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NEWSPAPER

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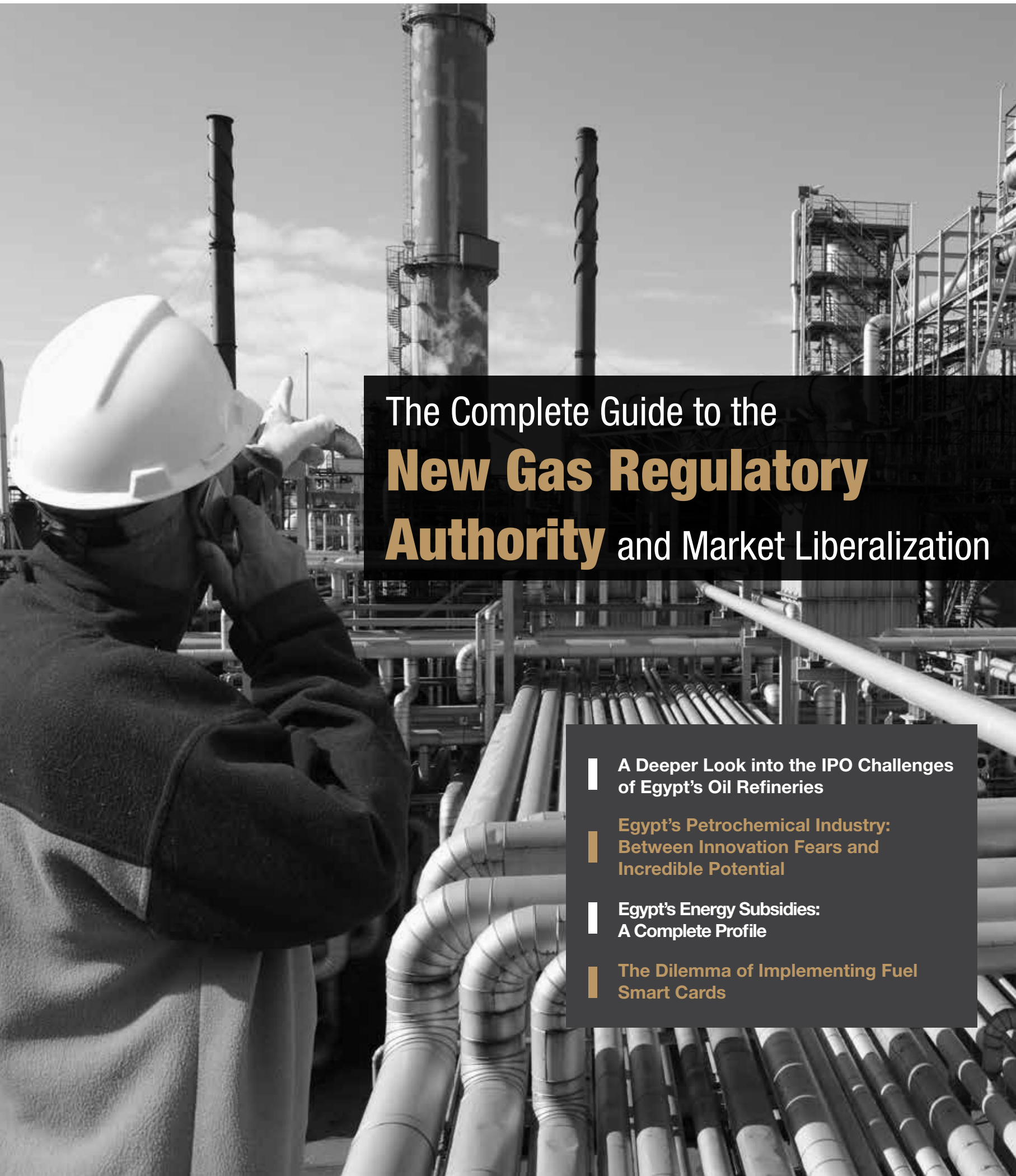

The Complete Guide to the New Gas Regulatory Authority and Market Liberalization

- A Deeper Look into the IPO Challenges of Egypt's Oil Refineries
- Egypt's Petrochemical Industry: Between Innovation Fears and Incredible Potential
- Egypt's Energy Subsidies: A Complete Profile
- The Dilemma of Implementing Fuel Smart Cards

Under the High Patronage of
HE. Eng. Tarek El Molla
Minister of Petroleum & Mineral - Resources Arab Republic of Egypt

Under The Egyptian Oil and Gas Sector Modernization Program

UPSTREAM
TECHNICAL CONVENTION
PANEL DISCUSSION– WORKSHOP – SHOWCASE

December 2017

CALL FOR ABSTRACTS

Featuring case studies from E&Ps, JVs, and technology service providers this year's Convention will feature a totally revamped agenda, the content of this year's agenda will feature:

TECHNICAL WORKSHOP TOPICS

- Case studies on brownfield assets where production from existing wells has been increased by more than 20% through downhole, wellbore or surface interventions including stimulations, re-completions and facilities modifications.
- Production operations best practises that have led to improved efficiency, cost reductions and production gains through increased uptime.
- Application of new technology to production operations that have resulted in greater than 20% increases in production from existing wells or re-instatement of shut-in wells.
- Reduction in energy consumption in onshore and offshore upstream production by 10%.

ABSTRACT CONTENT

- Description of the proposed paper summarizing the scope of business upon which the paper will be based

ABSTRACT CONTENT

- September 14, 2017 – Abstract submission
- September 26, 2017 – Notification of acceptance
- November 1, 2017 – Presentation submission

ABSTRACT CONDITIONS:

- Must be technically correct
- Should avoid commercialisation
- Must be written in English
- Should be submitted in electronic format and be a maximum of 500 words

Please send your Abstracts to:
ayman@egyptoil-gas.com

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EGYPT OIL&GAS NEWSPAPER

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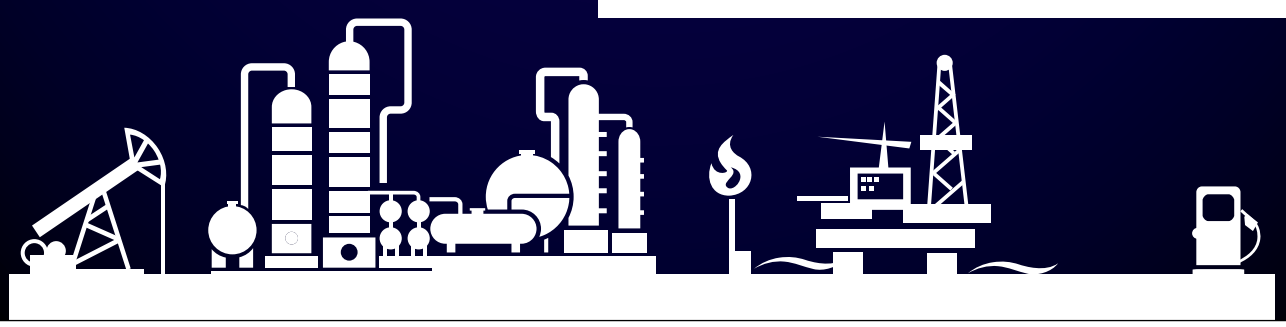

EDITOR'S NOTE

As we close the final pages of this issue, local media is buzzing with Moody's latest unchanged rating of Egypt; deeming the country's outlook as stable, with some issues revolving foreign debt and the sources of foreign reserves inflow. In terms of attracting investment, debt and foreign reserves are of crucial influence, especially when it comes to the hydrocarbon sector. Perhaps those two factors are the main pillars behind the decision to liberalize the Egyptian natural gas market, a move that was finally made official this month. Egypt Oil & Gas addressed the topic by interviewing a key official in EGAS, Economist Mohamed Khafagy, who headed the committee that calculated the tariffs and established the regulatory principles of the authority. The interview is built around answering the different questions regarding tariffs, operations, the future of the industrial sector, and securing the rights of both the importer and the end consumer.

The theme for this month has been the downstream sector, with a special focus on the petrochemical industry. One piece addresses the lingering issue of IPOs, attempting to uncover the real reasons behind the delays in enrolling state-owned refineries in the stock market as planned. A second piece discusses the lack of significant innovation throughout petrochemical sector, the reasons of which may be due to risk aversion. The third piece on the downstream industry revolves around the economic contribution of petrochemical companies, expanding into the promised national development plan.

We could not close the month without an overview on the all of Egypt's refineries, looking into capacity, product type, revenue, and ownership.

This issue also includes an interview with Ahmed Abou Sayed, a global expert on waste management, where he discusses ideal waste management solutions in unconventional fields as well as in nuclear energy.

In terms of fuel, Egypt Oil & Gas prepared an overview on the use of fuel smart cards in the industrial sector, looking into its efficiency, its challenges, and the potential implementation of its second phase that includes consumer vehicles.

Finally, we are excited to announce a new feature in this issue, "Report in Print" which will provide you will an analytical view on a specific angle in the sector every month. We hope you enjoy it.

As always thank you for your readership

EDITOR IN CHIEF

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Inside this Issue

EGYPT OIL&GAS NEWSPAPER

EGYPT'S LEADING OIL AND GAS MONTHLY PUBLICATION

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

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Egypt Enters the Era of a Liberalized Gas Market

After more than two years of negotiations and consultations, the Egyptian government approved a new regulatory framework for its ever-growing gas market. On August 8th, President Abd El Fattah El Sisi signed legislation, Law 196 for 2017, to reform Egypt's gas market. This law marks an important milestone in Egypt's efforts to open its gas market to private businesses and investors.

Under the new law, domestic companies will choose their own gas suppliers instead of relying solely on state-run sources. The regulatory framework established by the law, according to its proponents, will liberalize Egypt's domestic gas market.

The law establishes a Gas Regulatory Authority to regulate the gas market and oversee the development of market mechanisms. The authority is to operate as an independent regulatory body and will license companies to import, transport, and sell natural gas.

The government has already granted three companies initial approval to import natural gas, with four more companies in the application process. Once preliminary approval has been granted, the companies have six months to gain final approval for their import licenses.

The process to obtain initial approval includes submission of documentation about the quality and specifications of the gas to be imported, an official contract with the domestic buyer, a purchase contract from the producer, proof of the company's financial standing covering the previous three years, and other pertinent information to the reviewing agency.

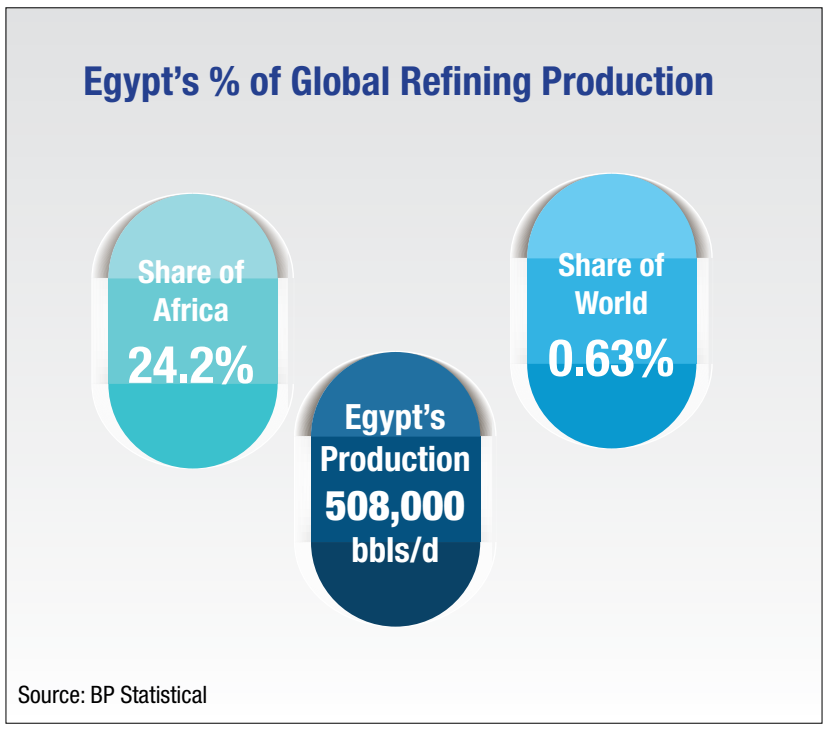
El Molla argues that Law 196 of 2017, by deregulating the market, will open Egypt's gas market to private investment in the trading, storing, selling, and distributing of natural gas. This liberalization of the market, he explains, will make it easier for Egypt to secure the gas required for its burgeoning domestic demand.

Foreseeing changes to the market, foreign direct investment (FDI) is already increasing. International oil companies (IOCs) increased their investments in Egypt by 22.7% in fiscal year 2016/2017 compared to the previous year, El Molla noted.

As FDI flows into the country, Egypt expects natural gas production to rise. El Molla projects domestic gas production to increase to 6.2 billion cubic feet per day (bcf/d) by June 2018, an increase of 1 bcf/d from current production rates. Rising production—particularly as the Zohr field comes online later this year—will allow domestic output to meet domestic needs by the end of 2018, the government believes.

Domestic production is already decreasing the need for imports. "We were planning to import 154 cargoes of LNG in fiscal year 2016/2017 but we only imported 118 cargoes because of the increase in local gas production," El Molla stated recently.

Driven by shrinking foreign-exchange reserves, natural gas shortages, and an opportunity to develop the massive natural gas fields discovered in its Mediterranean waters, Egypt has been considering regulatory reform for more than two years. The legislation that became Law 196 for 2017 was presented to Parliament in December 2016. After considering the legislation, Parliament passed the law on July 5, 2017.



Source: BP Statistical

GPC Launches New Tender in Eastern Desert

The General Petroleum Company (GPC) announced its latest exploration tender. The concessions offered in the bid round include Wadi Dara and West Gharib. The West Gharib tender is for block G of the site, a 20-kilometer area. The Wadi Dara site consists of 50-square kilometers. The company will receive bids from 10th of September 2017 until 3 p.m. on the 12th of October 2017.

Egypt, Romania Sign 4 MoUs

Egypt and Romania signed an economic-scientific protocol and four Memoranda of Understanding (MoU) to address energy, agricultural and economic issues. These MoUs include a MoU between the Egyptian Ministry of Investments and International Cooperation and the Romanian Ministry for Economy, Trade, Industry and the Business Environment and three others that deal with agriculture, small and medium projects, and water resources. The countries agreed to the MoUs during the second round of the Egyptian-Romanian Joint Ministerial Committee for Economic and Scientific Cooperation, chaired by Egyptian Minister of Investment and International Cooperation, Sahar Nasr, and held in Bucharest, Romania.

IOCs Increase Investments in Egypt by 22.7%

International oil companies (IOCs) increased their investments in Egypt to $8.1 billion during fiscal year (FY) 2016/2017, up 22.7% from the $6.6 billion invested in FY 2015/2016, the Minister of Petroleum and Mineral Resources, Tarek El Molla, said. The ministry announced in June that Egypt had reduced its arrears to IOCs to $2.3 billion. The government has promised to settle all arrears by June 2019.

Petroleum Subsidies Hike by 135% in FY 2016/2017 Budget

Egypt spent approximately EGP 120 billion on oil and gas subsidies during fiscal year (FY) 2016/2017 as a result of the flotation of its currency, the Minister of Petroleum and Mineral Resources, Tarek El Molla, stated. Subsidy costs jumped by 135.3%, an increase of EGP 69 billion from the EGP 51 billion spent in FY 2015/2016. Egypt allocated around EGP 110 billion for petroleum subsidies in FY 2017/2018.

Egypt to Reduce LNG Imports by 32%

The Egyptian government is accelerating its efforts to lower natural gas imports. It plans to reduce its imports of natural gas to 80 cargoes worth, an estimated decrease of 32.2%, by the end of fiscal year 2017/2018. "We were planning to import 154 cargoes of LNG in fiscal year 2016/2017 but we only imported 118 cargoes because of the increase in local gas production," stated Egypt's Minister of Petroleum and Mineral Resources, Tarek El Molla. Egypt expects its natural gas production to rise to 6.2 billion cubic feet per day (bcf/d) from 5.2 bcf/d—a 19% increase in output–by the end of fiscal year (FY) 2017/2018.

Egypt Receives 129,000 Tons of LNG from Rosneft

Egypt has received 129,000 tons of liquefied natural gas (LNG) from Russia's Rosneft during the first half of 2017. The LNG cargos were delivered per the agreement signed by the Egyptian Natural Gas Holding (EGAS) and Rosneft in March 2017. The Russian firm agreed to supply Egypt with 600,000 tons of LNG between May and October 2017.

Electricity Plants Increase Gas Consumption by 11.4%

Natural gas consumption for electricity generation increased to 27 billion cubic feet (bcf) per week, according to the head of the Egyptian Natural Gas Holding Company (EGAS), Osama El Bakly. Power plants were previously using around 3.5 billion cubic feet per day (bcf/d), but, with the rise in temperature, the plants consumption jumped by around 400 million cubic feet per day to approximately 3.9 bcf/d. Imported liquefied natural gas (LNG) covers a huge part of the power plants' needs and the country imports approximately 1 bcf/d.

Egypt Pumps 300,000 tons of Diesel Weekly

Egypt pumps around 300,000 tons of diesel per week in order to cover the county's fuel needs, according to the head of the Egyptian General Petroleum Corporation (EGPC), Abed Ezz El Regal. Most of the diesel production is targeted to citizens' consumption and electricity generating power plants, which consume huge volumes of diesel as well as natural gas, Ezz El Regal explained. He added that the country pumps between 41,000 tons and 43,000 tons on daily basis during summer.

Diesel Consumption Decreases

Diesel consumption in Egypt fell from 1.319 million tons in May of 2016 to approximately 1.178 million tons in May 2017, a decline of 141,000 tons (10.7%). Production of diesel has also fallen. In May 2016, Egypt produced 677,000 tons, but that number fell to 632,000 tons in May 2017, according to Central Agency for Public Mobilization and Statistics (CAPMAS).

Botagasco Pumps 40 M LPG Cylinders in H1

The Egyptian Company for Gas Transportation and Delivery (Botagasco) boosted its sales of butane cylinders to 40 million cylinders in the first half of 2017 from 35 million cylinders during the first half of 2016, an increase of 14.3%.

Egyptian Refineries Secure 65% of Local Fuel Demand

Egyptian refineries have secured approximately 65% of the country's daily demands for petroleum products, stated the head of Egyptian General Petroleum Corporation (EGPC), Abed Ezz El Regal. Egypt will import fuel cargoes to compensate for the market shortage, which is between 30% and 35% of domestic demand. Ezz El Regal projected that the shortage will be met by domestic production after the Egyptian Refining Company's refinery begins production and the expansion projects at the Middle East Oil Refinery (MIDOR) and the Asyut refinery are completed.

Power Plants Consume 26,000 tons of Mazut Daily

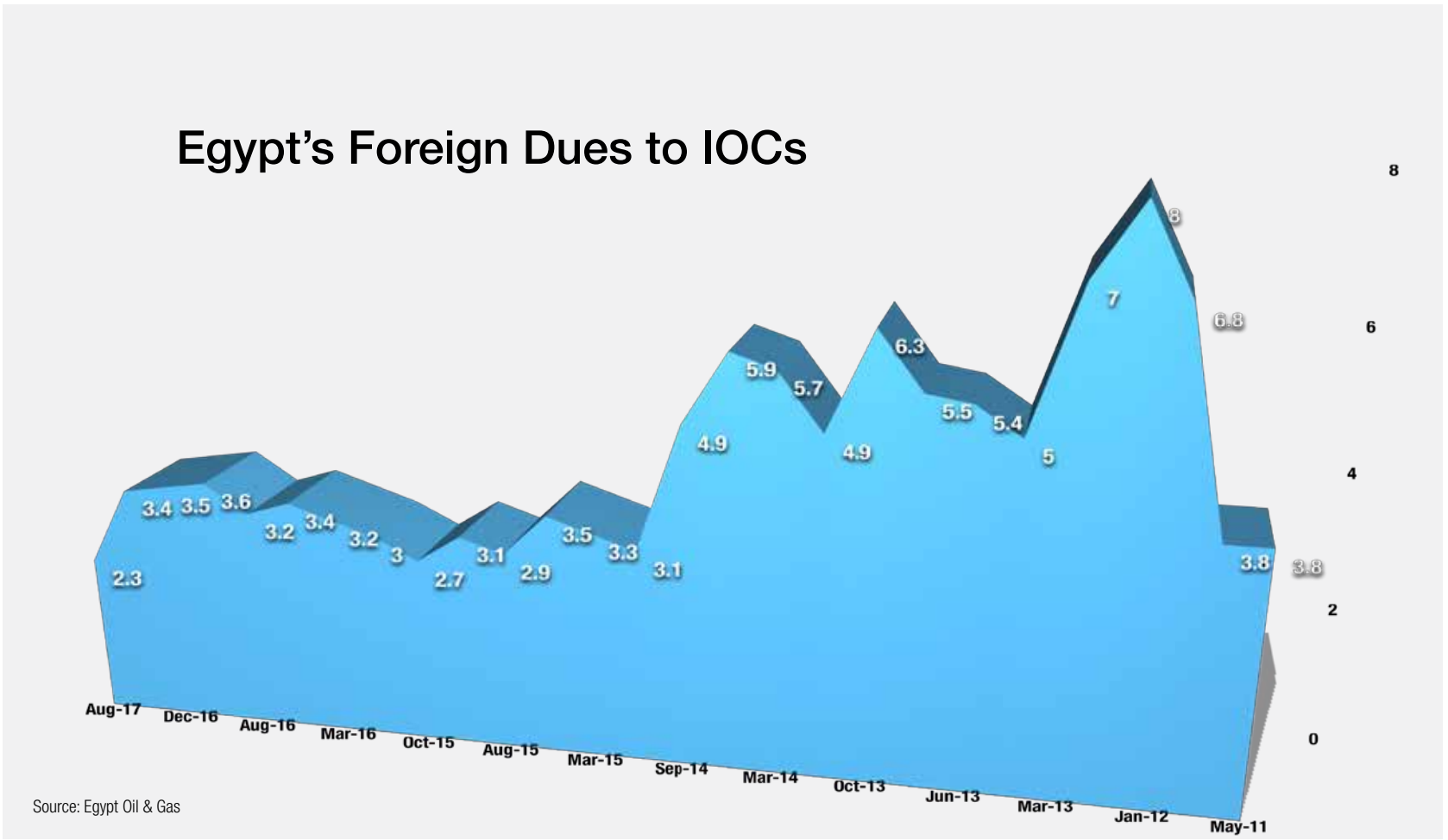
Egypt's electricity-generating power plants consume 26,000 tons of mazut per day in addition to natural gas. During the summer peak, mazut consumption can exceed 30,000 tons per day, Abed Ezz El Regal, Head of the Egyptian General Petroleum Corporation (EGPC) said, adding that Egyptian refineries possess the capacity to cover most of the local market's demands for mazut.

Sales of 92-Octane Gasoline Fell by 10%

Egypt witnessed a 10% drop in the sale of 92-octane gasoline during July 2017, according to Mohamed Shaban, Chairman of Misr Petroleum Company. Misr Petroleum's sales fell to 1.8 million liters from the 2.0 million liters it distributed prior to June's price increase, a 10% drop in volume. The price increase did not impact all gasoline products equally. Consumption of 95-octane gasoline rose 400% during the same time period.

Egypt Exports $2.955B worth of Crude Oil and Petroleum Products

Egypt exported approximately $2.955 billion worth of crude oil and petroleum products between July 2016 and March 2017, according to a financial report issued by the Ministry of Finance. Crude-oil exports accounted for $1.79 billion while petroleum products accounted for an additional $1.166 billion.



Petroleum Sector Boosts Output in H1, Consumption Falls

Oil and natural gas output increased to 28.138 million tons during the first five months of 2017. Egypt produced 5.582 million tons of oil and gas in January, 5.042 million tons in February, 5.555 million tons in March, 5.826 tons in April, and 6.134 tons in May 2017. The country's oil and gas consumption decreased during the same five months to 32.657 million tons, according to Central Agency for Public Mobilization and Statistics (CAPMAS). The Egyptian economy consumed 6.654 million tons of oil and gas in January, 6.650 million tons in February, 6.599 million tons in March, 6.186 tons in April, and 6.568 tons in May 2017.

Egypt Cut Fuel Import Bills by 23%

Egypt's fuel imports for the first five months of 2017 fell to $497 million from $645 million during the same period last year, a year-on-year decrease of 23%. Imported petroleum products fell in value to $243 million from $276 million, a 12% decrease. Coal imports also fell. During the first five months of 2017, Egypt imported $43.4 million worth of coal, compared to $73 million in 2016, a decline of 40.5%. Bucking this trend, Egypt's crude-oil imports rose.

GPC Boosts Crude Oil Production

The General Petroleum Company (GPC) increased its crude-oil output to 57,000 barrels per day (b/d) for the first time since the company started operations. The increased production is due to the discovery and production of NES-5 and NES-7. The two wells produce 3,000 b/d of oil and 1.5 million standard cubic feet (mscf) of gas and add nine million barrels of oil and 20 billion cubic feet (bcf) of gas to the company's reserves, GPC's Head, Mohamed Taher, stated in a report submitted to Minister of Petroleum, Tarek El Molla.

Sales of Butane Cylinders falls by 35,000 Units

Egyptian consumption and production of butane decreased in July 2017. The country pumped approximately 1 million cylinders per day, a decrease of 35,000 tons of butane per month. The drop in production erased the gains recorded in May. According to statistics released by the Central Agency for Public Mobilization and Statistics (CAPMAS), butane production had increased to 163,000 tons in May 2017 from 154,700 tons in May 2016, while Butane consumption dropped after the price increase for petroleum products, according to the Head of Egyptian General Petroleum Corporation (EGPC), Abed Ezz El Regal.

Gas Output Expected to Reach 6.2 bcf/d by June 2018

Egypt's gas production is expected to reach 6.2 billion cubic feet per day (bcf/d) by the end of fiscal year 2017/2018, Minister of Petroleum and Mineral Resources Tarek El Molla told Reuters. The country currently produces 5.2 bcf/d of gas.

Zohr Field Nearing Production Date

Work on the Zohr field continues to progress and was over 80% complete by the end of July. It is scheduled to begin production of natural gas this year. The Ministry of Petroleum and Mineral Resources expects production from Zohr to begin production of 1 billion cubic feet per day (bcf/d) in November 2017. By the end of the third quarter of 2017, investments in the field could top $4 billion, according to an official at Egyptian Natural Gas Holding Company (EGAS).

Egypt Imports 560,000 CF of LNG from Jordan

Egypt received approximately 560,000 cubic feet (cf) of liquefied natural gas (LNG) from Jordan over four months through the floating storage regasification unit (FSRU) located near Aqaba. The LNG imports came as a part of the deal with Jordan to supply Egypt with around 140,000 cf per month for 10 months, Jordan's National Electric Power Company's General Director for Planning and Production, Amin El Zoghl, stated. Out of the 48 LNG cargoes that Aqaba's Sheikh Sabah LNG Port received in 2016, 670 million cubic meters (mcm) of LNG were forwarded on to Egypt, according to the Jordanian Ministry of Energy and Mineral Resources

GPC to Take EGP 3 B Loan for Exploration and Dept Restructuring

The National Bank of Egypt (NBE) and Banque Misr are securing an EGP 3 billion loan for General Petroleum Company (GPC) to fund debt restructuring and exploration and drilling activities. GPC plans to invest around EGP 1.885 billion in fiscal year (FY) 2017/2018. EGP 99 million will be invested in replacement, innovation, and renovation processes; EGP 1.757 billion invested in exploration and drilling of new wells; and EGP 29 million invested in safety projects.

Egypt, EBRD to Ink $60M Renewable Energy Deal

The Egyptian government was set to sign a $60-million agreement with the European Bank for Reconstruction and Development (EBRD) this month, according to Investment Minister, Sahar Nasr. The agreement is the next step in the bank's $500-million initiative to provide financing for private renewable-energy projects in Egypt. In June 2017, the bank's board of directors signed off on the $500-million development plan. The goal of the development plan is to support the Egyptian's government's efforts to encourage private investment in the renewable-energy sector.

Egypt Denies Importing LNG from Qatar

Egypt does not import liquefied natural gas (LNG) directly from Qatar and has not received LNG shipments from Qatar since the rule of former President Mohamed Morsi, an official in the Egyptian Ministry of Petroleum and Mineral Resources stated. The source denied previous reports that Qatar had halted LNG shipments to Egypt. The rumor started in late July, when it was announced that the Gulf country had reject two LNG shipment requests and several other LNG requests coming from third-parties in Egypt as a result of the political tension between the two countries.

Electricity, Investment Ministries Sign Protocol for Dabaa

The Minister of Electricity and Renewable Energy, Mohamed Shaker, signed a protocol with the Minister of Investments and International Cooperation, Sahar Nasr, for investments worth EGP 2 million to clear the land allocated for the El Dabaa Nuclear Power Plant. The protocol follows President Abd El Fattah El Sisi's directive to clear the mine and war debris from Dabaa in preparation for economic projects that will improve social standards and provide employment opportunities for youth, Nasr noted.

Households Consume 42% of Egypt's Electricity

Household consumption accounted for 42% of Egypt's electricity usage during the first quarter of 2017, a source at the Egyptian Electricity Holding Company told Amwal Al Ghad. Households and manufacturers together consume around 72% of the electricity generated in Egypt with the industrial sector using 30% of the country's electricity supply to support both high- and low-energy-intensive production. Commercial usage of electricity is estimated at 5% of total consumption and public utilities and governmental institutions use 13% of the electricity produced in the country.

Apache, APEX, Shell Awarded 5 Concessions in EGPC Tender

The Egyptian General Petroleum Corporation (EGPC) has awarded five concessions in the Western Desert for exploration and production to US Apache, APEX International Energy, and Royal Dutch Shell. The Egyptian Cabinet and Parliament approved the contracts; however, the official announcement and final signing ceremony is yet to be made. EGPC had announced the international tender in 2016 to explore for oil and natural gas in concession areas in the Gulf of Suez and Western Desert.

TransGlobe Produces 13,851 b/d of Egyptian Oil

TransGlobe Energy Corporation announced production rates of 13,851 barrels per day (b/d) of oil from its Egyptian fields during the second quarter of 2017, Egypt Oil & Gas reports. The company sold around 302,648 barrels of crude oil to the Egyptian General Petroleum Corporation (EGPC) during the second quarter for $12.5 million. TransGlobe drilled two exploration wells and three development wells in Egypt during the same period. The drilling produced two oil wells, K-47 and NWG 38A, and three dry holes. It also finished drilling and casing the Boraq 5 well, located in the South Alamein Egyptian concession.

Rockhopper Produces 3,300 b/d from Abu Sennan Field

Rockhopper Exploration PLC announced that production from the Abu Sennan field averaged 3,300 barrel per day of oil equivalent (BOE/D) during the first half of 2017. It also stated that the company's outstanding receivables balance for Egypt fell in July. "We are pleased with the overall progress in Egypt and, in particular, with the continuing reduction in our receivables balance," Rockhopper's CEO, Sam Moody, said. The UK-based firm owns a 22% stake of the Abu Sennan field. Rockhopper is a UK-based oil and gas company that operates in the North Falkland Basin and the greater Mediterranean region.

QMax Group Enters Egypt

QMax Group acquired Environmental Solutions S.A.E (ES), allowing the group to enter the Egyptian market. QMax provides innovative solutions and services in Drilling & Completion Fluids, Solids Control & Waste Management, Wellbore Cleanup, Transportation Services, and Technical Testing & Analysis Services. The move added 280 employees to QMax family, including ES' Founder, Tarek Roushdy, along with management team members. The QMAXDRIL system has a proven industry track record as the standard in high-performance, ultra-inhibitive water-base drilling fluids for environmentally sensitive areas on and offshore including highly reactive shale formation. ES, a company providing waste management and solid control services to the oil and gas sector, operates in Egypt and Algeria.

Petrobel to Perform Maintenance on Abordees Pipeline

Belayim Petroleum Company (Petrobel) announced that the 120-km pipeline connecting Abordees to Ras Gara, north of Mount of Tur, has recently experienced several accidents and theft attempts. The pipeline has recently been used to move crude oil from the Shedwan field. The oil from Shedwan has high viscosity and contains huge amounts of water and carbon dioxide, causing repetitive leakage accidents. Petrobel agreed to replace the damaged parts of the pipeline to prevent repetitive leaking accidents until the entire pipeline is changed. The pipeline will remain in operation throughout the maintenance process due to the urgent need for crude oil.

Dana Gas Boosts Production in H1 in Egypt

Dana Gas announced that its production of gas in Egypt rose by 13%. While production slowed in the second quarter of 2017 to 37,650 barrels of oil equivalent per day (BOE/D), the company still posted strong gains for the first half of 2017. During the first six months of the year, the company's gas output in Egypt rose to 39,300 BOE/D compared with 34,850 BOE/D in the same period in 2016. "We maintained strong production numbers by adding a further 13% output in Egypt despite the planned shutdown of the El Wastani Gas Plant, which was completed successfully and without incident," Patrick Allman-Ward, CEO of Dana Gas, stated.

Saipem Awarded Zohr Contract

Belayim Petroleum Company (Petrobel) signed a $900-million contract with Saipem to execute the engineering, procurement, construction and installation (EPCI) activities for the Zohr field's optimized-ramp-up phase. The contract — signed July 27th — obligates Saipem to commence operations at once and to complete the project by the end of 2018. According to the terms of the contract, the company will install a 30-inch diameter gas export pipeline as well as an 8-inch diameter service pipeline. It will further conduct EPCI work for the development of four of Zohr's deep-water wells.

Transgaz to Send Delegation to Egypt

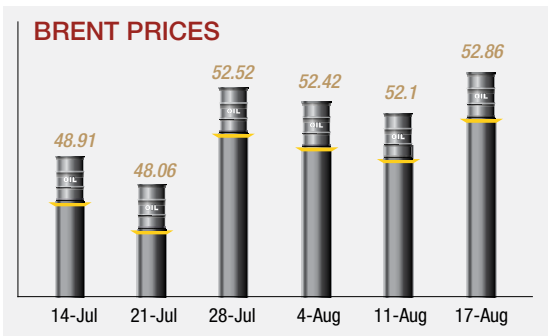
The Romanian Transgaz Company indicated interest in establishing a factory in Egypt. The company's expression of interest follows its meeting with Sahar Nasr, Egyptian Minister of Investments and International Cooperation, during her visit to Bucharest for the Egyptian-Romanian Joint Committee for Economic and Scientific Cooperation. Transgaz agreed to send a delegation to Egypt to meet with the minister and the appropriate ministries, according to a statement by the ministry. Nasr also met with Romanian Deputy Prime Minister, Gratiela Gavrilescu. The two agreed to create a joint mechanism to foster economic relations between the two countries.

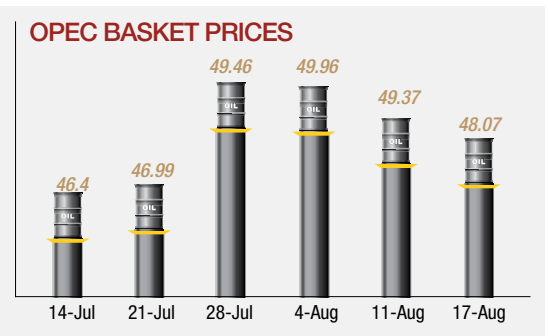
Qarun Petroleum Boosts Karma Field Production

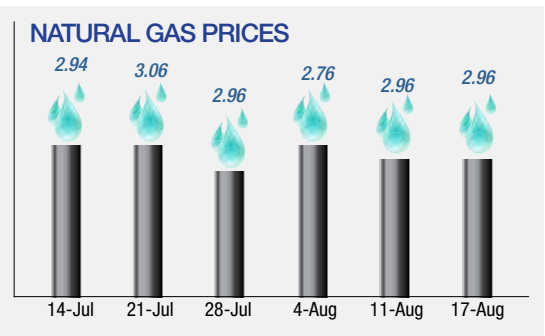
Qarun Petroleum Company boosted its crude oil production from the Karma fields to approximately 23,000 barrels per day (b/d). Daily crude oil production from the Karma fields ranges between 22,000 and 23,000 b/d. Mohsen El Nouby, head of Qarun Petroleum Company said that this crude oil, after being refined, helps meet the oil and gas sector's need for petroleum products. The company plans to drill additional development and exploratory wells to increase its production, El Nouby said. He also noted that Qarun Petroleum conducts regular maintenance work on its fields to ensure the company maintains a stable production capacity and meets its annual production target.

Misr Insurance Wins GASCO's Tender

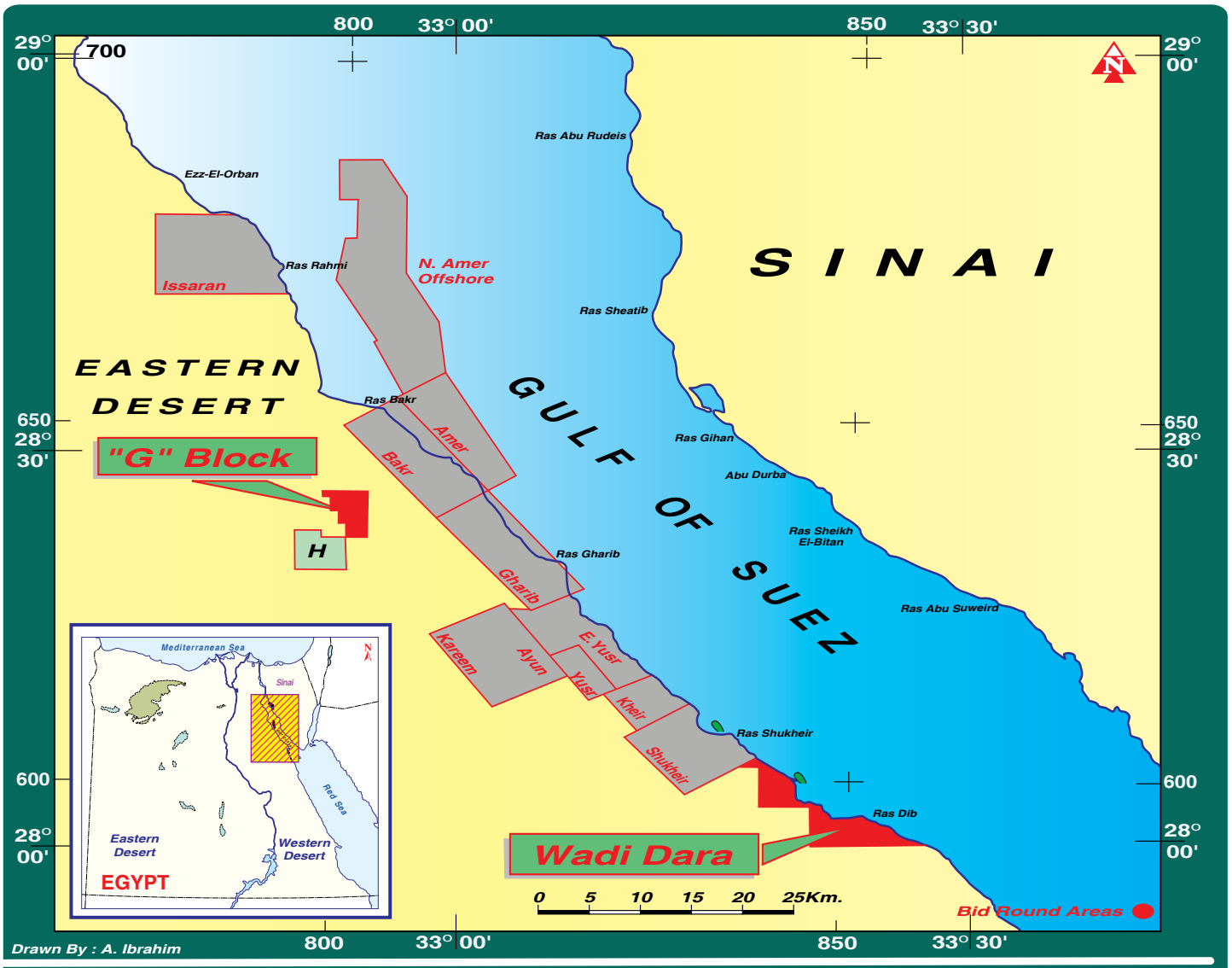
The Egyptian Natural Gas Company (GASCO) awarded its insurance-policy tender to Misr Insurance for the third-consecutive year. The two-year insurance policy insures up to EGP 50 billion of the company's assets. The policy covers the company's factories, gas networks, and other assets against damages from fire, theft, burglary, and engineering risks. The insurance will also protect the company against sabotage, strikes, riots, and other forms of civil unrest or political violence. Eight insurers competed for the tender. They included the Arab Misr Insurance Group (GIG), Suez Canal Insurance, Misr Insurance Company, the Egyptian Takaful Property and Liability Insurance (EGTAK), Orient Takaful Insurance, Mohandes Insurance, Iskan Insurance Company, and Royal Insurance.







The Arab Republic of Egypt
Ministry Of Petroleum
The General Petroleum Company (GPC)
Invitation for International Bid Round
For Exploration & Production Service Agreement



GPC International Bid Round 2017 For G Block & Wadi Dara Area

-The General Petroleum Co. (G.P.C) invites Specialized petroleum Companies in the field of exploration and production (Oil & Gas) to submit offers for undertaking oil and gas exploration and production services in GPC concession blocks in Eastern Desert ,The Arab Republic of Egypt, with the target of explore these blocks to achieve the optimal development of these blocks.

-The blocks (as shown in the map) includes :-

* Wadi Dara Area with an approximate total area of 50 km^2
* "G" Block with an approximate total area of 20 km^2

- Any bidder can apply for one or more of these blocks for signing an Exploration & Production Service Agreement.
- The Bidders can purchase the Bid Round brochure from GPC Head Office at 8 Dr. Mostafa Abu Zahra Nasr city, Cairo, Egypt. from Sunday September 10th 2017 to Thursday October 12th 2017 from (9:00 am 3:00 pm) for 500 US $ (Only five hundreds US $) or the equivalent Value in Egyptian pounds for each brochure paid by a payable check named to The General Petroleum Co. or in cash.

The Brochure includes the following : -

1 - Announcement
2 - Procedures
3 - Terms , Conditions & Guidlines
4 - Summary of the available Technical Data of each block
5 - Exploration and Production Service Agreement Model

- Data Room will be valid for interested bidders starting from Sunday September 10th 2017 to Thursday October 12th 2017- except Friday and Saturday from 9:00 am 2:00 pm for 1000 US $ (Only One Thousand US $) or the equivalent value in Egyptian pounds for one Day , paid by a payable check named to the General Petroleum Co. or in cash
- The Data package of the Bid Round areas can be purchased and received-from the General Petroleum Co.-according to the announced price list in the bid round brochure by the company's representative with an official authorization.

Bid Round Offers are to submitted to the office of the Assistant Chairman for Exploration and External Operations in two sealed and separated envelopes(Technical and Financial) addressed to the chairman of the General Petroleum Company, attached with a Letter of Guarantee or Bank Check valid for six months at a value of 50000 US $ (Only Fifty thousands US $) for each area as a Bid Bond .

The following documents have to be attached :-

1- Financial status for the last Three years ratified by an acknowledged financial auditing institution in Egypt.
2- Current organization Structure
3- Current activities and Projects

Closing Date for Submitting Offers
28th December 2017
12.00 PM Cairo Local Time

For Further information, visit www.gpc.com.eg or contact : (202) 24012058 / (202) 22633592
Email:assist.exploration@gpc.com.eg
Email: m.badr@gpc.com.eg

SAUDI ARABIA

Saudi Arabia expects to finish **the first phase of a project to expand its gas network by the end of 2017.** Once the first phase is completed, the government projects that the network will have a capacity of 9.6 bscf/d.

Saudi Aramco accepted bids to upgrade nine offshore facilities from Raytheon, Rhenmetall AG, Leonardo's Selex ES Saudi Arabia, and General Dynamics. The company is expected to announce a decision on the bids by early 2018.

Sadara Chemical Company has begun construction on a polyols plant. It will contain two units that will produce multiple grades of poyether polyols.

The kingdom's cabinet of ministers **approved a proposal to develop a national program for atomic energy**. Development of a national atomic program is part of the government's efforts to diversify the country's energy sources and wean it away from its heavy dependence on oil exports.

Saudi Energy Minister, Khalid El Falih, met with key hedge-fund investors to seek their advice on how to deal with the ongoing oil-price slump and whether Saudi Arabia should conduct forward-price sales to undercut the US shale industry, according to sources quoted by Bloomberg.

He also met with Iraq's oil minister, Jabar El Luaibi. **The two ministers discussed the oil market and OPEC's efforts to stabilize prices.** Saudi Arabia has been attempting to pressure countries, such as Iraq, to fully implement January's production-cut agreement.

Saudi Arabia, despite cutting production to comply with the production-cut agreement, has maintained a 40% market share of Japan's crude-oil imports. Its exports to South Korea, however, fell in July to 3.69 million tons, a 9.3% year-on-year decrease.

With Saudi Aramco looking to cut its crude-oil exports by 520,000 b/d in September, Saudi Arabia will struggle to maintain its market share. Industry sources told CNBC that Saudi exports to the Asian market could be cut by up to 10%.

The country is also leaning toward the NYSE for its primary overseas IPO listing, sources told Reuters. Despite the higher reporting requirements in New York, the sources indicated that Crown Prince Mohamed Bin Salmon favors the NYSE for "political reasons."

The Ministry of Finance announced that **the kingdom's second-quarter revenues from crude oil rose 28%** from the same period in 2016 due to higher oil prices. According to the ministry, its crude-oil revenues approached $27 billion for the second quarter of 2017 as opposed to just over $21 billion last year.

LIBYA

Libya's crude-oil exports rose to 865,000 b/d—a three-year high—in July. July's exports represented an 11% increase from June. Carsten Fritsch, an analyst at Commerzbank AG, noted that Libya's increased output "hurts OPEC's efforts to re-balance the oil market."

After July's high, **the country's largest oil field, Sharara, has suffered multiple degradations in output due to protests and poor security.** In early August, an attack on its control office in Zawiya temporary slowed production. The National Oil Corporation (NOC) blamed the disruption on protestors who it claimed broke into the control room.

While the company has regained use of the control office in Zawiya, security issues continue to hamper production at Sharara. Workers at the site complain of a general lack of security and one source estimated to Bloomberg that production has fallen 33%.

In addition to degraded operations at Sharara, **protesting workers shut down operations at the Zeuitina** port on August 12th to demand back wages and better working conditions. According to the local union leader, Merhi Abridan, Libya normally exports between 3.6 and 3.8 million barrels a month from the port.

The Italian oil firm, **Eni, plans to extract gas from the Bahr Essalam field next year.** Out of the ten wells to be drilled as part of Phase II, nine have already been drilled.

UAE

After lagging behind on its commitment to cut oil production, **the UAE recommitted to further cuts to be implemented in September.** Minister of Energy Suhail El Mazrouei tweeted last month that ADNOC would cut shipments of Murban, Das, and Upper Zakum crudes by 10%. According to the International Energy Agency (IEA), the UAE has only fulfilled 54% of its reduction commitment.

Abu Dhabi National Oil Company (ADNOC) is in talks with potential new partners for its offshore concession area currently operated by Abu Dhabi Maine Operating Company (ADMA-OPCO). ADNOC is looking to increase its crude-oil production capacity to 3.5 million barrels per day (b/d) in 2018 from its current capacity of 3 million b/d. The ADMA-OPCO operated concession will be split into two or more concessions to increase partnership opportunities and better utilize its holdings.

ADNOC has also entered negotiations for a syndicated loan worth up to $5 billion. The loan would mature over a period of up to five years and is one of several fund-raising options the firm is considering. ADNOC is also looking at issuing a project bond of up to $3 billion.

The Emirates National Oil Company (ENOC) is set to receive a $500 million loan to expand capacity. The fund will be used over a period of five years to further develop the company's expansion plans. The company plans to use a portion of the loan for a pipeline between the Jebel Ali storage facilities to the El Maktoum International Airport. ENOC is also looking to increase the capacity of its refinery.

Facing a serious diplomatic dispute with Qatar, the UAE has turned to other suppliers for condensates, including the US. The Abu Dhabi National Oil Company (ADNOC) purchased a cargo of condensates from America Eagle Ford. The Cargo is due to arrive in the UAE in September.

Sapiem signed an agreement with the Director of the Hamriyah Free Zone Authority (HFZA), Saud Salem Al Mazrouei, and Sharjah Airport Free Zone Authority to establish a major base in the UAE.

OPEC

Kuwait and Russia chaired a meeting in Abu Dhabi to discuss the failure of some signatories of January's production-cut agreement to fulfill their commitments. After the meeting, **Iraq, the UAE, and Kazakhstan—three nations that have failed to fully implement their agreed-upon cuts**—reiterated their support for the agreement, according to a statement released by OPEC. **Two of the biggest offenders, Algeria and Venezuela, failed to attend the meeting.** Algeria is estimated to be 70% in compliance with the agreement while Venezuela is estimated to be only 39% in compliance, according to the IEA.

OPEC's August report predicts that **crude demand will increase 1.3% in 2018.** OPEC also reported better than expected demand in the second quarter of 2017 and increased its growth prediction for 2017 by 100,000 b/d to 1.37 million b/d.

KUWAIT

In an attempt to draw down global supply, **Kuwait Petroleum Company (KPC) will cut back on sales to US customers** this year, the company announced.

Kuwait's crude-oil exports to Japan reached 6.94 million barrels in June 2017, a 37.9% increase from June 2016. According to the Japanese government's data, Kuwaiti exports of crude oil to Japan rose in both May and June. Japan imports 8.2% of its crude oil from Kuwait.

KPC shipped two million barrels of Kuwaiti crude oil to Vietnam for refinement. The shipment of crude oil will go to a refinery in the Nghi Son area. The refinery is a project of Kuwait Petroleum International Q8 and has a refining capacity of 200,000 b/d, according to Essam El Marzouq, Kuwait's Minister of Oil.

Looking to diversify its business, **KPC is considering joint-venture options for refined oil trading.** It is currently in discussions with BP, Shell, Total, Vital, and Glencore on areas of possible collaboration.

An oil spill occurred off Kuwait's southern coast. The size of the spill has not been reported, but experts interviewed by Kuwaiti media estimate that it could have been as large as 35,000 barrels. KPC has claimed significant progress in removing the oil.

Kuwait Oil Company announced the use of a new technique to extract heavy crude from complex oil reservoirs. The new technique requires the injections of chemicals instead of the more typical water-based fracking fluid. This technique, utilized in China, is new to the Middle East.

IRAQ

Iraqi oil production continues to climb. After Iran rejected India's request to invest in the Farzad B gas field, **India has turned toward Iraq for crude-oil imports and investment opportunities.** According to Iraq's Oil Ministry, **the country's oil exports averaged 3.230 million b/d in July.** (This figure only includes exports from areas controlled by the central government. It does not include exports from the Kurdistan Regional Government.)

The country's Oil Minister, Jabar Ali El Luaibi predicts that **oil production will reach 5 million b/d by the end of 2017.** Associated gas production will reach 1.3 billion stand cubic feet. During the first half of 2017, Iraq's exports of gas and condensates reached 59,370 tons and 356,008 cubic meters respectively.

Iraq met with representative of Russia, Kuwait, and Saudi Arabia in Abu Dhabi earlier this month **to discuss its compliance with January's production-cut agreement.** At the meeting, Iraq confirmed its support for the agreement. According to the International Energy Agency, Iraq is only 29% compliant with its commitments under the agreement.

After the meeting in Abu Dhabi, **Iraqi Oil Minister, Jabar El Luaibi visited Saudi Arabia to discuss the oil market and OPEC's efforts to stabilize prices.** During the visit, he met with the Saudi Oil Minister, Khalid El Falih.

The Provincial Government of **Kirkuk will not cooperate with the central government's plans to export oil from the Kirkuk oil fields to Iran.** Iraq and Iran recently agreed to study a possible pipeline to transfer oil from the Kirkuk fields to Iran for refinement. The pipeline would cross the border at Parvez Kahn and tie the Kirkuk fields to the Iranian oil network. Kirkuk officials claim that the central government has failed to consult them on the plan.

I**raq has extended an existing contract and awarded a new one to the UK-based Petrofac.** Petrofac will provide engineering services, construction management, commissioning, and start-up services to two international oil companies (IOCs).

Egypt's Petroleum Projects & Technical Consultations Company **(Petrojet) installed its first liquefied natural gas (LNG) storage tank at the Siba gas field.** Petrojet aims to boost the field's initial production capacity of 55 million cubic feet per day (mcf/d) to 110 mcf/d.

UK Export Finance, a British agency tasked to promote British exports, **will provide $117 million in financing to General Electric and Enka UK for the construction of two gas-powered electricity plants.** The financing will go toward the construction of two 750-magawatt plants in southern Iraq.

Finally, the country's **oil exports from its southern ports have declined so far this month.** During the first two weeks of August, Iraq exported an average of 3.15 million barrels per day (b/d), an 80,000 b/d (2.5%) decline from July. Iraq's exports also slipped slightly in July.

IRAN

Iran's exports to India have fallen 33% after Iran rejected India's request to invest in the Farzad B gas field. Iran has fallen from second to third largest exporter of crude oil to India.

The country exported over 2.2 million b/d of crude oil to Asian and European markets in July. Overall exports rose by 45,000 b/d from June, the oil ministry announced. Exports to Asian markets reached 1.4 million b/d, an increase of 100,000 b/d (7.7%).

Crude oil exports to South Korea also rose to 1.4 million tons for the month of July, a 26.5% year-on-year increase from the 1.1 million tons it exported to South Korea in July 2016. During the first seven months of 2017, Iranian exports to South Korea recorded a 47.7% increase from the same period in 2016, rising to 10.67 million tons from 7.22 million tons in 2016.

In addition to increasing imports of crude oil from Iran, South Korea has been expanding its economic activities in the country. A South Korean firm, SK Engineering & Construction Company, recently partnered with Iran's Tabriz Oil Refinery to carry out **a $1.6 billion modernization project for the Tabriz Refinery.**

Bigan Zanganeh was re-appointed as oil minister by Iranian President Hassan Rouhani. Zanganeh has served in the position twice. He served as oil minister from 1997-2005 and from 2013 until the present. During both his tenures, Zanganeh has landed large investments for the Iranian oil and gas industry.

Zanganeh and his Iraqi counterpart, Oil Minister Jabbar El Luaibi, recently **agreed to study a possible pipeline to transfer oil from the Kirkuk fields to Iran for refinement.** The proposed pipeline would cross the border at Parvez Kahn and tie the Kirkuk fields to the Iranian oil network.

The National Iranian Oil Company (NIOC) has signed 33 oil memorandums of understanding (MoUs) with 28 local and foreign companies after the implementation of the Joint Comprehensive Plan of Action (JCPOA).

Furthermore, **Iran completed a new 100-kilometer gas pipeline connecting Damghan, Semnan Province, and Neka, Caspian Province.** The new pipeline will supply gas to areas that previously depended upon Turkmenistan for their gas supplies. The pipeline should alleviate gas shortages in the Semnan, Golestan, Mazandaran, North Khorasan, Khorasan Razavi, and South Khorasan Provinces.

OMAN

Oman's production of petroleum products rose by 12% year-on-year during the first half of 2017, according to the National Center for Statistics and Information (NCSI).

Duqm Refinery & Petrochemical Industries Company (DRPIC) **awarded a $2.75 billion contract for the construction of its main processing plants to a Spanish-Korean consortium** of Spain's Tecnicas Reunidas and South Korea's Daewoo Engineering and Construction. The Duqm Refinery has also awarded contracts for other aspects of the project to Saipem International and a joint venture between Petrofac and Samsung Engineering. Saipem International will construct storage tanks, an export facility, and an 80-kilometer pipeline to the Ras Markaz field for $800 million while Petrofac and Samsung contracted to build offsite facilities and utilities for $2 billion.

Schlumberger won a $20 million contract from Petrogras Kahil to drill three exploratory wells in Oman's Block 55. Under the terms of the contract, Schlumberger will implement a range of its proprietary drilling technologies, including vertical drilling rotary steerable systems, modular compact wellhead systems, and ridged diamond element bits.

Topez Energy and Marine secured a contract to supply Dragon Oil Turkmenistan with six vessels. The contract is worth $100 million. Dragon Oil Turkmenistan will lease an emergency recovery-and-response (ERRV) vessel and five anchor-handling tug supply (AHTS) vessels for a term of five years with an option for a two-year extension.

The country announced that it is set to commence work on its first wind-power project, according to a governmental official. The project, called Harweel, will be built in the Dhofar Governorate and will be operational within two years. Upon completion, it will generate up to 50 MW of power or 50% of the Dhofar Governorate's winter demand.

TUNISIA

PERENCO closed its purchase of a 50% stake in the Tunisian Ashtart oilfield and a 50% state in the operating company SEREPT from OMV. The Tunisian National Oil Company (ETAP) will retain its 50% stake in both Ashtart and SEREPT. Production from the field averaged 3,000 b/d in 2016. OMV noted its sale of its stake in the Ashtart field is part of its overall portfolio strategy. Both parties did not release further details of the deal.

The Dilemma of Implementing Fuel Smart Cards

By Mariana Somensi

The signalization of fuel smart cards has been ongoing in Egypt since 2013. Although the project raised an important flag of combat against fuel smuggling and corruption in the system, it has remained on papers without significant progress. However, the Egyptian state took, late May 2017, a new step forward towards the implementation of the smart cards. In a meeting that brought together the Ministries of Finance, Petroleum, Supply, Local Development, and Agriculture and Land Reclamation; headed by Prime Minister, Sherif Ismail, the hope that the electronic system would be soon operational was revived as the application of the project's first phase was reviewed by the cabinet.

From Theory to Implementation

Looking at an improved distribution system for Egypt's oil and gas industry, the first phase of the project involves monitoring and following-up petroleum products from its initial distribution point (warehouses) to the multiple filling stations in the country, as well as the industrial sector.

After allegations that fuel shortages were led by fuel smuggling to the black market – an argument defended by the government during Egypt's fuel crisis in 2015 – preventing the diversion of petrochemicals has become a priority. Accordingly, during May's meeting at the Egyptian cabinet, the ministers discussed the efficiency of the first phase and its activation.

The company commissioned to operate the electronic system was the national firm E-Finance. At the occasion of the meeting, E-Finance's Head of Projects Department, Khaled Abdel Aziz, stated that the system is ready for being implemented once the government releases a decree.

According to the Ministry of Petroleum, smart cards have already been successfully distributed to warehouses, refineries, outlets, and filling stations. As much as 7.2 million smart cards have been issued, Egypt Independent reported quoting Abdel Aziz, a number that the Ministry of Finance guaranteed that could be increased without any restrictions.

The rush to run the project's first phase comes as the Ministry of Petroleum recently announced the reduction of fuel subsidies. Although the hike in the prices is not related to the smart cards' implementation, the new economic scheme designed by the Egyptian government calls for a more efficient market control, both in terms of avoiding the black market from taking advantage of the price inflation and of developing a more reliable database for future economic analysis.

Following the concept that big achievements come with big responsibilities, fuel smart cards are an innovative technology to assist the Petroleum Ministry in keeping track on the upcoming distribution from local production. It is also a significant step to the overall improvement of the country's system, once many Egyptian ministries still rely on paper documentation. Moreover, it provides the industry with a clearer market profile, categorizing fuel consumption. The broader view of petroleum products' supply and demand

7.2

Million smart cards issued.

bring up more assertive market strategies and investments.

Benefits to the Industry

As highlighted at Felicia Schandorf-Lamptey's these Electronic Fuel Cards: Challenges And Benefits, A Study Of Total Petroleum Ghana Limited Fuel Card (Tomcard), the electronic system can be used "to deter illegal content copying and distribution by inserting tracing content factors into the digital cash payment scheme that prevents users from duplicating activity."

This functionality meets the government's expectations towards the fuel smart cards scheme. Nevertheless, its benefits are countless and go beyond convenience and safety. As Schandorf-Lamptey further noted, "these benefits when maximized can go a long way in contributing immensely to economic development of a nation. Automated electronic payments help deepen bank deposits thereby increasing funds available for commercial loans – a driver of all overall economic activity."

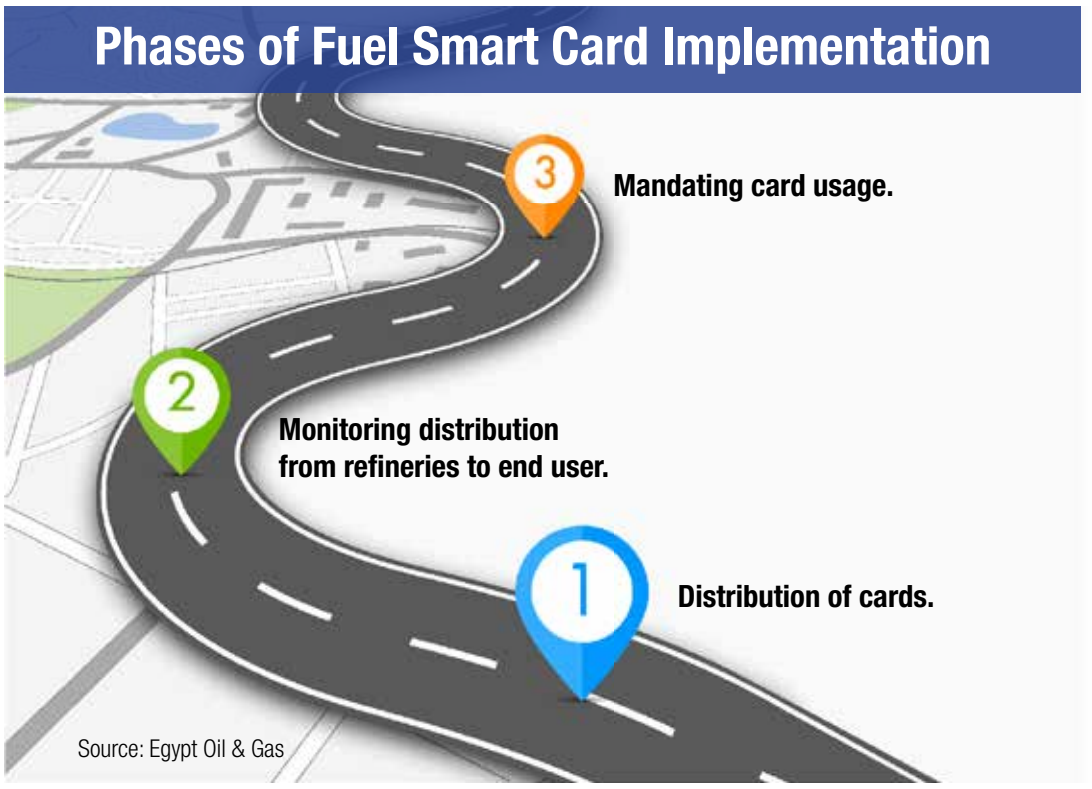
Furthermore, "cash has to be minted, securely transported, counted and reconciled, kept secure and maintained for re-use time and time again. The payment cost is high, and will always remain high whereas the costs of electronic systems are fixed. Once the infrastructure has been built, the costs transaction is very low," Schandorf-Lamptey added, citing Anne Cobb.

Considering Egypt's current struggle to overcome the deficit in its budget, which led to the cut of subsidies as a maneuver to reduce the federal government's paycheck, the subsequent increase in bank deposits following the implementation of the electronic system can feed the economic boom that Egypt needs to fund its most necessary projects.

5

Million fuel smart cards issued for vehicles

Accordingly, fuel smart cards are a helpful tool to the industry both directly and indirectly. As mentioned before, it plays an important role in increasing the availability of credit at Egyptian banks, which collaborates with public investments in the oil and gas sector. In line with Egypt's vision of achieving the status of a regional energy hub, every Egyptian pound counts to add up to the country's ambitious target.



Phases Two & Three

In order to fully profit from the electronic system, the fuel smart cards scheme counts with two phases subsequent to the first one. The cards are available in traffic departments and obtaining one only requires the customer's license. However, until the second phase is fully applied, consumers who still do not have their own cards will be allowed to use the ones available at gas stations when buying fuel.

The second phase consists of a tool for monitoring distribution from refineries to its final destinations, as well as the distribution from the gas stations themselves to consumers. "Activating the entire second phase of the system around the country will occur after making sure that car owners obtained their smart cards, estimated at five million cars," a source at the Ministry of Petroleum told Daily News Egypt.

The source added to the Egyptian newspaper that "problems that tuk-tuks had in obtaining gasoline via smart cards are now resolved, and their owners can obtain their own cards from the traffic department, while agricultural tractor cards are currently following the card system of the individual gas station until the agricultural holdings' cards can be finalized."

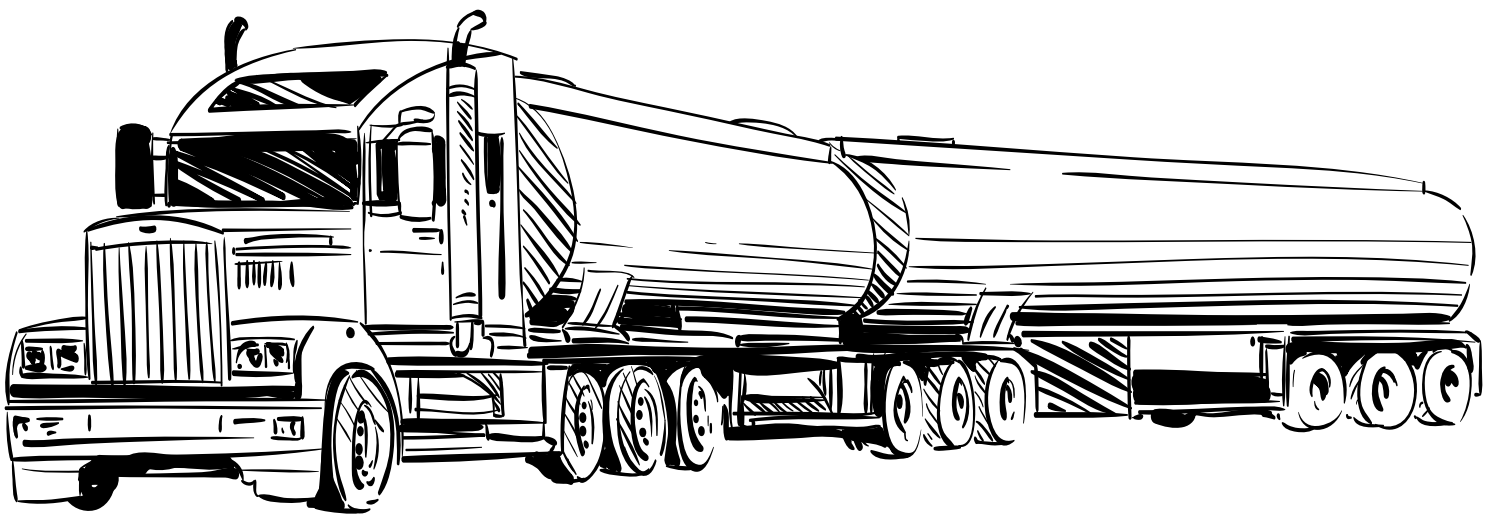
The third and final phase of the project consists of turning the fuel cards into the only possible way of obtaining fuel, consolidating the country's full control of petroleum product's distribution.

Moving Forward

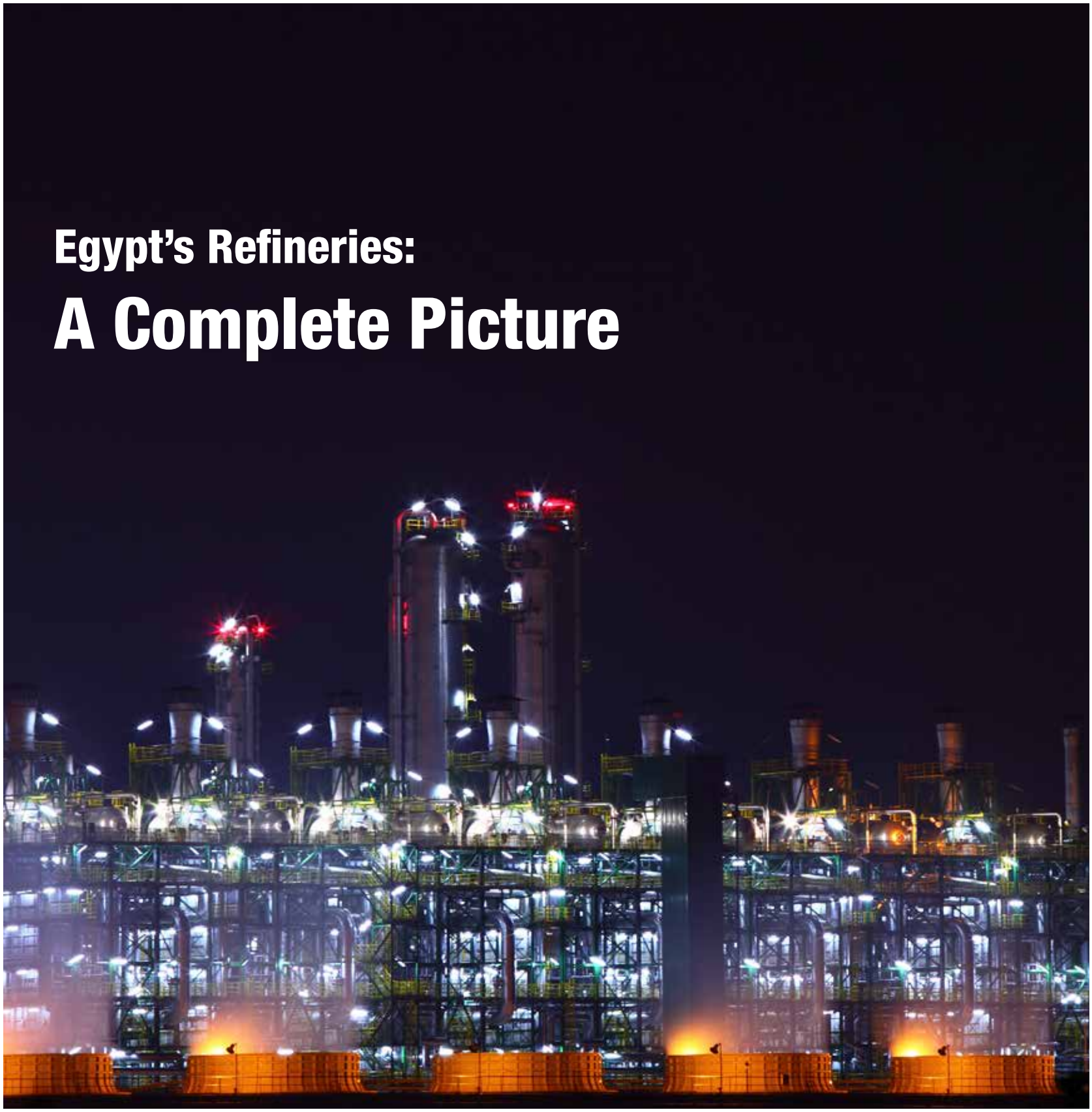
As Egypt takes decisive economic measures to rebalance its federal budget, projects with crucial economic prospects should no longer be delayed. The country has established ambitious schemes for the oil and gas sector, which highlights the importance of an accordingly developed system to track the distribution of its valuable products.

The government fully acknowledges this importance, which led the Egyptian cabinet to restart discussions over the project's implementation in May. However, according to the Ministry of Petroleum, the activation of citizen's smart cards is still delayed since the definition of all the sectors of distribution is pending.

Accordingly, a precise deadline for fuel smart cards to be operational remains unknown, even though the country has shown impatience to activate the new system. Until it happens, the profitable outcome of the electronic system to the industry and the federal government stays unveiled.



Egypt's Refineries:
A Complete Picture



By Tamer Mahfouz

In Egypt, nine out of ten oil refineries are run by the state. This setup meant that investments in oil refineries never measured up to crude oil extraction investments, which had always relied on international firms such as Apache and BP. In fiscal year 2015/2016, investments in refineries topped EGP 724 million compared to EGP 4.11 billion for oil extraction firms, according to the Central Bank of Egypt (CBE). To meet local demand from petroleum products, the government paid $7 billion to import petroleum products during the first nine months of fiscal 2016/2017, up from $6.2 billion a year earlier, according to CBE. This is over 38% of the government's total commodities import budget, making it by far the biggest import bill. Meanwhile exports were only worth $1.8 billion up from $1.5 billion during the same period last year.

This deficit needs to drop amid concerted government efforts to drop the budget deficit to 9% in fiscal 2017/2018 compared to 12.5% in fiscal 2016/2017. Hence, early 2017, the Ministry of Petroleum announced an $8 billion budget to upgrade oil refineries to increase production. Furthermore, the more profitable ones, starting with Middle East Oil Refinery (MIDOR), will be listed on the exchange to raise funds for future developments for the eight other state-run oil refining companies.

732,550
barrels a day, Egypt's maximum refining capacity.

65%
of demand is met by local production

Oil Refining Background

Egypt is the biggest oil refiner in Africa with a total of ten refining companies operating 12 refineries. This is compared to second-place South Africa, which has six refineries, according to an article in

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$7
billion imports of petroleum products during the first 3Qs of 2016/2017

Oil & Gas Journal published in 2015.

Interestingly, Egypt's oil refining business could have been much bigger had the government

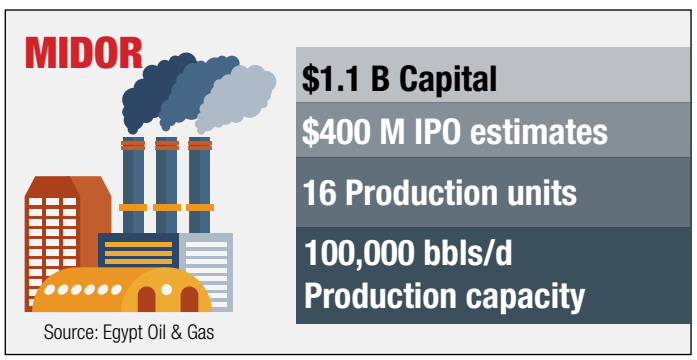
EGP 724
million investments in refineries in 2015/2016.

adhered to the plan to build an oil refinery every five years starting 2000 to meet rising demand. Only one was built since; Egyptian Refining Company (ERC) in 2007. Meanwhile, sporadic upgrades have pushed Egypt's maximum oil refining capacity to 732,550 barrels a day by the end of 2016, according to the Egyptian General Petroleum Corporation (EGPC).

This production capacity was only sufficient to cover 65% of local demand from petroleum products throughout 2016, according to the head of EGPC Abed Ezz El Regal speaking to Amwal El Ghad this August. Consumption throughout 2016 has been 7% higher than in 2015, according to Ezz el Regal.

Middle East Oil Refinery (MIDOR)

MIDOR was established in 1994 by EGPC, which owns 98% of its shares and Suez Canal Bank owning the rest. It is widely regarded as the most advanced oil refinery in Egypt with state-of-art equipment. The refinery, whose capital is $1.1 billion, is being considered for an IPO estimated to raise $400 million, according to Reuters in 2015. "We sent the names of eight petroleum companies to the Ministry of Investment... to



be studied, paving the way to issuing some of their shares on the bourse or increasing their capital," said Minister of Petroleum and Mineral Resources, Tarek El Molla to Reuters late 2016. "Among the names we are studying are Middle East Oil Refinery (MIDOR)." It is unclear whether the issuance will be in local currency or dollars.

MIDOR, which is located in the Ameryia specialized free zone in Alexandria, has 16 production units with a combined maximum refining capacity of 100,000 barrels a day, according to EGPC. (Crude and vacuum distillation capacity is 100,000 barrels a day; two types of naphtha have a production capacity of 64,900 barrels a day; catalytic reforming is 21,700 barrels a day; and kerosene is 10,150 barrels a day, according to the company's official Linkedin page.) By the end of 2016, MIDOR had refined a total of around 33.3 million barrels, according to an anonymous source talking to Al Shorouk News in June. He pointed out that during the first quarter of 2017, production was up by 109% compared to the previous year.

The refinery is currently working on expanding its production capacity to reach 160,000 barrels a day by 2020. To fund this $1.4 billion project, MIDOR took a $1.2 billion loan. Phase one, which cost $20 million, was completed last January, increasing production by 115,000 barrels a day. The company is also aiming at increasing production of its entire product portfolio including diesel and jet fuel production by 73% to 5 million tonnes and benzene to 105 million tons, according to an official release from MIDOR posted on the Ministry of Petroleum & Mineral Resources website in 2017. The refinery aims to refine 39 million barrels by the end of 2017, as reported by Al Shorouk News.

The latest financials for MIDOR date back to 2015, when it reported that it made $100 million in revenue, operating at 98% of its maximum capacity.

Cairo Oil Refining Company (CORC)

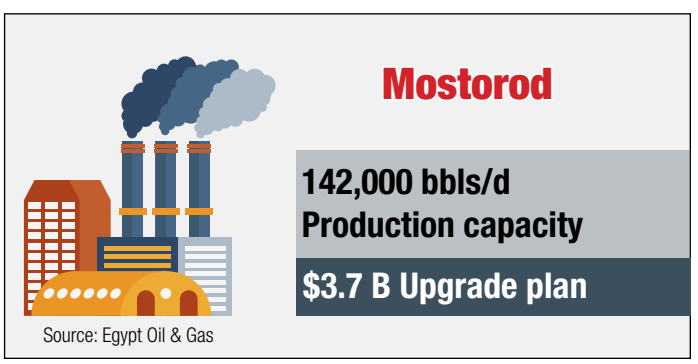
In terms of refining capacity, CORC is Egypt's biggest refinery. It was established in 1982 by EGPC, which owns 100% of its shares. CORC has two refineries. One is in Mostorod with a maximum production capacity of 142,000 barrels a day. The other is in Tanta whose

Tanta **35,000 bbls/d**
Production capacity

production capacity is 35,000 barrels a day. Around 75% of CORC's revenue comes from the Mostorod refinery. It is unclear how much market share does CORC have with estimates ranging from 20% to 50% mentioned on its website.

The refinery produces LPG, unleaded gasoline, kerosene, jet fuel, gas oil and fuel oil. It is also diversified in producing components and spare parts for refineries.

Currently, the Mostorod refinery is witnessing a $3.7 billion upgrade, which will allow it to refine around 4.7 million tons of mazut every year. CORC will supply 3.5 million tons, which



will be refined and sent back to the mother company. Meanwhile, 1.2 million tons will be imported to be refined and sent to the Egyptian Refining Company (ERC) for further processing. The upgrade was supposed to be finished early 2016. It is unclear why there were delays.

Egyptian Refining Company (ERC)

Unique among Egypt's refineries, ERC is run by the private sector, which makes up 76.2% of its shares. The biggest shareholder is Qatar Petroleum International (27.9% of shares). Qalaa

ERC **28 mt/y**
Production capacity

Holding has 18.8% while IFC holds 6.4% and Dutch Development bank owns 2.2%. EGPC owns 23.8% of shares.

ERC was commissioned in 2007 as a public private partnership project. Its current maximum refining capacity is around 28 million tons a year, according to an Al Mal article published in 2017. Of which, 2.3 million tons are Europe-compliant diesel, which is half of Egypt's diesel imports, 800,000 tons of gasoline and 600,00 tons of IATA-spec jet fuel. The rest of the production portfolio includes kerosene, reformate, naphtha, liquefied petroleum gas and fuel oil, according to the ERC website.

ERC has a unique 25-year deal with CORC where the former imports crude oil on behalf of EGPC to supply it to the state-owned refinery. This oil is refined in the 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.

ERC is aiming to increase production to 30 million tons by the end of 2017, according to the same Al Mal article. These increases have been despite delays in completing a $3.7 billion refinement facility in Mostorod, which will supply 14% of Egypt's local market needs, according to Qalaa Holding CEO, Ahmed Heikal as reported by Al Mal. His prediction is that the new facility will start production during the second quarter of calendar year 2018.

Alexandria Petroleum Company (APC)

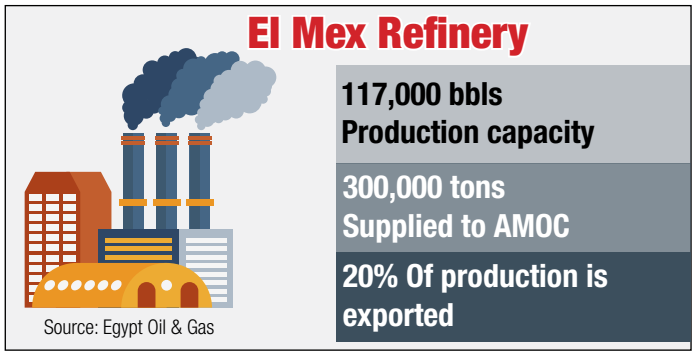
Opened in 1954 as another refinery wholly owned by EGPC, APC was a small oil refinery aiming to meet the needs of Alexandria governorate and Delta. However, it has grown over the following decades, becoming the second biggest single shareholder in Alexandria Minerals and Oils, the only EGX-listed refinery in Egypt, with 20% share ownership. It also owns 72% of Alexandria National Refining and Petrochemicals Company. APC capital is currently EGP 1 billion.

The refinery's main facility is El Mex Refinery whose maximum refining capacity is around 117,000 barrels. APC supplies both AMOC (30,000 tons according the refinery's website) and ANRPC with refined oil for further refinement. AMOC and ANRPC can return the oil to APC or sell it in the open market.

APC produces turbine jet fuel, fuel oil, gas oil,

gasoil for maritime uses, two types of kerosene, three types of liquefied propane as well as octane 80 and octane 92 fuel for the pumps, according to the company's website.

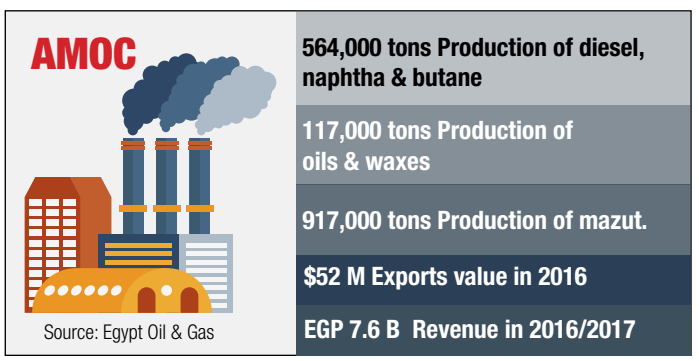
While APC's primary mandate continues to be meeting local demand from petroleum products, the refinery usually exports around 20% of its production, according to APC chairman Nabil Afifi talking to Al Borsa News in 2016. These exports include bitumen and heavy duty bitumen (both 47,000 tons), soft wax in liquid state (10,000 tons) and naphtha (22 shipments, each 22,000 tons in 2015), according to the Borsa News article. In 2015, APC made $236 million from exports.



In 2017, APC signed an agreement with Petrojet to build a production facility to produce NMP, a petrochemical used in refining petroleum, according to several media reports published early 2017. The new facility will cost EGP 100 million with an annual maximum production capacity of 16,000 tons.

Alexandria Minerals and Oils Company (AMOC)

Unique in several ways, AMOC was commissioned in 1997 and listed on EGX in 2004. It is currently the only refinery in Egypt to be publically traded and one of only two where EGPC doesn't have a direct stake. As it stands, 53% of the company is owned by state-owned banks, the biggest of which is the National Bank of Egypt through its investment arm, Al-Ahly Capital Holding (25.3% of shares), and Misr Bank (14.3% of shares). Other oil refining firms hold 27% of AMOC's shares, the biggest of which is APC with a 20% share.



The refinery's main product portfolio includes two variants of paraffin wax and automatic transmission oils, three categories of base oil, transformer oils and fuel oils. They are produced in two separate complexes; one for lubricants and other oils. The second is for gas oil production. AMOC sends fuel to be refined at MIDOR, a move that is expected to increase AMOC's revenue by around $6 million by the end of 2017, according to AMOC's CEO Amr Mustafa who was talking to Al Shorouk News early 2017.

AMOC's primary focus is meeting local demand, though it exports some of its products if there is excess. The refinery is ISO 9001:2008 and ISO 14001:2004 certified as well as OHSAS 18001:2007 certified.

Throughout 2016, AMOC produced 564,000 tons of diesel, naphtha and butane. It also produced 117,000 tons of oils and waxes as well as 917,000 tons of mazut. The refinery's main export product was paraffin wax, which topped 62,000 tons, making $52 million in proceeds, according to a bourse filing in 2017.

This reflected positively on revenue and net profits in fiscal 2016/2017, which increased by 152.8% to reach EGP 7.6 billion and EGP 1.1 billion respectively, according to an official document sent to EGX. These increases come despite a drop in investment budget during fiscal 2016/2017 to EGP 45.2 million compared to EGP 127.4 million the year before. This money will be spent on purchasing new equipment (EGP 23.1 million) and building support facilities (over EGP 12 million), according to the EGX document. Analysts attribute the hike in revenue to the massive devaluation of the pound after last November's floatation.

In fiscal 2017/2018, the investment budget is anticipated to increase to EGP 50 million, according to Mustafa in a press release published in January 2017. AMOC is forecasting that its revenues for fiscal 2017/2018 will reach EGP 10.3 billion.

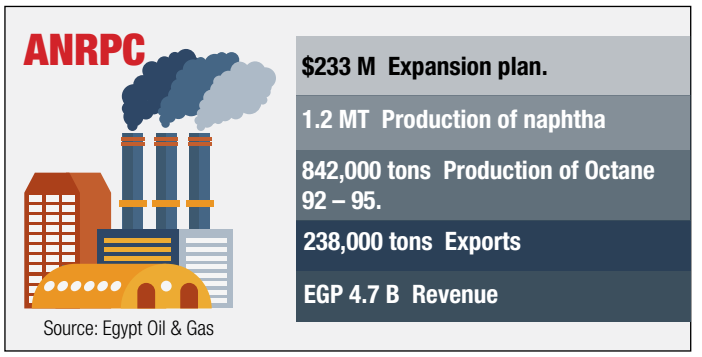
Looking ahead, AMOC's management have been focusing on gaining more exposure in the capital market. Last March, the company selected BNY Mellon Bank to oversee its GDR issuance, which will be listed on the London Stock Exchange. Right now, the issuance is expected to be around 10% of the company, according to a Reuters story published in May. AMOC is also looking at increasing its EGX listing by another 10% to 20%, according to international and local media.

From an operational perspective, AMOC signed a deal with Dana Gas last May to initially refine 1,500 barrels a day on behalf of the latter. This will ultimately increase to 4,000 barrels a day, according to Mustafa as reported by Mubasher.info at the time. Also in 2017, AMOC signed an agreement with Axens Group to build a new oil complex with an investment cost of around $800 million that will help increase the local refinery's production across the board. In terms of exports, AMOC signed an agreement in July 2017 to export a number of petroleum products including mazut to the State Oil Company of Azerbaijan Republic.

Alexandria National Refining and Petrochemicals Company (ANRPC)

The other oil refinery not be directly owned by EGPC is ANRPC, which was established in 1999. APC is the majority owner with 72% of shares. The National Bank of Egypt owns 18% and Alexbank owns 1% of the company. As it stands, the refinery's capital is EGP 713 million. The main purpose of the refinery is to produce high-octane fuel to meet local demand. Like AMOC, ANRPC is ISO 14001:2004, 9001:2000 and OHSAS 18001:2007 certified.

As of fiscal 2015/2016, ANRPC produced 1.2 million tons of naphtha. Meanwhile, octane 92 and octane 95 production topped 842,000 tons, according to a report published by Youm7 in 2016. The refinery's exports of heavy naphtha reached 238,000 tons. ANRPC revenue for the fiscal year topped EGP 4.7 billion. There are no confirmed reports regarding the company's refining maximum capacity and profits in fiscal 2016/2017.



ANRPC is currently expanding its facilities. The first is a $233 million (EGP 2.8 billion, according to Al Arabiya News in 2016) construction of two gasoline units to increase octane 92 and 95 production to 850,000 tons, according to various media reports including Al Mal and Al Arabya News. To fund the project, ANRPC took an EGP 1.98 billion loan from the National Bank of Egypt in 2016, of which $50 million was in hard currency. The facility is expected to start production by mid-2018 according to reports by Alam Al Taqa and Petroleum Today. So far, over 78% of the facility has been built, according to an Al Watan article published this year. Also under construction is a $176 million ammonia production unit that aims to increase production by 50,000 tons to reach 160,000 tons, according to news reported by Al Bawaba News and Ahram in 2016.

Nasr Petroleum Company (NPC)

The oldest refinery in Africa, NPC was commissioned in 1913. It was nationalized after the July 1952 revolution and 100% owned by EGPC. Its production capacity stands at 146,000 barrels a day, according to the company website. However, EGPC estimates it at 107,550 barrels a day. In addition to its own Suez-based refinery (99,000 barrels a day), NPC operates the Wadi Feran refinery (8,550 barrels a day) in the Gulf of Suez, overlooking the Red Sea.

The majority of NPC production is in hydrocracking and bitumen. The latter is exported if production outstrips demand. The refinery also produces butane, diesel oil, kerosene, mazut, naphtha. A portion of its inputs are imported. In 2017, NPC received some of

the 2 million barrels of crude oil imported every month from the State Oil Company of Azerbaijan as per a 2016 agreement, according to an Arab Finance article published in 2017.

There are no confirmed reports regarding the company's profitability. Some are claiming that

NPC
146,000 bbls
Production capacity

despite supplying 16% of Egypt's needs from diesel, the company is losing between $5 and $7 a barrel, according to a Daily News article published in 2014, quoting Youssef of EGPC. This is because of NPC old and simple technology. There is currently no news on upgrading either refinery.

Amreya Petroleum Refining Company (ARPC)

ARPC was opened in 1984, under full ownership of EGPC, after splitting from NPC. However, the refining facility itself had been operational since 1972. Its current maximum production capacity is 81,000 barrels a day, according to EGPC. In 2016, ARPC produced four million tons of refined oil-based products, according to a March 2017 presentation made by the company's directors to El Molla. This was made possible with the completion of the ethylene and butadiene production facilities, which combined, increased production by 480,000 tons a year.

The rest of the product portfolio includes diesel oil (1.2 million tons in 2016), mazut (1 million ton in 2016), octane 80 (574,000 tons in 2016) and butane (94,000 tons in 2016). ARPC also produces octane 92, butane and naphtha on a smaller scale. By the end of the year, the company's investments topped EGP 217 million employing around 4000 workers.

ARPC
480,000 tons
Production capacity

The company's latest financials date to fiscal 2014/2015 when revenues topped EGP 1.7 billion, EGP 400 million up from the previous fiscal year. In April 2016, the company increased its capital to EGP 300 million up from EGP 221 million. ARPC aims to increase production capacity to reach five million tons by the end of 2017, according to the company's chairman Mohamed Talaat during a 2017 presentation to EL Molla.

Suez Oil Processing Company (SOPC)

SOPC is the second oldest oil refinery in Egypt, built in 1921. Its ownership was transferred to EGPC in 1953, when its name became Government Oil Processing Company. In 1962, it became El Nasr for Oil Manufacturing and Petrochemicals. In 1963 it merged with a Suez-based refinery to become SOPC. The refinery currently employs over 5280 workers.

SOPC has a maximum capacity of 70,000 barrels a day as of 2016, according to EGPC. Its current facility has three production lines, producing high-octane fuel for the pumps while the other two produce a number of petrochemicals, according to the company website. SOPC opened a butane facility in 2016 costing $36 million. Currently, SOPC is building a refinery with a maximum production capacity of 48,000 tons of butane and 81,000 tons of naphtha. The company is also

SOPC
70,000 bbls/d
Production capacity
$94 M
Butane and asphalt plant under construction
$54 M
Diesel production facility under construction

building a $54 million diesel production facility to produce 322,000 tons of the fuel, according to Reda Abdel Salam as reported by Egypt Oil & Gas in January 2017. Its production will be directed to NPC for further refinement. There is also a $94 million facility producing butane and asphalt under construction.

SOPC latest financials were announced in September 2016, reporting on fiscal 2015/2016. In it, revenue reached $447 million, according to a presentation made to El Molla.

Assuit Oil Refining Company (AORC)

AORC was built in 1987 by EGPC to meet demand from Upper Egypt. Its current maximum production capacity is five million tons, according to the company website. EGPC sets it at 47,000 barrels a day in 2016. The company's production complex is an integrated facility with a dedicated oil pipeline connecting the factory with its main supplying field in the Shokeir region.

The company has been on a development spree to meet rising local demand since 2015. The first upgrade was the inauguration of the naphtha production unit which is producing 660,000 tons of naphtha every year. Also during 2015, French oil infrastructure company, Nexens, installed several upgrades to AORC's production lines. The lines include naphtha hydrotreater, continuous catalytic reformer and an isomerization unit with deisohexanizer recycle unit. Also during that year Italian company, Technip Italy, signed agreements worth $2.9 billion to upgrade AORC production lines. The local refinery also dedicated $1.8 billion in 2015 to build three new projects to increase production.

In 2016, AROC signed a $1.5 billion agreement with Bechtel to upgrade the refinery. This included the addition of a delayed coking unit to increase production. The refinery also added a $20 million production unit to increase production of butane

AORC
$1.5 B
Upgrade plan

by 228 tons a year to reach 75,000 tons. The third investment was a $250 million upgrade that will increase production of octane 95 fuel to 650,000 tons. By the end of the year, AORC signed an agreement with Australia's Worley Parsons to build a naphtha complex to increase production of fuel for the pumps. The complex is set to begin production in 2020. There were also developments to the butane production facility which doubled its production output to 120,000 tons by the end of 2016 compared to 2015.

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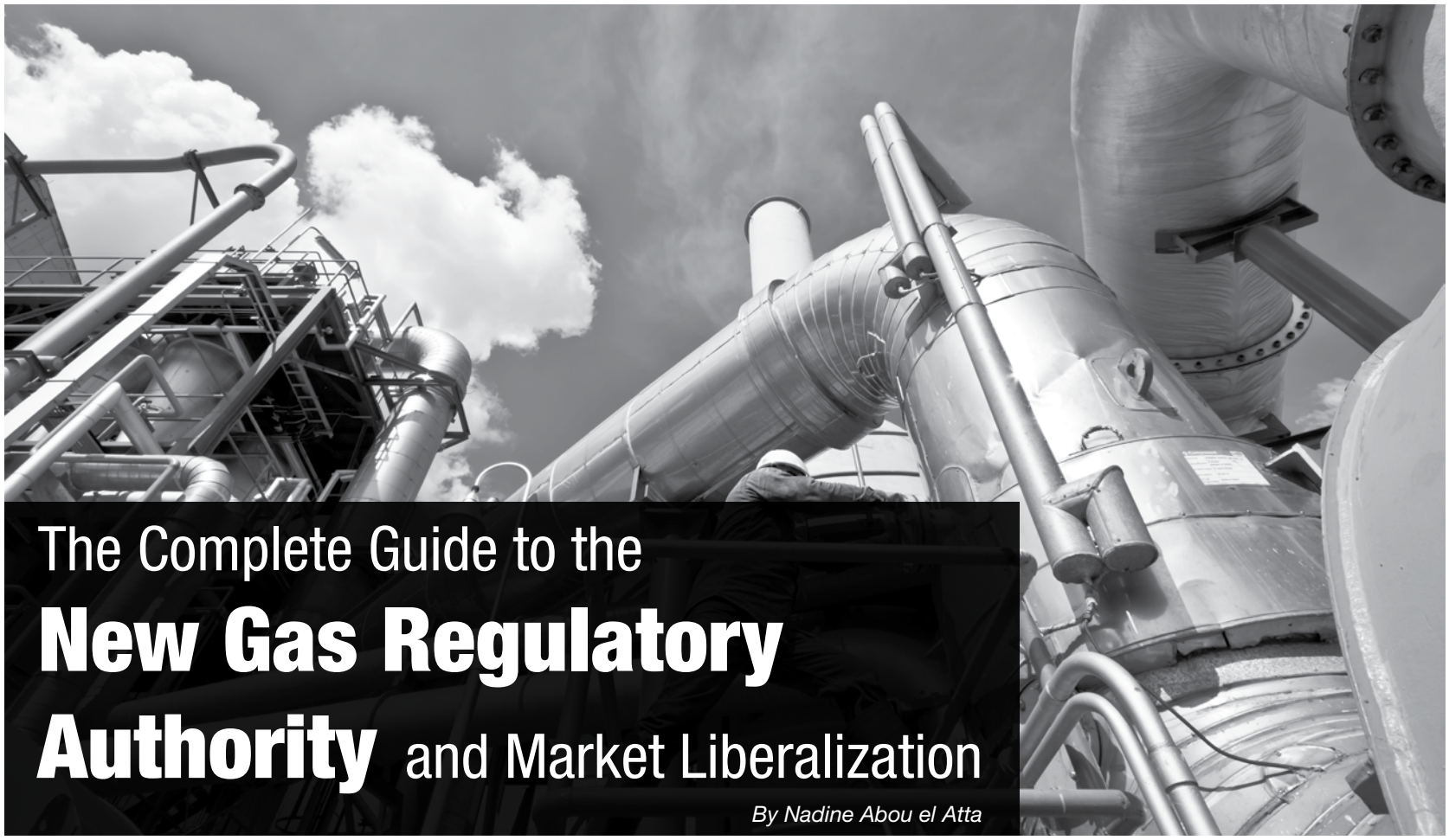


The Complete Guide to the New Gas Regulatory Authority and Market Liberalization

By Nadine Abou el Atta

Often the solution to one problem is through solving another. Since its commercialization, Egypt's energy mix has been largely skewed towards natural gas; a factor that created an energy crisis at one point.

Throughout the past few years, the state had invested billions to close the demand-supply gap, reaching an all time high of $3.55 billion in 2015/2016 alone, an official at EGPC told Reuters. The crisis initially grew in response to the government's decision to favor meeting local electricity demands, over securing feedstock to factories. Despite passing the peak of the crisis, Egypt's foreign reserves, the profitability of some factories, and the financial burden piling up on public entities are still yet to recover.

At the peak of the crisis, the Egyptian state made the decision to liberalize the natural gas market. The Egyptian Natural Gas Holding Company (EGAS) alongside the Egyptian General Petroleum Corporation (EGPC) announced in the month of 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.

A Breakdown of the Law

After years of deliberation, the gas regulation law was finally issued July 2017. Law 196 for 2017, includes 53 articles divided into five sections. 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.

The petroleum and mineral resources minister is to issue within six months the executive regulations of the draft law; where companies operating in the natural gas market will be provided a transactional grace period to adjust their conditions.

The decree's first section includes definitions of the main terminologies mentioned in the law and their field of application. The second section of the law refers to the establishment of an independent regulatory body, named Gas Market Regulatory Authority; the purpose of which is to regulate, follow up and control all activities related to the natural gas market in Egypt. Furthermore, the authority will be responsible for ensuring the availability of gas, the availability of a well functioning natural gas grid and related facilities. Additionally, the law states that the authority is responsible for ensuring that the market remains free of any monopolistic practices.

Breaking down further the practices of the authority, the second section of the law highlights that the regulatory body will be responsible for all planning and execution related to granting and renewing operation licenses; establish regulations for the use of the national gas grid, facilitate the transportation process of natural gas, and establish mechanisms for the calculation of tariffs.

The authority, according to the legislation, will be responsible for setting the control mechanism for the importing, re-gasification, transportation, distribution, and storage of the natural gas. The independent body is expected to insure that the market remains transparent and reaches a free competitive state.

The same section also highlights that the authority will be responsible for setting its own financial resources and revenue streams; in addition to determining the members of its board and the length of their tenure.

The third section of the law breaks down the rules governing the different activities of the gas market and the obligations on different parties. Furthermore, it highlights the obligations and rights of all members operating in the natural gas market, from operational entities down to the final consumer; in addition to a clear a breakdown of the different operational stages and possible parties included.

The fourth section, revolved around penalties in case of any violations of the provisions of the law, in addition to granting the status of judicial control officers to the employees of the authority, which shall be determined by a decision of the Minister of Justice. Finally, the fifth section includes transactional regulations.

The Ignite

Since its announcement local media has been buzzing at both ends of the spectrum; at one end, speculators deem the move as mundane, while on the other are announcements of a new revolutionary era.

In order to remove the media factor and stick to the economic foundation of the move, Egypt Oil & Gas sat down with, Economist Mohamed Khafagy, General Manager for Natural Gas and Economic Affairs in EGAS. Khafagy headed the core team involved in the calculation of the charged tariffs by the regulatory body, as well as the establishment of different operational mechanisms.

Khafagy began his interview by explaining the need for the regulatory body. "The regulator essentially was launched to 'regulate' the gas market. There was no entity regulating the market, monitoring companies that enter or exit the gas market, nor how different entities deal with each other."

Until the approval of the law, EGAS had the sole role in the market to sell natural gas, and distribute through its subsidiaries, which include GASCO, Khafagy explained. "As a result EGAS endured significant financial burdens; the company needed to meet the increasing demand of all sectors, a fact that created many issues. Thus, the state, believed that different companies should be allowed to sell natural gas in the local market, the market needed to open up," he added.

Process

To understand the exact process involved, Egypt Oil & Gas began by asking about the different entities eligible to apply, for which Khafagy explained that

16

no. of gas distribution companies

any operating company has the right to apply for a license to import and distribute natural gas, including industrial end consumers. "According to the law a factory has the right to import directly without buying from an intermediate; however, no factory has shown interest to take this step to date," he affirmed. On the receiving end, entities eligible under the law to choose their own supplier of natural gas are both the industrial sector and private power plants that follow the BOOT system.

According to media sources, three companies gained initial approval, while four are in the application process. When asked Khafagy highlighted that the "companies that took preliminary approval include TAQA, Roseneft, and Fleet Energy […] and one of the companies that is in the process of achieving initial approval is Toyota."

¢ 38

per mBtu for transportation tariffs.

To receive approval to import and sell natural gas in the Egyptian market, companies need to submit documentation proving purchase of natural gas from a supplier; proof of composition of the natural gas imported; a contract with a local buyer; financial documentation proving the strong standing of the importing company for the previous three years, Khafagy commented adding that if everything proves well, the company is given initial approval for six months during which it has to obtain final approval or begin the process from scratch again.

Once initial approval is provided, GASCO needs to confirm that capacity exits in distribution lines. Subsequently, EGAS provides confirmation that there is enough capacity in one of the FRSUs to accommodate the imported gas, he continued.

When asked about the general availability of capacity in FSRUs, Khafagy explained that "on paper there is an average of 50% to 60% available combined capacity for at least the coming four years. This percentage is expected to increase as local production is on the rise and government imports are declining, especially starting 2019."

Tariff Calculation

According to Khafagy, there are two types of tariffs: Transportation tariff and distribution tariff. The former was calculated based on all encountered costs, whether overheads, infrastructure, or operational costs. "Currently to transport natural gas it costs the state 38 cents per mBtu."

However, this is only the tariff imposed for transportation. Private entities will still be subject to a distribution tariff, which is yet to be determined, as there are currently 16 companies in Egypt handling the distribution of natural gas, each of which has its own infrastructure, size, investments, and operational costs; thus, setting a standard distribution tariff is demanding additional time.

EGAS vs. Market

Moving on, the discussion began to address the coming role of EGAS both in terms of existing commitments and in terms of conflict of interest. Beginning with the latter, especially given that EGAS, one of the players in the market, will also be the regulating entity, many would view the arrangement as conflicting, for which Khafagy affirmed that "the gas regulator will be a separate entity from EGAS. They will both report to the ministry, yet they will remain completely financially independent." EGAS will be treated as a regular market player; it will obtain a license like other private members." However, what is currently under discussion is whether EGAS as a whole will become a market player or whether a separate company will be launched to deal with the gas regulatory authority as a market distributor, he explained.

Addressing the initial point about the state's commitments, Khafagy remarked that "EGAS will begin to remove part of its commitments with factories as the market begins to liberalize, for example we were committed to supplying fertilizer factories with 100% of their feedstock needs, currently we supply around 80%. Once companies will begin importing natural gas, EGAS will confirm its commitment to only 70 - 80% and the factory will be obliged to import the remainder of its needs. Essentially we will have a liberalized market of buyers and sellers, not one company handling everything."

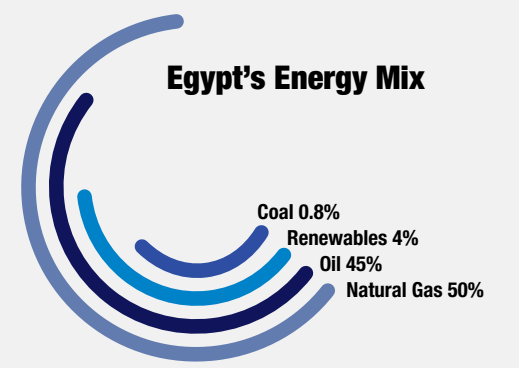
When asked if EGAS had plans to revoke all its supply commitments with factories in the near future, Khafagy was adamant on the issue stating that this is not an option. "We give power plants subsidized natural gas, which increases our financial burden, thus, EGAS' supply to factories is what helps the company breakeven. Factories should not worry about revoking our commitment to supply them with feedstock."

Breaking down the calculation, Khafagy explained that "as of now, Egypt still imports about a third of its natural gas needs. What this means is that our cost to supply the market is the combination of the production of two thirds of Egypt's natural gas plus the cost of importing the remaining third. This makes the average cost of natural gas for EGAS to be around $4.5 per million British thermal unit (mBtu). We then sell to power plants at a standard cost of $3 per mBtu, the difference is met through supplying feedstock to the industrial sector."

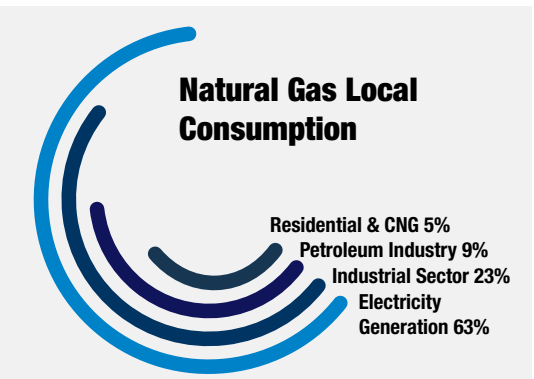
Quality of Service is a Factor

One question speculators may have is how can a private importer insure that the government will not simply use the natural gas to feed its power plants? For which Khafagy answered, "we have imposed several measures to secure the rights of all entities. In this case GASCO, which will be handling distribution arrangements though its infrastructure, will guarantee that the quantity it receives reaches the final buyer. If that did not happen, GASCO will be subject to extensive financial penalties, which will amount to more than what the final buyer was contracted to pay. Furthermore, what is comforting to market players is that Egypt's gas production is on the rise, we will soon have excess, thus removing any lingering threat that the state would revert to the supply of the private sector."

Addressing questions on the difference in prices between natural gas supplied by EGAS and that imported by private companies, Khafagy clarified that as the government begins to remove subsidies things should become more competitive in orientation, he highlighted that "the quality of services will also be a factor in this equation. A company can offer to meet 100% of a factory's needs and show outstanding commitment and a stabilized price offering, essentially all companies will reach a point where they compete with a complete package of offerings […] The high operational costs for EGAS is also a factor influencing our cost and prices, it may end up being easier for private companies to reduce their prices."



Source: BP Statical Review 2016



Source: EGAS Report

It is, however, important to note that the market will not be 100% competitive in a couple of years, he added; "looking at other markets who adopted this direction we will find that any regulator takes time to be well established, UK's gas regulator, for example, took 11 years to be fully functional. We still have a long way to go."

In terms of charges applied, Khafagy confirmed that the gas regulator will have a clear explanation of the methodology used to calculate tariffs on its website; in order to help assure the private sector that charges are not arbitrary but reflect the exact cost of transportation and distribution of natural gas. He went on to add that the Agence Francaise de Developpement (AFD) has agreed to give Egypt a grant for the evaluation of its natural gas grid and related assets, "this will help highlight why we charge these specific amounts," he explained.

Impact Subsidies and National Budget

It is believed that the move will improve the national budget before it improves foreign currency reserves. When asked about the topic, Khafagy commented, "this shift will allow the state to pay its dues. Currently our costs are too high to secure revenue to the state, once the market is liberalized, and subsidies are removed, the government will reach a point where there is a sufficient gap between cost and revenue."

Concluding the interview, Khafagy said: "It is a circle once it begins to improve, it will affect all aspects of the economy. As our import and subsidies burden eases, we will be able to pay our dues to foreign investors, enhancing the perception of the market's profitability, and thus attracting more investments into the country. The same thing happens when something falls, other aspects in the circle will begin to fall as well."

As Egypt took a bold first step, it is far too early to forecast a direction, the state has a long way to go in terms of ensuring that well laid plans will result in outstanding economic performance. Yet, initial signs and comparisons with advanced markets that took these steps all paint a bright picture for Egypt's liberalized gas market.

Understanding Unconventional Waste Management: From Fracturing to Nuclear Plants

By Sarah Samir

As Egypt expands its energy-extraction and -production sectors, it faces the growing challenge of waste management. To help its readers better understand the nature of the challenge and its possible solutions, Egypt Oil & Gas sat down with Dr. Ahmed Abou Sayed, a global expert on Production Enhancement and sustainability, with emphasis on waste management. He is the founder of Advantek International and co-founder of Advantek Waste Management Services. He served as a Member of the American Rock Mechanics Association (ARMA) Board of Directors from 2005 to 2011, He was the Technical Director for Production & Operation on the Board of the Society of Petroleum Engineers (SPE) and a UN Advisor from 1979 to 1983.

In the light of your experience in hydraulic fracturing and unconventional oil and gas resources, what do you think of Egypt's first unconventional reservoir, the Apollonia Reservoir?

It is a very promising resource for Egypt to exploit. The technology of hydraulic fracturing has been around for a long time and has created millions of jobs in the US. Hydraulic fracturing, at one point, was responsible of almost 30% of the US total oil and gas production.

Unconventional shale oil and shale gas produce almost 2.5 million barrels of oil equivalent per day (BOE/D) in the US—which is quite a bit—making the US the current swing producer of the world.

For Egypt, it is, perhaps, an appropriate time to get into hydraulic fracturing. Egypt has a reputation of expertise with this technology. Several Egyptians are prominently linked to it around the world. So anytime the US, or any other country, is looking for experts in hydraulic fracturing, there are at least one or two Egyptians among the selection pool.

I think we are ready to use this technology in Egypt.

And do you think Egypt's geography and geological nature promise more than just one unconventional reservoir?

Conventional wisdom and science show that a country with oil and gas resources most likely has shale-gas or shale-oil resources. In other words, if hydrocarbon reservoirs exist in an area, chances are you will also find shale oil and gas as part of the source rock.

From your point of view, what is the best method of waste management for Egypt to adopt at the Apollonia Reservoir?

The amount of associated waste (rocks, fluids, chemicals) from unconventional resources is substantial. One way to manage such waste is to handle the rock removed from horizontal wells in an environmentally safe manner. Another aspect would be to better manage the chemical waste which comes back from shale gas with the hydraulic-fracturing fluid.

We believe that, frankly, one of the most prominent and most used technologies for waste management is injection. Injection is used in managing the waste of specific wells to prevent unsafe products from flowing along the surface. It has been applied all over the world. It has been used in Alaska for years to dispose all the cuttings and all the waste streams. We have injected more than eight billion tons of waste from oil and gas fields.

Asked about the injection technique, Abou

> "For a country like Egypt, the trickiest problem right now is how to minimize the impact of pollution on the population—and it is not a simple problem."

Sayed, explained that it is exactly the same as hydraulic fracturing.

We mix solids with fluid to ease transportation of solid substances. We then inject it, we inject the slurry, under pressure, into fractures deep underground. Once there, it will stay there forever. So one walks in, develops the field, and uses the injection technology to dispose of wastes, rocks, cement, and produced water—nothing is left to worry about. It leaves the surface and environments basically clean. It is a permanent solution to waste management. It has no lingering problems—so no one is going to worry about what is going to happen in the future—and also, with proper design, it can keep the waste from mixing with existing ground waters.

Injection technology is not only useful to oil and gas, but it is also useful for chemical plants and for waste hazards from other industries, such as petrochemicals and paper.

Waste management via injection has been applied worldwide in different fields. The cost is reasonable. For a country like Egypt, the trickiest problem right now is how to minimize the impact of pollution on the population—and it is not a simple problem.

When Saudi Arabia tried to develop the Manifa field, it used injection technology to manage waste from the drilling and production operations in order to prevent pollution in the Gulf of Arabia. ADCO utilizes the same technology in the UAE.

In your opinion, if Egypt does not find a way to decrease its Mediterranean pollution, will it face problems with European countries?

European countries are starting to be concerned about the Mediterranean in general, especially in terms of the lack of a coherent waste-management and pollution control plans.

One of the current problems is the Manzala Lake. Manzala is almost entirely sewage—a lot of chemicals are being dumped there. It affects fisheries and affects fishermen's lives.

I believe that injection technology will be as suitable in the Mediterranean as it is in the Gulf of Arabia. This technology is used in the North Sea, the Gulf of Mexico, the Gulf of China, Malaysia, and Indonesia for offshore waste management; waste is not dumped into water anymore.

You were in Japan recently for the Fukushima Nuclear Power Plant decommissioning. What do you think about nuclear activity and about Egypt's plan to establish a nuclear power plant in Debaa? Would that technology be suitable?

Yes, but I am not stating my personal opinion. With proper precautions—if everything is done safely and carefully—nuclear energy is a very clean and efficient way to generate energy in a country that does not have enough resources.

I trust that the Egyptian government has carefully considered the location of the plant along the North Coast. I understand why it needs seawater—for cooling. I am cautious that it is in the middle of a huge tourist development and there are a lot of people surrounding it, but I am sure the government has done enough studies for Egyptians to support the decision.

Would you suggest that injection technology be adopted for nuclear-waste management?

The waste of nuclear plants, in general, is problematic across the whole world. France declared that the best disposal option for nuclear waste is to place it underground.

When asked about the dangers of burying waste, Abou Sayed, explained that the process is not dangerous. Many areas of the world have uranium resources underground. I think of the ground as an isolator. That is why the early man lived in caves, because he could shelter himself from heat, cold, insects, and animals and the elements.

Are there any lessons from the Japanese nuclear projects that Egypt should consider while developing the Dabaa project?

The Japanese have had excellent success in managing the crisis to-date. Their number one focus has been on protecting the population around their nuclear sites.

A major issue they faced at the beginning was how to handle rainwater within the radioactive zone to prevent it from washing away to the ocean. They tried to store it in tanks, but that solution became unpractical. They now run it into the aquifer to prevent the contaminated water from running into the ocean. The problem they face now is what to do with the contaminated aquifer.

What about plants, underground water, and wildlife, won't buried radioactive waste affect them?

No, waste is typically buried in deep layers, more than 3000 or 4000 feet underground.

What is your opinion of Egypt's vision to become a regional energy hub? What do you think the government should do to ensure the achievement of this vision?

I am very optimistic. I think that our trained staff, our engineers, and scientists, combined with the amount of activity going on in the Mediterranean, will give us the opportunity to develop the entire area off the Mediterranean coast

We have the human resources to generate service, transportation, logistic companies. We will also produce significant amounts of natural gas much closer to Europe than Qatar or Russia. Our production can reach Western countries a lot quicker and more efficiency than production from other countries.

I don't see why we cannot use compressed gas rather than liquefied natural gas (LNG) to transport our natural gas to Europe. It will take less time and will become much cheaper. Compressed gas is also safe.

What steps should Egypt adopt to ensure both the state and the investors benefit from the development of Mediterranean resources?

Good governance and transparency are essential for a successful business climate. A business won't take risks, if investors don't understand current or future laws affecting the industry. Corruption also discourages investment and risk-taking.

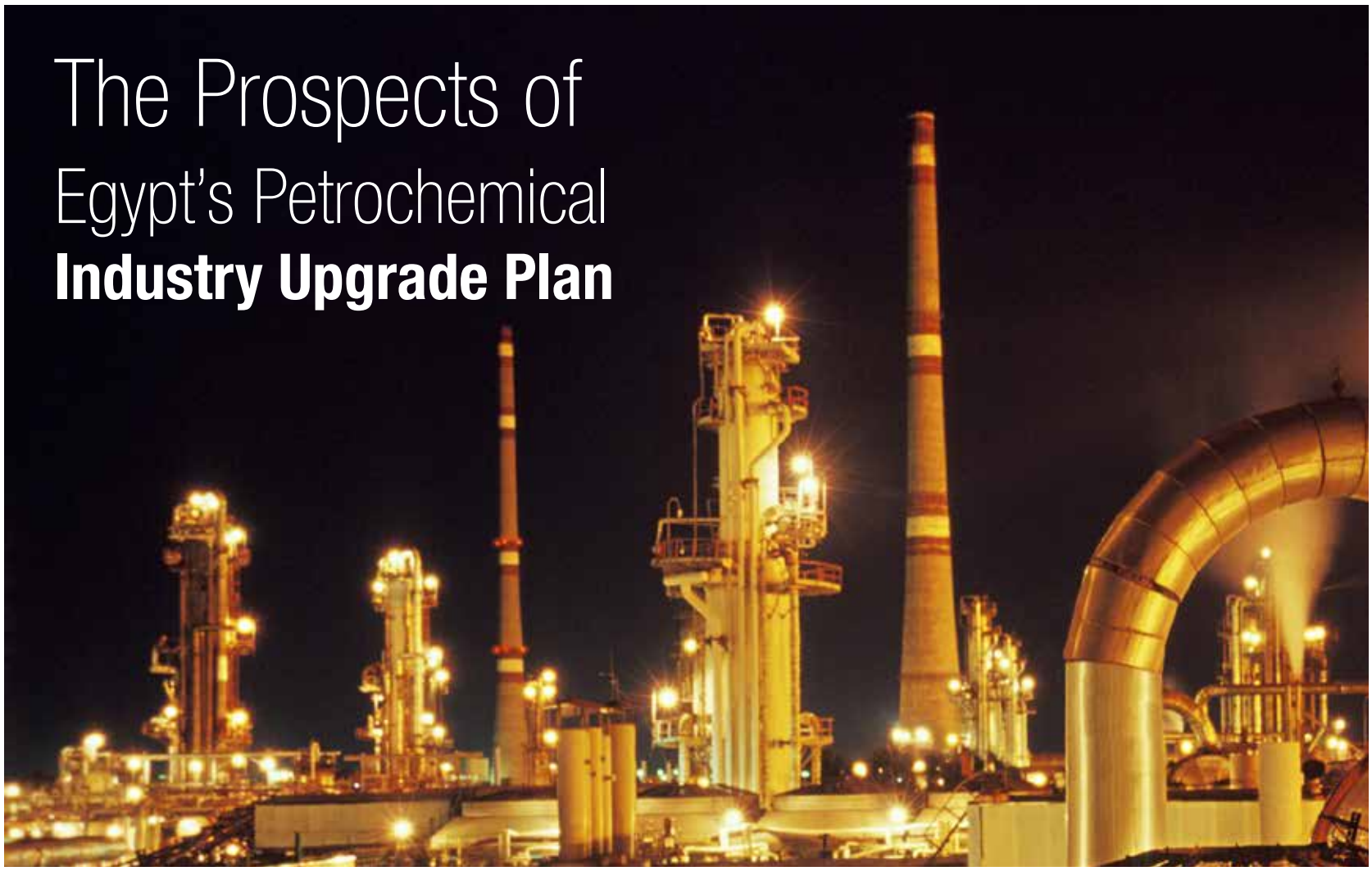
"One of the current problems is the Manzala Lake. Manzala is almost entirely sewage—a lot of chemicals are being dumped there. It affects fisheries and affects fishermen's lives."

I am very pleased to see the government has taken steps to rein in corruption. I'm also very pleased to see legal stability. We no longer change our laws as quickly as we did in the past, so investors can better predict earnings from their investments.

To attract investment, we have to create an environment where companies can operate. I think the government has made it a priority to create such an environment—an environment where people know their rights and responsibilities. This environment is important because it protects people and mitigates corruption.

Concluding the interview, Abou Sayed expressed his optimism about private enterprises in Egypt, particularly emphasizing the importance of small- and mid-scale companies in economic development. These small, privately owned enterprises, he predicts, will harness the economic capacity of Egypt and its natural resources and prove the true drivers of growth in Egypt as they expand their operations in both the domestic and international markets and creates jobs for the young population.

The Prospects of Egypt's Petrochemical **Industry Upgrade Plan**



By Mahinaz El Baz

The petrochemical industry plays an important role in the Egyptian economy and is one of the most dynamic parts of the oil and gas sector. Recognizing the importance of the industry, the Egyptian government has developed and is implementing a master plan to accelerate its growth, but, despite significant expansion, the industry still faces many obstacles that hinder its ability to achieve its full potential.

Economic Contribution

There are few industries that do not—in one way or another—use petrochemical products. The industry has also begun to create new products that not only compete with but also surpass traditional materials. With such a central role, the petrochemical industry serves as an essential component of an economy's industrial backbone.

Egypt's petrochemical industry will benefit from the country's resource endowment and domestic market. According to the United Nations Industrial Development Organization (UNIDO), domestic demand for petrochemical products is increasing in Egypt. This demand for will continue to increase at a brisk pace for the foreseeable future due to economic and population growth.

To meet that demand, Egypt will need to pump additional capital into the refining and manufacturing sector to increase capacity. With population of over 90 million and growing domestic demand, Egypt's domestic consumption of petrochemical products is expected to increase in the coming years. "Egypt has a potential huge market that can absorb and consume petrochemical products when produced locally. For foreign investors, this can secure a great percentage of their products off take, hence increasing their market shares," said Sara Mortada, Business Development Department Head at the Egyptian Petrochemicals Holding Company (ECHEM).

Production of petrochemical and derivative products reached 35.5 million tons during fiscal year (FY) 2016/2017—up from 31.2 million tons during FY 2015/2016—according to Amwal Al Ghad. This production rate represented an increase of over 30% from the previous year's production and was accompanied by sales nearly 20% higher, according to ECHEM's annual report.

Moreover, the Egyptian oil and gas sector is aiming to boost the production of petrochemical products to 40 million tons during FY 2017/2018 to meet the growing demand, sources at ECHEM told Amwal Al Ghad.

The industry contributes 3% of the country's GDP and 12% of the local hydrocarbon industry as a whole. In 2014, Egypt consumed 2.22 million tons of plastic and rubber, an annual rate of 25 kilogram per citizen, according to the General Authority for Investment and Free Zones (GAFI).

In addition, Egypt supplies petrochemical products to about 50 countries worldwide. With its strategic location and large domestic market, the country is well positioned for business. "Egypt is gifted with its distinct location, which facilitates product export to global markets, such as Asia, Europe, and Africa," noted Mortada. A more level playing field could spur the growth of small- and medium-sized businesses. These businesses, according to a World Bank study, contribute only 20% of the Middle East and North Africa (MENA) region's domestic production but employ 70-80% of its workforce. Growth among these small- and medium-sized businesses could create tens of millions of new jobs, with 65% of its 355 million people under the age of 25, will need in the next decade to avoid social disaster, according to ECHEM's annual report. Mortada considers this young, competent, and technologically adept workforce one of Egypt's assets.

Attracting Extra Investments

The Egyptian Ministry of Petroleum and Mineral Resources considers the petrochemical industry a priority and hopes to garner $20 billion worth of investments in it. Several factors are key to attracting foreign direct investment (FDI), such as the availability of raw materials, a talented workforce, and strong communication channels with investors. According to Amr El Shikh, a petrochemical engineer, Egypt has all these prerequisite factors for FDI.

Egypt's petroleum sector includes eight large petrochemicals projects with investments worth almost $7 billion and a total capacity of about 4.5 million tons per year, according to a September 2016 report by Plastics News Europe. The projects are located in four regions: Port Said, Suez, Damietta, and Alexandria.

"There are main factors determining the Foreign Direct Investment (FDI) flow, such as political and economic stability," according to the expert. He also noted that "Egypt's strong and trusted banking system is also a main factor in attracting

"There are main factors determining the Foreign Direct Investment (FDI) flow, such as political and economic stability."

FDI in the petrochemicals industry, as the foreign share of any project is managed by Egypt's public banks."

Echoing this theme, Mortada stated that, "recent reforms of the Egyptian gas market and the issuance of the new gas market regulating law would encourage investments in Egypt as well. [In addition, the] current status of the Egyptian pound highly attracts more foreign investments in Egypt."

In August 2016, Egypt's downstream sector set a new milestone with the inauguration of the petrochemical complex of the Egyptian Ethylene & Derivatives Company (Ethydco). The complex has the capacity to produce 480,000 tons of ethylene annually . Other projects are currently in the works. The Tahrir Petrochemicals Complex is set to become Egypt's largest petrochemical complex. This five-million-square-meter complex is being built in Ein Sokhna, close to Suez, and is expected to begin production in 2019. When complete, it will produce 1.35 million tons of polyethylene per year, 880,000 million tons of propylene, 250,000 million tons of butadiene, 350,000 million tons of benzene, 150,000 million tons of gas oil and 100,000 million tons of hexene, according to World Refining Association Report about The Future of Egypt's Refining & Petrochemical Industry.

> "Egypt's natural gas is lean, which means it is mainly composed of methane, and there are various methods for converting methane to olefins, the building blocks of petrochemicals."

"I believe that the upcoming days hold a bright investment future for the petrochemicals industry in Egypt in the light of the wise governmental reforms, sincere employee dedication, and extensive R&D activities that will place Egypt as a prolific competitor on the regional petrochemicals production map," stated Mohamed Saafan, ECHEM's president and chairman of the board, according to ECHEM's annual report.

Egypt's gas reserves and strategic location close to western European and Mediterranean markets make it an attractive place to invest in new petrochemical capacities. With its assets and technical expertise, Egypt has a unique opportunity to take a leading role in the production of high quality petroleum and petrochemical products, according to Sameh Fahmy, Egypt's Former Minister of Petroleum and Mineral Resources, in his 2008 interview with Egypt Oil & Gas. Egypt's infrastructure, comprehensive government support, and the availability of technical expertise in the fields of refining, fertilizers, and petrochemicals also encourage investors to invest in Egypt, Fahmy added.

The petroleum sector is pursuing two parallel paths in the development of the petrochemicals industry. Egypt is both developing existing petrochemical projects to increase their competitive capacities and establishing new projects, sources at ECHEM informed Amwal Al Ghad.

New Gas Discoveries

Development of its petrochemical sector will permit Egypt to optimize the benefits of its natural resources, particularly its new discoveries of large natural gas deposits. These "new gas discoveries will surely boost the contribution of Egypt's petrochemicals industry, in addition to adding new capacities and maximizing the value added of the industry," according to an anonymous petrochemical expert.

El Shikh, similarly, mentioned that new gas discoveries, such as Zohr, will change Egypt's petrochemicals industry. According to El Shikh, the government should focus on increasing value-added production of natural gas through the petrochemical industry.

Most of Egypt's petrochemical companies have operated at 50% or less of their total capacity since 2011 because natural-gas scarcity, El Shikh stated. The Zohr discovery is expected to play a very important role in reviving the industry. Petrochemical companies are expected to boost their capacity by up to 80% and may permit the development and production of new products, he added.

The natural gas feed stock, a primary factor for the petrochemical industry, is expected to be available in Egypt at competitive prices as soon as new gas discoveries come online. The government is planning to monetize the newly discovered natural gas to foster its utilization in value-added industries. Mortada notes that Egypt's natural gas reserves are attractive to foreign investors in the petrochemical industry because it guarantees a local and dependable supply of feedstock for production purposes.

Though feedstock also includes lighter crude-oil products, natural gas is increasingly at the heart of the global petrochemical industry's ability to produce for the components of many products."Egypt's natural gas is lean, which means it is mainly composed of methane, and there are various methods for converting methane to olefins, the building blocks of petrochemicals," Mortada explained, pointing out that domestic natural gas production will reduce costs by reducing costly imports.

This abundance of olefins, Mortada added, would widen the range of petrochemical products produced locally and would increase the opportunity to produce new derivatives, such as the specialty chemicals, which are currently imported and not produced in Egypt.

To be competitive, petrochemical experts advise that production sites should have easy access to both feedstock and markets. They must also be capable of producing the high quality, lighter products that world markets are increasingly demanding.

Petrochemical Master Plan

Egypt's petrochemical master plan presents a three-phase, twenty-year program (2002-2022) for the industry that takes into consideration feedstock availability, global and local market conditions, land availability, financing, and existing projects. It aims to attract $20 billion worth of investments and create 100,000 direct and indirect jobs in the oil and gas sector, according to ECHEM.

The master plan looks beyond meeting local demand and envisions the export of petrochemical products. While the plan is being implemented, analysts point out that progress has been slow and cumbersome, according to UNIDO."Egypt's petrochemicals master plan should be revised, because the market dynamics have changed a lot since 2002, in addition to the shift in over-supply between products, and the invention of totally new petrochemical based products," an anonymous petrochemical expert said.

> "Egypt's petrochemicals master plan should be revised, because the market dynamics have changed a lot since 2002, in addition to the shift in over-supply between products, and the invention of totally new petrochemical based products."

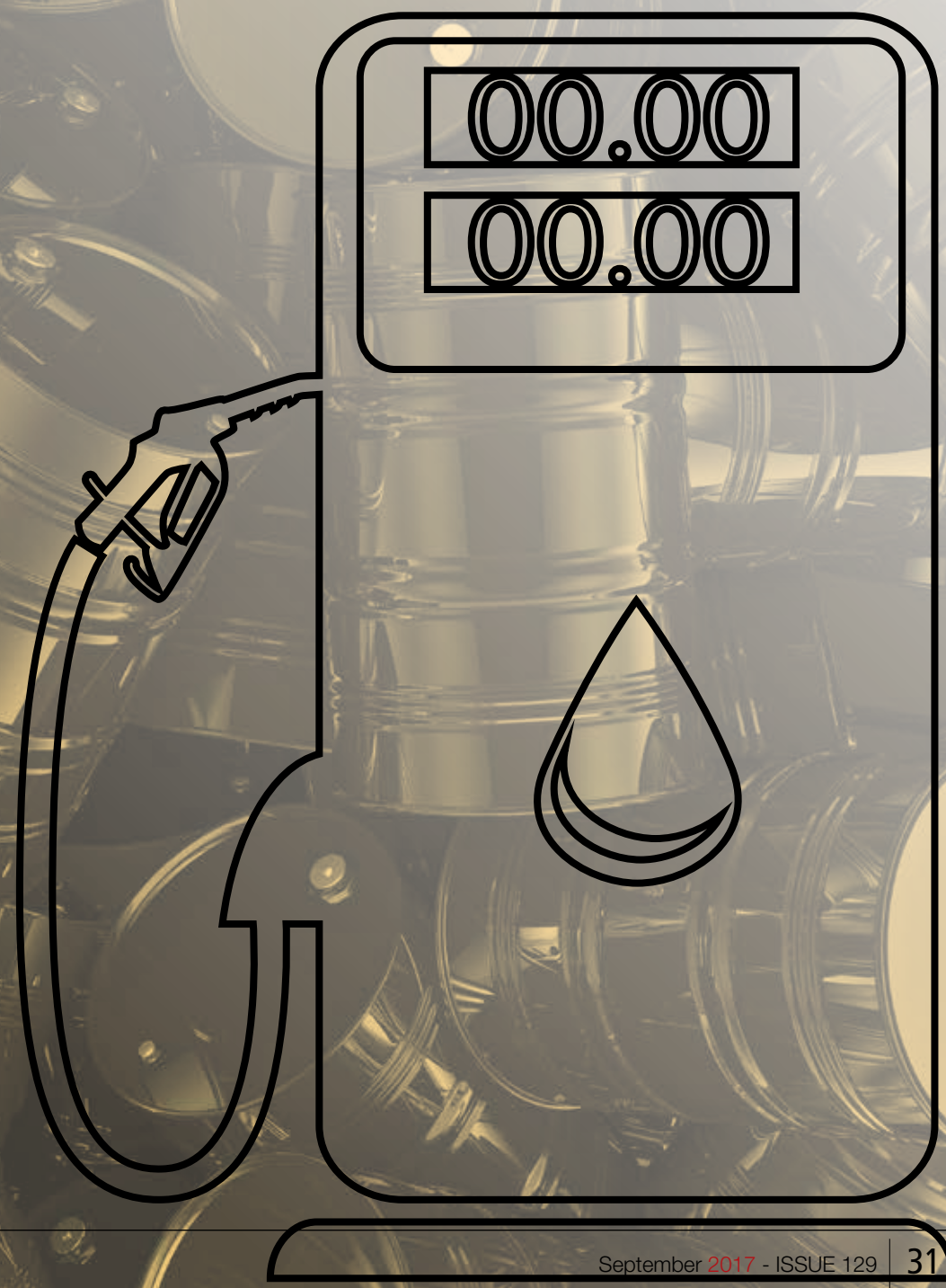
On the other hand, BMI's Petrochemicals Risk/ Reward Index for the Middle East and Africa region showed that Egypt, with a score of 47.7 points, was in the ninth place in 2015—up 3.0 points as a result of improved prospects for the petrochemicals industry and the country as a whole.

In 2016, the Egyptian Ministry of Petroleum and Mineral Resources adopted a multifaceted strategy to secure Egypt's oil and natural gas needs. The goal of this strategy was to expand current petrochemical facilities and thus maximize their ability to add value to products and transform Egypt into a regional energy hub. The petrochemical industry "could support the Egyptian goal of being a regional energy hub if the government diversified the use of the current facilities in order to increase the petrochemical products exports," according to an anonymous petrochemical expert.

Mortada explained that producing exportable downstream products would increase Egypt's net exports while replacing current imports. This change would strengthen Egypt's position in the international petrochemical market. Over time, Egypt's strategic location and access to feedstock sources would contribute to Egypt's development of trading and export infrastructure and its aspiration of becoming a regional energy hub.

The petrochemical industry is well positioned to benefit from current economic reforms and the growth of Egypt's natural-gas sector and could help drive the Egyptian economy in the future. As Mortada notes, "petrochemical projects are highly profitable, whether they are mega complexes, or small downstream plants." Yet the industry faces challenges. The current master plan needs to be revised to adapt to rapidly changing market dynamics, drawing upon the opinions and expertise of industrial experts and Egypt's young and talented workforce, argues one expert. These changes, he believes, would demonstrate the strength of the sector and allow it to attract the investments it needs.

Egypt's Energy Subsidies:
A COMPLETE PROFILE



Egypt's Energy Subsidies: A COMPLETE PROFILE

By Tamer Mahfouz

With the fuel subsidies bill rising above EGP 100 billion since fiscal year (FY) 2014/2015, the Egyptian state need to speed up its subsidies reform program, a feat that became imminent after the $12 billion IMF loan, which required commitment to an economic reform program.

Yet, even with falling global oil prices, the burden remained more than the government's finances could bear. As such, the government aims to reduce the fiscal burden to EGP 33 billion by the end of the 2017-2018 FY.

The impact of this policy change is most evident at the fuel pump. Over the past 12 months, prices have doubled. After more than a decade of relative price stability in Egypt's energy sector, this rise in prices will cause rippling effects throughout the economy – impacting both consumers and producers.

A Hard Environment to Reform

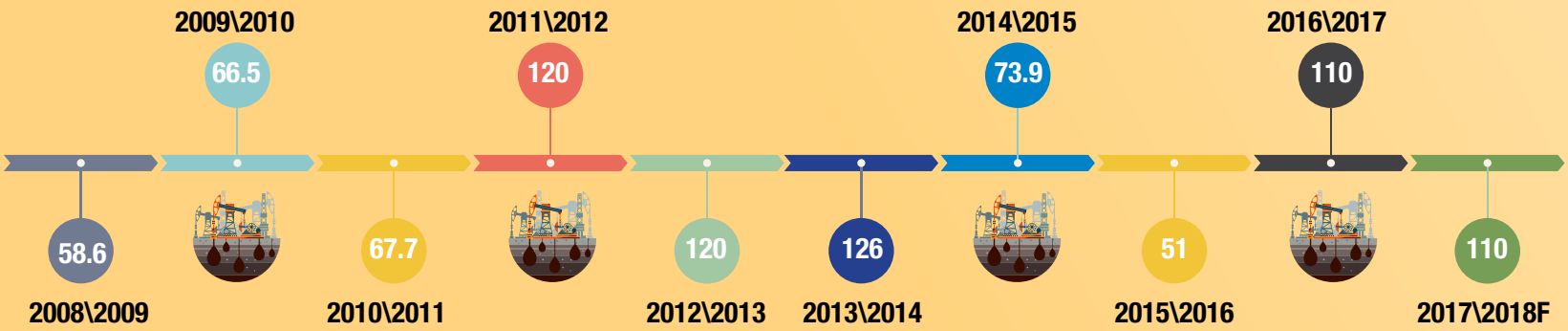
By reducing the cost and the final price of all government-supplied commodities, products, and utilities, the energy-subsidy system benefits both individuals and corporations in Egypt. For example, in electricity production, the fuel used to generate electricity is subsidized, and then the produced electricity reaching homes and commercial buildings is also subsidized.

This system appears to need a reshuffle; according to a September 2014 report by Sherif Zoheir, a senior tariff specialist at the Ministry of Finance, the poorest 20% of the population, who consume the least, receive around 10% of the subsidies value. Meanwhile, the middle 60% of the population consume 45% of the subsidy and the richest 20%, and hence citezens who consume the most, receive 45% of the subsidy.

As of 2017, Egypt is the sixth cheapest place in the world to fuel a car, according to Global Petrol Prices website, this approach may lack the incentive to limit waste and to seek cheaper more sustainable energy. As a result, petroleum and natural gas represent approximately 96% of Egypt's energy consumption.

Similarly, electricity generation relies heavily on natural gas with 83% of electricity produced from natural gas. According to government figures, the industrial sector utilizes natural gas for 61% of its needs, mazut for 27%, and diesel fuel for 12%.

Value of Subsidies 2008 – 2018



Source: Egypt Oil & Gas

Unit: Billion EGP

Becoming a Net Oil Importer: From Fiscal 2005/2006 to Fiscal 2010/2011

In fiscal year 2005/2006, the government hiked electricity prices by 8.7% and then by an additional 5%. These were the first hikes since 1993, when pump prices were equal to the cost of fuel. These price increases didn't prevent Egypt from becoming a net importer of energy. By the end of the fiscal year, it had spent $5.36 billion to keep up with local demand. Fuel subsidies cost the government EGP 41.7 billion, almost 77% of the entire subsidy budget, in fiscal year 2005/2006, according to CBE. By fiscal year 2010/2011, the fuel subsidy was almost EGP 67.7 billion (a 62.3% hike compared to 2005) while imports topped $9.26 billion (a 72.7% hike), according to CBE's monthly statistical bulletins.

Crude oil production during this timeframe remained well below 600,000 barrels a day (b/d), reaching that benchmark only in 2009. In 2010, production averaged 568,000 b/d, according to Index Mundi, a statistics-gathering website. Meanwhile, natural gas production held steady, reaching 62.96 billion cubic meters (bcm) in 2009 and then dropping slightly to 61.33 bcm in 2010.

While production remained static, consumption increased. Demand for crude oil reached 706,000 b/d in 2010 (a 7.3% increase over 2005). This increase in demand occurred despite the global economic crisis in 2008, which caused Egypt's GDP growth to decline from 7.2% in 2008 to 4.69% in 2009. Before the crisis, consumption topped 715,000 b/d in 2007. Natural gas consumption had also increased to 46.17 bcm by 2010 after remaining almost flat at 31.8 bcm prior to 2007. This 45% increase was because the government had started to connect households to the natural gas infrastructure and factories were opting to switch to natural gas from oil in order to reduce production costs amid a poor economic outlook.

With the subsidy budget skyrocketing, the government announced in 2007 that fuel prices for electricity generation would increase by 9% annually while electricity prices to consumers would rise by 7.5% annually until 2013. The government quickly retreated from this policy and abandoned the rate increases in 2008. That year, saw a major change in how fuel was subsidized with the government resorting to tiers based on consumption levels to determine how much of the fuel price would be subsidized.

In fiscal 2008/2009, with investors certain that the subsidy will keep prices fixed and Egypt going through other positive economic reforms, foreign investment inflow directed to energy investments increased massively. It accounted for 75.8% of FDI, according to press releases published by the Ministry of Petroleum. Oil and natural gas investments reached EGP 37 billion in fiscal 2010/2011, a 156.2% increase compared to fiscal 2004/2005.

The Dry Spell: Fiscal 2011/2012 to Fiscal 2013/2014

This era was characterized by massive political instability in the aftermaths of the January 25th 2011 and June 30th 2013 revolutions. This resulted in almost no new foreign oil investments in Egypt. It also saw the government steadfast on the notion of not increasing fuel prices in an attempt to achieve some sort of societal stability, which will reflect on Egypt's political stability. The fuel subsidy budget reached EGP 95.5 billion in fiscal 2011/2012, while imports topped $11.77 billion. By mid-2014, fuel subsidies had reached EGP 126 million (around 32% increase over fiscal 2011/2012) while imports recorded $13.24 billion (a 12.5% increase), according to CBE.

Production of crude oil continued to drop during this period, reaching 514,000 barrels a day by the end of 2013. This was a 6.7% drop in production compared to 2011. Natural gas production also declined. In 2011 production topped 61.2 billion cubic meters. However, with few new investments and several bombing incidents of natural gas pipes in Sinai, production dropped in 2012 to 68 billion cubic meters, and in 2013 production reached 56.07 billion cubic meters, according to data compiled by Ycharts, a data-compiling website, using Ministry of Petroleum figures.

In terms of crude oil consumption, Egypt saw its consumption reach 752,000 barrels per day by the end of 2013, this was a 6% increase over 2011. Meanwhile, despite factories running at a fraction of their capacity due to low demand, natural gas consumption was increasing. By 2013, natural gas consumption had reached 51.43 billion cubic meters. This is a 3.6% increase in consumption compared to 2011.

There were several discoveries during this period, mainly by state-owned oil firms. In 2011, state-owned Balaeem Petroleum Company announced that it discovered an oil reservoir in the Balaeem region in Sinai without giving details on how large the reservoir is. To date, no excavation activities were reported. By year's end, the company had increased its production of crude oil from existing wells by 5000 barrels a day and almost 3.4 million cubic meter of natural gas. Meanwhile, Badr el Din Petroleum, another SOE, dug 22 wells to produce an additional 14,000 barrels a day and 4.5 million cubic meters of natural gas a day. By year's end, the company's total production was 40,000 barrels of oil a day and 12.3 million cubic meters of natural gas.

By the end of 2013, there were 20 discovery and excavation deals signed between the government and foreign investors promising an investment floor of $700 million at some point in the future. The Ministry of Petroleum also gave these foreign companies contract-signing bonuses worth $120.5 million to dig 107 wells, according to press releases from the Ministry of Petroleum. These were the first deals to be signed since 2010, but there was no new investment on the ground. Oil and natural gas investments reached EGP 28.738 billion in fiscal 2013/2014, a 23.2% drop compared to fiscal 2010/2011.

During this timeframe there were severe power cuts during summer, with residents in busy neighbourhoods such as Mohandseen complaining of cut outs lasting several hours, happening several times a day, especially during Ramadan which came in July. There were also noticeable shortages at the pumps, leading to long lines and, in some cases, altercations among drivers or with station employees. The height of the petrol shortage came a few days before the June 30 revolution, which overthrew of then President Mohamed Morsi.

When Everything Changed: Fiscal 2014/2015 to Fiscal 2016/2017

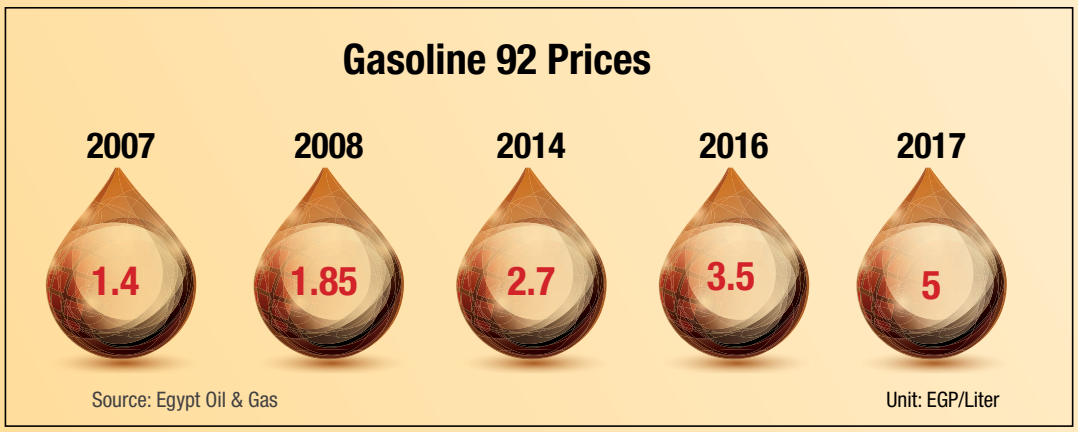
With renewed political stability, and the country ultimately led by Abdel Fattah el Sisi, the former chief of the armed forces and a head figure during the June 30 2013 revolution, foreign investors started to invest in arising opportunities. They came amid resilient energy subsidies, which ensured prices remained fixed, despite falling reserves. Also, starting 2015, the country was suffering from a strong foreign currency black market that led to unfavorable decisions by CBE, such a limiting repatriation of profits.

A major game changer during this timeframe was that global oil prices dropped from around $115 a barrel to just over $40 a barrel by mid-2014. As a result, fuel subsidies in Egypt dropped to EGP 73.9 billion in fiscal 2014/2015 (a 43.4% decline compared to just before the drop). By mid-2016 (the most recent annual statistic), subsidies reached $51 billion as global oil prices bottomed at around $30 a barrel. Import costs dropped as well to $12.36 billion in fiscal 2014/2015, representing a 6.67% drop compared to previous period. By mid-2016, import costs dropped to $9.29 billion.

This downward trend will reverse when fiscal 2016/2017 figures are reported because of the November 2016 float of the pound. The FX rate neared EGP 20 to the dollar by December compared to EGP 8.89 before the decision. It is currently hovering closer to the EGP 18 mark. Observers anticipate that fuel subsidies and import bill will likely double at the end of fiscal 2016/2017, given that Egypt is still a net importer of oil and natural gas.

During this timeframe, crude oil production in Egypt continued to decline as oil investors cut investment budgets to deal with lower global oil prices. Crude oil production eventually dropped to 491,000 barrels a day by the end of 2016. This was a 4.8% drop compared to mid-2014 (just before the crash in global oil prices). Natural gas production also declined, reaching 45.58 billion cubic meter by the end of 2015. This was a near 6.6% drop compared to 2014.

However, crude oil consumption continued to increase. In 2014, it reached 797,000 barrels, according to data compiled by The Global Economy website citing government data. Consumption ultimately reached 853,600 barrels a day by the end of 2016, as reported by Egypt Oil & Gas late June citing a report by BP. (A 7% increase.) On the other hand, natural gas consumption almost stabilized as companies



had to cut production output amid harder-to-get foreign currency and slowing domestic demand. Consumption ultimately reached 47.81 billion cubic meter by the end of 2015, this was only a 0.4% drop compared to 2014.

During the second half of 2014, Egypt was focused on signing oil-import deals to plug the country's energy gap. The Minister of Petroleum (MoP) visited Saudi Arabia twice during the year to secure oil shipments. In September, a presidential decree opened the door to Cypriot oil firms to excavate for oil and natural gas reservoirs at the borderline. In December, the government signed agreements to secure six LNG shipments from Algeria totaling 750 million cubic meters of natural gas to be delivered between April 2015 and September 2015. EGAS, the MoP executive arm for natural gas activities, signed six exploration and excavation deals with Emirati Dana Gas, Irish Petroceltic and Italy's Edison as well as British and Canadian companies . By September, two new oil reservoirs were discovered in West Kanayes region and Siwa Oasis, both in the Western Desert.

During summer and Ramadan, power outages to residential units were almost eliminated. However, factories were being extremely vocal about power outages to their factories which would last a few hours, several times a day. At the time, many factories were contemplating building their own power generators and buying fuel from the open market to stay open. In an effort to increase national electricity production, the government in November 2015 announced a feed-in tariff system that allows private energy companies to supply the national grid and get paid for the electricity they provide.

In 2015, the mega investment conference; Egypt Economic Development Conference held in March; saw 17 new agreements signed to excavate oil and natural gas in the Western Desert, Gulf of Suez, the Mediterranean and Nile Delta, according to MoP. The EEDC yielded a $12 billion agreement with BP to start new projects. Several MoUs and development agreements were signed with new-to-Egypt and existing multinational oil and gas firms such as Kuwait Energy Company, Cyprus Hydrocarbons Limited and BG.

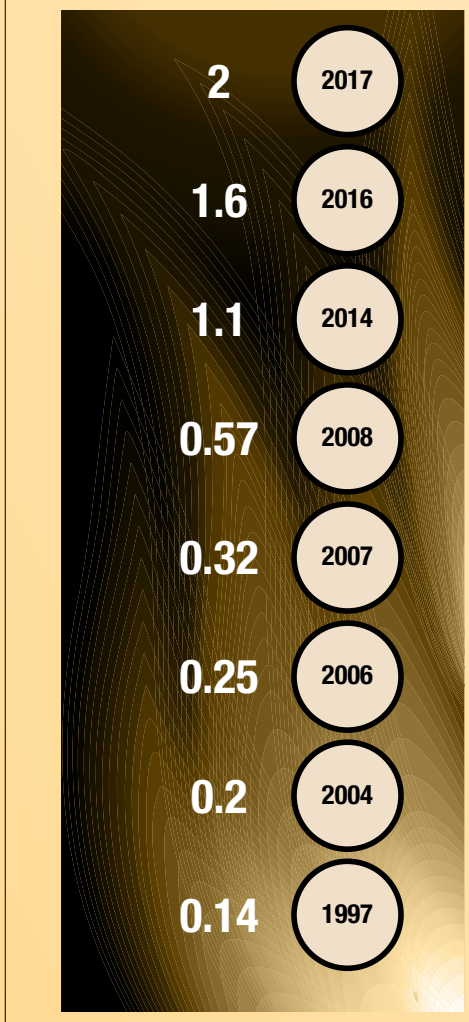
Regarding local explorations, EGAS announced an auction for eight natural gas blocks in the Mediterranean. Meanwhile, Ganoub el Wadi Petroleum Holding Company, an SOE, and BG both made natural gas discoveries in Upper Egypt and the Mediterranean, respectively. After the EEDC, two agreements were signed with MIDOR and UOP. Also, the discovery of the supergiant natural gas field Zohr (aka Shrouk) was made by ENI. This is the biggest reservoir in the Mediterranean, and the government is pinning hopes that it would make Egypt meet local demand by 2019, and become a net exporter by 2020.

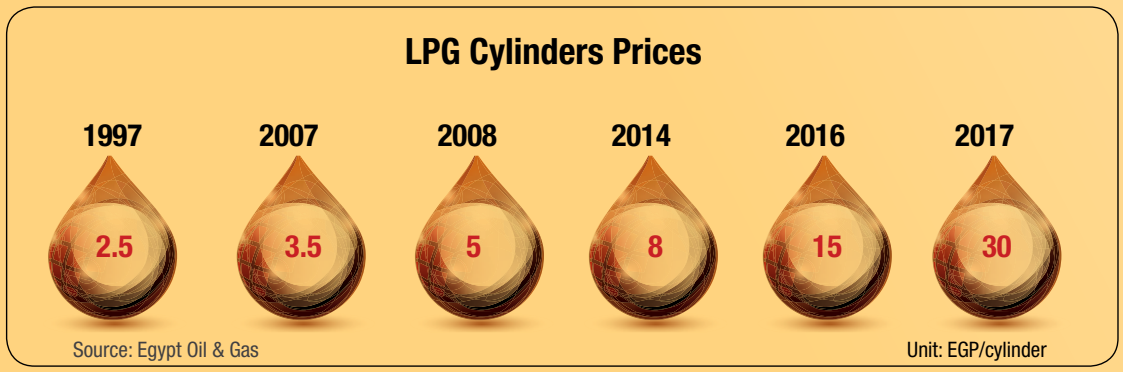
To secure local supply, EGAS signed an agreement with Trafigura to supply Egypt with 33 shipments of LNG in 2015 and 2016. EGAS also signed an agreement with Noble Clean Fuels to supply seven LNG shipments starting June 2015. Meanwhile, Swiss-based Vitol will supply Egypt with nine shipments of LNG. Lastly, EGAS signed a 5-year agreement with Russia's Gazprom LNG Trade to supply Egypt with five shipments of LNG a year.

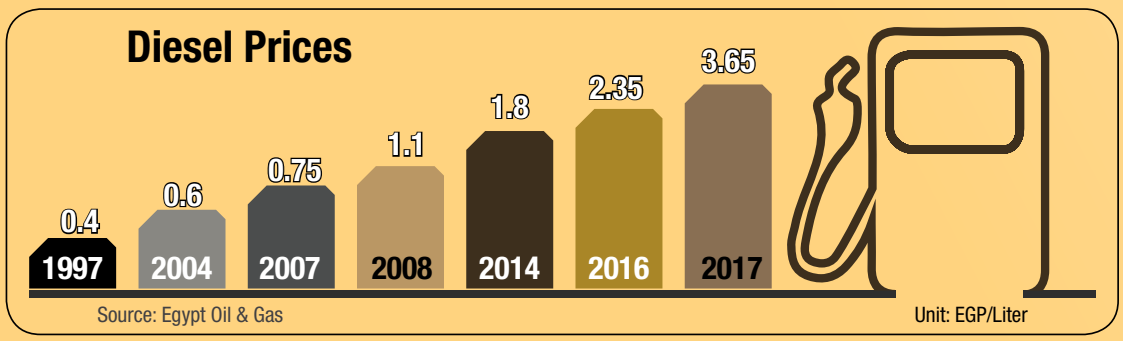
During the summer and Ramadan, no complaints were voiced from residences and factories about power outages. That year marked the start of the government strategy to increase in electricity prices for households at the start of every fiscal year. In fiscal 2015/2016, the increase was up to 27.1%.

In 2016, there were two major bids by the Egyptian General Petroleum Corporation (EGPC) and state-owned Ganoub el Wadi Petroleum Holding Company. EGPC got six proposals to excavate in the Suez Gulf and Western Desert with a minimum investment budget of $200 million, of which $68.2 million are already signed. The Ganoub el Wadi bid didn't see any proposals to date. Meanwhile, MoP signed 10 agreements with local and international firms to search for oil and gas in the Red Sea, Nile Delta Eastern and Western Deserts, Gulf of Suez and Upper Egypt. The combined minimum investment budget for them is $83.8 million to dig 37 new oil and natural gas wells.

Throughout the year, there were several new discoveries in existing concessions such as North Nidoco-1 and West Nidoco-2 in West Baltim in the Nile Delta, producing a combined 870 million cubic meter of natural gas and BTE-2 in the Western Desert which will produce 12 million cubic meters of natural gas. Oil discoveries included a new well in Gabal el Zeit, in the Suez Gulf, which will produce 3000 oil barrels a day and in Abu Senan in the Western Desert producing 3800 barrels a day. Meanwhile, the government invested close to $31 billion in the North Alexandria and Zohr fields, according to MoP press releases. Oil and natural gas investments reached EGP 46.3 billion in fiscal 2015/2016, a 61.1% increase over 2013/2014.







Also in 2016, BoP announced its five year strategic plan, which will end in 2021. The biggest news however was in November 2016 when the pound was floated, dropping instantly to EGP 13.4 to the dollar from an artificially propped LE8.89 FX rate. Fuel prices at the pumps went from EGP 2.6 a liter to EGP 3.5 for Octane 92 and from EGP 1.6 to EGP 2.35 a litre for Octane 80, the two most widely used fuel categories. These were the first of many reforms that have to be implemented after Egypt got the IMF approval earlier in 2016 for an extended fund facility amounting to $12 billion. Continuing its electricity price hike strategy, the government increased prices by up to 41% for fiscal 2016/2017.

Throughout the first six months of 2017, existing oil and gas companies were announcing expansions and new discoveries. Khalda Petroleum Company, a private oil firm, started production on the eight wells it had discovered since July 2016, increasing its output by 3 million barrels a day. Their plan for fiscal 2017/2018, as announced in an MoP press release, is to dig 53 wells with a minimum investment budget of

around $800 million. Meanwhile, EGAS signed four agreements in January with a minimum investment budget of $306 million.

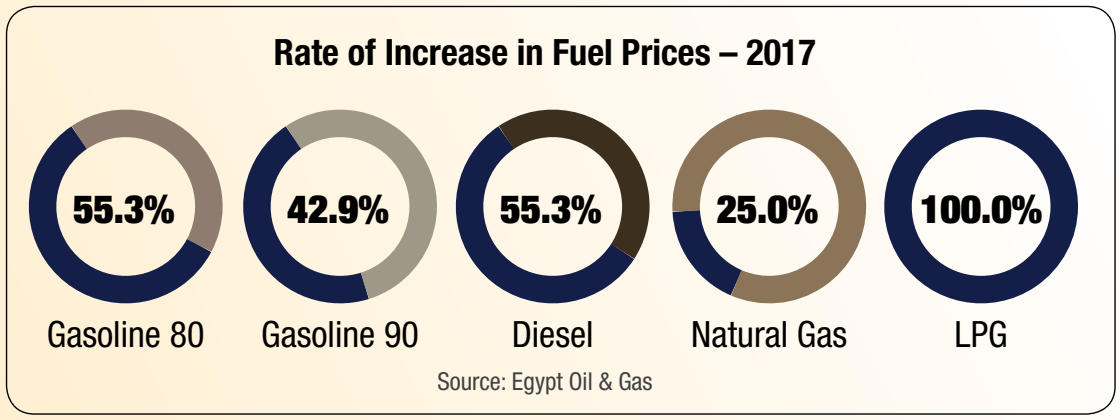
Future Plans

In efforts to reduce the forecasted increase in fuel subsidies and fuel import bills, prices were increased at the start of fiscal 2017/2018, between 5% to 42%. After the hike, the government announced that the top tier Octane 95 petrol was now selling at cost.

Moving forward, the main aim of the government is to reduce consumption growth rates, which are currently between 7% and 9%. “This is too high,” said Tarek el Molla, the Minister of Petroleum, when announcing the 2017/2018 fuel price hikes. “We need to drop growth in consumption to between 5% and 6%. We will do this by reducing subsidies on fuel.” The aim for fiscal year 2017/2018 is to drop fuel imports to $8 billion, a 13.3% drop from fiscal 2015/2016.

On the other hand, the government has been working on eliminating smuggling throughout the supply chain when it introduced fuel smart cards in 2014.They are currently used between the main national depot and petrol stations. The second phase, from stations to individual cars, should be up and running some time this fiscal year, thereby keeping the entire supply network under tight monitoring.

Some news reports anticipate that energy subsidies would be removed by 2022, or at least become highly targeted to Egypt’s poorest.



Growth rate of Petroleum Products 2004 - 2017

Year	Gasoline 80	Gasoline 90	Diesel	Natural Gas	LPG
7/1/17	55%	43%	55%	25%	100%
11/1/16	47%	30%	31%	46%	88%
7/1/14	78%	46%	64%	93%	60%
1/1/08	0%	32%	47%	78%	43%
1/1/07	0%	0%	0%	28%	0%
1/1/06	0%	0%	25%	35%	0%
1/4/04	0%	0%	40%	36%	40%

Source: Egypt Oil & Gas

“Overall, our industry vision is […] to establish Egypt as a more deregulated market, working with dynamic supply and demand forces, to become a net exporter of gas with a more diverse energy mix,” said Molla to Energy Egypt Magazine in March.

Egypt's Petrochemical Industry:
Between Innovation Fears and Incredible Potential

By Mariana Somensi

The demographic expansion in Egypt brings an enormous responsibility to the oil and gas industry. As the energy market is directly related to the performance of other sectors, increasing the supply of petroleum products to meet the growth in demand is especially important.

In order to cover the crescent usage of fuel and cut costs with the importation of oil, gas, and other petroleum products, the Egyptian Ministry of Petroleum and Natural Resources has set up new strategies and targets, which include transforming the country into a regional energy hub, as well as achieving self-sufficiency in gas production by 2018.

Although production and exploration drive a great amount of investments in the North African nation, looking at the petrochemical industry is equally essential to reduce the burden at the federal budget and avoid fuel shortages throughout the country. However, the sector is extremely cautious when it comes to new technologies and production models, and might be resistant to sudden innovation in order to avoid risks.

Risk Aversion

To enjoy the benefits of a well-established petrochemical sector, investing in technology and innovation is highly required to optimize the sector's operations. "Innovation can come in a variety of areas, including new product development, improvements in raw material and feedstock identification and utilization, the use of techniques such as pinch technology to identify ways to improve process efficiencies, increase production yields and improve energy utilization, and supply chain optimization, among others," Dale Kline wrote to the Innovative Membrane Technology's (Imtex) website.

Nevertheless, Kline highlighted that innovating is not an easy task for the petrochemical industry. According to him, considering all the consequences of a failure in the chemical processes, the sector presents a particular aversion to technical risks in its operations, which brings a roadblock to the industry's upgrade.

"This is the one area where strategy and resources really do not come into play. The chemical industry is perhaps the most risk averse of all established industries. Compared to industries such as information technology, telecommunications, health sciences, and even pharmaceuticals, to name a few, the

Petrochemical sector forms
12% of Egyptian industries.

development, demonstration, and adaptation of innovative technologies within the chemical industry moves at a snail's pace," he pointed out.

"While emerging technologies – truly innovative game changers – exist in the chemical industry, their demonstration and adoption to enhance, or even replace, decades-old tried and proven technology can be a difficult risk hurdle to overcome," Kline added.

Yet, the petrochemical sector's importance calls up for a change of behavior. In order to avoid a decline in performance, the industry must revitalize its operations by following up with the newest technologies in the market.

> "We have to reduce our imports and encourage the local industry to supply for our market and cover our needs. The petrochemical industry is the solution."

Risking is Necessary

Products obtained from oil and natural gas hold a major role in running an economy. Due to their importance in other industries and their omnipresent status in people's routine, the production and management of petrochemicals must be nearly flawless to avoid a severe economic crisis and a sharp drop in quality of life. Accordingly, improving the sector brings bright prospects of progress and stability.

"The petrochemical industry can transform any country into an advanced one, as [it] is responsible for producing all kinds of products used in the market," Hoda Ragab Omran, Engineer Business Development at the Egyptian Petrochemicals Holding Company (Echam), told Egypt Oil & Gas on the sidelines of Egypt Petroleum Show 2017.

> "This is the one area where strategy and resources really do not come into play. The chemical industry is perhaps the most risk averse of all established industries."

As she explained, the country imports a huge amount of petrochemical goods, spending a lot of the available foreign currency. "We have to reduce our imports and encourage the local industry to supply for our market and cover our needs. The petrochemical industry is the solution to reduce our imports," she added.

Given its proven potential of lifting the country's economy, backing off from the necessary changes would be a long-term suicide for the sector. "Chemical companies would be wise to take a hard look at their core strategies – and make sure that real innovation in all areas of their businesses are pursued where absolute value is evident, and encourage and reward those who are willing to identify and pursue new technology in non-traditional areas." Dale Kline noted.

Changes are Already Occurring

In the last decade, new approaches were spotted in the two largest economies in the world. The impressive shale gas production in the United States (US) brought new prospects for petroleum products output, including ethane crackers and on-purpose technologies, and China has been successfully operating coal-based petrochemical units, whose economics are more attractive if compared to crude oil-based feedstock.

Furthermore, "multiple market disruptions — including the shale gas renaissance in the United States, plummeting oil prices worldwide, and a capacity expansion drive in China and Iran — are reshaping the Middle East's petrochemical industry," Udo Jung, Mirko Rubeis, Marcin Jędrzejewski, and Arun Rajamani pointed out in an article for the Boston Consulting Group (BGC).

Egypt's Potential

In Egypt, the petrochemical industry represents 3% of the gross domestic product (GDP) and 12% of total Egyptian industries, according to the data disclosed by Hussein Hassan Selmy during the Third Annual Downstream Summit held in Algiers, Algeria, in 2015. These numbers indicate that any development plan established at the Egyptian petroleum sector should also include the petrochemical performance in order to boost its effectiveness.

"The country is heavily dependent on imports and the ambitious development program [managed by the Ministry of Petroleum] is, in part, aimed at balancing the country's trade deficit – alongside improving its export performance," Sherif El Gabaly stated in his article Petrochemical Industries in Egypt: Present and Future, written for the Federation of Egyptian Industries and the Chamber of Chemical Industries.

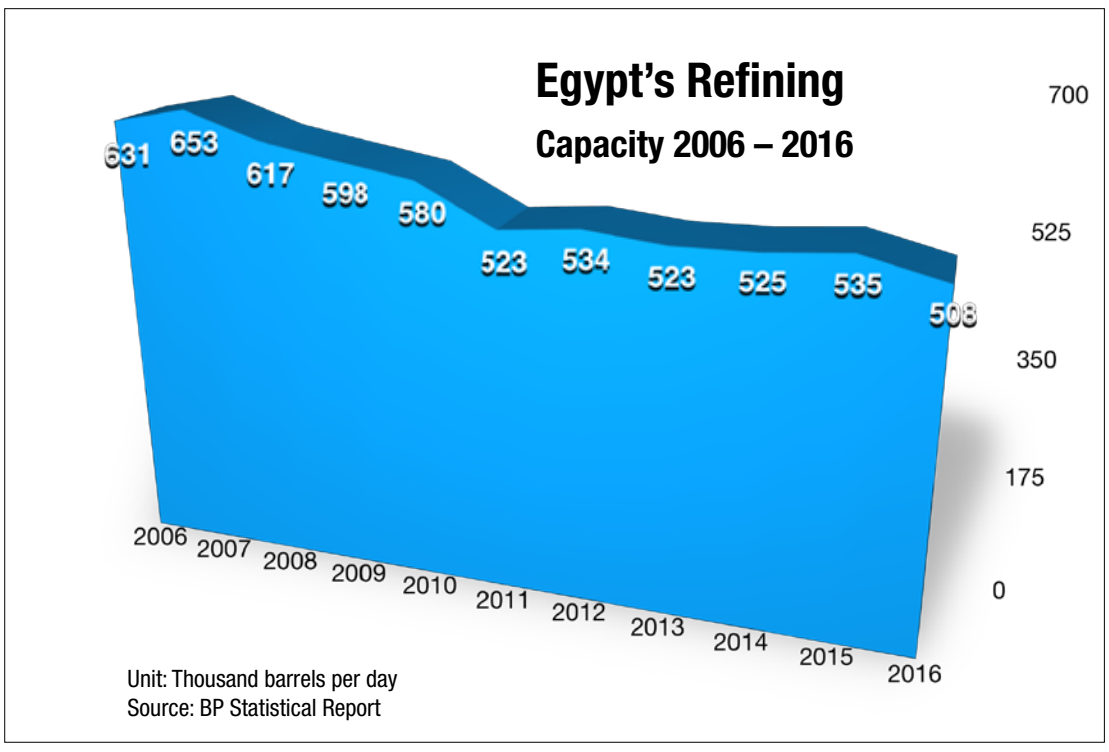
The country's rich natural resources place Egypt in a privileged position to embrace innovation risks. The great proven amount of hydrocarbons and the incorporation of new gas fields to the local production – including Eni's Zohr, the largest gas reserve found in the Mediterranean Sea – turn on a green light to new approaches in the Egyptian petrochemical industry, which could be fed by local production.

Petrochemical sector represents 3% to GDP.

"The cost of production of petrochemicals is highly dependent on feedstock cost. The regions with abundant low cost feedstock have obvious advantage over the regions where the availability of feedstock is limited or closely related to crude oil pricing levels," it was disclosed during the Southwest Process Technology Conference, held in the US. Accordingly, saving costs with importation and meeting the petrochemical industry's needs with local production works as a great push for the industry to invest in innovative approaches.

"With a population of over [90] million, and GDP growth rate improvement, Egypt's domestic consumption of petrochemical products is expected to increase in the coming years. In addition, Egypt supplies petrochemical products to about 50 countries worldwide," Selmy pointed out during the Downstream Summit.

As Dale Kline well noted, "the ultimate winners in the chemical industry will be those who resource and support innovation, and overcome the technical risk barriers through successful and more timely integration." With all the cards in hand, Egypt is more than ready to make a bold move towards innovation in the petrochemical sector – a move that would add up to the overall win of the country's ambitious targets for petroleum industry in the near future.



A Deeper Look into the IPO Challenges of Egypt's Oil Refineries

By Mahinaz El Baz

After decades of discussion, the Egyptian government is looking to partially privatize parts of the oil and gas industry, particularly its state-owned oil refineries. Of late, it has taken steps to prepare for Initial Public Offerings (IPO) for a number of the governmentally owned corporations in the sector. This move is part of the government's plan to raise funds for the national oil companies (NOCs) to upgrade production capacity.

Strategy and Policy Actions

The government has recently pursued pro-market policies in the oil and gas sector. It has made payments on long accumulated debts to International Oil Companies (IOCs), removed subsidies on petroleum products, and expressed interest in issuing IPOs for NOCs. The government has even indicated a willingness to list state-owned oil-refining companies on the Egyptian Exchange (EGX) in the hope that restructuring to partner with the private sector will lead to greater efficiency and profitability.

The government has been discussing this step since 2005, but, as of yet, few steps have been taken to turn it into reality. The reasons behind the delay vary, according to experts.

Pof. Alaa El Shazly, Professor of Economics at the Faculty of Economics and Political Science (FEPS) at Cairo University, believes that the reforms may have been delayed in order to wait "for a more favorable business environment with improved macroeconomic indicators to attract potential investors." He also indicated that the IPOs could have been delayed due to the volatility in the international oil market or to allow the state-owned enterprises to restructure prior to their IPOs.

Dr. Ahmed Kandil from the Energy Security Program at Al-Ahram Center for Political and Strategic Studies (ACPSS), took a slightly different approach, arguing that, "the delay in issuing IPOs for Egypt's state owned refineries, especially MIDOR was mainly because of the political unrest, security challenges, global oil prices fall, and the lack of feedstock."

Creating a legal and regulatory regime can also pose a significant challenge. Prof. Jenik Radon, a lawyer and Adjunct Professor at the School of International and Public Affairs (SIPA) of Columbia University, pointed out that regulation of privatized industries poses a unique challenge: "Prior to privatization, experts in the particular area, here refining, may all be in the state owned enterprise (SOE) and not in the Ministry or the regulating agency. Too often the SOE became, although it should not have, both a producer and a regulator. This occurred because the government viewed, or came to view, the SOE as another government department."

He further noted that state needs to implement a regulatory regime and to staff the ministry with experts to enforce its regulations prior to the IPO. He added, "if the delay in privatizing MIDOR is caused by ensuring the laws, and regulations, are first put in place that would be a very good reason for the delay. In fact it would be a necessary reason."

Radon, like Kandil and El Shazly, also pointed to the volatility in the oil markets: "Another good reason for a delay would be the markets are not receptive, at the particular time of the proposed offering, for the particular SOE, here MIDOR. Timing of an offering is critical. The price may be too low at the announced time. One certainly does not want to give a state asset away."

The government has also been faced with a more immediate challenge: ensuring access to a sufficient crude oil supply and reducing the gap between capacity and production. In November 2016, Egypt's Minister of Petroleum and Mineral Resources, Tarek El Molla, announced an agreement with Iraq to import Basra crude oil for refinement in Egypt as part of a broader plan to increase bilateral petroleum-industry cooperation. "The agreement on refining Basra crude oil comes within the terms of a previously-signed memorandum of understanding," El Molla said, according to Egypt independent. Egypt is also conducting negotiations with Libya to import crude oil at a rate of 1 million barrels per month, an official source at the Egyptian General Petroleum Corporation (EGPC) told Egypt Oil & Gas. With the government focused on increasing imports, preparations for the IPO have languished. As Kandil noted, "securing crude oil for state-owned refineries

"Timing of an offering is critical. The price may be too low at the announced time. One certainly does not want to give a state asset away."

is a priority before thinking about issuing any IPO."

Macro-economic Impact

In 2016, Egypt reached an agreement with the International Monetary Fund (IMF) for a $12 billion stabilization loan. In exchange Egypt pledged to conducts economic reforms, including the privatization and the issuing of IPOs for state-owned companies. The loan is designed to encourage growth, restore investor confidence, and reduce Egypt's budget deficit.

Some experts also believe that IPOs for state-owned oil refineries will prove beneficial and will relieve pressure on the budget. They think that oil-refining companies would receive an inflow of capital permitting a financial restructuring of the companies.

Kandil, expressing his support for the issuance of IPOs, stated, "I support privatizing NOCs and introducing state-owned refineries into the EGX, especially that such actions could support the current economic reform in the light of the IMF's deal with Egypt to move forward with the plans of opening the market for Foreign Direct Investments (FDI)."

> "It is preferable to offer new unregistered companies for tender in order to provide new offers and lure investors in the financial market."

As part of the reforms required by the IMF, the government has begun to reconsider IPOs in order to improve the fiscal situation of the state and encourage growth.

"The proposed IPO in the oil and gas industry is a stimulus to private investment and business activity in the country that also increases public revenues from asset sales and hence improves public finances in line with the current economic reform program," El Shazly notes.

> "Offering public companies in EGX is not considered privatization; it is merely a participatory step between the state and the private sector to raise income and provide fund."

He also points out that IPOs will "help in raising capital for business expansion in the field of oil refineries and petrochemicals that further support the country becoming a regional hub, given a reasonably trained man power."

IPOs could contribute to economic growth by forcing state-owned enterprises to become more efficient, Radon noted adding that "the macro effects are the same as the micro effects, making an enterprise more efficient and profitable, and expanding a good enterprise by investment (through more capital) would obviously grow the economy. So in the end the issue is making enterprises more efficient, which means more business, more taxes etc."

While there is broad support for the offering of IPOs, many experts believe that the state will need the assistance of financial advisors under the supervision of the Accountability State Authority (ASA). They would define a fair value for companies' shares which would be offered after thorough technical and financial evaluation of the company that also considered its future expansion plans of the company.

Offering to increase public companies' capital in EGX would be a good step by the government, especially as the exit of several companies from the stock market during the past four years, Mohamed Farid, Chairman of the Egyptian Exchange told Daily News Egypt.

"It is preferable to offer new unregistered companies for tender in order to provide new offers and lure investors in the financial market," Farid noted. "Offering public companies in EGX is not considered privatization; it is merely a participatory step between the state and the private sector to raise income and provide fund."

He added that the government's steps will allow it to increase the capital of its companies in order to fund new expansions aside from the state treasury. This will oblige companies to become more transparent their planning and social commitment.

"This tendency will have its effect on the oil sector through its ability to establish petrochemical companies and fund part of their capital through EGX," Farid said. He believes that the stock market will be able to provide the necessary investment capital for the sector. This development, he believes, will have a positive effect upon the oil sector and boost the entire Egyptian economy.

Furthermore, offering public companies for tender is a positive development, Mohsen Adel, EGX Vice Chairman of EGX, told Daily News Egypt; adding that the market will be interested in new tenders, provided that they offer growth potential.

"This is a good step for companies to develop and expand their investments," he said. "Tenders would make a great leap in the way these companies manage their financial statements and commit to transparency."

Adel also noted that offering oil companies' shares on the EGX reflects the government's perception of the stock market as an important source for funding projects and supporting business expansion without incurring debilitating debt.

MIDOR: Egypt's Refinery of the Future

MIDOR is among the biggest, most modern, and most sophisticated refineries in the Middle East and North Africa (MENA). It is 78% owned by the Egyptian General Petroleum Corporation (EGPC), while Enppi holds 10%, PetroJet 10% ,and Bank of Suez 2%.

The refinery is capable of processing a wide range of crude oils, which produce high-quality petroleum products, and it serves both local and international communities. Established in 2002, MIDOR has a current capacity to refine 100,000 b/d. MIDOR also provides approximately 25% of the petroleum products consumed by the local market.

In 2005, the Egyptian General Petroleum Corporation (EGPC) purchased a 38% stake in MIDOR refinery for $517 million. One year later, Egypt's Ministry of Petroleum and Mineral Resources announced that it was planning to issue an IPO for MIDOR during the same year. In 2008, rumors of the government's intention to privatize petroleum companies, especially MIDOR, gained significant traction, but the Committee of Industry and Energy of the Shura Council consistently rebuffed any governmental attempts to sell MIDOR.

Discussing the situation, Kandil noted that "[t]he

> "Securing crude oil for state-owned refineries is a priority before thinking about issuing any IPO."

House of Representatives plays a very important role in privatizing NOCs and issuing IPOs for oil refineries, that's why the representatives should have a clear vision and fully understand the reasons behind such actions."

In 2015, MIDOR sought aimed to issue an IPO to raise $400 million and increase the company's capital stocks to $1.1 billion by the last quarter of fiscal year 2015/2016. It further planned to expand its output through 2018, Reuters reported. At the time, however, the government failed to specific whether the proposed IPO would be in US dollars or Egyptian pounds and nothing came of the proposal.

In 2016, the government again considered privatization and public listings on the EGX. "We sent the names of eight petroleum companies to the Ministry of Investment to be studied, paving the way to issuing some of their shares on the bourse or increasing their capital," said El Molla as reported by Reuters.

MIDOR and the Egyptian Ethylene and Derivatives Company (ETHYDCO) were among the names considered by the Ministry of Petroleum and Mineral Resources. The ministry was also considering a capital increase for Alexandria Mineral Oils Company (AMOC), MIDOR, and Misr Fertilizers Production Company (MOPCO), according to El Molla. Out of the names submitted, five oil companies have been selected by the Ministry of Investment for the first phase of the privatization. It is expected that approximately 20% of their shares will be made public.

Reflecting the anticipation of MIDOR's IPO, Kandil said, "MIDOR is Egypt's hope in fulfilling the local demand of refined products, in addition to exporting high quality petroleum products."

Yet Radon cautioned against excess optimism, "[t]he IPO does not per se support the dream unless the enterprise becomes profitable, expands and more investment is triggered. It may of course support the dream again by making the sector more efficient, and reliable. Still it will be hard for Egypt to compete with existing suppliers, such as Saudi Arabia. The dream should be that Egypt provides better energy supplies for itself, has to import less, diversifies and grows it economy."

In January 2017, the former Egyptian Minister of Investment, Dalia Khorshed, announced the commencement the IPO process for state-owned firms, including Engineering for Petroleum & Process Industries (Enppi). This announcement marked the first phase of the privatization process. Early estimates suggested that Enppi could garner between $213 million and $267 million from its IPO, reports Amwal Al Ghad.

While there have been many factors that have slowed the privatization process, many experts agree that the government should take steps to issue IPOs for state-owned companies. They believe this step will encourage investment and assist in the modernization of the oil and gas sector. As Radon notes, "privatization if done well can help reform the economy and, as said a listing on as stock exchange does bring management/governance discipline into the enterprise, as long as the rule of law system is in place."

Schlumberger:
Aiding the Industry's Growth

By Sarah Samir

In efforts to contribute to the enhancement of the local economic welfare, Schlumberger Egypt provided a training program to 100 young technicians, as a part of the protocol signed with the Ministry of Man Power to train youth on the market's needs.

Commenced in March 2017, the program included 100 trainees, 87 of which graduated through the different training phases.

In celebration a graduation ceremony was held on July 27. The event was attended by important figures including Minister of Manpower, Mohamed Saafan; Hussein El Ghazzawy, Vice President & Managing Director of Shlumberger Egypt & East Mediterranean; First Undersecretary of the Ministry of Petroleum and Mineral Resources, Mohamed Moanes; Chairman of the Egyptian Natural Gas Holding Company (EGAS), Osama El Bakly; and Renowned Egyptian Actor, Mohamed Sobhy.

"This celebration is a mark that we have taken the first step in the cooperation protocol with the Ministry of Manpower, which was signed in the presence of the Egyptian Prime Minister," El Ghazzawy highlighted.

Major Success

Women represented 30% of the trainees in the program. The young trainees challenged themselves into a difficult industry and won the challenge. "The idea of a girl working in the oil and gas field and working with her own hands is not found in other training programs, so getting trained on rigs made me really happy," Naglaa Mahmoud, one of the training graduates, told Egypt Oil & Gas.

Commenting on the successful implementation of the program El Ghazawy told Egypt Oil & Gas, "on a scale from one to seven, the success of this batch was a seven. Yet, they exceeded our expectation and I am very happy and very proud of them. The trainees are very good, keen, and enthusiastic."

The program included sessions on soft skills that would enable trainees to lead their own career path in future as Amina Attia Mohamed, one of the graduates, noted, "We [the graduates] have learned many things, first was commitment and how to manage time. Then, we learned how to write a CV, how to have an interview with a company, how to dress. We learned computer skills, like how to use word, power point and excel. We learned how to work on a project and how to work in a team. We applied that in the company's sites as there was no one working on his\her own in order to ensure the value."

Furthermore, the trainees were taught about risk mitigation and quality, health, safety, and environmental (QHSE) standards. "We have taken a course, titled (NEST – New Employee Safety Training, & SIPP – Schlumberger Injury Prevention Program), in the company. We did

not have a background before about safety," Mahmoud Karim Eissa, a program graduate, explained adding, "we learned how to secure our safety while working on rigs in the fields, and how to deal with risks. The Safety First course assured us and taught us how to prevent risks before happening."

"The trainees showed good response during the training and proved to be a successful batch," Senior Training Officer at Education for Employment (EFE), Noura Abou El Seoud, told Egypt Oil & Gas. She further added "the trainees were very excited and happy about the new experiment, but they didn't know what will happen to them; they had a lot of questions." Abou El Seoud explained that after the first two weeks, when the trainees experienced the training process, they became more eager to know everything related to the topics addressed; "they were very enthusiastic and the team work was perfect. These trainees were a very different and successful group," she explained.

During the ceremony, Islam Gamal, one of the training's graduates, told the attendees a real life example about the dream of travelling abroad, which haunted him; and how after the training this has changed. He explained that now he wants to succeed in Egypt and to benefit from the experience he got from the training and obtain new experience to help him climb his career ladder.

The Schlumberger training is going in line with Actor, Mohamed Sobhy's campaig 'Etesel Eshta3'al', which translates to call us and start working. Sobhy highlighted during his speech that he is very proud of the program and looking forward to the increase of the number of trainees in the future.

Creative Talents

The trainees prepared very creative graduations projects of which only three were presented during the ceremony. "During the four months training, we were all [waiting] to see the results, but before that we were [preparing] a good training model to help us have good technician employees who are well prepared to represent us anywhere inside or outside Egypt," Minister of Manpower, Mohamed Saafan said, adding that "the first batch is a gift from the ministry and Schlumberger to Egypt."

The first graduation project was about a virtual company, named New Vision Construction. The project featured included building 3D Panels to be used instead of normal building methods, which include heavy bricks. The vision of the project is to be a leading marketplace building company, while the mission is to ensure lower cost, less time and more efficiency.

The second graduation project introduced a virtual company, dubbed Rethink Recycling Company. The project is meant to recycle waste to produce methane and biofuel. The vision of the project is to make Egyptian roads clean and save the environment. The graduates introduced their plans of waste collection, production, and selling the produced fuel.

The trainees achieved a great success, and Schlumberger's Education Services Training Center Manager, Heba Abaza, commented that she was "fascinated by the graduation projects and knew how Egypt's youth are creative, & all they needed was for their talents to be developed & channeled accurately & efficiently."

Promising Future

The training program offers a future for the trainees and a chance for success. El Ghazzawy mentioned during the ceremony that Schlumberger is hiring ten graduates who officially started work end of July, he further added that an exploration and production (E&P) company, wants to hire five of the graduates.

"The graduates will not just find a future in the petroleum industry, but they can invade other sectors as well," El Ghazzawy told Egypt oil & Gas adding that he spoke on the sidelines of the event with a representative for one of the carpet producing companies, "[who] asked [Schlumberger] to recommend a number of graduates for his company."

The training will still have a future full of development as El Ghazzawy highlighted, one notable example would be Petrojet's agreement to open their workshops for trainees. Furthermore, Schlumberger is working on securing an arrangement with Oil and Gas Skills Company (OGS) for the use of simulator. The training projects will allow the company to train more [people] as the [training] atmosphere is encouraging everyone to help," El Ghazzawy told Egypt Oil & Gas.

After the success of Schlumberger's initial program, the company is keen on increasing the number of trainees to 200, especially after opening Schlumberger's training center and as many companies are eager to help, according to El Ghazzawy.

The success of the training inspired several firms to help and to hire the graduates. It also inspired the youth to look forward to their future and seek their own development. Graduate, Islam Gamal sent a massage for Egyptian youth saying "work will not find you, seek work and knowledge."

"The Ministry of Petroleum is very proud of the young technicians training," The First Undersecretary of the Ministry of Petroleum and Mineral Resources, Mohamed Moanes, told Egypt Oil & Gas, adding "the training is a good step towards benefiting from the youth's energy. Egypt will never prosper without its youth, and the whole country is moving in the same direction."

The Real Influence of Saudi Arabia

IN THE OIL PRICE GAME

When it comes to influencing global oil prices by manipulating production levels, many politicians and economists agree that no country is more powerful than Saudi Arabia, the second biggest oil producer in the world after Russia. This was most evident when oil prices dropped from $105 a barrel mid-2014 to a low of $30 a barrel early 2016 at the behest of Saudi Arabia officials to fight off a shale gas boom in the USA.

In the past few years, however, Saudi's dominance has been threatened by cheaper shale gas exaction technologies in the U.S.A. as well as the lifting of the economic sanctions over Iran, which are into Saudi's market share. This raised questions among market observers over Saudi Arabia's status as the dominant influencer over oil prices, and more importantly who is winning the war to control oil prices.

The Oil Spring

The Arab Spring was a blessing for Saudi Arabia. For one, oil supply disruptions in Libya and Algeria further cemented Saudi Arabia's position as the "central bank of the oil market," as named by The Economist in a story published in 2011, as it had to cover the resulting drop in supply. Accordingly, Saudi Arabia increased its production from 8 million barrels a day (bpd) to over 9.5 million bpd during the first quarter of 2011, and have rarely dropped production below that threshold ever since. Meanwhile, overall OPEC production dropped from over 27 million bpd to around 24 million bpd between 2010 and 2011. And with increasing global demand for oil, fueled by China's economic boom, crude oil prices topped $115 a barrel by March 2011, and have generally remained over $100 a barrel in the following years. This helped the Saudi government stave off social unrest at the time by increasing spending on social services between 2011 and 2013 by almost 20 percent in each year.

The Shale Threat

During the boom in global oil prices, U.S. and Canadian oil miners were finding it financially feasible to start excavating shale gas, which requires expensive drilling techniques but whose production prospects were huge. And as oil was trading at over $100 a barrel, a lot of shale gas excavators in the U.S. had a breakeven price of around $60 for the equivalent of a barrel of oil. Accordingly, demand for oil started to significantly drop. Further reducing demand for oil was that China's economy was slowing down with GDP growth dropping from over 12% in 2011 to stabilize at under 8% by late 2013 until now. Reflecting this drop in demand was oil prices going from $105 a barrel to under $50 during the second half of 2014.

For Saudi Arabia, the loss of market share to shale gas was concerning, and a further massive reduction in oil prices was a must to quell this boom. Ultimately, oil prices dropped to $30 a barrel, thus making shale gas excavations too expensive, and investments decreased dramatically.

Saudi Arabia had denied on several occasions that it is dropping oil prices to kill off the shale

gas boom. According to Khalid Al Falih, Saudi's Minister of Oil, the drop is necessary to readjust the market after the previous high-price period. For OPEC's Secretary General, Abdullah Al Badri, talking to Reuters in November 2014, OPEC was clearly entering a battle to regain lost market share. "We answered. We keep the same production. There is an answer here," he said when asked about OPEC's response to the U.S. shale gas boom. "OPEC is always fighting with the United States because the United States has declared it is always against OPEC [...] And there we are going to see what will happen with production," said then Venezuelan Foreign Minister Rafael Ramirez during the same event.

To reach and sustain sufficiently low prices, Saudi Arabia increased its oil production by around 1 million bpd as of 2015 to reach 10.6 million. Production ultimately reached a high of 11.25 million bpd by the end of 2016. OPEC total production was seeing a linear increase reaching almost 36 million barrels a day by the end of November 2016, up from almost 33 million mid-2014. Since the increase in production, oil supply had been outstripping demand by an average of 1.5 million bpd. During the third quarter in 2015, the supply-demand surplus ultimately reached 1.72 million bpd.

These decisions showcased just how influential Saudi Arabia was as several OPEC members were already running budget deficits despite soaring oil prices pre-2014, and such a severe drop would only hurt them further. These countries were Venezuela (11.5 % budget deficit in 2014), Iraq (2.69 budget deficit in 2014) and Iran (2.57 budget deficit) as well as Libya (43% deficit), Algeria (8.3% deficit) and Equador (4% deficit). "You think we were convinced? What else could we do?" said an OPEC delegate from a country that wanted a cut in production, talking to Reuters in November 2014. Al Badri was also publically critical of Saudi Arabia's policy of defending market share over revenue. "We need to remember that low oil prices are bad for producers today and lead to situations that are bad for consumers tomorrow," he said in June 2016 as reported by Mckinsey.

The war within

For Saudi Arabia, another benefit to low oil prices was that it greatly reduced Iran's cash benefit from ramping up oil production after economic sanctions were lifted early 2016. They are the two biggest economies in the region with opposing views on everything from the doomsday scenario to the recent wars in Syria and Yemen to setting oil production quotas seeing they are both part of OPEC. "We are a primary target for the Iranian regime," said Prince Mohammed bin Salman, the second in line for the crown to The New York time in May.

When it came to oil pricing, Iran seemingly lost that war. That was an acceptable loss given that Iran's economy is more diversified than other OPEC nations. Oil revenue accounted for 23% of GDP in 2014 versus 55% of GDP for its rival Saudi Arabia, and therefore a drop in oil prices would likely hurt Saudi more. And indeed, Iran's GDP grew by an estimated 2.55% in 2014, and 0.6% during the first quarter of 2015 GDP amid the sanctions that dropped oil production by around 29% and the oil price slump. Saudi's economy shrank by 14.2% due to the drop in oil prices in fiscal 2014/2015.

The current war between the two nations is over production quotas. "Iran refused to accept production quotas which would have stopped it returning to pre-sanctions output levels, viewing the move as an attempt by the Kingdom to prevent it from resuming its pre-sanctions position in the market," said Aniseh Tabrizi, a research fellow at the Royal United Services Institute, a think tank. This refusal allowed Iran to produce 4 million bpd in 2016, the highest since the late 1970s when it topped 7 million bpd. And while this is a fraction of what Saudi produces, the Saudi monarchy and government are worried because, since the lifting of the sanctions, Iranian exports to Europe in 2016 increased by around 60%, which is faster than what the International Energy Agency was forecasting, eating into the kingdoms market share and opening the door to attracting more FDI to Iran. "I think ultimately Iran does not need to export crude or raw materials — we should export petrochemicals or other added-value materials," said Amir Mehran, head of foreign assets and investment management at Iran's Bank Pasargad, in May 2016 as reported by CNBC.

This conflict went beyond OPECs meeting rooms. A few months after the lifting of the sanctions, Saudi Arabia banned Iranian-flagged freights from entering its waters and were offering European customers $0.35 cents discounts. "They were targeting Iran's prospective market," said Tabrizi. Meanwhile, Iran was offering $0.6 per barrel discounts to its Asian customers, including the largest consumer of oil in the world, China, to undercut Saudi oil and regain market share lost during the sanction years. This was the biggest price difference since 2007.

Winners and losers

The agreement signed last November between OPEC and major non-OPEC producers, including Russia, to cut oil production by 1.8 million bpd (1.2 million for OPEC and 600,00 for Russia) from both OPEC and non-OPEC countries was a landmark event. As per the agreement, Saudi Arabia agreed to a 4.6% cut at 486,000 barrels a day, to produce around 10 million bpd. Meanwhile, Iran saw its production only drop by 2.3 percent to just under 3.8 million bpd as per the agreement. It was a clear victory for Iran who were able to negotiate the lowest percent drop of all of OPEC members. In the long term, the economic and political composition in Iran will allow it gain an increasingly stronger footing, especially regarding oil, according to U.S. foreign affairs expert Dan Lazare in an opinion piece published in Sputnik, a news portal, mid-2016. "So the Saudis will eventually lose this tug of war," he said.

Worryingly, the agreement, which should have increased oil prices, had no influence as oil prices went from $55 a barrel at the start of 2017 to $50 at press time. The culprit was shale gas coupled with low global demand. "Shale-producing companies have managed to reduce their operating costs in the past three years, enabling them to profit at current low prices and to expand operations if prices rise," wrote Hadi Fathallah, a fellow at the Cornell Institute for Public Affairs at Cornell University, in a column published by The Cairo Review in April.

With better technology, shale gas' breakeven price will continue to drop. Meanwhile, market observers see that Iran is better equipped to withstand low oil prices given its diverse economy while Saudi Arabia has strong reserves and its own plans to diversify its economy away from oil by 2030. "For all intents and purposes, the key to winning this war will be who can withstand lower oil prices in the long run," said Tabrizi.

OPINION COLUMNS

Fuel Prices Hike to Boost Economy

The increase in gasoline prices will surely have a positive impact on the market supply ratio and the government budget as well, as this increase secure available sufficient local currency liquidity. Thus, it will enable the country to procure foreign currency to import relevant quantities of gasoline to cover the local market needs, and as a consequence it will definitely improve the government budget specifically the revenues item. This decision is considered right, especially at that time, after the increase in the USD exchange rate from EGP 8 per $1 to EGP 18 per $1, in the light of the decisions taken on 3/11/2016 to float the local currency.

As the gasoline subsidy decreases, the gap between the cost price and importation and the selling price will surely decrease. Eventually, this will result into enough liquidity to secure foreign currency needed to import products such as gasoline, and also to commit in the repayment of the principals in due dates that's related to petroleum importation agreements from Saudi Arabia. Therefore, this will improve Egypt's image towards those agreements.

By Mohamed Farahat
General Manager of Financial and Economic Affairs at EGPC

OPINION COLUMNS

Egypt Looks at GCC Countries for FDI

Egypt's oil sector is full of investment opportunities as it is one of the main pillars of the state's economy. The industry attracts foreign direct investments (FDI) to Egypt despite the excessive costs of exploration and drilling for oil and gas.

The Egyptian economy appears to be on the road to recovery especially the government is focused on luring foreign currency into the country mainly through FDI, so that it would eventually boost its economy.

As the new investment law, issued in 2017, aiming to ease the legal and administrative barriers for foreign investments, hence playing a major role in increasing FDI; in addition to the expected effect of the IMF driven economic reforms, Egypt should witness a growth in the flow of foreign investments into the country.

Before the political crisis, Egypt was a very attractive market for FDI. The dynamic growth of the Egyptian economy, which was around 7% before the crisis, low labor costs, strategic geographical position, skilled workforce, substantial energy reserves, large domestic market, and the success of undertaken reforms increased FDI.

Egypt has signed bilateral agreements with more than a hundred countries, including most of the European Union, the United States and several African countries, the Middle East, and Asia.

Furthermore, the government is in talks with Saudi Arabia and UAE over an agreement to provide the North African country with petroleum products to cover local demands. The terms of the agreement would be generous for Egypt, with a long-term repayment schedule and low interest rate. This way, at least Egypt doesn't need to spend more of its foreign currency reserves to fulfill its domestic petroleum needs.

Although Egypt has a great potential, the country still has to balance with multiple stakeholders in order to keep its head above the water. Willingness of foreign companies, as well as the readiness of GCC to keep oil and money flowing towards the country, will remain crucial.

The question is, will it be enough? However impressive investment announcements may look, it still remains hard to believe that they will reach their full potential. With the low oil price, companies are cautious with expenditures.

By Mohamed El Haythem
Mphil., DBA, MBA, PMP, General Manager, Foreign Companies' Control, EGPC

OPINION COLUMNS

Oil Prices Affect Exploration

There is no doubt that the decrease in global oil prices has a direct effect on natural gas prices, which has a continuous increase in demand due to its role in decreasing global warming.

The status of oil and gas investments in Egypt has been affected during the past few years by two major factors. The first is the outbreak of revolutions in the state, which led to the drop in exploration activities, as tenders were not launched on a regular basis due to the political changes. The second factor is the low oil prices, which resulted into reduction in development drilling activities and led some investors to be reluctant to drill because of the low profit compared to the drilling risks, which significantly affected production.

Today, after the political stability, petroleum firms, whether the Egyptian General Petroleum Corporation (EGPC) or the Egyptian Holding Companies, started launching global tenders. As a result, several oil and gas discoveries were made in several concessions, especially in the Mediterranean Sea, starting by announcing the discovery of major Zohr field.

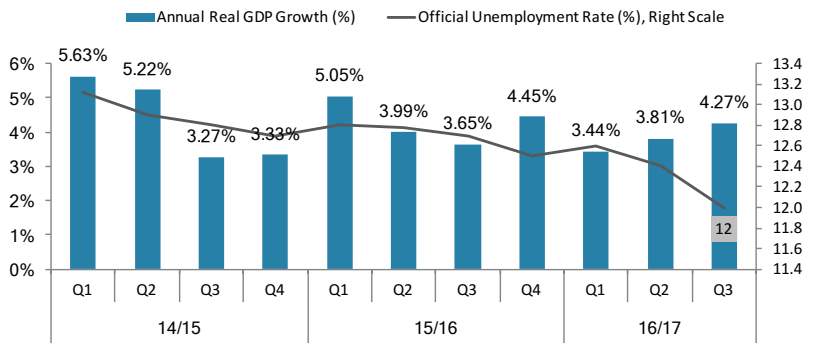
The Zohr discovery, in particular, will help Egypt to stop importing gas when added to production, which will enable Egypt to study exporting gas by the time the field is totally linked to production map. The positive impact of the low global oil prices is that it eases the oil and gas import bill, which is spent to meet the growing local demand of petroleum products and gas.

However, there is no doubt that the decrease in global oil prices will be a barrier in the face of gas exports. If Egypt starts exporting gas in the coming years, it will have a low profit. Therefore, the best investment method is to liberate local gas prices and lift subsidies to have local prices at the same level as global prices, then to invest the difference in amounts internally and use the existing national gas grid to attract more investment in order for gas to be used in different industries, especially petrochemicals.

By Hafez El-Shamy,
Production Technology Division Manager,
Egyptian General Petroleum Corporation (EGPC)

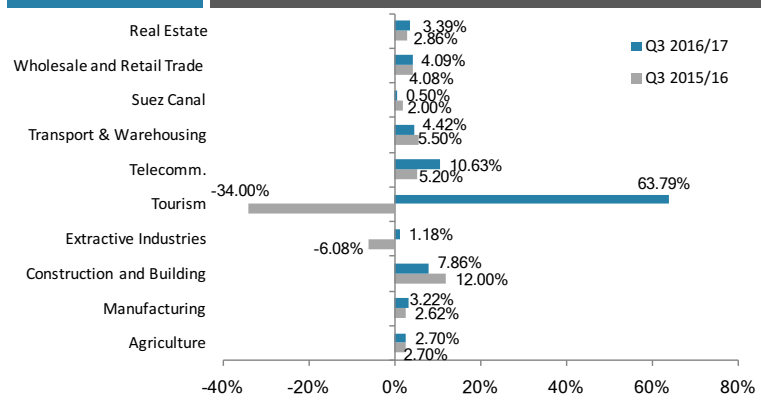
in partnership with Dcode Economic & Financial Consulting

Chart 1 Annual Real Economic Growth and Unemployment



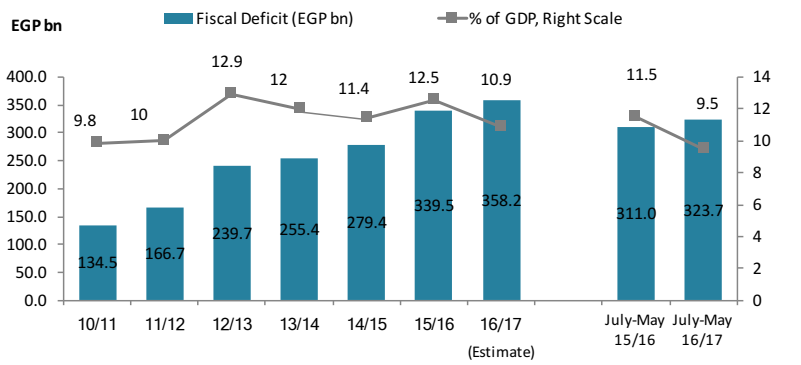
Source: Ministry of Planning and CAPMAS.

Chart 2 Sectoral Performance (Annual Real Growth)



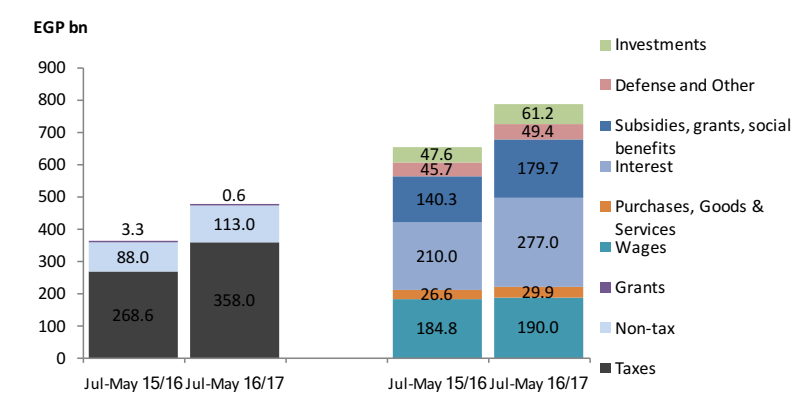
Source: Ministry of Planning .

Chart 3 Budget Deficit



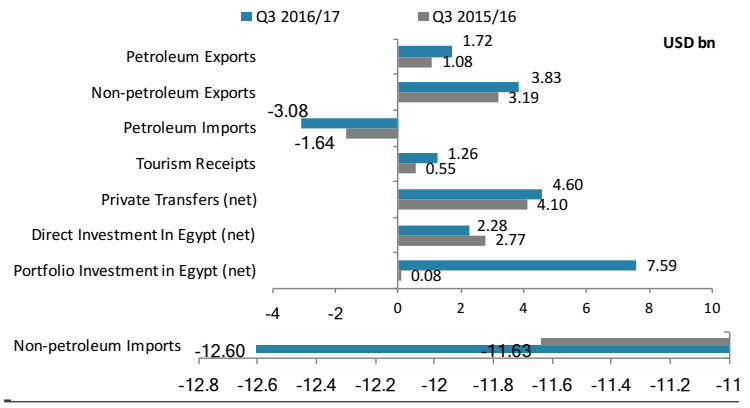
Source: Ministry of Finance.

Chart 4 Composition of Government Finances



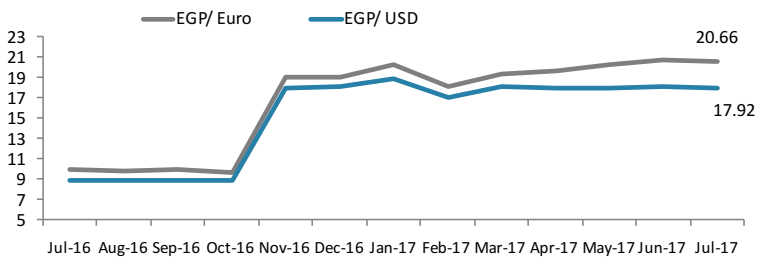
Source: Ministry of Finance.

Chart 5 Key Balance of Payments Accounts in Q3 16/17



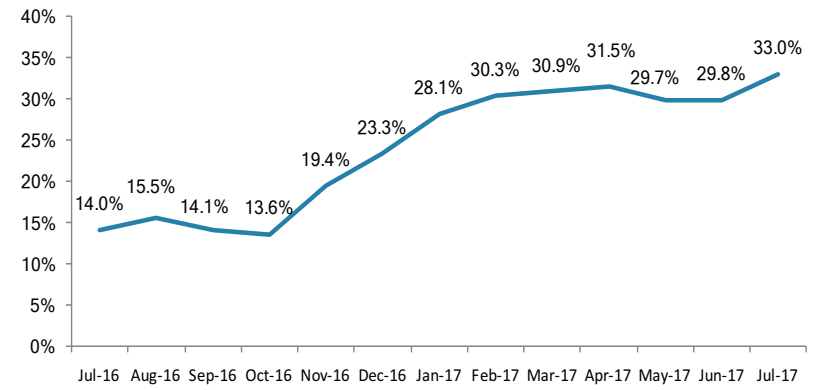
Source: Central Bank of Egypt.

Chart 6 Exchange Rates (Monthly Average)



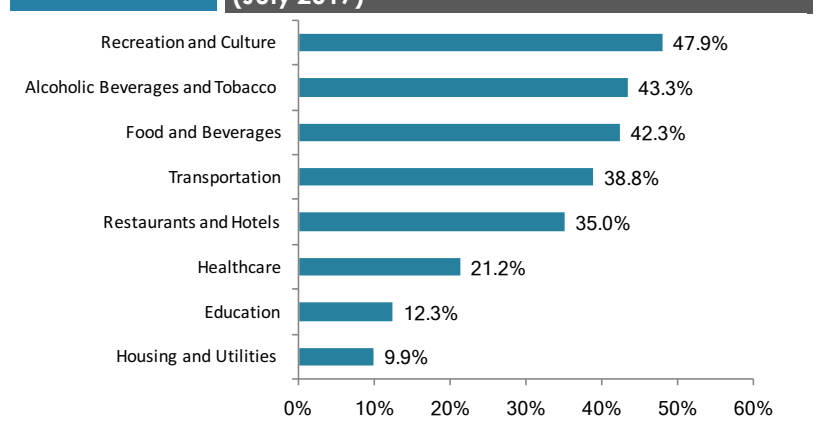
Source: OANDA.

Chart 7 Annual Headline Inflation (%)

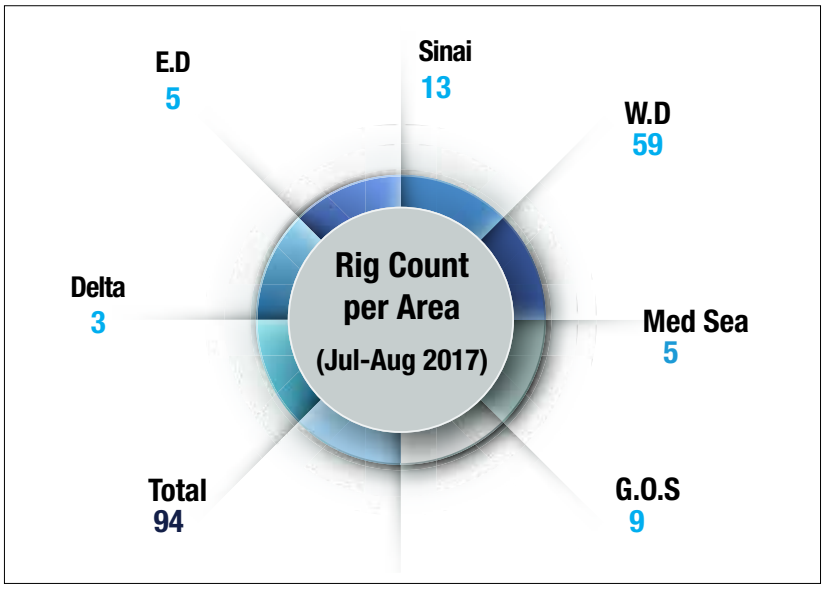


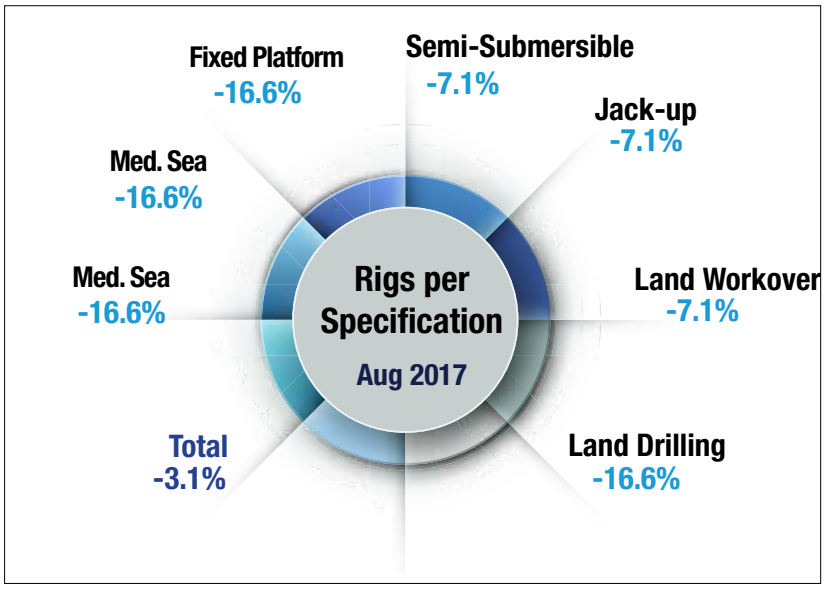
Source: Central Bank of Egypt.

Chart 8 Annual Headline Inflation by Category (July 2017)



Source: CAPMAS.





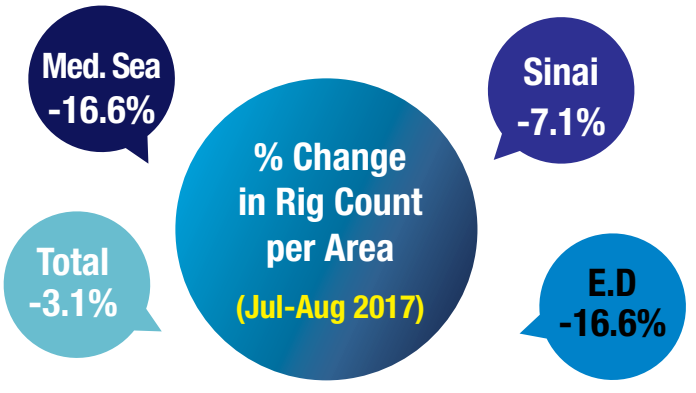
% CHANGE IN RIG PER SPECIFICATION (JUL-AUG 2017)

*Unmentioned rig types showed no change.

PRODUCTION JULY 2017

	Crude Oil	Equivalent Gas	Liquified Gas	Condensate
Med. Sea		15684326	175261	635728
E.D.	2016525	23000	1904	1300
W.D.	9428766	8600941	634156	1512253
GOS	4054621	918295	274598	74562
Delta	42583	8322598	136521	506427
Sinai	1865259	8365	38514	17251
Total	17407754	33557525	1260954	2747521

Unit: Barrel



*Unmentioned areas showed no change.

DRILLING UPDATES

Region	Company	Well	Well Type	Rig	Depth	Well Investments	Company Production	
							Oil	Gas
Western Desert	Bapetco	BED3 C6-E	Water Injection	EDC-42	12,434 ft	$800,000	1,402,993	2,724,771
		SITRA 8-BO ST	Water Injection	EDC-51	11,604 ft	$2.561 M		
		NEAG 2-E	Development	EDC-72	9,984 ft	$2.6 M		
	Agiba	MEL-118	Development	EMSCO-602	6,500 ft	$700,000	1,445,141	116,003
		NE-57	Development	ST-7	7,800 ft	$1 M		
		MEL-WD-14	Development	ST-8	11,400 ft	$1,537 M		
	Petrosilah	WARD 1-2	Development	TANMIA-1	8,550 ft	$1.79 M	254,883	-
		WARD 1-3	Development	Tanmia-1	9000 ft	$1.878 M		
	OAPCO	W.Q 34/15-22	Water Injection	ECDC-2	7,525 ft	$1 M	53,863	-
	NORPETCO	ABRAR S-7 ST-1	Development	ECDC-2	6,774 ft	$1.4 M	252,991	-
Sinai	Petorbel	W.FEIRAN-1	Development	ST-3	11,900 ft	$6.2 M	2,884,257	8,628,814
Delta	Petrobel	NIDOCO W.5	Developmnt	EDC-59	14,600 ft	$6 M		

*Production figures are for July 2017.

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