptian Parliament's Committee of Energy, Tharwat Hassane, told Egypt Oil & Gas. He further noted that, in order to achieve its export target, the government should "put a quick plan to complete all work for the new facilities of the new fields, such as Zohr and North Alexandria; enhance the well productivity by work over operation and put more fields in the production, and start thinking about the unconventional resources." Hassane added that the Egyptian oil and gas authorities should "invest in more exploration areas, enhance and maintain the gas network facilities to take more natural gas capacities, and try to use the new gas market regulatory law very soon and start giving the new gas licenses to the investors."

With Egypt exporting natural gas, the industry will attract more investments as "IOCs will benefit from natural gas surplus and exportation [in light of] the new gas market regulatory law, which allows the investors and the IOCs to sell the produced gas inside and outside of Egypt with good prices," Hassane explained.

Eventually, exporting natural gas will boost the Egyptian economy as it will increase foreign currency reserves and raise foreign investments. "The gas market is a promising market to which most countries are heading; therefore, there is a possibility of increasing prices. This will have an effect on the Egyptian economy, as the national economy has very few foreign currency sources. Hence, exporting natural gas will have a new

> "IOCs will benefit from natural gas surplus and exportation [in light of] the new gas market regulatory law, which allows the investors and the IOCs to sell the produced gas inside and outside of Egypt with good prices."
>
> **THARWAT HASSANE,** Professor in Petroleum Engineering and Energy Advisor in the Egyptian Parliament's Committee of Energy

source of foreign currency that adds to the foreign currency reserves, which will lead to currency stability," Group CEO of Solid Capital, Mohamed Reda, pointed out.

Moreover, Egypt is expected to allow foreign companies to freely export natural gas not needed for domestic use in five years, El Molla announced during Al Ahram's energy conference. New exploration contracts contains a clause that allows companies to export a part of their share of extracted natural gas abroad in the event it is not needed by Egypt, the Minister added.

The Unusual Option: Natural Gas Re-exports

While Egypt's production is expected to match, even outstrip, domestic demand, some experts argue that, despite rising production, the supply-demand gap could continue to widen due to Egypt's growing population and its heavy dependence on natural gas to generate electricity. This brings up a concern about running out of gas reserves and consuming the available capacity in exporting gas on the medium run, which leads to another hydrocarbon external deficit in a long term.

The Egyptian consumption of natural gas has been increasing by approximately 7% annually over the past decade, according to Daily News Egypt. The country's total natural gas consumption is about 6 billion cubic feet per day (bcf/d), from which roughly 65% is burned in electricity-generation plants, as a government official told Ahram. The rising demand is caused by the growing industrial and chemical sector demand, and the utilization of natural gas to produce LNG for export, according to a study by Gaffney, Cline & Associates (GCA) on the Egyptian gas market.

Egypt's natural gas demand is expected to increase by more than 5% per year between 2015 and 2021, according to the International Energy Agency (IEA). CI Capital, on the other hand, expects Egyptian demand to increase by 9.4% per year between 2016 and 2020, according its analysis in "Egypt's Natural Gas Outlook," predicting that demand will reach 2,860.5 bcf in 2020. GCA sees Egyptian demand rising as well. According to its mid-case scenario, GCA projects that Egyptian demand for natural gas will reach around 8 bcf/d in 2019/ 2020.

"With the recent gas developments brought on-stream, Wood Mackenzie forecasts that Egyptian domestic gas production will reach 7.7 bcf in 2020. Post-2020, we see production from fields currently on-stream or under-development falling, largely due to the continued decline from historic fields, which could force Egypt to restart imports in the mid to late 2020's. However, this could be offset by new discoveries, especially with new licensing rounds planned for the Western Mediterranean and Red Sea, both of which are considered to be gas prone," Stephen Fullerton, Research Associate at Wood Mackenzie explained.

Affirming on Fullerton statement, Dr. Pascal Devaux, Senior Economist MENA at BNP Paribas Bank, mentioned that "Unless there are new significant discoveries, the long term Egypt will have to import gas again as consumption will continue to increase."

Therefore, "Egypt has to choose between the traditional path of exporting surplus natural gas in either LNG - in order to accumulate foreign exchange reserves - or industrial forms, in a way that maximizes factors of economic development, such as employment and industrial integration," BNP Paribas' study noted. The second path will push the state to go for unusual options, such as using the current LNG infrastructure in re-exporting the natural gas of neighbor countries to Europe.

"Given Egypt's current reserves and expected future production, it makes sense to utilize Egypt's LNG facilities to re-export gas from neighboring countries. This allows Egypt to realize revenues from these facilities without having to use its domestic gas reserves. But this is an evolving picture and if Egypt was to make significant exploration discoveries to allow for long-term gas self-sufficiency, it would make sense to export the excess gas via LNG," Fullerton noted.

Re-exporting natural gas of other countries should help the country in saving its reserves, as some producing legacy gas fields suffer from high rates of decline in production (12% annual average). While the four key offshore discoveries are being fast-tracked, they have varying production plateaus ranging from 11-18 years (Atoll, Zohr) to much shorter 3-5 years (Noroos, West Nile Delta). Replacing declining offshore production necessitates further exploration investments to proactively sustain Western Desert production that should start naturally declining in 2-3 years, albeit at smoother rates, according to Daily News Egypt. "Egypt's capacity to export gas may not last beyond 2022," the study stated.

Potential Regional Cooperation

Energy producing and non-energy producing countries tend to use their geographical location to become energy hubs. Turkey, for instance, is not one of the major oil and gas producers; yet, its geographical locations serve as a bridge between the east and the west. In the same context, Egypt's goal of becoming a regional energy hub is based on three main prerequisites for success. These pillars are strategic locations on key trade routes, proximity to resource-rich countries with relatively saturated domestic markets, and advanced LNG export infrastructure, according to BNP Paribas.

The country is planning to receive natural gas from different source countries and transform it into LNG using the Egypt located Idku liquefaction plant and the Damietta liquefaction plant. "Being a regional gas hub and using domestic gas resources can be done together. As I think that the Egyptian LNG export capacity is limited, the development of the gas hub advantage is a good opportunity to use existing facilities and generate revenues," Devaux stated.

Egypt is already part of some regional and sub-regional agreements, such as the Arab Gas Pipeline (AGP) and El- Arish-Ashkelon Pipeline. The AGP is a shared pipeline between Egypt, Jordan, and Syria, which has been executed over four phases. Moreover, Egypt signed a preliminary deal with Cyprus on August 2016 that paves the way for further negotiations on a construction of a submarine pipeline, through which Cyprus would export natural gas from its offshore field Aphrodite to Egypt, according to Egypt's Ministry of Petroleum's press release. If the project overcomes the considerable hurdles in its path, including uncertain funding, the pipeline could be operational by 2020, enabling Cyprus to finally begin producing from its largest known natural gas deposit. It worth noting that Egypt has offshore pipelines connecting it with Cyprus, which is why the two countries had signed a memorandum of understanding (MoU) in 2015 to send gas from Cypriot Aphrodite field to Egypt to be re-exported.

The agreement is part of Egypt's plans to have a shared infrastructure with its neighboring countries to import and export energy. El Molla stated to Pipeline Journal, "This is part of the development of the east Mediterranean gas as a whole and I think our strategy optimally is to position ourselves as an energy hub in the region." In his interview with BP Magazine, the minister further stated, "We have signed agreements with Cyprus to bring their gas here, whether for our domestic use or to export on their behalf through our LNG facilities. There's an opportunity to do the same with any other gas [sic] in the Eastern Mediterranean basin."

Besides Cyprus, Egypt has good opportunities to cooperate with other East Mediterranean countries. With limited domestic markets, Israeli and Lebanese fields will need to find external buyers at a time when world gas markets are close to saturated. The most pragmatic and practical near term path to outside markets would be to build a network of short pipelines and tap into Egypt's LNG plants.

Egypt, at least initially, provides the most pragmatic route to reap the economic benefits of exporting East Med's natural gas to the European Opinion (EU) without exacerbating regional tensions, according to the Financial Times. "[Egypt can access the European Market], but as a re-exporter, not as a direct exporter," Devaux explained. Moreover, he highlighted that "there are a lot of gas resources in the East-Med region, but building export capacities is very costly. Egypt can benefit from the use of its LNG facilities to re-export gas. Nevertheless, for the time being the political factor is a strong constrain that prevent Egypt to take profit from its LNG facilities."

From his side, Fullerton mentioned that "one stumbling block may be the landed price of East-Med gas into Europe via Egypt's LNG facilities. Cypriot/Israeli gas would have to compete with several new sources of supply, so this could present challenges once tariffs, liquefaction costs, and transportation costs are factored in." Furthermore, he explained that "in recent years, Egypt has been one of the largest importers of LNG in the region. With the increase in domestic production, this will offset most and potentially all of these volumes. As far as exports go, this is very much an evolving picture. We have already seen a discovery made in Cyprus and further exploration successes could completely reshape the landscape for LNG exports."

The Egyptian LNG infrastructure is promoting the country to be either a gas exporter or/and a transit point. Both paths will help the country to become a regional energy hub. Yet, it is important to maximize and sustain the Egypt's regional competitive advantage on both short and long-run.

THE IMPACT OF LNG IMPORTS REDUCTION ON EGYPT'S BOP

By Mahinaz El Baz

Egypt is aiming to become a regional energy hub following the recent discoveries of large offshore gas reserves in the Eastern Mediterranean and the Nile Delta. The country's goal is essential during the current transitional period as the energy sector, especially the oil and gas industry, remain the major driver of Egypt's Balance of Payments (BOP).

Economic and petroleum experts believe that the country has a strong potential to become a trading, transit, and exporting natural gas hub in the region. However, achieving this ambitious goal is mainly depending on the country's ability to cope with geopolitical, economic, security, and legal uncertainties, both locally and regionally.

Moreover, Egypt is planning to have a diversified energy mix to reduce dependence on gas for power generation. It is worth noting that the country's total natural gas consumption is about six billion cubic feet per day (bcf/d). Out of this six bcf/d, roughly 65% is burned in electricity-generation plants, a government official told Ahram Online. By having a diversified energy, Egypt is willing to sustain the expected natural gas exports, as the Ministry of Petroleum and Mineral Resources is currently working to achieve energy self-sufficiency target, according to the Minister of Petroleum and Mineral Resources, Tarek El Molla.

LNG Changes Egypt's BOP Performance

Since 2011, sharp macroeconomic deterioration and structural natural resource trends have pushed Egypt's oil and gas sector into difficulties. The first hit was the decline in offshore Mediterranean gas production as a result of reservoir maturity and stalled investments.

The production of four of Egypt's major offshore gas fields started to decline in 2012. The second hit was the accumulation of the Egyptian General Petroleum Corporation (EGPC) arrears to upstream investors, peaking at $6.3billion in 2012 and representing around 2% of Egypt's Gross Domestic Product (GDP) as a result of mounting fiscal deficits and deteriorating external liquidity during the political transition, according to a BNP Paribas' study on Egypt's petroleum industry in 2017.

The third hit came from the decline in crude oil prices in the fiscal year (FY) 2014/2015, thereby discouraging foreign investment, especially in high-risk deep-water exploration, the study highlighted. In the same FY, Egypt had to halt Liquefied Natural Gas (LNG) exports and turned into a net natural gas importer in FY 2015/2016, with a hydrocarbon external deficit of $3.6 billion compared with a surplus of $5.1billion in FY 2009/2010, the study noted. During that period, economic experts explained that the current account deficit was largely driven more by the negative hydrocarbon balance than by the decline in tourism, as reported by Daily News Egypt.

Due to the increasing natural gas consumption and decreasing production, Egypt had to import a total of 118 LNG cargos in FY 2016/2017, costing an import bill of about $2.2 billion, according to a press release by the Ministry of Petroleum and Mineral Resources. On the other hand, the government has taken steps towards diversifying its revenue sources, in light of the BOP static structure. The economic reform launched in 2016 aims to reduce the BOP deficit and create more endogenous sources of revenue.

Despite the high LNG import bill, Egypt's BOP ran an overall surplus of $13.7 billion in FY 2016/2017, of which $12.2 billion were realized in November/June 2016/2017, following the Central Bank of Egypt (CBE)'s decision of the exchange rate liberalization against an overall deficit of $2.8 billion in the previous FY, according to CBE.

"Egypt's BOP started posting a large surplus since 2017, driven by monetary policy and fiscal reforms, thus reversing the negative trend seen since 2011. The BOP surplus has been mainly driven by portfolio inflows into the public debt market, but I expect greater contribution from merchandise trade balance and labor remittances in 2018-2020," Youssef Beshay, Senior Banker at BNP Paribas, stated.

According to an announcement from the ministry of petroleum, Egypt intends to stop importing LNG by the end of the current FY 2017/2018. The country will reach its LNG imports halting plans as it speeds up output at newly discovered natural gas fields, the minister Tarek El Molla said, which will enable Egypt to save $250 million per month, as CNBC informed.

"According to our estimates, it [halting LNG

imports] should save roughly $1.8 billion in FY 2018/2019, which is equivalent to 0.6% of GDP. Thus, the impact on the current account deficit will be positive on the short term (and accordingly on BOP)," Dr. Pascal Devaux, Senior Economist MENA, BNP Paribas highlighted. "On the medium term, it is difficult to estimate how much can be exported, at best few hundred millions of USD. We do not believe that LNG exports will be a game changer with regard to BOP trends," he added.

Giving a close estimate to Devaux's prediction of the financial impacts of halting LNG imports, Allen Sandeep, Director, Research, NAEEM Brokerage, explained that "On the BOP and Balance of Trade (BOT), overall, when we achieve self-sufficiency in gas, Egypt would stop importing LNG, which in FY2016/2017 cost us around $2.5billion (as imports)." However, taking into account production share of the international oil companies (IOCs) in the new gas fields (Zohr, Nooras, Alex-offshore), "the country should effectively be saving around $1.5 billion per annum on a net basis," he added.

Meanwhile, Beshay believes that "the transformation of Egypt's gas balance would save Egypt's trade balance $1-2 billion per annum from FY2018/2019 onwards." It is worth noting that LNG imports peaked at $ 2.4 billion in FY2016/2017.

New Gas Discoveries

Increasing natural gas production at existing fields and fast-tracked development of new fields will bring online significant amounts of gas through 2020, according to the American Chamber in of Commerce in Egypt's industry insights from December 2017. Given the promising production of Zohr and other deep-water fields such as Atoll, Nooros, Taurus, and Libra fields, the Ministry of Petroleum and Mineral Resources is aiming at importing only 80 cargos throughout FY 2017/2018, reducing 32% of Egypt's current import bill of $200 million per month, Petroleum Minister Tarek El Molla told Reuters.

"Egypt will be able to export gas again. It is exporting gas already with much lower volumes than before but after becoming self-sufficient in gas, by the second half of 2018, more volumes will be directed to LNG as there will be surplus of gas, and exports should be back," Amr Zaher, Reservoir Engineer at Shell, said. "There is Zohr ramping up and adding new phases, and other fields are coming on stream during 2018. That's why by the second half of 2018, we should expect a surplus," he noted. .

Output from Zohr field currently saves Egypt more than $60 million monthly in natural gas imports. This sum is expected to increase to $250 million per month by the end of 2018, according to Ahram Online. "After discovery of Zohr gas field, which is considered the largest ever natural gas field in the Mediterranean Sea, with its huge production capacity reach to 30 trillion cubic feet, Egypt no longer needs to import gas again even on increasing energy demand," Dr. Abdelaziz El Hoshoudy, a Researcher at the Egyptian Petroleum Research Institute, stated. "In the upcoming days, Zohr field will almost double Egypt's gas reserves, so the global gas market will be concentrated through Egypt, which will change the fuel strategy in the Arab region," he added.

It is worth noting that Egypt's production of natural gas increased by around 14.11% year-on-year (Y.o.Y), rising to 3.12 million tons (mt) in November 2017, compared to 2.734 mt in November 2016, according to the Central Agency for Public Mobilization and Statistics (CAPMAS). On the other hand, consumption of natural gas increased around 10.4% Y.o.Y to 3.472 million tons in November 2017 from 3.144 mt the previous November, CAPMAS report stated. "The Egyptian market should have flexible configuration to import LNG seasonally, notably in 3Q to accommodate peaks in household and industrial consumption," Beshay commented.

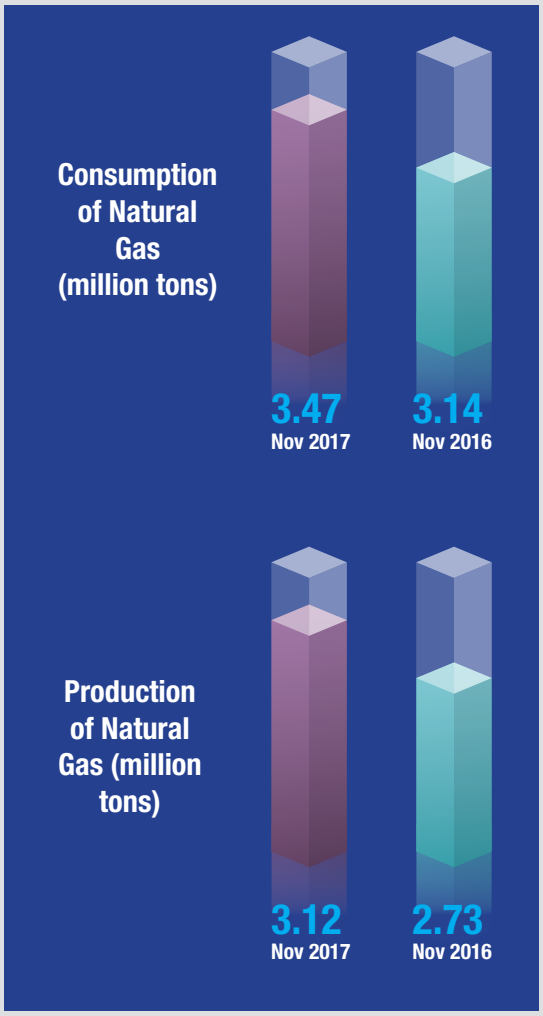
Given the figures, local natural gas supply is expected to narrow the current supply-demand gap; as CI Capital expects consumption levels to increase to 6.37 bcf/d, a close estimate to the planned production level of 6.2 bcf/d, by the end of 2018. This narrowing of the gap will reduce the import bill to around $40 million monthly.

HALTING LNG IMPORTS SAVES 0.6% OF GDP

"The total imports of refined petroleum and gas should drop by 20% by FY2018/2019, as Egypt should effectively save around $2 billion starting 2019, due to the absence of LNG imports," according to Naeem Brokerage report on the Egyptian economy, December 2017.

Future Scenarios

There is an ongoing debate between economic and petroleum experts about the future of LNG market dynamics in Egypt, in light of the increasing production and consumption. "On the supply side, there is 40 mt of new LNG supply that has to be absorbed in 2018 (in addition to 30 mt that came online in 2017). Whether this added supply gets catered to by the largest new importers (including China and India) is a tough question to be answered," Sandeep stated.



Zaher explained that "if you look at the supply and demand, Egypt should be self-sufficient till 2023-2024, but there are many efforts from the Egyptian government to open new plays and add new acreage for exploration that companies can explore and add more volumes and more supply."

On the contrary, economic experts believe that the government should think of the best energy mix when planning for natural gas exports sustainability, as demand is growing faster than production rates.

"Egypt will certainly export gas in the next few years. However, the question of gas exportation on the medium term depends on the pace of power mix diversification. In other words, the faster Egypt on boards new renewable power generation capacity in 2019-2022, the greater gas surplus would be available for export via existing LNG terminals in Idku and Damietta. LNG exports will contribute positively to trade balance, but I expect contribution to be far lesser than the LNG export boom of early 2000s due to higher demographic pressure stemming from new power connections," Beshay noted.

He further explained that "the real game changer for Egypt's trade balance rather be LNG exports via Idku and Damietta due to lower political risk and technical readiness of the terminals versus alternative export routes."

Both economic and petroleum experts agreed on the positive impact of reducing LNG exports on Egypt's BOP on the short and medium runs. Yet, increasing natural gas consumption is a main independent variable affecting the equation of LNG imports and exports on the long run.

IRANIAN LATEST DEMONSTRATIONS' EFFECT ON THE OIL MARKET

By Omnia Farrag

In December 2017, the oil barrel price reached $64 - the highest monthly average since 2014. One of the factors that could have contributed to this increase was the Iranian massive demonstrations that took place between December 28, 2017 and January 3, 2018.

Iran is the third biggest oil producer of the Organization of the Petroleum Exporting Countries (OPEC), with oil output reaching 3.8 million barrels per day (b/d). Due to Iran's huge contribution in international oil trade, many analysists expected oil prices to further increase if the demonstrations had continued in the country. Economic expert Panos Mourdoukoutas wrote in Forbes that he expected oil prices to reach $100 per barrel if the demonstrations had lasted for longer - like in the 1979 Global Energy Crisis, which had the decrease of oil output during the Iranian Revolution as one of its main drivers.

In his article, Mourdoukoutas pointed out to that Iran's recent protests themselves would not lead to direct significant increase on global oil prices; however, the geopolitical aspects of the demonstrations could lead to this increase for various reasons. First, protests usually put the government between two decision-making situations: not interfering in the demonstrations and risking destabilizing the government or cracking down on the protests and risking being sanctioned over human rights violations. In Iran's case, both paths present harsh effects on the local oil industry and worldwide.

The tension relation between Iran and its Arab Sunni neighboring countries represents an additional impact of political unrest in Iran on oil prices. During the demonstrations, the Iranian government grew the tension with countries that were supporting protesters. Mourdoukoutas stated his belief that Saudi Arabia, OPEC's second largest oil exporter, is the Persian Gulf country's main rival in this aspect. He warned that Iran may in the future escalate against Saudi Arabia if further and larger protests take place. Such situation affecting the two main players of the international oil market would have an impact on the petroleum industry.

However, the Iranian protests' influence on oil prices is not a unanimous belief. Some experts affirm that an immediate impact of demonstrations on oil prices would only happen if protests attacked oil fields. Oil Prices wrote that the Iranian government managed to protect the fields during the latest demonstrations. In addition, protestors are less likely to attack oil fields, David Roche, president of advisory firm Independent Strategy, told CNBC Asia. According to Roche, such movement from the protestor side would not happen overnight; it would be likely to take place after a set of escalations.

From the Iranian side, sources at the Iranian government told Reuters that the protests did not affect oil exportation. "Iran's crude oil production and exports have not been impacted by the unrest spreading across the country," Reuters cited an anonymous Iranian official a day before the government announced the dispersal of the demonstrations in January.

In the same line, Vandana Hari, founder and CEO of Vandana Insights, an Asian energy market analysis firm, told CNBC Asia that the price increase in December might have just been a "knee-jerk reaction in the marker." He added that prices would remain stabilized as long as it sees that the protests are not impacting supplies.

The debate on whether the Iranian demonstrations influenced December's oil prices hike, as well as whether it can present future impacts on the industry, illustrates the importance of considering political backgrounds when establishing strategies in the oil and gas sector. In Iran's case, it is relevant to keep an eye on the tension between Iran and its Sunni neighbors, especially Saudi Arabia, as well as on the protesters' moves and the countries responses.

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AUV being deployed off back of vessel.

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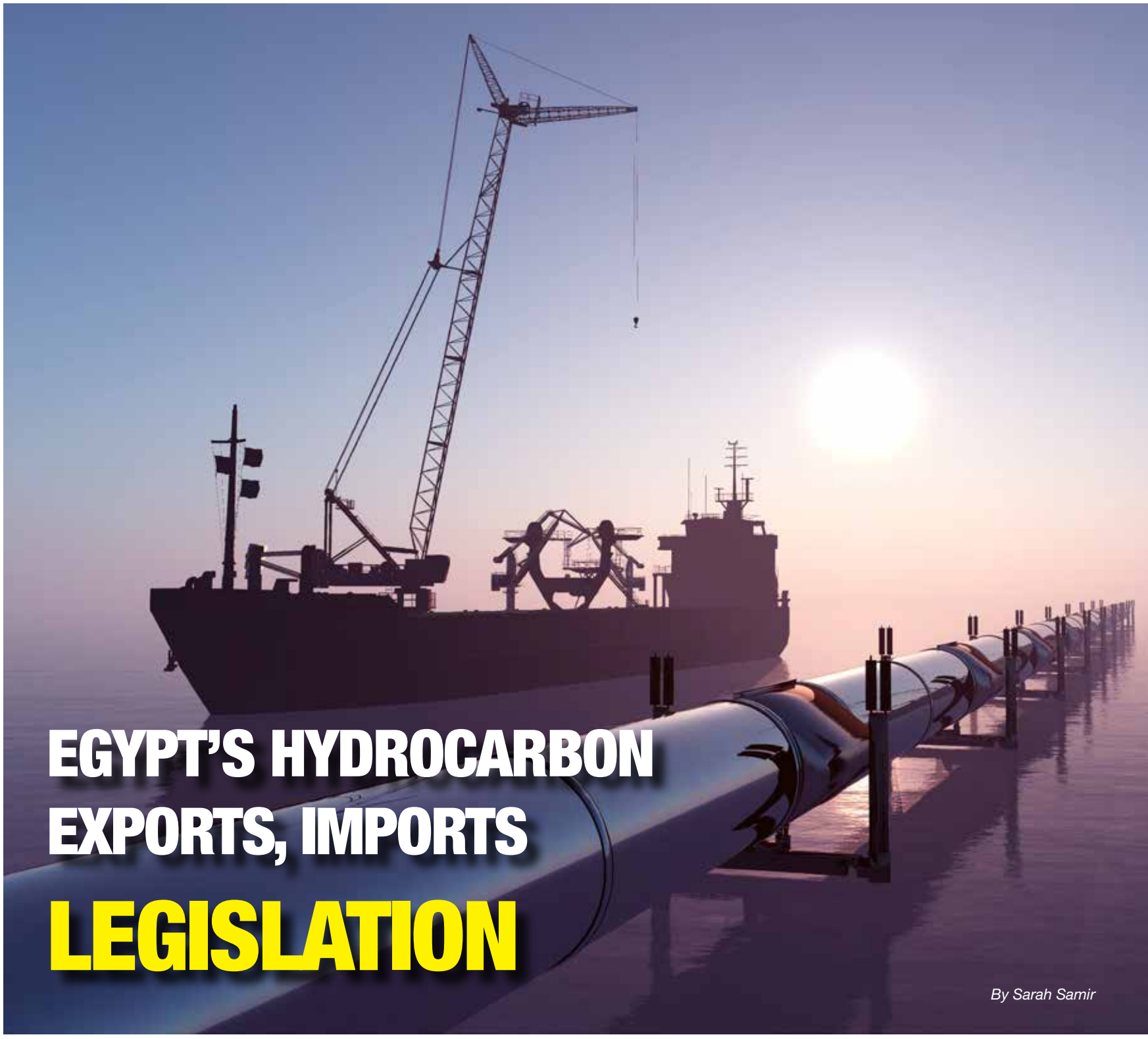

EGYPT'S HYDROCARBON EXPORTS, IMPORTS LEGISLATION

By Sarah Samir

Egypt has an attractive climate for hydrocarbon investments. Many international and national firms are interested to enter the Egyptian hydrocarbon market, whether by conducting exploration and production (E&P) activities or through establishing stations to sell hydrocarbon products. In order to pump more investments, the Egyptian government has made the market more attractive for these companies through polished legal terms concerning hydrocarbon exports and imports.

Egypt's oil sector is mainly governed by the state-owned Egyptian General Petroleum Corporation (EGPC), while the gas sector's affairs are related to the Egyptian Natural Gas Holding Company (EGAS). Other stated-owned bodies involved in oil and gas operations include the Egyptian Petrochemicals Holding Company (ECHEM), Ganoub El Wadi Petroleum Company (Ganope), and the Egyptian Geological Survey and Mining Authority (EMRA). Partnering with state-owned firms is an obligation for any international oil company (IOC) to explore the Egyptian oil and gas fields. Hence, before importing oil and gas or exporting hydrocarbons from these fields, some terms should be considered.

Oil Exports Regulations: Concession Agreement

Allowing IOCs to export oil and natural gas is a great step to attract investors to the field. The concession agreement already enables IOCs to export crude oil if the country does not need it. However, with the growing demands of the country, Egypt exported only low amounts of crude, including heavy crude oil that cannot be refined in its facilities. Egypt's oil exports value recorded $208 million in October 2017, according to statistics released by the Central Agency for Public Mobilization and Statistics (CAPMAS).

The Egyptian constitution states that all the oil and gas resources are governed by the country. In order to ensure the control over these resources, the concession agreement is issued. "Once a commercial discovery has been made, and after the exploration costs and expenses have been recovered, the contractor's share of the disposition petroleum may be freely disposed of, either through export or otherwise. However, EGPC and Ganope always have a preferential right to purchase the oil at a predetermined price to meet local market requirements," according to Donia El-Mazghouny and Girgis Abd El-Shahid 's article "Oil Regulations" to Shahid Law Firm.

Every agreement is relevant to the resource itself, "each concession agreement includes the mechanism of disposing the oil produced from the oil wells under such concession agreement," Reham Eissa, Senior Associate at Sharkawy & Sarhan Law Firm, told Egypt Oil & Gas. "The current concession agreement template, issued by EGPC, allows exporting the produced oil by the contractor. However, the concession agreement also includes a priority right to the local market need. In case of

unavailability of the local market, EGPC and the contractor are entitled to export their respective share in the oil or gas," Eissa explained.

Oil & Petroleum Products Imports

Egypt owns significant refineries, with capacity estimated at 732,550 barrels per day (b/d) in late 2016. With this, the country has started to import crude oil from several countries to be refined in the Egyptian refineries and sent back as petroleum products or sold in the Egyptian markets. In November 2017, negotiations between Egypt and Saudi Aramco started for the refining of Saudi crude in Egypt, the Minister of Petroleum and Mineral Resources, Tarek El Molla, told media at the time.

It has been allowed for private sector to import oil in order to cover local demands. "The Egyptian Refining Company (ERC), which is run by the private sector, has a unique 25-year deal with Cairo Oil Refinery Company (CORC), where the former imports crude oil on behalf of EGPC to supply it to the state-owned refinery. This oil is refined in Mostorod or Tanta refineries and then sent back to ERC for further refinement. The private sector refinery will either sell this oil to CORC or the open market at international prices. This setup helps the government meet local demand for petroleum products from locally produced products," according to the article entitled Egypt's Refineries: A COMPLETE PICTURE, written by Tamer Mahfouz.

All the refineries processing in Egypt, except for ERC, are state-owned and run by the country's public sector. Hence, most of the locally refined petroleum products are owned by the government. For companies to transport their products, "pipeline transportation is essentially carried out through the national grid owned and managed by EGPC or its subsidiaries. Otherwise, the transport of oil and gas products, most of which are considered hazardous materials, requires the prior authorization of the Ministry of Petroleum," according to El-Mazghouny and El-Shahid's article.

Egypt produces several petroleum products and petrochemicals like diesel and mazut, which can be used to fuel equipment. "Typically, concession agreements oblige contractors and joint operating companies (JOCs) to give preference to locally manufactured material, equipment, machinery, and consumables as long as their quality and time of delivery are comparable to the internationally available items, unless the price of the local items is higher by more than 10% than that of the imported items," stated the article. Hence, there is a priority in using locally produced fuels, to cover the needs of the oil and gas activities.

THE EGYPTIAN CONSTITUTION STATES THAT ALL THE OIL AND GAS RESOURCES ARE GOVERNED BY THE COUNTRY.

Natural Gas Exports & Imports

The Egyptian government had been in control of natural gas exports for years before the country turned into a net gas importer, becoming the sole importer of the product. Nowadays, "it is not in EGPC/EGAS interests anymore to be the sole aggregator or distributer of gas," Research Associate at Wood Mackenzie, Stephen Fullerton, told Egypt Oil & Gas.

Egypt is expected to have natural gas surplus as the newly discovered fields increase output. "Whether natural gas is produced accompanied to crude oil or produced solely from its fields, it is not stored after production and processing operations, except in special cases and in limited quantities using expensive technologies. Thus, selling and production operations must be done simultaneously in order to guarantee the continuous investment operation in the fields of exploration and the development of natural gas reservoirs, taking into consideration that there are limited alternatives, whether selling in domestic market or exporting when there is a surplus," according to a study prepared by the Ahram Center for Oil and Energy studies.

With the growing production of natural gas, it becomes important for the Egyptian government to allow private sector companies and IOCs to export gas. Accordingly, the country will permit oil firms to export surplus natural gas, which is not needed for local supply, in five years, as minister Tarek El Molla announced in December 2017.

However, prior to natural gas exporting permit, Egypt should consider several procedures including "negotiations with foreign partners to set a maximum gas price, aiming at determining gas costs in order to suit the domestic market needs, exporting agreements and to protect Egypt from price fluctuations in the international markets," Ahram Center's study pointed out. Additionally, the country should estimate gas production average cost, "which was between $0.65 and $0.70 per billion British thermal unit (BTU), aiming at putting a suitable minimum in gas exporting contracts." Furthermore, it should study the international markets and the gas prices, determine both the minimum and the maximum of gas prices in order to protect the petroleum sector in case of price reduction, and achieve a competitive price for Egyptian gas taking into consideration the limited number of the international markets at that time.

The procedures further include "studying producing countries' prices, taking advantage of the limited information available through communications with some of the consultants around the world; obtaining the approval of the Council of Ministers' on the average prices of different projects and exporting gas; restructuring the petroleum sector by establishing EGAS to be responsible for the contracts beside the EGPC, to follow up implementing the contracts and projects of gas exporting whether it is liquefied or in pipelines," Ahram Center's study further highlighted.

Additionally, in line with the ministry's efforts to liberalize its natural gas market, "the Egyptian Parliament passed Law No. 196 of 2017 for the deregulation of gas market activities in August 2017," said Reham Eissa.

Eissa added that "the gas law is expected to be governing natural gas exports and imports, as well as transmission and distribution, and that it will exceed this to the development of distribution and transportation's pipelines and facilities." The new legislation will enable private sector companies to directly import natural gas and use the country's national grid and facilities to distribute it into the local market, boosting the gas market competitiveness.

In a full picture, Egypt has created a strong legal frame to preserve its oil and natural gas resources. In order to cope with the energy global developments, the Egyptian ministry has enhanced its efforts to liberalize the markets, empower oil firms operating in the country, and eventually become an oil and gas regional trading hub without shaking the firm laws governing the oil and gas sector.

THE MAIN OBSTACLES FACING EGYPT IN EXTENDING NATURAL GAS NETWORKS

Egypt's energy dilemma has attracted attention over the past decade as one of the major challenges facing the government: it reflects the economic and social instability following two revolutions that took place in less than five years.

As natural gas has been always the key to solve most of Egypt's energy challenges, the government had to accelerate the pace of providing solutions and alternatives to meet the energy needs of its citizens and create an attractive environment for energy investments. This reform is expected to take longer time than usual to reach its goals, as the government has to deal with obstacles that have been accumulated over time and through past political regimes.

The main challenges facing the development of the natural gas grid are lack of natural gas supply, aging infrastructure, delay in extending sewage networks, rapidly spreading slums, the continuous support to the subsidized cooking gas cylinders, and the economic hardships facing distribution companies after floating the exchange rate.

Moreover, the hard financial status of low-income citizens drive them away from contracting to connect their residential units. It is worth noting that the government received a grant from the European Union and the French Development Agency to support unable and low-income citizens with a EGP 1,500 aid per unit, according to the monthly consumption of electricity, which is an important step to overcome this financial obstacle.

Despite obstacles facing the government, it is seeking to overcome them quickly. One of the signs of its success is getting closer to meeting the country's goal of natural gas self-sufficiency during 2018 and having new records of developing natural gas fields, in addition to linking these fields to the national gas grid.

Moataz Sonbol

Natural Gas Affairs Specialist

EARTH MODELLING AT A GLANCE

Earth Modelling is an old terminology describing some parts of earth's science, in specific sedimentary. Different earth models created by specialists explained individual items of theory, for example, sedimentologists illustrated the depositional environment models and the difference of each part, which answered many of the dilemmas related to other geology branches, as petroleum geology. Many other models have been created by different scientists and specialists for different purposes of illustrations on an individual or integrated discipline, under a stand-alone or merged 3D model.

The static modelling is another type of earth modelling that eventually appears between geoscientists and petroleum engineers for exploration and development purposes. Some geoscience software invented 30-40 years ago have helped to develop a new branch of earth modelling discipline in 3D "zero phase" through technique of software's application.

There are benefits of building a 3D model statically "zero phase," not only for exploring, developing, and prediction of oil and gas fields, but for other different targets, as understanding the parameters of field's factors and its uncertainties for more direct integration between its involved disciplines together in one figure of three dimensions. Additionally, it is a vital task for mathematic volume estimation.

The most important value of building a static model in 3D for exploration and development is connecting all of the geoscientist and engineering data together in one figure, which helps to correlate the available information and understand well the capabilities, limitations, and effects of each factor until percentage of uncertainty reaches its minimum level. It maximizes the integration of all individual geoscience and engineering branches in order to use their analogous "conceptual figure" in a better way before taking decisions to next phase of the project.

The geoscientists' "geology background" is the best candidate to build a model in 3D for different purposes of exploration and development at oil and gas fields. Creating 3D static model indeed is an integration work for G&G at the beginning of the project, accompanied by engineering input and the main tasks of the model, conceptually and mathematically.

Any available input data would lead to better understanding of the field's setting and status, as well as help in choosing the most accurate scenario out of different conceptual analogues for the field. All this to be applied and get closer to correctly defined integrated parameters of the 3D model, leading to an accurate 3D static model rather than coming up with a stochastic 3D model, which has uncertainties according to the puzzle of the field.

In theory and regardless the commercial 3D static modelling software, the workflow of building a 3D model for an oil and gas field in its static "phase zero" before or during the production is simple and easy as a first step. The process gets more sophisticated by time after integrating all the data of each discipline, such as geological depth maps and its relation to the log data, correlating all to other data of the engineers.

Second step of the theoretical workflow is applying different scenarios related to main field status. For example, applying different possible classification of reservoir geometry, limits, and borders matching geological concept and its suggested analogue. All Geo-Modelers believe that the most important step of earth modelling methodology is building different trails to capture all of the suitable scenarios and prepare back-force realizations copies to avoid data contradictions of individual disciplines and hence reduce the uncertainties.

Mohamed Farahat Halima

Senior Geo-Scientist

NUCLEAR MAGNETIC RESONANCE IN THE PETROLEUM INDUSTRY

Conventional porosity and resistivity logs provide the petrophysicist with a first look at the reservoir, but there are practical limits to the accuracy and usefulness of these data. Neutron, density, and sonic porosities are more sensitive to lithology than to reservoir fluids (this is not always the case in a gas-bearing formation). As a result, even small amounts of clay minerals may cause errors in porosity measurements. In addition, reservoirs commonly contain clay-bound, capillary-bound, and moveable water. Resistivity tools are sensitive to all water, and Archie water-saturation calculations can overestimate the amount of producible water. Thus, porosity pay zones might remain elusive with conventional logs.

Porosity measurements with neutron-density combinations provide an estimate of the total porosity, which is the total pore space in the reservoir whether the pores are interconnected or isolated. Still, with the volume of shale (Vshale) corrections, it's possible to mostly eliminate the shale effect and arrive at an estimate of effective porosity or producible pore space. What remains to be resolved in this situation is the critical difference between any capillary-bound water and moveable water. Furthermore, porosity and resistivity logs provide few clues about other petrophysical information such as hydrocarbon type (e.g. low-viscosity versus high-viscosity oils), pore-size and grain-size distribution, and permeability estimation.

Nuclear magnetic resonance (NMR) is rapidly gaining popularity in the petroleum industry as a means of overcoming the limitations of conventional logs. The primary advantages of NMR logging over conventional porosity measurements are that it uses no nuclear (radioactive) sources and it provides a lithology-independent measure of porosity. Much like the neutron tool, an NMR tool responds to the amount of hydrogen in the formation or hydrogen index. However, unlike the neutron measurement, hydrogen existing in matrix and clay minerals is transparent to the NMR porosity measurement. The result is a porosity measurement that is sensitive only to fluids occupying the pore space. Other petrophysical information may be deduced from the manner in which hydrogen protons react to magnetic fields created by the NMR tool.

At the well-site, NMR tools are capable of providing measurements of both effective and clay-bound porosity (a combination of which yields total porosity), estimates of permeability, hydrocarbon type, pore size distribution, and information pertaining to the moveability of fluids. In many cases, the data obtained from NMR logs are in close agreement with core data. Post-processing of the data away from the well-site, incorporating conventional logs and capillary pressure data from core analysis, may provide for a comprehensive evaluation of the uninvaded zone.

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Key Highlights of the IMF's Second Review on Egypt

Points of Strength

- Real GDP growth rebounded f to 4.2% in 2016/17
- Inflation started to moderate after reaching a peak in July 2017
- Business environment reforms
- Improved external competitiveness
- The floating of the exchange rate which led the parallel market to disappear, increased capital inflows and foreign reserves
- Primary fiscal deficit narrowed to 1.8% of GDP in 2016/17
- Recovery in tourism

Further Recommendations

- Increasing revenues by reducing VAT exemptions, making the tax system more progressive and the tax administration more efficient
- Eliminating most fuel subsidies (excluding LPG) by 2019. The next fuel price increase and indexation mechanism* are scheduled for December 2018.
  *Rule determining frequency and magnitude of price changes.
- Shifting subsidy spending towards cash transfer programs like Karama and Takaful
- Letting the private sector flourish
- Deep and lasting structural reforms to create jobs
- Reform of the central bank law; improving access to finance and land

IMF's Outlook

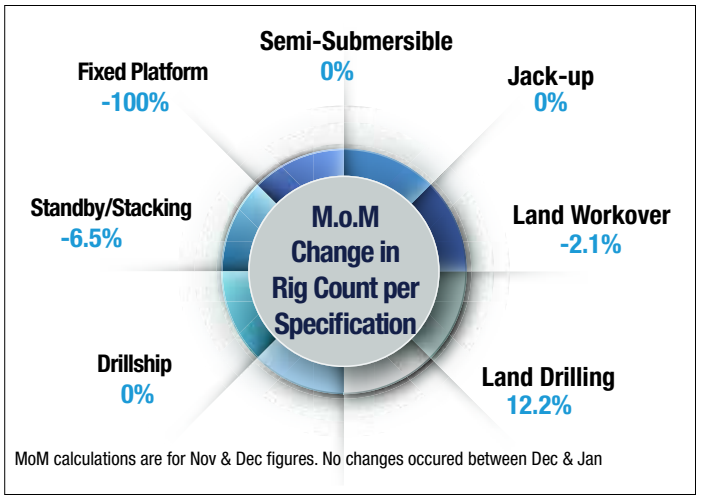
- Growth is projected to strengthen to 4.8% in 2017/18 and rise to 6% in the medium term
- Inflation is expected to decline to around 12% by June and to single digits in 2019
- Current account deficit is projected to narrow to 4.5% of GDP in 2017/18 and to 3.5% of GDP by 2021/22
- A primary fiscal surplus of 0.2 % GDP is projected in 2017/18 driven by the full year impact of the VAT increase, and lower wages and fuel subsidies
- General government debt is projected to decline by about 17% of GDP by the end of the program

Key Risks

- Premature easing of monetary policy
- Pressures to expand spending beyond budgetary allocations
- Opposition to reforms by vested interests
- Loss of momentum on structural reforms
- Worsening of the security situation
- Slower recovery of tourism
- A sustained rise of global oil prices
- Lower growth in Egypt's main trading partners or unexpected tightening of global financial conditions

Rigs per Specification

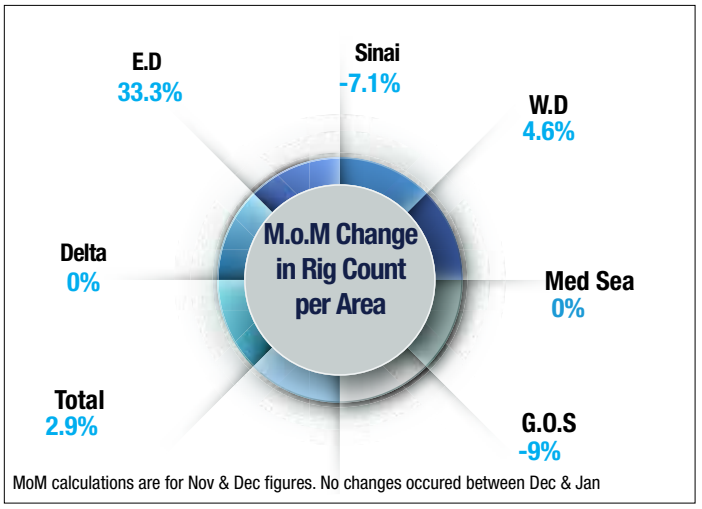
Date	Land-Drilling	Land Workover	Jack-Up	Semi Submersible	Fixed Platform	Standby/ Stacking	Drillship	Total
May-17	44	37	11	1	1	53	2	149
Jun-17	45	40	11	1	1	49	2	149
Jul-17	45	37	11	1	1	52	2	149
Aug-17	42	37	11	1	1	55	2	149
Sep-17	39	40	10	1	0	56	2	149
Oct-17	41	43	10	1	1	50	2	148
Nov-17	41	45	10	1	1	49	2	149
Dec-17	41	47	11	1	1	46	2	149
Jan-18	46	46	11	1	0	43	2	149



MoM calculations are for Nov & Dec figures. No changes occured between Dec & Jan

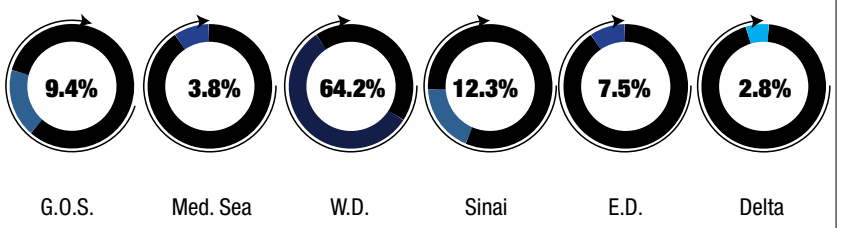
Rigs per Area

Month	G.O.S.	Med. Sea	W.D.	Sinai	E.D.	Delta	Total
May-17	9	6	58	12	6	5	96
Jun-17	9	6	61	13	6	5	100
Jul-17	9	6	59	14	6	3	97
Aug-17	9	5	59	13	5	3	94
Sep-17	9	5	61	11	5	2	93
Oct-17	10	4	64	12	6	2	98
Nov-17	10	4	63	13	7	3	100
Dec-17	11	4	65	14	6	3	103
Jan-18	10	4	68	13	8	3	106



MoM calculations are for Nov & Dec figures. No changes occured between Dec & Jan

Distribution of Rigs - January 2018



PRODUCTION Q4 2017

	Crude Oil	Equivalent Gas	Liquified Gas	Condensate
Mediterranean Sea	0,025,000	14809727	82,934	853,040
Eastern Desert	1,720,000	0	0	0
Western Desert	9,540,000	7193845	40,286	1,247,010
Gulf of Suez	3,900,000	670,614	3,755	75,227
Delta	0,030,000	7499661	41,998	468,358
Sinai	1,480,000	839	5	17,517
Upper Egypt	0,006,000	0	0	0
Total	16,640,000	30174686	168,978	2,661,152

Unit: Barrel

*Natural Gas figures are in Boe. *Crude total excludes Upper Egypt production

DRILLING UPDATES

Region	Company	Well	Well Type	Rig	Depth	Well Investments
Mediterranean	PETROBEL	ZOHR-7	Development	SPM 10000	12700	$45.125 M
Delta	B.P	KHAIRAT DT-1	EXP	EDC-9	10761	$4.095 M
	DANA GAS	ESAEN-1	EXP	ST-2	8957	$2.070 M
Eastern Desert	KUWAIT ENERGY	S.KHAIR-1X	EXP	ECDC-6	4072	$2.209 M
	PETRODARA	ARTA-48	Development	EDC-66	4120	$0.545 M
	PETRODARA	NWG-38A-2	Development	EDC-66	5315	$0.509 M
Western Desert	AGIBA	AMAN-67	Development	EDC-64	6797	$0.830 M
	AGIBA	AMAN-70	Development	EDC-64	6820	$0.585 M
	THARWA	EAS A-1X	EXP	TANMIA-1	7600	$1.977 M
	PETROSILAH	N.SILAH D1-5	Development	ECDC-1	8844	$1.285 M

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