EGYPT
OIL&GAS
NEWSPAPER

Egypt's Leading Oil And Gas Monthly Publication
November 2017 - 48 Pages - Issue 131
www.egyptoil-gas.com

An Interview with Cyprus' Top Presidential Candidate

- The Turkish-Egyptian Race for Regional Gas Hub
- Egypt- Greece Natural Gas Ties: Integration or Competition?
- Eastern Mediterranean Gas Infrastructure: Anti or Pro Egypt's Dreams?
- Glimpse of Laws Protecting Investments in Egypt and Cyprus

EDITOR'S NOTE

In the game of natural gas, international relations tend to have the upper hand. Locally, media and government officials alike have often praised the central role of Egypt in the regional gas equation; yet, internationally, or at least regionally, media tends to report a different story. Thus, we have built this entire issue around reaching a deeper understanding on Egypt's real position in the Eastern Mediterranean natural gas race.

Fraught with political agendas, almost all countries in the region are in the pursuit to become a regional gas hub; therefore, in this issue you will find individual detailed comparisons between Egypt and key industry players, as well as an analytical piece on the infrastructure of the region as a whole and the influence of it on the practicality of Egypt's hub dreams.

Our key interview for the issue is with Cyprus' Presidential candidate, Nicholas Papadopoulos, who was very open about the crucial role Egypt could play as a natural gas market, given the lack of sufficient local natural gas demand, rendering their resources uneconomically viable.

Due to the remarkable similarity between Greece and Egypt's efforts to liberalize their natural gas market to become an energy hub, we sought an interview with Constantinos Filis, the Director of Research at the Institute of International Relations of Panteion University in Athens.

The geology of the East Mediterranean region is also addressed in the issue; along with a legal prospective on the local laws of different players in the region in luring investments.

The picture would not be complete without a deeper look into Egypt's economy; Egypt Oil & Gas' Report-in-Print of the month gives a complete overview of the changes in the country's economy from 2011 to 2017.

In a coincidence with this issue's scope, we received news of the newly appointed head for the Gas Regulatory Authority, who will support the forward move to liberalize the natural gas sector.

We have really enjoyed preparing this issue, and we really hope you enjoy reading it as well. As always thank you for your readership and support.

EDITOR IN CHIEF

nadine@egyptoil-gas.com

Inside this Issue

EGYPT OIL&GAS NEWSPAPER

EGYPT'S LEADING OIL AND GAS MONTHLY PUBLICATION

EGYPS EGYPT PETROLEUM SHOW

Proudly the Official Publication

Publisher **MOHAMED FOUAD**

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

/EgyptOilandGas /EgyptOilandGas /Egypt-Oil-&-Gas

13D Sherif Salama Street - Lasilky Division - New Maadi, Cairo, Egypt

www.egyptoil-gas.com
info@egyptoil-gas.com
(+20) 2 25164776
(+20) 2 25172052
(+20) 2 27547569
(+20) 2 25172053

Editor in Chief	**Nadine Abou El Atta**
Managing Editor	**Mariana Somensi**
Senior Editor	**Noah Finley**
Senior Writer	**Sarah Samir**
Staff Writer	**Mahinaz El Baz**
Contributors	**Erica Fauser**
	Mahmoud Rashed
	Reem Hossam
	Mohamed Khedr
Chief Reporter	**Wael El-Serag**
Market Researcher	**Hager Magdy**
Sales & Marketing Director	**Ayman Rady**
Art Director	**Omar Ghazal**
3D Visualizer	**Maged Makram**
Photographer	**Amir William**
Operations & Financial M.	**Abdallah Elgohary**
Marketing Executive	**Shorouk Maged Lewaa**
Administration	**Taghreed Mounir**
Accountant	**Mahmoud Khalil**
Web master	**Olfat Kamel**
IT Specialist	**Sameh Fattouh**
Production Advisor	**Mohamed Tantawy**
Legal Advisor	**Mohamed Ibrahim**
Distribution Officers	**Mahsoub Kenzi**
	Mohamed El-Sayed

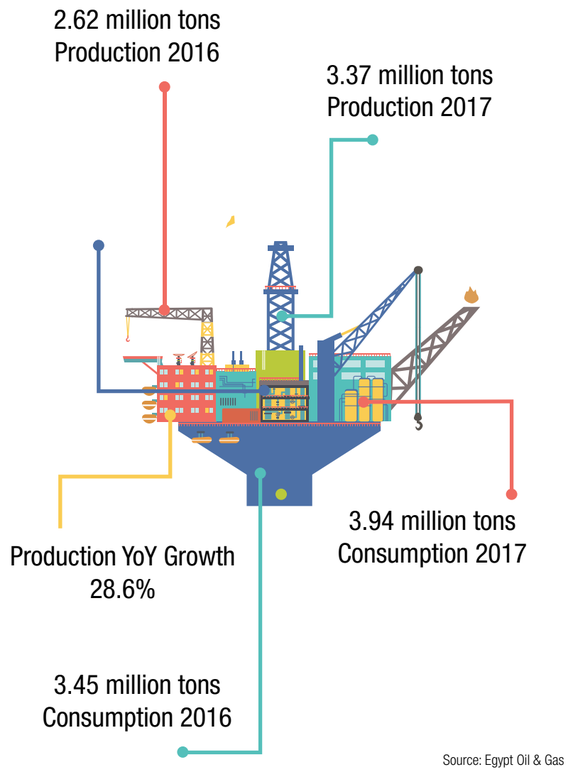
Karem Mahmoud the New Head of the Gas Regulatory Authority

Egypt's Prime Minister Sherif Ismail has officially appointed Karem Mahmoud, as the Head of the Natural Gas Regulatory Authority. The Gas Regulatory Authority has been officialized by law number 196 for 2017, in August. The purpose of the authority is to monitor and regulate the transmission and distribution of natural gas by foreign players in the local market. Management of the authority prior to and during the issuance of the gas regulation law, was assigned to Amira El Mazni, the Vice Chairman of the Authority, who reportedly is retiring this month.

Natural Gas Production Rises by 28.6%

Egypt's production of natural gas rose to 3.37 million tons in July 2017, a year-on-year (Y-o-Y) increase of 28.6% from last year's 2.62 million tons. Consumption also rose to 3.94 million tons in July from 3.45 million tons in July 2016, a 14.2% Y-o-Y increase, according to the information released by the Central Agency for Public Mobilization and Statistics (CAPMAS).

Egypt's Natural Gas Production and Consumption



Source: Egypt Oil & Gas

Butane Consumption

Source: Egypt Oil & Gas

Egyptian Crude Reserves at 2.4B Barrels

Egypt possesses 2.4 billion barrels of oil and condensate reserves as of October 2017, according to a senior official at the Egyptian General Petroleum Corporation (EGPC). In 2016, Egypt's official reserves stood at 3.57 billion barrels of oil and condensates. In FY 2015/2016, Egypt had 665 million barrels of oil reserves in the Western Desert. In June, Egypt produced 2.7 million tons of crude oil, condensates, and butane, down 4.3% from the 2.82 million tons it produced in June 2016, according to CAPMAS statistics.

Fuel Exports Rise by $127M

The value of Egypt's fuel exports increased by $127.335 million dollars from June 2016 to June 2017, according to CAPMAS. In June, Egypt exported $349.624 million worth of fuel products, a 57% Y-o-Y increase from the $222.289 million worth it exported in June 2016. Crude oil exports rose 37.4% from $16.490 million to $22.791 million. Exports of coal, meanwhile, rose from $4.177 million to $12.152 million, a 190.9% increase. Egypt imported $819 million worth of fuel in June 2017, a 30.6% Y-o-Y increase from the $627 million worth of fuel it imported in June 2016.

Egypt's Fuel Imports Reach $819M in June

Egypt imported $819 million worth of fuel in June 2017, a Y-o-Y increase of 30.6% from the $627 million worth of fuel it imported in June 2016, according to CAPMAS. Crude oil imports rose by approximately 372% to $184 million, compared to $39 million in June 2016. Imports of petroleum products remained stable. Egypt imported $263.204 million worth of petroleum products in June, a slight decrease from the $263.794 worth it imported during the same time period last year.

Jordanian Operations to Comprise 5% of Egypt Gas Company's Revenue

Egypt Gas Company expects proceeds from its expansion project in Jordan to reach 5% of its revenues by the end of 2018. The company's projection is based upon a feasibility study performed by Osool Asset Management. The Egyptian Financial Supervisory Authority authorized the feasibility study. Egypt Gas Company signed a contract with the Jordanian-Egyptian Fajr for Natural Gas Transmission and Supply Company to establish a natural gas pipeline to supply natural gas for the Jordanian United Iron and Steel Manufacturing Company (Manaseer Iron & Steel). The pipeline project will cost $600,000.

Lower Y-o-Y Diesel Consumption in July

Egypt's consumption of diesel decreased by 0.9% to reach 1.165 million tons in July 2017, compared to 1.176 million tons in the same period of 2016. Meanwhile, diesel production increased to 627,000 tons in July 2017 from 556,000 tons in July 2016, a 12.77% Y-o-Y increase, according to the information published by CAPMAS. Despite the lower Y-o-Y figure, 1.165 million tons still represents a slight uptick in monthly consumption compared to the average monthly consumption rate this year. Diesel consumption has fallen by approximately 8% throughout 2017.

Butane Imports Rise to 167,200 Tons

Egypt increased its imports of butane to 167,200 tons in July 2017, a 1.21% Y-o-Y increase from the 165,200 tons it imported in July 2016. Egyptian butane production dropped in July 2017 by 7.45% to 149,100 tons, compared to 161,100 tons during the same period last year, according to information released by CAPMAS. Butane consumption fell to 308,100 tons in July 2017, 4.32% Y-o-Y decrease from the 322,000 tons of butane consumed in July 2016. Consumption fell after the price for petroleum products was raised, according to the Head of the Egyptian General Petroleum Corporation (EGPC), Abed Ezz El Regal.

Egypt Signs 83 E&P Contracts in 4 Years

Egypt has set a new record by signing 83 exploration and production (E&P) contracts with international oil companies (IOCs) since June 30, 2013, according to the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla. This confidence by IOCs is a result of the government's reform efforts, El Molla noted. The Ministry of Petroleum and Natural Resources plans to reveal its mineral development strategy next year, El Molla said. The Chairman of the French Chamber of Commerce (CCFE), Mahmoud El Kaissy, praised the government's efforts to overcome previous challenges to the sector, particularly in demarcating boundaries in the Red Sea. He noted that French companies are interested in investing in the Red Sea region.

MIDOR Offers for Sale 50,000 Tons of Jet Fuel

The Middle East Oil Refinery (MIDOR) is offering for sale 50,000 tons of jet fuel to be shipped during the second half of November 2017. The Egyptian refinery will ship 25,000 tons of jet fuel between November 17th and 19th and 25,000 tons between November 28th and 30th. The two cargoes will be loaded from the port at Alexandria. MIDOR announced that the last date for submitting bids for the fuel is October 18th.

Egypt to Launch New E&P Tender

The Egyptian General Petroleum Corporation (EGPC) is planning to launch a new exploration and production (E&P) tender before the end of 2017, according to the Head of EGPC, Abed Ezz El Regal. EGPC is completing operational procedures and obtaining the required approvals in order to launch the tender, Ezz El Regal said. He added that the purpose of the new tender is to raise Egypt's production and reserves of crude oil.

Zohr to Yield 500 mcf/d in 2017

The Zohr gas field will produce 500 million standard cubic feet per day (mscf/d) before the end of 2017, according to the Egyptian Prime Minister, Sherif Ismail. Egypt had been importing 10 to 12 shipments of natural gas per month, Sherif noted, but has recently decreased that amount to 8 cargoes a month. Rising production from the Zohr, Atoll, Noroos, and West Delta fields will further decrease imports, he said. In addition to Zohr, Egypt expects the Fayoum and Giza fields to begin production by the end of 2018, adding 500-700 mscf/d to Egypt's domestic production.

Enppi's IPO Delayed Until 2018

Egypt has pushed back the initial public offering (IPO) of Engineering for the Petroleum & Process Industries (Enppi) until the first quarter of 2018, the Minister of Investment and International Cooperation, Sahar Nasr, said. It was originally projected for sometime this year. This IPO will be the first public offering of shares for an Egyptian state-owned company in nearly 12 years. The valuation of the 24% of Enppi's shares to be sold during the IPO is estimated to range between $213 million and $267 million.

Egypt to Implement 12 New Gas Projects

Egypt will implement 12 new gas-development projects over the next four years, the Minister of Petroleum and Natural Resources, Tarek El Molla, said. The projects are estimated to cost $17.5 billion. El Molla also stated that Egypt will complete eight refining projects during the same time period at a cost of $3.8 billion. Continued development at the Zohr, North Alexandria, and Noroos fields will raise Egypt's domestic production by 50% in 2018, he said, adding that Egypt should reach self-sufficiency in natural gas by the end of 2018. By 2020, he noted, Egypt's production of natural gas should rise by 100%.

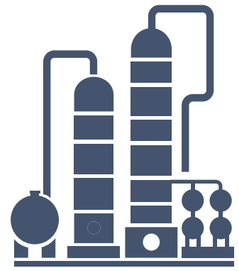
Steel Industry's Natural Gas Consumption Stabilizes at 126 mscf/d

Natural gas consumption by the steel industry has stabilized at 126 million standard cubic feet per day (mscf/d), according to a source at the Egyptian Natural Gas Holding Company (EGAS). Households, commercial units, and vehicles consume an additional 225 mscf/d of natural gas and the thermal sector, including ceramic factories and brick kilns, consumes approximately 500 mscf/d. Egypt's natural gas consumption rose to 3.94 million tons in July from 3.45 million tons in July 2016, a 14.2% Y-o-Y increase, according to the information released by CAPMAS.

Butane Production

-7.45%
YoY decline in production from 161,100 tons in 2016 to 149,100 tons in 2017.

1.21%
YoY change in imports from 165,200 tons in 2016 to 167,200 tons in 2017.



Ain Sokhna's Storage Capacity to Increase by 200,000 CM

The second phase of development at the Ain Sokhna Port will include the installation of storage tankers to increase the port's storage capacity by 200,000 cubic meters (cm). The storage tankers will be used for diesel, bitumen, and benzene. Storage capacity for butane is projected to rise to 150,000 cm while storage capacity for diesel is set to rise to 100,000 cm. The project will also permit the port to receive up to two tankers with 120,000 tons capacity each. Upon completion of the current project, the port's capacity will increase by 133% to 21 million tons per year.

El Mazni: Additional Steps Necessary for Gas Market Liberalization

Liberalizing Egypt's gas market requires additional steps and greater cooperation, according to Amira El Mazni, Vice Chairman for Gas Regulatory Affairs at the Egyptian Natural Gas Holding Company (EGAS). Creating a gas market, she noted, will require significant cooperation between the Cabinet of Ministers, the new regulatory agency, and the private sector. Under the recently issued Law Number 196, eligible consumers will be able to choose their own supplier and negotiate prices, according to El Mazni. With private companies entering the market, EGAS will no longer be solely responsible for meeting Egypt's natural gas needs.

Inflation Falls in September

Urban consumer price inflation eased slightly in September, dropping to 31.6% from 31.9% in August. Core inflation declined to 33.26% in September from 34.86% in August. "The decline in core inflation … confirms our expectation that the inflationary impact of energy and utilities price hikes is tapering off and demand-driven inflation is declining," Reham El Dessouki, an economist at Arqam Capital, said. Last month the International Monetary Fund (IMF) warned that inflation threatened Egypt's economic stability, but commended the Central Bank of Egypt's steps to reduce liquidity and raise interest rates to counter inflationary pressures.

12.2% of Buildings Linked to Natural Gas Grid

The percentage of buildings linked to Egypt's natural gas grid rose to 12.2% in 2017, according to data from Egypt's 2017 census. In 2006, only 3.4% of Egypt's buildings were connected to the grid. Urban buildings are more likely to be connected to the grid than rural buildings. While only 2.3% of rural buildings are connected to the grid, the percentage rises to 35.3% in urban locations. Connection to the electricity grid is more general and lacks the rural-urban disparity. Altogether, 96.3% of Egypt's buildings are connected to the electricity grid. Out of this total, 96.5% of urban buildings and 96.2% of rural buildings are linked to the grid.

Diesel Production, Consumption & Imports

627 thousand tons
Production 2017, recording a 12.77% YoY increase.

556 thousand tons.
Production 2016

Egypt plans to import 1.012 million
tons of diesel this year.

1,165 million tons in July 2017.
Falling by 1% from 2016's 1.176 million tons.

First Phase of Development at Zohr 91% Complete

The first phase of development at the Zohr gas field is 91% complete, the Minister of Petroleum and Mineral Resources, Tarek El Molla, stated during a recent visit to the gas field. The minister noted the acceleration of the work schedule to ensure that the onshore and offshore facilities are prepared to begin production by the end of 2017. He noted that final preparations were still necessarily as well as the signing of contracts with the operating company. Work on the second phase will begin after the completion of the first phase.

VAT Revenues from Oil Sector Rose 520%

Value-added-tax (VAT) revenue from the oil sector grew at a faster pace than from other economic sectors during FY 2016/2017, the Deputy Finance Minister for Taxation Policies, Amr El Munir, stated. In FY 2016/2017, VAT revenues from the sector rose 520% from the previous year, according to El Munir. The VAT revenue growth from the oil sector far outstripped other sectors. VAT revenues from the telecommunication sector grew by 135%. The cement and tobacco sectors also demonstrated VAT revenue growth, increasing by 65% and 23% respectively.

Egypt to Continue to Pay Down Arrears

Egypt will make another payment toward its arrears to IOCs before the end of 2017, the Prime Minister, Sherif Ismail, said. The prime minister noted that these companies had been increasing their investments in the Egyptian economy. Two years ago, back payments to the IOCs rose to $6.3 billion. Since that time, the government has made a commitment to draw down its arrears and make timely payments to the IOCs.

Botagasco Opens a New Butane Warehouse

Egyptian Company for Gas Transportation and Delivery (Botagasco) opened a new butane distribution warehouse in Kirdasa, Giza, to serve the citizens of Kirdasa and its surrounding area. With the addition of the new warehouse, the company now has 175 distribution sites across the country. Botagasco aims to sell 30,000 butane cylinders per month from the new distribution warehouse to meet the needs of local citizens during the peak-demand winter months. The company sold 40 million cylinders in the first half of 2017, up from 35 million cylinders during the first half of 2016, an increase of 14.3%.

El Garhy: No Fuel Subsidy Cuts in FY 2017/2018

The government has no plans to cut fuel subsidies during FY 2017/2018, Egypt's Finance Minister, Amr El Garhy, announced. Garhy's statement followed the release of an IMF report that called for further reductions in Egypt's fuel subsidies. According to the report, the Ministry of Petroleum will submit a plan to the Prime Minister later this month for the indexing of fuel prices to market conditions. No timeline, however, was given for the implementation of the new pricing mechanism.

Badr City Depot to Open in November

The petroleum-storage facility in Badr City is nearing completion and will begin operations in November 2019, according to the Head of Misr Petroleum, Mohamed Shabaan. The facility is currently 95% complete, Shabaan said. The storage facility will have the capacity to store almost 26,000 tons of petroleum products upon completion. It will include two diesel tanks with a combined capacity of 12,000 tons, two 80-octane gasoline tanks with a combined capacity of 7,000 tons, three 92-octane gasoline tanks with a combined capacity of 6,000 tons, and a 95-octane gasoline tank with a capacity of 750 tons. The depot will also have a tank loading platform that contains six diesel loading arms, five 80-octane gasoline loading arms, four 92-octane gasoline loading arms, and two 95-octane gasoline loading arms.

IMF: Economy to Grow 4.5% in FY 2017/2018

The International Monetary Fund (IMF) projects that Egypt's economy will grow by 4.5% in FY 2017/2018. For the current calendar year, the IMF expects the economy to expand by 4.1%, 0.6% higher than its projections for 2016. The IMF credits the government's economic reforms for spurring growth. It predicts that Egypt's unemployment rate will fall from 12.2% in FY 2017/2018 and to 11.5% in FY 2018/2019.

Egypt Energy Exports

Fuel Products
Exports in 2017 reached $349.6 million, a 57% Y-o-Y increase from the $222 million in 2016.

Crude Oil
Exports rose by 37.4% to $22.791 million in 2017, from $16.490 million in 2016.

Coal
Exports rose by 190% from $4.177 million in 2016 to $12.152 million.

Egypt to Receive $2B Tranche after Second IMF Review

The International Monetary Fund (IMF) expects to release the third tranche of its $12 billion loan to Egypt after the completion of a second review of Egypt's compliance with the loan agreement later this year, the organization announced. The third installment is for approximately $2 billion. In its first review released on September 26th, the IMF said that Egypt had made a "strong start" on its reform program, but that high inflation threatens macroeconomic stability. It noted that fiscal and regulatory reforms had improved Egypt's financial and business climate.

Nasr: World Bank Financing of Energy Sector Hits $4B

The World Bank has provided the Egyptian energy sector with $4 billion in financing, according to the Minister of Investment, Sahar Nasr. The funding includes $3 billion to support economic reforms in the sector and $635 million of direct investments from international and domestic investors to establish an international zone for solar-power generation in Aswan, the minister noted. In addition to this amount, the project has received more than $200 million in financial guarantees from the World Bank's Multilateral Investment Guarantee Agency (MIGA). The energy sector also received an additional $150 million in foreign direct investment.

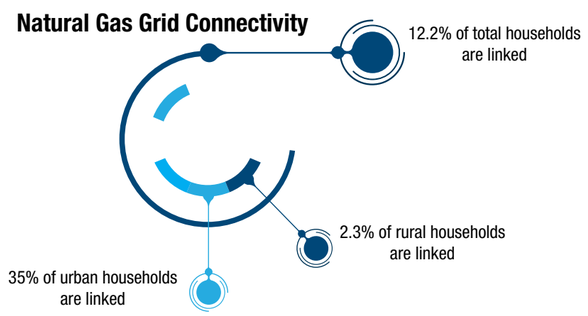
Egypt Gas to Supply Fuel for New Airport

Egypt Gas Company is prepared to supply the fuel requirements of the airport at the New Administrative Capital once it begins operations, the Head of Egypt Gas, Mohamed Shabaan, said. Egypt Gas will bear the sole responsibility for meeting the airport's demand for fuel. The volume supplied will depend upon the needs of the airport and its flight volume, Shabaan noted, adding that, depending upon demand, other suppliers could later assume some of the responsibility of meeting the airport's fuel needs. Along with other suppliers, such as Exxon Mobil, BP, Total, and Emarat Misr Company, the company already supplies Cairo International Airport.

IMF Official: Egypt to Set Pace of Fuel-Subsidy Cuts

Egyptian authorities will determine the date of future fuel-subsidy cuts, according to the Director of the Middle East and Central Asia Department at the International Monetary Fund (IMF), Jihad Azour. The IMF is currently discussing the issue with Egyptian policy makers, Azour said. He noted that Egypt's economic reforms have improved the country's monetary situation and increased foreign investment in the country.

Natural Gas Grid Connectivity



Shell to Drill 63 Wells in Western Desert

Royal Dutch Shell plans to drill 63 wells in the Western Desert during 2018, the CEO of Shell, Andrew Brown, said during a meeting with the Egyptian Prime Minister, Sherif Ismail. The company plans to continue its work under Phase 9B for the development of the West Delta Concession. Shell's investments in the concession have reached approximately 1.6 billion, Brown noted. The Minister of Petroleum and Mineral Resources, Tarek El Molla, and the Vice President and Managing Director of Shell in Egypt, Gasser Hanter, also attended the meeting.

TransGlobe Produced 12.2M boe/d in Q3 2017

TransGlobe Energy Corporation produced 12.2 million barrels of oil equivalent per day (boe/d) in Egypt during the third quarter of 2017. The company sold domestically 443,000 barrels of the oil it lifted in the month of September. It also sold 350,000 barrels of inventoried oil to the Egyptian General Petroleum Corporation (EGPC) for approximately $14.9 million, causing its Egyptian inventories to fall to less than a million barrels as of September 30th. The company received approval for three development leases at the North West Gharib Concession last month. It plans to drill up to four new wells in the Eastern Desert.

KPC Renews Contracts with SUMED

The Arab Petroleum Pipelines Company (SUMED) renewed its contract for the storage and transportation of crude oil with Kuwait Petroleum Corporation (KPC).

KPC aims to strengthen its position in northwest Europe and the Mediterranean, boosting its market share. The contract was renewed during the third Kuwait Oil & Gas Show Conference (KOGS 2017). SUMED is a joint venture between Egypt, Saudi Arabia, UAE, Qatar, and Kuwait.

GlobalConnect's Acquisition of a 25% Share in Abu Sennan Approved

The Egyptian government approved GlobalConnect's acquisition of a 25% stake in the Abu Sennan Concession. The company can now proceed with its exploration and exploitation duties as a full partner in the concession. GlobalConnect acquired the stake as part of the Farmout Agreement (FOA) it signed with Kuwait Energy in December 2016. With the completion of the agreement, Kuwait Energy holds a 25% revenue interest and is the operator of the Abu Sennan concession. Dover Investment Ltd, Global Connect, and Rockhopper Exploration Plc hold shares of 28%, 25%, and 22% respectively.

SDX Makes New Discovery in West Gharib Concession

SDX Energy Company has made a new oil discovery in the West Gharib Concession. The company discovered 101.5 feet of net heavy oil pay with an average porosity of 20%. The oil is located in the Yusr and Bakr sand formations. The discovery was made at the company's Rabul 2 well. The company expects to connect the well to its processing facilities at Mesada. In July, the company drilled Rabul 1. During the drilling, it discovered 14.5 feet of net heavy oil pay with a porosity of 21.2%. The find was in the Yusr sands.

Banking Alliance to Provide EGP 2.3B for GPC Exploration

GPC signed an agreement with six banks for an EGP 2.3 billion loan to finance oil and gas exploration. The company plans to use EGP 1.757 billion for exploration and drilling projects and EGP 99.3 million for its renewal and replacement programs. The loan will be for a period of seven years.

DuPont, KT to Supply Zohr with Scrubbing Technology

DuPont Clean Technologies and Kinetics Technology (KT) signed a contract to deliver gas-scrubbing equipment for Egypt's Zohr gas field. DuPont will provide two MECS DynaWave wet gas scrubbing units along with technology licenses, engineering equipment, and proprietary equipment. KT will supply the on-shore gas-plant units in Port Said with Claus and Tail Gas Treatment Units (TGTUs). The technology and equipment provided by Dupont and KT are intended to limit sulfur dioxide emissions at the field and allow operations at Zohr to stay in compliance with environmental standards.

Technip: MIDOR, Asyut Refinery Projects on Schedule

Production from the hydraulic-cracking project at the Asyut refinery and the expansion project at the Middle East Oil Refinery will begin on schedule, according to the CEO of Technip, Marco Villa. Technip, an Italian firm, is the general contractor for both projects. The expansion of MIDOR will increase the refinery's capacity by 52% to 175,000 b/d from its current capacity of 115,000 b/d. Technip is also implementing a project to perform hydrogen cracking on low-value products, such as mazut, at the Asyut refinery to increase the output of higher-value products. Technip has invested approximately $3.7 billion in the two projects.

AMOC Invited to Cross List on Dubai Exchange

Nasdaq Dubai proposed that Alexandria Mineral Oils Company (AMOC) cross list some of its shares on the Dubai stock market. AMOC has yet to accept the offer, but a meeting between representatives of AMOC and Nasdaq Dubai was reportedly held. An offering on the Dubai exchange will require the approval of the Egyptian Ministry of Petroleum and Mineral Resources.

Cheiron to Partner in the Development of Mexican Oil Field

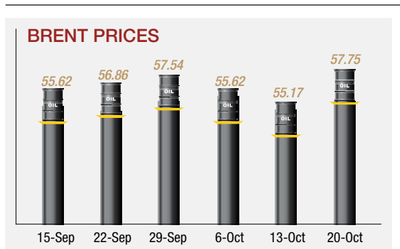
Egypt's Cheiron Holding Company won the right to partner with PEMEX, a Mexican company, to develop the Cardenas-Mora project in Mexico. The Cardenas-Mora field is located in the Mexican state of Tabasco. With an area of more than 168 square kilometers, it is estimated to contain approximately 93 million barrels of oil equivalent (boe) in reserves.

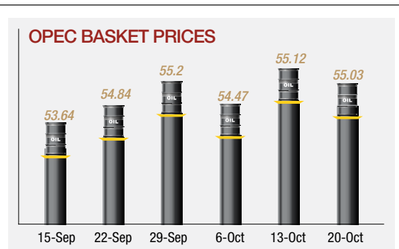
MIDOR to Receive $1.2B from Banking Consortium

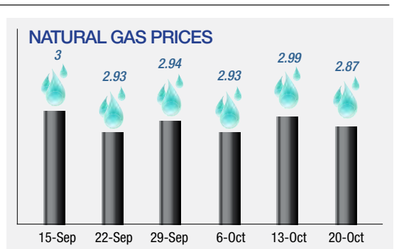
The Middle East Oil Refinery (MIDOR) will receive a $1.2 billion loan from Crédit Agricole, BNP Paribas, and Italian bank Cassa Depositi e Prestiti, a source at the Ministry of Petroleum told Al Shorouk. The loan will finance the second phase of the expansion plans at MIDOR's refineries. The company expects to increase its output capacity by 15% to 39 million barrels of refined crude in FY 2017/2018. The first phase of the expansion projects started in January 2017 and was completed in September.

Rosneft Acquisition of 30% of Zohr Finalized

Rosneft has closed its $1.125 billion deal with Eni to acquire a 30% stake in the Zohr gas field. Rosneft also partially reimbursed Eni for past project costs. Eni retains a 60% stake in the field. The remaining 10% is held by BP. Rosneft will contribute its offshore-development experience to the project.







SAUDI ARABIA

The initial public offering (IPO) for Saudi Aramco remains on schedule for 2018, the Saudi Arabian Minister of Finance, Mohammed El Jadaan, told investors. Earlier last month rumors had begun to circulate that Saudi Arabia might push back its IPO due to a report that was preparing contingency plans for a possible delay.

Saudi Aramco will soon finish the shale-production facilities that the company is building in northern Saudi Arabia. The natural gas project, called System A, includes gas-processing facilities, wellheads, and pipelines.

Saudi Arabia announced that it will cut crude shipments by 560,000 b/d in November. **The country will export 7.15 million b/d in November despite global demand in excess of 7.7 million b/d**, according to a statement released by the Ministry of Energy. In September, due to high domestic demand, Saudi Arabia exported 6.68 million b/d.

The state will cut crude oil shipments to customers in Asia next month. **Saudi Aramco will reduce its exports to three Japanese customers and one South Korean customer by up to 10% in November**. Some Chinese customers will also face cuts.

LIBYA

Libya continues to experience considerable fluctuation in its oil production. **At the end of September, production had risen to 950,000 b/d with 230,000 b/d coming from the Sharara oilfield**.

Despite the uptick in production in September, security issues continue to dampen production figures in Libya. **Output from the Sharara oilfield stopped after an armed group halted production for several days at the beginning of this month**. The group closed the field to demand concessions from the National Oil Corporation (NOC).

UAE

Despite lagging behind on its production-cut commitments, **the UAE is now fully compliant with the production-cut agreement** between OPEC and several major, non-OPEC oil producers, the UAE Energy Minister, Suhail Mohamed El Mazroui, said.

In a sign of its renewed commitment to the agreement, the UAE announced further production cuts for November. **It will cut production of Murban crude by 15%, Das crude by 10%, and Upper Zakum crude by 5%. These cuts will bring the UAE's total cuts to 139,000 b/d of oil**.

ADNOC is looking to syndicate a $6 billion loan. The loan will mature in two tranches. The first tranche will mature after three years and the second tranche after five years. The funds will be used to increase liquidity and optimize ADNOC's capital structure.

KUWAIT

Kuwait announced a new tender for the development of its Jurassic natural gas field. The tender is for the development of a new facility that is to be called the Jurassic gas facility (JGF-1). **Upon completion, the facility is projected to have 69 wells and to produce 590 mcf/d of natural gas and 220,000 b/d of crude oil**. Bids are due by the end of February.

Kuwait is looking to sign new crude export deals with Chinese buyers. "We see medium sour demand is very healthy and we have been approached by several customers for additional cargoes or for new contracts in China," an official at the Kuwait Petroleum Corporation (KPC) said. At present, the interest is for single shipments instead of long-term contracts.

BAHRAIN

The construction of a new oil pipeline connecting Saudi Arabia and Bahrain will be completed in 2018, according to the Bahraini Oil Minister, Sheikh Mohammed bin Khalifa El Khalifa. **The pipeline will have the capacity to carry 350,000 b/d** and will facilitate the expansion of the BAPCO oil refinery.

Bahrain is currently negotiating a contract for the expansion of the BAPCO oil refinery. **The expansion project is expected to cost $5 billion** and expand the capacity of the refinery to 360,000 b/d, up from its current capacity of 267,000 b/d.

Bahrain's new LNG terminal should be completed in 2019, according to the Bahraini Oil Minister. The terminal will be Bahrain's first LNG-import terminal and will have a capacity to process 800 mscf/d.

OPEC

After meeting in Vienna, ministers from OPEC and major, non-OPEC oil-producing countries, said the production-cut agreement had drawn down global oil stocks. **"The process is working fine so far," the Kuwaiti Minister of Oil, Essam El Marzouq, noted, adding that the ministers hoped that they could "consume the remaining overhang" in global supply** before the expiration of the production-cut agreement in March 2018**. The Russian minister indicated that the group might consider extending the agreement**.

Other ministers expressed support for broadening the agreement. **The Iranian Minister of Petroleum, Bigan Zangeneh, singled out Libya and Nigeria and called for changes in OPEC policy towards the two OPEC-member countries with no obligations under the production-cut agreement**.

Expressing similar sentiments, the UAE Energy Minister, Suhail Mohamed El Mazroui, indicated that they might be asked to make cuts at the next OPEC meeting.

Despite the talk of extending or broadening the production-cut agreement, **OPEC production edged higher in September by 50,000 b/d**.

IRAQ

The central government increased crude exports in September**. Iraq exported 3.98 million barrels a day (b/d), its highest export rate since the implementation of the production-cut agreement in January**. Production from the areas under the control of the Kurdish Regional Government (KRG) increased by 40,000 b/d.

Iraq is looking to shift its export focus toward Asian markets to take advantage of growing regional demand. **The country could potentially ship up to 80% of its exports to Asia**, according to Iraqi Minister Councilor for Energy Affairs, Dheyaa Jaafar Hajam El Musawi. Currently, Iraq ships 52-55% of its crude to Asian markets. The shift would come at the expense of more traditional markets such as the US and Europe.

Despite earlier reports that Royal Dutch Shell was pulling out of the Majnoon oilfield in Iraq, Iraqi Minister of Oil, Jabar El Luaibi, said that negotiations between the government and Shell were ongoing. He also noted that Chevron and Total have expressed interest in taking over Shell's operational stake in the oilfield.

With last month's independence referendum in areas controlled by the KRG, tensions between the KRG and the central government in Baghdad have continued to worsen. The day prior to the referendum**, the Iraqi government called on the international community to cease importing crude oil from the autonomous region**.

The government has also reasserted its right to control oil revenues from the region and **has announced plans to reopen the federal Kirkuk-Ceyhan Pipeline to Turkey**. The pipeline, if reopened, could weaken the KRG's control over Iraqi oil exports to Turkey. The pipeline was closed in 2014 after the Islamic State conquered much of northern Iraq. The timeline for the project has yet to be announced.

Another sign indicating that Iraq is beginning to regain control over areas previous captured by the Islamic State, **Iraq announced its plans to resume oil production from its Nineveh oilfields over the next few months.** The region contains the Qayyara and Najma oilfields, which—prior to their seizure by the Islamic State in 2014—produced approximately 30,000 barrels per day (b/d) of heavy crude.

IRAN

Iranian exports of crude oil to Asia rose in August for the second month in a row but remained well below the export levels of August 2016. The higher export volume was driven by demand from China and South Korea. **Despite the increase in August, Iranian exports to Asia were down 10.8% Y-o-Y from August 2016**.

The country's total crude exports rose in September to 2.28 million b/d, the country's highest rate of exports since February.

Iranian officials **predict that crude production from its South Azadegan oilfield will rise to over 140,000 b/d by the end of March 2018**. The field currently produces 80,000 b/d.

The state pushed back its tender for the development of the Azadegan oilfield until at least 2018. The government had already delayed the tender once to permit oil companies more time to appraise the field.

Iran has agreed to build an oil refinery in the Syrian city of Homs. The refinery will have an initial refining capacity of 70,000 b/d, according the Head of the Research Institute of Petroleum Industry (RPIP), Akbar Zamanian. **Upon completion, the refinery's capacity will increase to 140,000 b/d**. Construction will begin after the cessation of hostilities in Syria.

The government has cut off its trade of petroleum products with the KRG after the Iraqi Kurds voted in favor of independence in a non-binding referendum last month.

ALGERIA

Algeria is looking to increase its natural gas exports to Spain via the Medgaz pipeline to 7 bcm this year, according to the CEO of Sonatrach, the state-run energy company. The country has already exported 4.5 bcm through the pipeline between January and the end of August.

Key governmental officials are calling for changes to Algeria's energy laws to bolster foreign investment. **The Energy Minister, Mustapha Guitouni, indicated that the government will amend its hydrocarbons law to create a better investment climate**. Other high-ranking Algerian officials, such as the Prime Minster and the CEO of Sonatrach, have also called for reforms.

KBR won a contract to provide engineering, procurement, and management services at the In Salah and In Amenas natural gas fields. The work will be performed over a period of four years. The In Amenas and In Salah fields have a combined production capacity of approximately 315 mcf per year, but have previously suffered from attacks by militant groups.

An Interview with Cyprus' Top Presidential Candidate

By Nadine Abou el Atta

In the global chess game of energy, international relations tend to have the first hand. When looking into the power of the Eastern Mediterranean region, one cannot side-step the central role of Cyprus. In an effort to steer away from Egypt's angle of the equation, Egypt Oil & Gas conducted an interview with Nicholas Papadopoulos, the Presidential candidate of Cyprus and the Head of the country's Democratic Party.

Furthermore, Papadopoulos chairs the parliamentary committee on Finance and Budget; and he is the son of former President Tassos Papadopoulos.

Please highlight to our readers a brief about the core points you intend to focus on as the future president of Cyprus?

My vision for Cyprus is diametrically opposed from that followed by the present administration and not only over the core issue of resolving the Cyprus Question. I believe in the creative powers of my people and the establishment of an investment friendly environment that would help us to recover from the catastrophic consequences of the 2013 bail-in program that ransacked one of the most competitive sectors of our economy. I want to restore the competitiveness of our economy that goes far beyond the banking sector and energy is major part of this plan.

Beyond the economic sector, Cyprus needs to also restore its international and diplomatic credibility. I have a very clear position on Turkey and the Cyprus issue and I will use all leavers available to the Republic of Cyprus at the EU as well as the regional level to confront Turkey's imperialist objectives.

Mr. Erdogan sees his country as a revisionist and expansionist power that treats the Eastern Mediterranean as an Ottoman lake. He has no respect for international law other than the interpretation he gives to it and is building up a huge military capability which he intends to use in order to coerce his neighbors into submission.

He has been occupying 1/3 of my country, he has placed his troops illegally in Syria and Iraq, and has been officially questioning the validity of the Lauzanne Treaty which defined the borders between Turkey and Greece in 1923.

"I want to build a direct pipeline connecting Aphrodite with the Damietta LNG plant so as to export 90% of the field's recoverable reserves."

Since 2011 and more emphatically since 2016 he has regressed from any democratic reform, he has persecuted the political opposition and the country's ethnic and religious minorities and has all but breached his relationship with the EU.

More importantly for the region, Mr. Erdogan has chosen to side himself and his country with extremist political forces who have disseminated dissension and instability throughout the Middle East and is offering a safe haven even to terrorist organizations such as the Egyptian Muslim Brotherhood.

"I will never build a pipeline to Turkey."

I intend to stand up to Mr. Erdogan. I cannot trust him or his intensions and I will discontinue the appeasement policies followed by the current President and his predecessor. Their appeasement strategies have failed to resolve the Cyprus Question, they have made Turkey more aggressive and more recalcitrant and are severely damaging the credibility and international standing of the Republic of Cyprus.

How do you view the cooperation between Egypt and Cyprus in terms of energy and investment? And in your opinion, what needs to be changed? how can both countries collaborate to enhance their benefit from the natural gas in the deep Mediterranean area?

We need, and by "we" I mean the Cypriot leadership, to get serious about what we want to achieve and how we want to achieve it. We have been talking about energy cooperation for a very long-time but I have not seen any real and tangible progress either in the natural gas or electricity sectors. The government of Mr. Anastasiades has been passive and procrastinating partly because elements within his administration are deluded by the argument that Ankara will change its policy vis-à-vis Cyprus if we export our gas to Turkey.

"The size of our future gas demand it too small to make the development of the field economically viable just for our domestic consumption. In order to get the 10% of Aphrodite's reserves we need for our internal demand we have to export the other 90% to Egypt."

It has no clear direction and this creates questions about its credibility and determination to move forward with its declared energy cooperation with Egypt. On the other hand I am clear about what I am proposing. I will never build a pipeline to Turkey. I want to build a direct pipeline connecting the Aphrodite discovery with the Damietta LNG plant so as to liquefy and export 90% of the field's recoverable reserves to international markets. Aphrodite has enough net export capacity estimated to almost 110 bcm to fully book Damietta's liquefaction potential for 17 consecutive years.

In your opinion, what is the outcome expected from the trilateral summit in November?

Unfortunately, I do not expect anything concrete to come out of this meeting.

What are the major challenges Cyprus faces in its energy sector?

Cyprus has one of the most vulnerable and environmentally unfriendly energy systems in the EU. We are dependent on foreign oil imports for 92% of our energy supply and electricity consumption, although we have a lot of untapped wind and particularly solar energy potential. Cyprus is completely isolated from its neighbors and the European Union.

The Aphrodite gas field would help us to significantly reduce the cost of fuel oil imports and modernize our energy system by building new infrastructure for the benefit of all Cypriots, Turkish Cypriots included. Unfortunately, the size of our future gas demand it too small to make the development of the field economically viable just for our domestic consumption. In order to get the 10% of Aphrodite's reserves we need for our internal demand we have to export the other 90% to Egypt.

Moreover, our electricity market is still controlled by an essentially state-subsidized monopoly. Regardless of how effectively this monopoly is, our electricity market cannot grow if we do not inject it with new capital and new investment that will help modernize and expand our fleet of electricity plants, secure our energy supply and make Cyprus into a major electricity exporter and transit hub.

For this to happen, Cyprus has to connect as soon as possible with high voltage electricity cables with both Egypt and Israel and later on with Greece and the EU. Promoting the pipeline to Damietta and the construction of these electricity interconnectors will be at the top of my agenda starting on March 1st 2018.

Upon winning the coming elections, how do you see future cooperation with Egypt, in different fields? What are the main areas you will focus on?

The historical ties between our two countries go back to before the independence of Cyprus from British colonial rule. Cypriot workers participated in the construction of the famous Suez Canal and many families, including part of my family, worked and prospered in Egypt during the previous century.

President Nasser was a strong supporter of Cyprus' emancipation struggle and Egypt was one of the very few countries in the world which supported that struggle from a moral as well as a practical point of view and President Makarios was a dedicated member of the non-aligned movement that President Nasser helped to forge and lead for several decades.

After the Turkish invasion of 1974, Egypt has been one of the most principled supporter of Cyprus in its continued struggle for liberation from the Turkish occupation and I am very happy to note the renewed interest of Egypt in the Cyprus question over the last few years, the most intractable problem of international security, second only to the Palestinian Question.

Our relationship has survived the test of time and has been recently rekindled and expanded in the face of great regional uncertainty and unprecedented volatility. The high-level tripartite cooperation summits between Cyprus, Egypt and Greece established in 2014 constitute the linchpin of a new emerging regional cooperation which is a pillar of stability and security for the entire Eastern Mediterranean.

This framework of synergies founded on the principle for the respect of international law also constituted the basis for the establishment of other tripartite initiatives as well as the ones between Cyprus-Greece on the one hand and Jordan, Lebanon and Palestine on the other that followed in 2016, offer us a fruitful framework to deepen and broaden that cooperation in all aspects of our relationship.

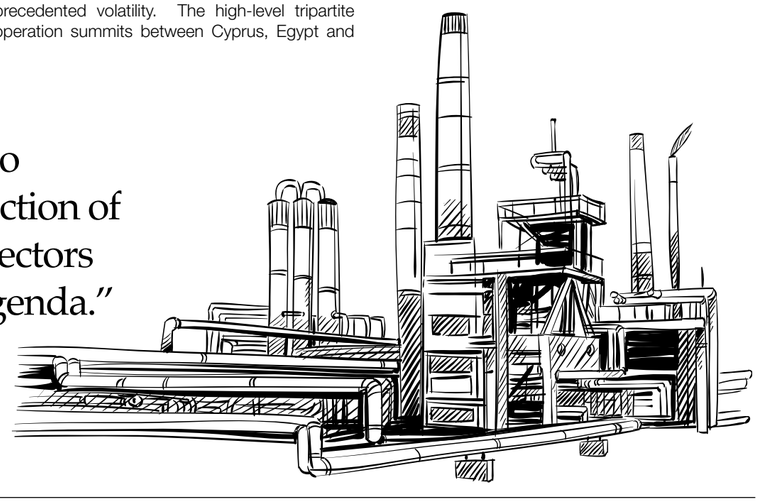
If elected in February 2018, I want to reassure you that I am going to continue and further encourage this enhanced tripartite partnership by taking more practical steps towards tangible results, especially in the energy and regional security sectors that will highlight the importance of Egypt especially in the eyes of the European Union.

"Nasser was a strong supporter of Cyprus' emancipation struggle and Egypt was one of the very few countries in the world which supported that struggle from a moral as well as a practical point of view."

Apart from the energy sector, I will enhance and deepen our security and military cooperation by, inter alia, conducting common exercises with Greece as well as other EU countries who will see Cyprus as a strategic base of operations within the evolving framework of the EU's PESCO (Permanent Structured Cooperation) on Defense.

I will also welcome Egyptian investment in any sector of our economy, from tourism and construction to banking and real estate while promoting joint education and research programs by utilizing existing EU and Union for the Mediterranean (UfM) financial capabilities.

"Promoting the pipeline to Damietta and the construction of these electricity interconnectors will be at the top of my agenda."



The Power of Greece in the International Gas Game:

An Interview with Constantinos Filis

By Nadine Abou el Atta

In the race to become a regional gas hub, the shortest route tends to be through the welfare of other nations. Experts often believe that international relations and mutual benefit are the only road for region to succeed as a global energy hub. As a central payer in the Eastern Mediterranean natural gas equation, and to better understand Egypt's side of the pursuit. Egypt Oil & Gas conducted a phone interview with Dr. Constantinos Filis, the Director of Research at the Institute of International Relations of Panteion University, and the Head of the Russia-Eurasia & SE Europe Centre at the Institute of International Relations. Furthermore, Filis is a member of the Greek-Turkish Forum, as well as the Greek-Russian Society.

The Greek Route vs. the Turkish Route

The interview began with a question exploring Greece's similar dream to Egypt of becoming an energy hub, through its infrastructure.

"Greece enjoys a very high competitive edge, in terms of facilities and location," Filis commented. He went on to explain that his country is at the crossroads of three continents. In terms of infrastructure, the country is equipped with Revithoussa liquefied natural gas (LNG) terminal, located west of Athens; a floating regasification and storage unit (FSRU) in Alexandroupolis in Northern Greece is in the making; and the Gas Interconnector Greece-Bulgaria (IGB Pipeline), which connects the natural gas infrastructure between both countries is also under development.

An edge in favor of Greece recently stems from the EU's strategic priority to lessen its dependence on imports of natural gas from Russia. This is where the Southern Gas Corridor comes in to the picture; "Greece can receive quantities from eastern Mediterranean countries in the form of LNG or through an undersea pipeline, host them in the Alexandroupolis FSRU, and then pass it on to countries such as Hungary or Austria via the extensions of the IGB pipeline."

When asked about the East Med Pipeline, Filis said that "there are technical issues that can be dealt with; however, it does not seem to be a priority for Eastern Mediterranean's producing countries for the time being."

In discussion of other regional players such as Turkey, Filis affirmed that "Greece is a more suitable energy transportation centre in the eyes of Europe, than other countries such as Turkey. It is part of the European Union (EU), and it is a more credible and predictable partner vis-à-vis Turkey".

Yet, he went on to highlighted the strength of Turkey. "It is a major player and has a strong position as well. Israel will 'feed' one way or the other the Turkish market." Filis believes that this act is politically and economically motivated, he clarified: "When you export your natural gas to a country you gain a political advantage, but when a country transports your hydrocarbons, it neutralizes this advantage. What is more, Turkey is a big and 'thirsty' market."

One of Turkey's major disadvantages is the current state of affairs in its relations with Egypt and Cyprus. Thus, "neither Cairo nor Nicosia are considering exporting through Turkey".

Egypt in the Equation

Spotting a myriad of similarities between Filis' statements and the strength's Egyptian politicians are basing the Egypt's goal of becoming a regional energy hub on, Egypt Oil & Gas asked about the potential of the country's prospects against that of Greece.

"Not against, but in cooperation with Greece. I can only see synergy," Filis began his reply. He further noted that Egypt has the potential of becoming an energy hub, "it is the cheapest option for countries such as Israel and Cyprus," he said noting that the North African country is in fact the most-likely option.

The country's two FSRUs, have enough unused capacity to allow Egypt to transport natural gas to Europe, whether it will be its own or Israel's and/or Cyprus's. The FSRUs can then "connect" to the Alexandroupolis FSRU terminal, and through Greece reach the rest of Europe.

"We want to see Egypt stabilized and any contracts signed for Egypt are welcomed. Our relations are advanced and much benefit can come from the stability of our neighbors," he added.

The Pursuit of Liberalized Markets

In an effort to enhance the attractiveness of its investment climate and to boost its chances of becoming an energy hub, Greece has embarked on a market liberalization program. Addressing the topic Filis stated "the more liberal a market is, the more attractive it is to investors."

Lack of transparency and laws that are in benefit of particular companies, have had a negative impact on the investment climate in Greece, explained Filis. He further highlighted that there are some difficulties in achieving a fully liberalized market, adding that state companies, mainly in the electricity sector, have been trying to retain the situation as is.

Giving an example of the progress the country made, Filis said: "We use to have one electricity company, now we have four or five we can choose from, which means no monopoly," adding that "citizens and companies can choose their own supplier and secure better prices for their households and industries."

Noting the negative impact of high electricity prices on investment and the country Gross Domestic Product (GDP), Fillis explained that "due to the high electricity prices, some companies have transferred their businesses out of the country to other nearby markets such as Bulgaria."

The Trilateral Summit

When asked about the Trilateral Summit, taking place in November in Egypt's Sharm el Sheikh and involves Egypt, Greece, and Cyprus; Filis replied: "There is plenty of room for synergy and cooperation. The three leaders are going to confirm their efforts towards a more sustainable cooperation. There are a lot of topics to be addressed, one of which being how can Greece and to a lesser extent Cyprus serve as a "bridge" between Egypt and the European Union".

Filis highlighted Greece's long standing support for Egypt, adding that Athens supported its southern neighbor during times when it was under severe criticism by the rest of the European Union.

Challenges in Greece's Path

In terms of foreign investment, the country has been facing several roadblocks in boosting its lure in the eyes of major foreign corporations. Commenting on the issue Filis noted that the country is mainly facing four core challenges in this regard.

Beginning with the need to reach a completely liberalized market; secondly, the need for a stable taxation system. "Due to the unstable nature of taxes, companies did not know what was going to happen or how much taxes were going to be imposed a decade from now," he noted, an issue which is negatively impacting the decision to enter the Greek market.

Thirdly, "a key issue is liquidity, a country needs liquidity to become a hub," he affirmed. The fourth issue Filis stressed was the regional environment, noting that its stability will be crucial and beneficial for all players, with no exclusions.

The Future of the Equation

Basing its pursuit on its location, infrastructure, and affiliation, Greece is well on its path to enhance its role as a key regional player in the Eastern Mediterranean geopolitical equation, particularly due to the unstable environment/circumstances surrounding a big part of the southern european periphery, thus emerging as a stable and useful partner, Filis underlined. Nevertheless, with other strong players in the region, and with the country's economic welfare still in recover, the road maybe bumpy for the south European nation.

The Turkish-Egyptian Race for Regional Gas Hub

By Noah Finley

Over the past decade, Israel, Egypt, and Cyprus have all announced discoveries of large offshore deposits of natural gas. These recent discoveries in the eastern Mediterranean have set off a regional race to exploit the newly discovered energy sources and, perhaps just as importantly, the lucrative business of connecting them to the European energy market. Europe also stands to benefit from this competition over its market. European policy makers have a strong incentive to encourage the development of these natural gas fields in order to alleviate Europe's dependence upon Russian natural gas. While many countries are attempting to cash in on the discoveries, two states in particular, due to their proximity to the gas fields and natural gas infrastructure, are well positioned to take advantage of recent discoveries and harness them for the revitalization of their regional energy ambitions. These states are Turkey and Egypt. While both face significant obstacles to their ambitions to become regional energy hubs, they both possess significant advantages, which, if developed, could allow them to play a central role in the development of the regional gas reserves.

Their ability to develop a regional role depends upon a number of factors, such as their domestic market and resources, location and natural gas infrastructure, and diplomatic assets and liabilities. The ability of the governments in Cairo and Ankara to develop their strengths and alleviate their weakness could significantly impact investment patterns and the flow of natural gas from the eastern Mediterranean for decades.

Turkish and Egyptian Domestic Markets and Natural Gas Reserves

Both Turkey and Egypt, over the past few years, have been heavily dependent upon energy imports to meet their domestic demand. This energy dependence has highlighted for their policymakers the importance of developing the necessary natural gas infrastructure to meet growing energy needs.

At the end of 2016, Turkey's natural gas reserves stood at 18.8 billion cubic meters (bcm), according to the website of Turkey's Ministry of Energy and Natural Resources. These reserves are insufficient to meet Turkey's growing energy needs. The nation is only able to meet 26% of its energy needs from domestic sources, the website of Turkey's Ministry of Foreign Affairs states.

As the Turkish economy has grown, the country has increased its consumption of natural gas from 36.1 billion cubic meters (bcm) in 2007 to 42.1 bcm in 2016, an increase of 13.9%, according to the data released in the BP Statistical Review of World Energy June 2017.

Lacking a sufficient domestic supply of natural gas to meet this growing demand, Turkey has turned to imports to meet its needs. In 2016, it imported a total of 45.1 bcm of natural gas and liquefied natural gas (LNG), according to the BP report. Out of this total, it re-exported 0.6 bcm.

Egypt has also seen its energy consumption skyrocket and has turned to imports to meet domestic energy demand.

The country has increasingly utilized natural gas to meet its energy needs. Natural gas supplied the majority of Egypt's energy demand in 2016, comprising 50.7% of the country's energy mix.

Unlike Turkey, Egypt has substantial natural gas reserves. BP estimates that Egypt's reserves in 2016 stood at 1.8 trillion cubic meters (tcm), or at about 1% of proven world reserves. Years of underinvestment, however, led to falling production rates, according to Jean-Francoise Seznec and Samer Mosis in a piece published by the Middle East Institute.

In addition to falling production, consumption has been increasing. In 2016, Egypt consumed 51.3 bcm of natural gas, up 33.6% from the 38.4 bcm it consumed in 2007, according to BP's figures. Production for the same year stood at 41.8 bcm, demonstrating a considerable supply-demand gap. A previous natural gas exporter, Egypt became a net importer in 2015, according to Salma El Wardany, writing for Bloomberg in February 2017.

To make up for this shortfall in production, Egypt imported 118 cargoes of natural gas in fiscal year (FY) 2016/2017, the Egyptian Minister of Petroleum and Mineral Resources, Tarek El Molla, told Reuters in August 2017. To counteract the trend toward lower production, the Egyptian government embarked on an ambitious program to increase the production of natural gas to the level of domestic demand, according to the Bloomberg article. As a result of the government's efforts, production has been increasing. El Molla predicts that daily production will rise to 6.2 bcf by the end of FY 2017/2018. Responding to higher production figures, imports have already started to fall. El Molla predicted that imports will drop to 80 cargoes during the current fiscal year, according to the August 2017 Reuters article. The government is aiming to achieve parity between production and consumption in 2018 and to begin exporting natural gas by 2020, Reuters reported in February 2017.

Even as both countries struggle to meet their domestic demands, Egypt is nearer to meeting its natural gas needs through domestic sources. Sensing an opportunity to meet its own needs, even resume exports, Egypt has embarked on an ambitious program to increase investment in its energy sector and increase natural gas production. Turkey, on the other hand, lacking significant natural gas reserves has instead relied upon its strategic location as a land bridge between the energy-rich countries of the Middle East and Asia and energy-dependent states of Europe to foster its ambition to become a major player in the regional energy market.

Location and Infrastructure

While Cairo is closer to satisfying, perhaps even surpassing its domestic demand for natural gas than Ankara, Turkey's location and pipeline infrastructure give it a significant advantage in its bid to become a regional energy hub.

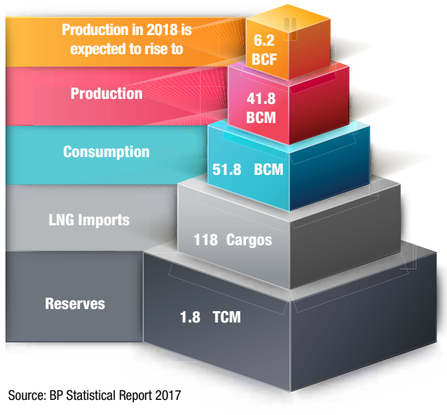
Turkey possesses a large and expanding network of natural gas pipelines that it uses primarily for importing natural gas for its domestic needs. Its oldest international pipeline is the West Line, connecting Turkey to Russia through Bulgaria, Romania, and Ukraine. In addition to the West Line, the Blue Stream Gas Pipeline cuts through the Black Sea to carry natural gas from Russia to Turkey. The pipeline began operations in 2003 and has the capacity of supplying Turkey with 16 bcm of natural gas per year, according to the Turkish Ministry of Energy and Natural Resources.

With the instability plaguing Ukraine over the past couple years threatening transmissions through the West Line, Russia and Turkey have moved to develop alternate routes. In 2016, Russia and Turkey signed an agreement for the TurkStream Gas Pipeline. The project, if completed as planned, will include two pipelines through the Black Sea from Russia to Turkey with a combined capacity of 31.5 bcm of natural gas a year, according to the Turkish Ministry. Half of this amount, according to the plan, will be re-exported to European markets. The other half will replace the gas currently imported via the West Line. Transmissions through the pipeline are expected to begin in 2019.

Besides its natural gas links to Russia, the Eastern Anatolian Natural Gas Main Transmission Line connects Turkey to Iran's abundant natural gas market. The pipeline, according to the Turkish Ministry, has a capacity of 10 bcm per year and became operational in 2001.

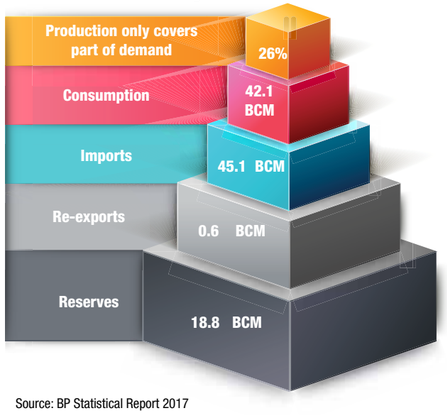
To further tap the abundant natural gas supplies in the Caucuses, Turkey and Azerbaijan agreed to build the Baku-Tbilisi-Erzurum (BTE) Pipeline, running from the Shah Deniz field in Azerbaijan through Georgia and into Turkey, to transport 6.6 bcm of natural gas from Azerbaijan to Turkey. According to the Turkish Ministry, the capacity of this pipeline is being increased to feed into the Trans Anatolian Natural Gas Pipeline (TANAP). TANAP is supposed to connect Europe with the natural gas fields of Azerbaijan. The pipeline, upon completion, is supposed to carry 32 bcm of natural gas per year and to stretch from the Turkish border with Georgia to the Greek border. The Turkish Ministry, according to its website, anticipates gas reaching Europe via the new pipeline in 2020. To facilitate the flow of natural gas through Asia Minor to Europe, an interconnection pipeline between Greece and Turkey was inaugurated in 2007—though plans to extend the pipeline on to Italy have languished uncompleted.

Egypt's Natural Gas



Source: BP Statistical Report 2017

Turkey's Natural Gas



Source: BP Statistical Report 2017

Despite its extensive pipeline network, Turkey lacks pipelines to the south to capitalize on Mediterranean gas resources. If such a pipeline was built, Turkey, straddling multiple energy markets, could draw upon the natural gas resources of Russia, the eastern Mediterranean, and Russia for re-export to Europe.

Egypt has a less extensive pipeline network. Prior to 2012, Egypt exported natural gas to Israel through a pipeline across the Sinai Peninsula. These exports came to a close in 2012 due to changing market conditions and a number of acts of sabotage against the pipeline, according to Egypt Daily News. Egypt also constructed the Arab Gas Pipeline, linking Egypt's gas fields to Jordan and Syria, according to the Egyptian Ministry of Petroleum and Mineral Resources.

In addition to its pipelines, Egypt has two LNG plants on its Mediterranean coast, one in Idku and one in Damietta. The two facilities, largely idle since Egypt cut off its exports in the face of urgent domestic needs, could resume the conversion of natural gas into LNG in 2020 if domestic production once again rises to surpasses consumption, according to an article by The Economist in September 2015. The two LNG facilities, according a Reuters' article in February 2013, have a combined export capacity of 12.2 million tons.

In addition the infrastructure previously noted, Egypt and Turkey have invested in floating storage regasification units (FSRUs) to insure an adequate supply of natural gas to their domestic energy markets. Due to the costs associated with the importation and regasification of LNG, these FSRUs will have little bearing upon either country's quest to become a regional gas hub.

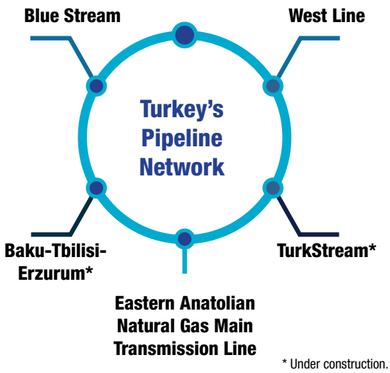
Diplomatic Assets and Liabilities

To fully utilize the opportunities provided by their natural gas infrastructures and strategic locations, both countries will need to draw on the resources of their gas-rich neighbors in order to become regional gas hubs.

Turkey, with its central location and network of pipelines, is ideally situation to take advantage of the natural gas boom in the eastern Mediterranean. Despite its clear advantages, Turkey's troubled-plagued relationships with Israel and Cyprus have the potential of offsetting its strengths.

The biggest obstacle in the way of Turkey's ambitions is Cyprus. Cyprus' central location in the eastern Mediterranean makes its territorial waters the natural pathway for natural gas pipelines from the region. Yet its relationship with Turkey has been hostile since Turkey occupied northern, or Turkish, Cyprus in 1974. Turkey still has 30,000 soldiers stationed on the island and continues to contest the maritime rights of the Cypriot government. After the breakdown of talks between the rival parties this summer, the Turkish government warned international oil companies against operating in Cypriot waters, according to a July 2017 Reuters article by David Dolan and Ece Toksabay. These disputes not only hamper the possibility of gas exports from Cyprus to Turkey, but, because of Cyprus' central location, block potential pipeline routes from Israel [and Egypt] as well, according to a Financial Times article in September 2017 by Andrew Ward.

While Turkey's relations with Israel are better than its relations with Cyprus, diplomatic relations between the two countries were only restored in 2016. In 2010, after the deaths of several Turkish activists in a maritime incident off the Israeli coast, Turkey broke off relations with Israel. When the two countries resumed diplomatic ties in 2016, many assumed the reconciliation was driven by Israel's recent natural gas discoveries and Turkey's need for natural gas, according to a CNN article by Oren Liebermann and Elise Labott in June 2016. Yet the two nations have yet to reach a natural gas agreement and relations have remained rocky.



* Under construction.

Egypt, for its part, instead of seeking Turkish outlets for its natural gas, has drifted toward greater cooperation with Turkey's regional nemeses, Greece and Cyprus. In August 2016, Egypt and Cyprus signed a pipeline agreement for the transfer of Cypriot gas to Egypt, according to an August 2016 Reuters article. Cyprus' natural gas deposits, however, pale in comparison with Israel's. The commercial viability of Cyprus' gas fields has even been questioned by some, such as Tareq Baconi, who wrote "Pipelines and Pipedreams: How the EU can support a regional gas hub in the Eastern Mediterranean" for the European Council on Foreign Relations.

While enjoying warm ties with Cyprus, Egypt's relationship with Israel is more complicated. Unlike Cyprus, Israel's reserves are large enough to ensure their development. At first glance, Egypt and Israel would appear to be natural partners. Israel has excess natural gas reserves that it struggles to export while Egypt has dormant LNG processing and export facilities. Yet obstacles to a natural gas cooperation agreement exist. Despite the benefits that both countries could realize by using Egyptian infrastructure to export Israeli gas, domestic opposition and an ongoing debt dispute over the termination the previous Egypt-Israel natural gas agreement could derail future cooperation, according to Barconi.

The Reality of the Race

Egypt and Turkey both have market advantages that could help them realize their common aspiration of becoming the regional gas hub of the eastern Mediterranean. Yet to turn their dreams into reality, they both face serious challenges that they must overcome. Heavy demand in both countries threatens to engulf both domestic and imported supplies of natural gas. Egypt, by many accounts, is about to break free from its dependence upon natural gas imports due to rising production, but the country's heavy reliance upon and its ever-increasing consumption of natural gas could limit its future export capability. As neither country possesses a large natural gas surplus, they both must draw upon the resources of their gas-rich neighbors to become regional gas hubs. In order to achieve their aims, both Turkey and Egypt must bridge past historic apathies and partner with former adversaries. The fate of the eastern Mediterranean natural gas market depends, at least in part, on their relative diplomatic dexterity.

Egypt - Greece Natural Gas Ties: Integration or Competition?

By Mahinaz El Baz

The countries and territories of the Eastern Mediterranean have been a controversial topic in international natural gas markets. A number of regional export options, especially to the European Union (EU), has been raised, including pipelines to Greece and liquefied natural gas (LNG) plants in Egypt. Although Egypt and Greece are sharing the struggle of reforming their economies, both countries are having great potential of being regional hubs, and the relationship between the two countries is more likely to comprise integration rather than competition. Egypt is aiming to export natural gas by 2020, while Greece is willing to establish a very strong natural gas infrastructure.

Natural Gas Market Dynamics: Greece

Greece's natural gas market is managed by the Greek Public Gas Corporation (DEPA), the corporation's 100% subsidiary National Natural Gas System Operator SA (DESFA), and two gas supply companies in which DEPA has a 51% share. It is further managed by three distribution companies, two of which DEPA has a 51% share, while the third is DEPA's 100% subsidiary, according to Rokas Law Firm's article entitled "Recent developments in natural gas sector."

The Greek government is adopting a natural gas security policy that is aiming through DEPA to diversify supply sources, establish market-based demand measures, reduce the liquefied natural gas (LNG) delivery lead times during high demand periods, and sign new contracts for gas supply. Additionally, it looks at developing the natural gas transmission system by updating the existing LNG terminal and establishing new pipeline and an underground gas storage facility, according to OECD&IEA Energy Supply Security 2014.

Greece's domestic production of natural gas is scarce. Although, its natural gas production fluctuated substantially in recent years, it tended to decrease through 1995 - 2014 period. The data from the 1990s is not available; however the production was around 0.95 billion cubic feet (bcf) in 2003 and ended at 0.18bcf in 2014, according to Knoema's latest available data. In addition, International Energy Agency (IEA) estimated Greece's natural gas production for 2015 at around 0.21bcf.

0.21 BCF

Greece's NG production

Greece imports more than 99% of its oil and gas, according to IEA. The country's total natural gas imports reached 109.5bcf in 2016, according to BP statistical review of world energy 2017. "It's not great news: Greece is, to a large extent, dependent on imports. [.....] Questions might be raised on whether it will have problems financing those imports.

75%

Of Egypt's electricity comes from NG plants.

Suppliers might, under these circumstances, ask for guarantees or pre-payments," said Walter Boltz, Vice Chairman of the board of regulators at the EU's Agency for Cooperation of Energy Regulators, according to Sara Stefanini and Kalina Oroschakoff's article entitled "The next Greek crisis: gas shortages."

DEPA has three long-term contracts for natural gas supply. The first contract is with Russia's Gazprom to export up to 98.9bcf/y until 2015-2016, which was extended in 2014 to 2026. The second contract is with Algerian Sonatrach to import around 17.7 bcf/y until 2019. The third contract is with Turkish Botas to import up to 24.7bcf/y until 2021. Together they will supply a total volume of about 141.3 bcf/y, according to OECD&IEA Energy Supply Security 2014.

Russia has been the main source of natural gas since Greece began to import gas in 1996. However, the share of Russian gas in total gas imports has gradually declined from 85% in 2005 to 60% in 2012, due to the increase in imports from Algeria and Turkey, which accounted for around 16% and 15% of the total gas imports in 2012, respectively, according to OECD&IEA Energy Supply Security 2014.

Breaking the continuous gas import decline, Russia's Gazprom provided nearly 70% of Greece's gas in 2014, equivalent to 60bcf, according to BP statistics. Dropping again, Greece obtained 65% of its gas supplies in 2015 from Russia through the Trans-Balkan pipeline which passes through Ukraine and delivers gas first to Romania, Bulgaria, and then splits in two with one branch going to Greece and the other to Turkey.

"On top of difficulties stemming from liquidity issues, if Greece were to leave the euro and adopt a new national currency, that could impact its ability to import and use natural gas, among other commodities," said Anastasios Giamouridis, a senior consultant at the energy consultancy Pöyry. Furthermore, it could be too expensive for end-consumers to pay for US dollar-priced imports in drachmas, according to Stefanini and Oroschakoff.

"This unfavorable framework could therefore result in a collapse of gas demand, as imported energy becomes too expensive to use by the Greek population, and/or in non-payment issues as end-customers find themselves unable to settle their bills towards Greek importers, which could in turn affect the latter's ability to pay their foreign suppliers," Giamouridis added.

Natural Gas Market Dynamics: Egypt

Unlike Greece, Egypt is the second largest producer of natural gas in Africa after Algeria, yet Egypt's power generation infrastructure is dependent on natural gas. More than 75% of the electricity generated in Egypt comes from natural gas plants. Egypt currently produces about 3.9bcf/d of natural gas and imports another 1-1.1bcf/d with an estimated cost of $300 million per month in order to meet the growing needs of the electricity sector, according to Daily News Egypt.

"The main challenge for the O&G sector in Egypt is the macroeconomic environment. As most of the hydrocarbon production is destined to domestic consumption, mainly power and households, the capacity of the Egyptian government and consumers to pay is the key factor," according to feedback from Dr. Pascal Devaux, Senior Economist MENA and Youssef Beshay, Senior Banker , BNP Paribas.

> "The main challenge for the O&G sector in Egypt is the macroeconomic environment."

Egyptian consumption of natural gas has been increasing by approximately 7% per year over the past decade. However, since 2011, production and reserves have been on a consistent downtrend. This was driven by International Oil Companies (IOCs) reducing exploration capital expenditures (capex) following the Petroleum Ministry's delay to settle its dues, which meant that natural depletion of resources was not being offset, according to The American Security Project (APS)'s report about energy in Egypt. As a result, Egypt had to reduce exporting natural gas in 2011 to secure the local consumption. Yet, the domestic production did not fulfill the local consumption and the country had to stop exporting then start importing gas in December 2012, turning into a net natural gas importer as Greece.

> "The reform of energy subsidies is on the right track, but the social impact of higher energy prices is something to be considered as well."

"In the short term, the EGPC arrears [to] IOCs [represent constrains] for further investments. But the current noticeable improvement in external accounts, […] thanks to EGP flotation, will allow the government to repay those debts. In the medium term, the consumer has to pay the right price for energy supply. If not, the gap will have to be met by the government and could imply new arrears. The reform of energy subsidies is on the right track, but the social impact of higher energy prices is something to be considered as well," noted Devaux and Beshay.

Regarding Egypt's natural gas reserves, Zohr field, which was discovered in 2015, holds the largest reserves in the Mediterranean, according to the economist. The field is expected to produce 500 million standard cubic feet per day (mscf/d) before the end of 2017, according to the Egyptian Prime Minister, Sherif Ismail, Al Ahram Newspaper reported. It is worth noting that Egypt has 60 trillion cubic feet (tcf) of natural gas reserves, according to a senior government official. Yet, demand for energy resources is on the rise. Accordingly, if gas reserves are properly utilized, they can satisfactorily supply country's growing need for energy.

Egypt has plans to reach self- sufficiency by the end of 2018, which seems to be an impossible dream for Greece, which is exporting most of its natural gas consumption and does not have enough proven reserves to cover the domestic consumption.

Economic Hardships

Both Greece and Egypt faced economic hardships and had to follow economic reform programs, which affected their hydrocarbon sectors and changed their mid-term plans. Similar to Egypt, the International Monetary Fund (IMF)'s economic assistance to Greece is attached to implementing energy reforms. In Egypt, the main energy reform is gradually removing the energy subsidies, while in Greece it is completing the liberalization of the energy market, both in terms of regulation and ownership, according to the IMF.

In Greece, a number of recent developments and significant reforms in all sectors of the economy have put Greece on a new course and have kept energy at the forefront of the economic recovery. Despite the humble gas production, the Greek hydrocarbon sector is currently witnessing fundamental reforms. The ongoing reforms are tackling many issues through liberalizing the electricity and natural gas markets, increasing competitiveness, extending, and enhancing the domestic and cross-border electricity, natural gas and oil networks. It separates production and supply from transmission networks, consumer choice, increasing share of energy from Renewable Energy Sources, reducing share of fossil-fuel generated electricity, improving energy efficiency, saving energy, and protecting the environment, according to Greece's Ministry of Environment and Energy.

On the other hand, investing in Egypt as a regional hub would create a positive potential and generate a significant source of revenue that could reduce the deficit of the budget and mitigate public debt and underpin governmental expenditure. A revived and reformed energy sector might be what Egypt needs to stabilize the economy and trigger medium term growth, stated Baconi.

Regional Role

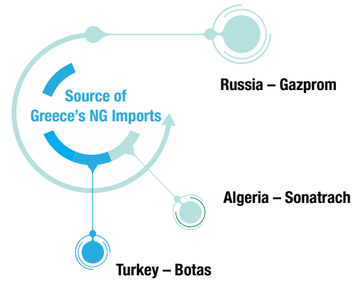
Greece has the potential to become a regional gas hub, due to its location at the EU boarders of the Southern Gas Corridor and has access to LNG and gas supplies from Russia, one of the largest suppliers of natural gas to the EU. It has, therefore, all the characteristics needed for the development of a liquid hub, providing price competition, security of supply, and market integration in the Region, according to European Semester: Country Reports – Greece, 2014.

Amidst the economic uncertainty that Greece has been recently facing, having a real reform that includes establishing new projects is of great significance as it keeps energy in the forefront of economic investment in Greece and turning it into a regional hub. One of these Projects is the agreement signed in 2013 between Greece and an international consortium, the Transadriatic Gas Pipeline (TAP). Through this agreement, a new pipeline will be built, which will cross Greece and then move gas through Albania, and underwater through the Adriatic to Italy, and then to Europe. Construction of this $3.52 billion pipeline will be completed by the end of 2019, transporting 353.1 bcf from Azerbaijan to Italy, according to Institute of Energy for South-East Europe (IENE).

This is not a significant amount of gas given European gas needs, which reached almost 17,657.3bcf in 2014. Nevertheless, the TAP pipeline is supported by the EU as Europe's best alternative gas supply route in its efforts to lessen its customary dependence on Russian gas. Still, TAP, even if it doubles its capacity to 706.3bcf, as latest plans suggest, will still provide insufficient quantities to enable it to play a key part in European gas supply diversification, according to IENE.

While Greece is having the privilege of being part of the EU, which supports its dreams of being a regional hub, simultaneous gas discoveries in offshore Egypt have opened a new opportunity for regional collaboration with the EU and the East Mediterranean Countries, given that discovered volumes seem to exceed domestic market capacities.

Egypt's bid to become a regional energy hub is based on three main prerequisites for success. These pillars are strategic locations on key trade routes, proximity to resource-rich countries with relatively saturated domestic markets, and advanced LNG export infrastructure, according to BNP Paribas. "The availability of two LNG terminals is a key advantage given the cost of building a new one for the other Mediterranean producers. Other secondary advantages encompass a stable regulatory environment, attractive fiscal terms, and the demonstrated capacity to fast-track major projects," stated Devaux and Beshay.



Yet, Egypt's main challenges are internal. The country has increasing domestic gas consumption and slowing production, driven largely by the absence of government investment in further exploration activities or existing ones. The discovery of Zohr injected much needed gas into Egypt's energy balance. Given Egypt's domestic demand, the bulk of Zohr's gas will probably be directed to internal markets, according to Bloomberg.

However, the size of the gas field suggests that, at maximum production, a surplus could be set aside for export, allowing Egypt to resume its role as a regional exporter by 2020, after the current LNG glut has passed, noted Tareq Baconi in his policy brief to the European Council on Foreign Relations (ECFR). There is optimism that, given the wealth of resources in the Eastern Mediterranean region, additional offshore reserves on Egypt's western coastline might be discovered. This could increase Egypt's export capacity all the more, noted Baconi.

Having more than a new Eastern Mediterranean energy hub would present benefits for all players involved, allowing Egypt and Greece to enhance their roles in the region and secure revenue from such a transit economic scheme in both countries. Furthermore, it would present an opportunity for the EU, where imports requirements will grow post 2020 due to declining domestic production and expiration of long-term contracts with Norway and Russia.

> Greece imports **99%** of its NG supply, which amounts to **109.5** BCF.

Experts argue that no supply can compete with the price of the Russian natural gas. However, Egyptian gas could be competitive with American LNG, and provide an option for greater diversification of the EU's energy mix, lessening dependence on Russian supply. It is entirely possible that Egyptian LNG exports could be sent through under-utilized European LNG terminals in Greece and other countries, which will create a win-win game.

Egypt vs. Israel:
Regional Natural Gas Export Game

By Mahinaz El Baz

When speaking of natural gas and the Egyptian-Israeli relations, discussions almost always shift to the previous export history and the Israeli hopes of shifting the gear one day and exporting to Egypt its own production.

In 2005, Egypt and Israel signed a 20-year export agreement. Under the terms of the agreement, Egypt was to export up to 247.2 billion cubic feet (bcf) of natural gas to Israel per year, approximately 40% of Israel's yearly demand, according to The Economist. The country additionally exported natural gas to several other countries, such as Jordan, Syria, and Spain, but Israel remained the most prominent importer of Egyptian natural gas. Growing domestic demand, however, led to a shortage of gas in the Egyptian market. In 2011, rising domestic consumption began to disrupt gas exports to Israel and Jordan. The next year, exports were completely cut off after the pipelines were sabotaged.

At the same time, domestic conditions were changing as well in Israel. In March 2013, natural gas production began from the Israeli Tamar field; furthermore, development began in the Leviathan and Karish/Tanin fields.

Output from the Tamar field alone has met Israel's goal for natural gas self-sufficiency and has permitted the country to consider potential export plans to countries it has well established export-infrastructure to, namely European countries and Egypt.

However, the game changed with the discovery Egypt's Zohr field in 2015. The country's ambition to export natural gas revived. Anticipating rising production, Egypt is targeting exports to the European market by 2020, potentially setting off a gas-export competition between the two counties.

Natural Gas Reserves

Over the past two decades, Israel has gone through a huge transformation, shifting from a gas-importing country to a producer of natural gas. The country is currently focusing on developing the Leviathan gas reservoir, which is expected to begin production in 2020. Production from the field will enable Israel to become a substantial exporter of natural gas. Even by conservative estimates, Leviathan holds enough gas to meet Israel's domestic needs for 40 years, according to The Economist. Israel's gas reserves are estimated at 34.6084 trillion cubic feet (tcf), more than 90 times its expected consumption in 2017 and 70 times the its projected domestic demand in 2020, according to BDO Consulting Group. These reserves will be sufficient for both domestic consumption and exportation.

Israel's gas reserves are significant in relation to the size of the Israeli economy. Experts expect that this ratio of reserves to the size of the economy will give Israel a competitive advantage within the next few years. An analysis of the supply side of the regional energy equation shows that, among the regional countries, Israel has the highest per capita gas reserves. Hence, international rating agencies are upbeat about the effect of gas on Israel's economy. Kristin Lindow, Senior Vice President at Moody's Investor Services, notes, however, that the contribution of natural gas to gross domestic product growth (GDP), "is not substantial anymore."

34.6 TCF
Israel's NG reserves.

"At first when Tamar came on there was an extra boost to GDP and there has not been an additional boost relative to the rate of growth of other sectors of the economy since then. But the construction of Leviathan will certainly contribute to growth and so will the exports," Lindow said, according to CNBC.

At present, Israel ranks fourth in the OECD in per capita oil and gas reserves, according to BDO. The significant quantities of gas discovered in the Tamar and Leviathan fields—and the potential for future gas and oil finds—guarantee that domestic electricity production, industry, transport and other economic sectors will have sufficient gas supplies for many years to come.

Things are slightly different in Egypt as one gas field changed the rules of the game. The discovery of the Zohr gas field has raised prospects for a rapid turnaround in the country's gas reserves and production performance. The Zohr field, which was discovered in 2015, holds the largest reserves in the Mediterranean and is almost twice the size of Israel's Leviathan, according to The Economist. The field is expected to produce 500 million standard cubic feet per day (mscf/d) before the end of 2017, according to the Egyptian Prime Minister, Sherif Ismail, Al Ahram reported. Moreover, Eni believes production from Zohr will reach 2.6 bcf/d of gas by 2019, according to Financial Times.

Egypt has around 60 trillion cubic feet (tcf) of natural gas reserves, a senior governmental official told Egypt Oil & Gas, noting that the state aims at reaching 70 tcf in the near future. It worth noting that both BP statistical report and BNP Paribas put reserves at around 65 TCF. Nevertheless, demand for energy resources is on the rise. If gas reserves are properly utilized, they can satisfactorily supply the country's growing energy needs. Capturing flared gas could meet an additional 5% of the national energy requirement, according to the World Bank. Experts recommend that Egypt avoid full reliance upon its natural gas reserves and begin to diversify its energy mix. "It would be the biggest mistake to rely on this find and to postpone [the adoption of] renewables," stated Mohamed Shoeib, former head of Egyptian Natural Gas Holding Company (EGAS), according to Financial Times. "We have to work on all fronts, to increase [fuel] reserves and to reduce consumption through efficiency. Everything has to march in parallel. There has to be a vision and an action plan," Shoeib added.

Israel's gas reserves are estimated at 34.6084 tcf while Egypt has 60 tcf of natural gas reserves. Furthermore, Egypt has a larger geographical area than Israel, giving it a higher chance to boost its reserves further. However, in terms of reserves per capita, Israel enjoys a much better standing, in addition, Egypt's population is 12 times the population of Israel, increasing the demand and pressure on the existing supply.

Natural Gas Demand Forecast

Thirteen years have passed since Israel began producing natural gas domestically. The country was totally dependent on imported oil and coal for its entire energy supply prior to 2003, according a study by BDO. Between 2004 and 2008, Israel began to use natural gas production from the Mari-B/Yam Tethys (YT) reservoir for the production of electricity.

In spite of its domestic natural gas production, the country was still partially dependent on natural gas imports. Between 2008 and 2012, around 60% of Israel's natural gas was produced domestically while the remaining 40% came from Egypt. This arrangement came to an end in 2012. In April 2012, the Egypt-Israeli natural gas agreement was cancelled due to recurring and frequent damage to the connecting gas pipelines and economic reasons, stated Yaniv Bar in a study on Israel's natural gas sector.

In tandem with rising production, Israel's consumption increased as well. During the past decade, gas demand in Israel increased by an average annual rate of 17.5%. In 2016, consumption reached 342.6 bcf and it is expected to rise to 370.8 bcf by the end of 2017, according to BDO's forecast. Current gas consumption levels, however, do not usually represent potential market demand, according to experts. In recent years, supply constraints in Israel have held back demand growth. These constraints include gas shortages and a lack of transmission and distribution infrastructure. Despite these handicaps, BDO expects local gas demand to increase by an average annual rate of 8% over the next decade, reaching 505 bcf by 2020, 724 bcf by 2025, and 883 bcf in 2030.

The main drivers behind BDO's prediction of a 162.4 bcf increase in Israeli natural gas consumption between 2016 and 2020 are: increased demand for electricity and the closure of four Rabin coal units with a total capacity of 1,440 megawatts (MW). Continuing demand growth will be generated by ongoing structural change in the energy sector, higher electricity demand, reduced utilization of coal, and increased usage of gas for transportation, industrial, and chemical uses.

While Israel's rising consumption of natural gas is driven by structural changes as the country shifts from an energy importer to an energy exporter, Egypt's rising demand is caused by increased power generation from gas-powered plants, growing industrial and chemical sector demand, and the utilization of natural gas to produce LNG for export, according to a study by Gaffney, Cline & Associates (GCA) about the Egyptian gas market.

Egyptian consumption of natural gas has been increasing by approximately 7% annually over the past decade, according to Daily News Egypt. The country's total natural gas consumption is about 6 bcf/d. Out of this 6 bcf/d, roughly 65% is burned in electricity-generation plants, a government official told Ahram Online.

Between 2008 and 2015, Egypt faced a 529.7 bcf shortfall in domestic production; production in 2015 stood at only 4.395 bcf/d. Due to supply shortages, the country experienced routine power blackouts due to Egypt's heavy reliance on gas-fired generation, according to the International Energy Agency (IEA).The Egyptian government responded to this issue by redirecting gas supplies away from energy-intensive industries and towards power production. Since 2014, it has initiated reforms in the oil and gas sector, including reducing fuel subsidies and increasing prices for industrial and residential customers.

The IEA expects Egypt's gas demand to increase by more than 5% per year between 2015 and 2021. CI Capital, on the other hand, expects Egyptian demand to increase by 9.4% per year between 2016 and 2020, according its analysis in "Egypt's Natural Gas Outlook." It predicts that demand will reach 2,860.5 bcf in 2020. GCA also sees Egyptian demand as rising. According to its mid-case scenario, it projects that Egyptian demand for natural gas will reach 7.bcf/d by 2020 and 8.7 bdf/d by 2025.

The government is willing to reduce the country's dependence on gas by developing renewables and turning to coal. The discovery of Zohr, however, has changed the gas industry in Egypt and has the potential to substantially alter the gas supply outlook of the country. Because of Zohr, Egypt could reach self- sufficiency by the end of 2018, according to Egypt's Minister of Petroleum and Mineral Resources, Tarek El Molla. This will likely affect the development of new coal plants. As a result of governmental policies, the IEA expects the power sector to use 60% of Egypt's natural gas consumption by 2021.

Natural Gas Supply and Demand Dynamics

370.8 BCF
Israel's NG consumption.

The Tamar field is currently the only operational gas field in Israel, according to BDO. Hence Tamar is the main source of natural gas for Israel's domestic market. Shortages caused by higher demand during peak-demand periods or infrastructure limitations are currently met by liquefied natural gas (LNG) imports.

With the start of production from the Leviathan and the Karish/Tanin deposits, Israel anticipates a change in its domestic gas supply by 2020. The gas market will enter a new phase with multiple suppliers. The entry of new suppliers will not only lift current limitations, but could also cause increased domestic demand as gas utilization is expanded to new sectors of the economy, according to the BDO study.

Even with increased demand, an analysis of the projected supply and demand for natural gas in the Israeli market in 2025, taking into account existing export agreements, indicates that production should keep pace with higher demand. At present, 90% of the natural gas extracted from the Tamar field is designated for the domestic market with the remaining 10% allocated for export to Jordan's Arab Potash Company (APC) and Egypt, according to BDO. Exports to Jordan began in 2016 and currently stand at approximately 5.3 bcf/y. In the case of an export agreement between Egypt and Israel, production from Tamar could be increased.

While Egypt's production is expected to match, even outstrip, domestic demand, some experts argue that, despite rising production, the supply-demand gap could continue to widen due to Egypt's growing population and its heavy dependence on natural gas to generate electricity. To better analyze the market, GCA has developed short–to-medium-term and long-term scenarios to identify potential gas surpluses and deficits during the next 20 years. Egypt's outlook can broadly be divided into two timeframes. The first stretches from the present to the early 2020s, which represents the short-to-medium term, and the second, or long-term timeframe, encompasses the years following the early 2020s.

In the short-to-medium term, GCA expects that LNG imports will be sought on a fast-track basis to address chronic shortages caused by underdevelopment as a result of perceived political and commercial uncertainty. As uncertainty has decreased, however, upstream investment has risen. In addition, the recent Egyptian production decline will be arrested in the near-term by development of gas resources near existing infrastructure networks, supplemented by new fields, such as West Nile Delta and Zohr. GCA's mid-case supply scenario suggests a peak supply of around 8 bcf/d in 2019/2020 and an ability to maintain production at more than 6.0 bcf/d until 2024.

In the long term, as the chronic supply shortage is alleviated, GCA anticipates, based on its supply-demand analysis, that Egypt will be able to secure substantial, cost-effective domestic and regional gas supplies from Zohr and other developments. If known reserves that have yet to be approved for development are taken into account, Egypt could maintain this production rate until at least 2027 without resorting to gas imports from neighboring countries, according to GCA.

With rising production in both countries, Egypt and Israel are expected to attain self-sufficiency in natural gas market on the long term, according to GCA and BDO forecasts. In the short term, though, Egypt might face a temporary supply-demand gap.

Regional Export Potential

In contrast to the current situation in Egypt, Israel has surplus gas for which the government has given authorization to export. Egypt, on the other hand, does not anticipate the resumption of natural gas exports until 2020, according to El Molla. Israel, while it plans to export most of its excess gas to Europe, has no LNG terminals, according to BDO. Egypt has two. These LNG terminals allow natural gas to be loaded onto tankers and shipped around the world. Both terminals have sat idle for the past five years as Egypt has prioritized domestic needs over exports. These plants, according to The Economist, could quickly ramp up operations again. With the infrastructure in place, Egypt will face few challenges in exporting gas once the country generates sufficient output from its gas fields.

Egypt's plan to resume exports is supported by GCA's short-to-medium-term scenario. Based on the pre-2020 GCA forecast, LNG exports from the Damietta and/or Idku LNG terminals could compete in some European and Middle Eastern markets in the medium term. Furthermore, Egypt's LNG export potential could extend past this period in an upside scenario. In light of the exploration interest that emerged after the discovery of Zohr, it is possible that new, as yet unidentified, relatively low-cost gas developments in the Mediterranean may sustain LNG exports well beyond 2020. By the mid-2020s, energy production from renewable-energy sources could also reduce domestic demand for natural gas, making it available for export via the Idku and Damietta LNG plants.

Longer term, if the upstream sector in Egypt and the wider region is able to capitalize on cost efficiencies and better utilize regional gas infrastructure, LNG exports from Egypt may become more attractive, especially if the efficiency is achieved through positive marginal cash flow measures rather than being based on new capital, according to GCA.

In the regional competition for market share, Egypt possesses larger natural gas reserves. This advantage, however, is offset by its higher domestic demand caused by its growing population. With both countries looking to increase production above domestic requirements, the competition will ultimately be decided by supply dynamics, international trade patterns, and diplomatic/political considerations.

Eastern Mediterranean Gas Infrastructure:

Anti or Pro Egypt's Dreams?

By Mahinaz El Baz

Egypt's contribution to Eastern Mediterranean potential gas supplies is not limited to its own reserves and production. The country is expected to be an important transit route for regional gas supplies through the Arab Gas Pipeline (AGP) and Liquefied Natural Gas (LNG) terminals, reinforcing the strategic importance of Egypt for the stability of the Eastern Mediterranean energy market. Yet, there are many obstacles along the road to success in being a regional gas hub. One of these challenges is the Eastern Mediterranean integrated gas infrastructure agreements that do not include Egypt, such as the Undersea Gas Pipeline commonly known as East Med gas pipeline linking Italy, Israel, Greece, and Cyprus.

Potential Effects of Undersea Gas Pipeline

Three Mediterranean European Union (EU) countries and Israel agreed in April 2017 to move forward with a Mediterranean pipeline project to carry natural gas from Israel to Europe, setting a target date of 2025 for completion, according to Cyprus Mail. The natural gas pipeline project is expected to link gas fields offshore Israel to Cyprus, Greece, and Italy, which might help the EU to diversify supplies away from Russia. "This is going to be the longest and deepest subsea gas pipeline in the world. It is a very ambitious project," the Jerusalem Post quoted Israeli Energy Minister, Yuval Steinitz, as saying.

In an expected move, Cyprus, Greece, and Israel announced in June 2017, they would speed up plans for the development of the pipeline channeling gas to Europe from newly discovered East Mediterranean reserves. "We agreed to expedite our joint actions concerning our agreement on the construction of a large project which will offer new prospects of economic cooperation in the Eastern Mediterranean," Greek Prime Minister Alexis Tsipras said in a press conference in Thessaloniki, Cyprus Mail reported. Some experts argue that such agreements might negatively affect Egypt's potential of being a transit route for regional gas supplies and, accordingly, prevent Egypt from being a regional natural gas hub and exporting gas to the EU.

"Egypt should not be worried about [the East Med gas pipeline]. I think this gas pipeline is a political maneuver," commented Tharwat Hassane, Professor in Petroleum Engineering and Energy and Advisor in the Committee of Energy in the Egyptian Parliament. Hassane further explained that the pipeline will be very costly for Israel. It will cost around $6 billion and will extend up to 2200 kilometer (km) under the sea. Due to high cost, Israel's exported gas will not be competitive in any means with Russia's gas to the EU. "I am sure the EU will not depend only on Israeli or Cypriot gas. They should depend on other sources of gas, such as Egypt especially after the new gas discoveries like Zohr field, which has around the double of Israel's reserves," highlighted Hassane.

Affirming on Hassane's opinion, many experts have suggested that it is "more pipedream than pipeline," according to Tareq Baconi, Visiting Policy Fellow, European Council on Foreign Relations in his policy brief to the European Council on Foreign Relations (ECFR). Baconi explained that there are concerns among experts, stakeholders, and industry actors that the budgeted capital investment for the pipeline is understated and that the level of capital investment means the gas will not be commercially competitive, especially in relation to American LNG and Russian natural gas.

On a technical level, gas infrastructure experts have suggested that difficult terrain around Greece would either prohibit the construction of the pipeline or make its cost much higher than current estimates suggest. In addition, there are suggestions that the proposed route for the pipeline fails to address the same political impasse that has plagued Israeli efforts to export directly to Turkey – namely, Turkish claims to sovereignty over Cypriot maritime space, stated Baconi.

In contrast, a study conducted by EDISON stated that the East Med gas pipeline is commercially viable and technically feasible, as it is offering good perspectives for energy cooperation in the East Mediterranean region. In addition, the study found that by 2030 the EU may need more than 100 billion cubic meter (bcm) of additional net imports, with more than 50 stemming from production and import change.

On a commercial level, industry actors have expressed confidence that gas delivered by pipeline to Europe in this manner would be competitive with American LNG. Furthermore, from a technical perspective, the route of the pipeline is presumed to be viable despite some challenging terrain around Crete and Greece, according to EDISON's study.

The various opinions around the East Med make it uncertain if the pipeline will truly affect Egypt's plans of becoming an energy hub. However, the existing risk should be taken in consideration by the Egyptian government to avoid it from ruining the country's prospects.

Eastern Mediterranean Integrated Gas Infrastructure

Adopting a more cooperative regional approach by pooling infrastructure in Eastern Mediterranean area would create economies of scale effect that would offer Egypt commercial benefits, boost market confidence, and expand the appetite for foreign direct investment (FDI) in the region as a whole, according to Baconi.

Infrastructure developed on the territory of one of the Eastern Mediterranean countries could be used in part to meet the requirements of neighboring countries. In addition, collaborative planning between all parties could reduce environmental impact from the construction and maintenance of infrastructure. It is expected to reduce habitat fragmentation, raise biodiversity, restore functioning ecosystems, and sustain living resources. A coordinated approach might as well involve common rules and procedures for ensuring the safety of infrastructure, preventing marine pollution, and ensuring rapid intervention, noted Miroslav Kukobat, Head of Infrastructure and Energy Unit, Regional Cooperation Council (RCC).

With more developed and integrated infrastructure, more natural gas could be transported to the EU, where it can be marketed effectively. Transport costs constitute a significant part of the final cost of natural gas, unlike oil. Yet, linking natural gas pipelines and establishing new ones is considered as one of the main challenges in reaching a better balance between supply and demand in the Eastern Mediterranean, according to Shaul Zemach in his policy paper about Eastern Mediterranean Gas Infrastructure.

It is worth noting that there are precedents for gas infrastructure projects on a regional or sub-regional scale, although modest and fraught with political and economic difficulties. Egypt was part of some of these agreements, such as the AGP and El-Arish-Ashkelon Pipeline. "The AGP is very important since Egypt used to export gas to Jordan and other countries through it. If activated again and extended, it could be used to transport gas to the EU, which will be a better option for the EU than the East Med Pipeline. [……] I think Egypt's government should work hard on reviving the AGP and ink an agreement with the EU as soon as possible," noted Hassane.

Moreover, Egypt signed a preliminary deal with Cyprus on August 2016 that paves the way for further negotiations on a construction of a submarine pipeline, through which the Mediterranean island would export natural gas from its offshore field Aphrodite to the North African nation, Egypt Oil & Gas reported at the occasion, citing an Oil Ministry's press release. If the project overcomes the considerable hurdles in its path, including uncertain funding, the pipeline could be operational by 2020, enabling Cyprus to finally begin producing from its largest known natural gas deposit.

For Egypt, though, the deal is small part of a much broader strategy. As the promise of Eastern Mediterranean energy draws in significant amounts of foreign investment, Egypt hopes to become a regional gas hub. The plan will no doubt be successful, since without Egypt's infrastructure and massive consumer market, many of the projects under consideration would be neither economical nor feasible, according to Stratfor's analysis about Egypt as the next natural gas hub.

Egypt is considered as an irreplaceable ally for most of the neighborhood countries, especially that analysts stress on the joint export by gas-rich countries as it would enhance prospects in the region, particularly for Cyprus and Israel. The benefits for both countries are clear, as without such a regional approach, Israel and Cyprus are unlikely to be able to export beyond their local markets. Of the recent discoveries, Zohr is the only one that could possibly export gas to the EU markets on its own. Yet, even for Egypt, there are advantages to joint export, stated Baconi.

"It remains unclear what the export potential from the East Med will be. While Egypt certainly has some potential to act as a hub for liquefied natural gas (LNG) export or re-export, this will ultimately depend on the level of domestic consumption and the success of reforms the government is currently pushing through. If successful, there is the chance that Egypt's current LNG infrastructure could be used for export of Egyptian or regional gas. As the market currently stands, I believe that it is less likely for the region to have any form of pipeline export to Europe in the near future. However, more insight will be gained on the state of the East Med. Pipeline through the EU's feasibility study due at the end of this year," said Baconi.

The key to the Eastern Mediterranean's gas future

Egypt holds the keys to the Eastern Mediterranean's gas future. It has the ability to proceed alone by exporting the expected gas surplus from Zohr field via its existing exporting infrastructure, such as the two idle LNG terminals and the AGP, or it might decide to proceed together with Israel and Cyprus, by creating a new Eastern Mediterranean gas hub, according to Simone Tagliapietra and Georg Zachmann's Forbes Opinion.

As for the EU, Egypt's northern LNG terminals are the most probable sources of gas supply in the entire region. Egypt has the largest natural gas reserves and already has its own infrastructure in place to export. In this sense, Egyptian LNG would be cheaper than either Cypriot or Israeli gas, as no large capital investment is needed. Although no supply can compete with the price of Russian pipeline gas, Egyptian gas could be competitive with American LNG, and provide an option for greater diversification of the EU's energy mix, lessening dependence on Russian supply.

Egypt's Minister of Petroleum and Mineral Resources, Tarek El Molla, declared in many occasions Egypt's plans to increase production capacity by 50% by the end of 2018, with aspirations to re-enter the export market by 2019, according to Bloomberg. Furthermore, officials have suggested that the Idku terminal could be running at full capacity by 2021, although these estimates are ambitious. It is more likely that Egypt will resume its role as an exporter by 2021- 2022, when production would have sufficiently expanded and balanced out domestic demand, stated Daily News Egypt.

However, experts argue that the second option of proceeding together with Israel and Cyprus would present benefits for all parties involved, allowing Egypt to enhance its role in the region and secure revenue from being a transit route, and Israel and Cyprus to fully exploit their gas reserves. It would present an opportunity for the EU as well, where imports requirements will grow post 2020 due to declining domestic production and expiration of long-term contracts with Norway and Russia. This option can be implemented by pumping Egyptian LNG exports through under-utilized European LNG terminals in Greece, Spain, Turkey, and elsewhere in Southern Europe, informed Baconi.

Even if Cyprus and Israel decide to fully exploit their gas reserves, the impact of Zohr field could go beyond Egypt's boundaries, due to its location and settled infrastructure, according to Forbes. Zohr is close to Aphrodite and Leviathan fields, allowing the development of the fields to be coordinated and the economies of scale to put in place a competitive regional gas export infrastructure.

From Israel and Cyprus point of view, as potential gas exporters, having a neighbor country like Egypt may appear worrisome at first sight, since it intensifies competition and complicates export plans. However, great integrating powers can always be a game changer. "In this sense, the latest developments in Egypt can be an opportunity, offering perhaps more practical export options if mutually beneficial agreements are negotiated and if common sense is used in a region that is not famous for rational thinking and behavior," according to Carole Nakhle's study for The Lebanese Center for Policy Studies.

Having a new Eastern Mediterranean gas hub will ultimately depend on foreign policy considerations and domestic politics. From a regional perspective, having a major competitor such as Egypt right at their own doorsteps presents challenges to many Eastern Mediterranean countries like Cyprus and Israel. That is why many neighborhood countries took steps towards having their own gas infrastructure, aiming to have a plan B that does not include Egypt.

On the contrary, many experts see that integrating regional gas infrastructure and linking it to Egypt's established ones can lead to opportunities if cooperation is pursued. Integrated planning, policies, and design could strengthen overall gas infrastructure in the Eastern Mediterranean, avoiding duplication and ensuring the efficient use of existing pipelines.

In addition, the EU should support a regional cooperation scheme to develop an Eastern Mediterranean gas hub, for both energy policy and foreign policy considerations. In terms of energy policy, this initiative could provide much-needed substance to the long-lasting EU gas supply diversification strategy. In terms of foreign policy, this initiative could allow international collaboration in an area that currently presents very few opportunities for cooperation.

Meet Egypt's Oil & Gas Technical Committee

With the mission to unify the industry's voice and to work in parallel with the government to enhance the welfare of the petroleum industry, Egypt Oil & Gas Technical Committee brings together exploration and production companies, service companies, government entities, and leading industry experts under one roof, to address the challenges the industry is facing and explore potential solutions as well as promising opportunity.

Eng. Abed Ezz El Regal
CEO - EGPC
Honourable Committee Chairman

Mr. Thomas Maher
President & COO
Apex Energy
Committee Chairman

Eng. Mohamed Fouad
Managing Director
Egypt Oil & Gas
Committee Co-Chairman

Eng. Nabil Salah
Vice Chairman for Production - EGPC

Mr. Moataz Darwish
Deputy Chairman - Shell Egypt

Eng. Sami Amin
Egypt Managing Director - Subsea7

Mr. Mark Konecki
Region Operations Director - Apache

Eng. Sayed Rezk
General Manager - Enap Sipetrol

Mr. Samir Abdel Moaty
Country Manager, Egypt - Rockhopper Exploration

Mr. Craig Robertson
Country Manager & Director - TransGlobe Energy

Mr. Mahmoud Shawkat
Sales & Marketing Director – Egypt, Sudan & South Sudan - Baker Hughes, a GE Company

Eng. Layla El-Hares
Development Manager - Shell

Eng. Hussein F. El Ghazzawy
VP & General Manager– Schlumberger

Mr. Osama Abdel Halim
Egypt & Libya Area Manager– Halliburton

Ms. Mirna Arif
Regional Sales Director O&G Digital Egypt, Turkey & Tunisia - Baker Hughes, a GE Company

Ms.Enaam Khamis
Global Sales Director - Weatherford

Mr. James Pendergrass
Deputy Exploration Manager - Petrosilah

Geol. Mostafa El Bahr
Oil & Gas Consultant

Mr. Ismail El Kholy
Oilfield Services Account Director - Schlumberger

Dr. Ahmed El-Banbi
Professor – American University in Cairo

Mr. Maged Nadim
CCO / Board Member - Maridive Group

Mr. Raed Saba
Deputy GM & Exploration Manager - Apex Energy

Mr. Santo Giannone
Deputy Reservoir General Manager and
Board Member - Petrobel

Dr. Hany Elsharkawi
International Oil & Gas Advisor

Eng. Kamel El Sawi
President – Kuwait Energy Egypt

Mr. Osama Elsaadawi
Marketing Manager - Oil & Gas Skillsl

Mr. Miguel Munoz
Deputy Engineering Manager - QARUN

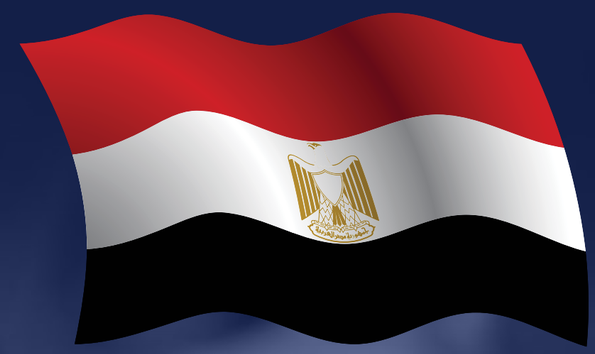
Mr. Ayman Rady
Sales & Marketing Director Egypt Oil & Gas

EGYPT OIL AND GAS
TECHNICAL COMMITTEE

Understand the cause and effect

Egypt's Complete Economic

Profile from 2011-2017



October 2017

Understand the cause and effect

Egypt's Complete Economic Profile from 2011-2017

By: Mahinaz El Baz

Egypt launched a major economic reform program in November 2016 that included floating the exchange rate, fiscal consolidation measures, and reforms to the investment environment. Experts consider the liberalizing of the exchange-rate regime as a milestone towards restoring the competitiveness of the economy and boosting private-sector activity, which had been severely impeded by shortages of foreign currency. Yet, in the short term, the reforms are exacerbating social pressures. Inflation has reached some of the highest recorded rates, according to the World Bank (WB).Despite the side effects of the reforms, the government needed to make serious decisions after the five years of economic fluctuations following the 2011 revolution. The most notable decisions included the floatation of the exchange rate, the reduction of subsidies, the issuance of new taxes, and the increase in interest rates. These decisions were intended to adjust the foreign-exchange market, enhance the investment climate, control the inflation rate, and reduce the balance of payment (BOP) and budget deficits.

Floating Exchange Rate

Egypt had fixed its exchange rate for decades, weakening the economy and creating a parallel exchange market. Since January 2011, Egypt has experienced political, economic, and social instability. The exchange rate of the Egyptian pound (EGP) against the US dollar remained fairly stable despite the turmoil, only depreciating from EGP 5.8/$1 in January 2011 to EGP 6.1/$1 in November 2012, according to the Central Bank of Egypt (CBE). The strain of maintaining the peg, however, led to a sharp decline in Egypt's foreign-exchange reserves, from $36 billion in January 2011 to $15 billion in November 2012, according to Reuters.

Nonetheless, the International Monetary Fund (IMF) reclassified Egypt as having a stabilized exchange rate arrangement in 2012. Trying to stem the massive losses to its foreign-exchange reserves, the CBE announced in December 2012 the adoption of a new system. Under the new system, the CBE auctioned the US dollar, effectively floating the exchange rate. The new currency regime resulted in the depreciation of the EGP against the US dollar, the British pound, and the euro. The EGP depreciated by 13%, an effect that became visible six months after the adoption of the CBE's tightly managed foreign exchange auctions in December 2012, as per the IMF. Between June 2013 and mid-2014, the official exchange rate has remained stable, creating increasing demand for foreign exchange. This stability is attributable to the financial support of the Gulf countries. Gulf aid permitted the CBE to stabilize the official exchange rate, which depreciated by only 2% against the US dollar during this time period.

$3.55 B

Highest LNG import bill recorded in FY 2015/2016.

In 2013, Egypt received $12 billion in external assistance from Kuwait, Saudi Arabia, and the United Arab Emirates (UAE), greatly easing the pressure on the country's balance of payments and exchange rate, according to Atlantic Council's study on the economic decline of Egypt after the 2011 uprising. With the inflow of foreign funds, the stock market rose sharply. The EGX 30 Index increased by 6% on July 4, 2013, the study notes. The real effective exchange rate had appreciated 18% by the end of November 2014 due to high inflation differentials with trading partners and the appreciation of the US dollar against other major currencies.

In an unexpected move, the CBE raised the weekly auctioned amounts by 25% one month later in December 2014, according to the IMF. The total value of the foreign-exchange auctions offered since December 2012 reached $ 15.4 billion by the end of June 2015, according to a paper titled "Exchange Rate Pass-Through to Inflation in Egypt: A Structural VAR Approach" by Helmy, Fayed, and Hussein.

After years of fixing the exchange rate, the CBE devalued the pound by about 14% in March 2016, willing to move to a more flexible regime. Despite the CBE's decision, the EGP continued to depreciate in the black market in the following weeks, falling to an unprecedented EGP 10 to the US dollar, according to the Atlantic Council's study.

Eight months later, the CBE announced on November 3, 2016, its decision to move, with immediate effect, to a liberalized exchange-rate regime. The move allowed market demand and supply dynamics to provide a reliable and sustainable provision of foreign currencies. It improved foreign currency liquidity while pushing economic activity into formal channels. By the end of December 2016, the EGP had depreciated against all foreign currencies. The weighted average of the US dollar in the Egyptian interbank market at the end of December 2016 was EGP 18.2665, as opposed to the EGP 8.7800 at the end of June 2016, according to the CBE.

The decision to float the EGP has significantly changed the country's short-term economic prospects. The pound depreciated by more than 40% and foreign-currency liquidity has been returning to the banking system—thanks to significantly higher interest rates. About $4 billion has returned to the official banking system and more than $1.3 billion entered the country as portfolio investments, according to a BNP Paribas report.

The effective exchange rate is currently about 28% above its average for the past 15 years, and 29% above its average for the past 10 years, Marwa El Sherif writes in "Exchange Rate Volatility and Central Bank Actions in Egypt: Generalized Autoregressive Conditional Heteroscedasticity Analysis," which was published in the International Journal of Economics and Financial Issues.

Investments

One of the main reasons for floating the exchange rate was to eliminate the parallel exchange market and regain foreign investors' confidence. The credibility of the new exchange rate regime and the substantial increase in yields on government securities have attracted more than $10 billion in foreign portfolio investment as of July 2017, compared to virtually zero up until mid-2016, according to BNP Paribas' report. Moreover, foreigners have returned to the Egyptian debt market, buying more than $3.3 billion of treasuries by mid-March 2017, according to the Ministry of Finance. Egypt issued a $4 billion Eurobond at the end of January 2017 that was three times oversubscribed. As an overall result of the economic reforms, investments in fiscal year (FY) 2016/2017 jumped 27.5% from the previous year, according to a report by the Ministry of Finance.

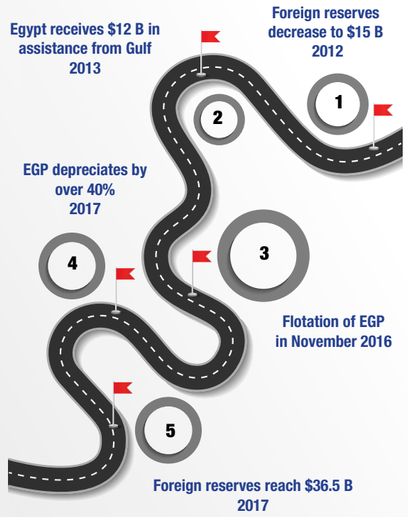
Total investment as a proportion of gross domestic product (GDP) fell from 21.3% in 2010 to 14.5% in 2015 because of political unrest, according to Atlantic Council's study. It worth noting that Egypt's government began working on a new investment law in 2015 before launching the current economic reforms. The new law attempts to resolve problems with the previous investment legislation, passed in 2005, which aimed to cater to businesses in much the same way. The new investment law makes it easier for investors and businesses to obtain free or subsidized land and protects contracts against challenges from third parties, according to the American Chamber of Commerce in Egypt's study on the legislation.

Balance of Payments (BOP)

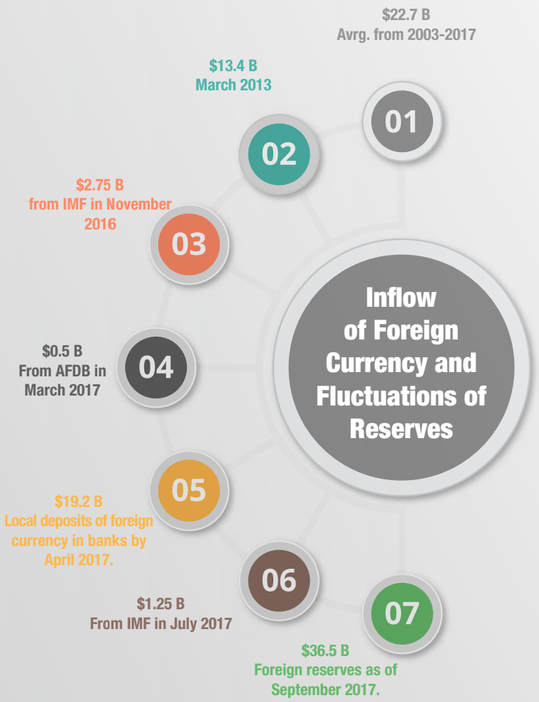
There are three main sources of revenue for Egypt's external accounts: tourism, the Suez Canal, and hydrocarbon exports. These three main revenue sources for Egypt's current account have not changed over the past decade, which makes the external account vulnerable to exogenous factors.

Since 2011, tourism revenues have decreased by more than half. The situation could improve in the short term as some countries lift travel restrictions to Egypt. Greater political risk and the reversal of the oil cycle widened the current account deficit to unsustainable levels, according to CBE. Suez Canal revenue decreased even though capacity recently doubled, according to a recent study by BNP Paribas. This is mainly due to the sharp slowdown in global trade to 1.9% in 2016 from 2.7% in 2015, according to the IMF. Suez Canal revenues are closely linked to the international oil environment.

On the other hand, the drop in oil prices helped improve the current account; in addition, official transfers from the Gulf countries reduced the current account deficit from 5% of GDP in FY2013/2014 to 0.5% in FY 2014/2015, according to CBE. Yet since Egypt is both a hydrocarbon exporter and importer, the gain in terms of the current account balance from the drop in oil prices is modest. It was estimated at about $0.2 billion in FY 2014/2015, which is less than 0.1% of GDP compared to FY 2013/2014.



In the light of static structure of the BOP, the government has taken steps toward diversifying its revenue sources. The economic reforms adopted in 2016 aim to reduce the BOP deficit and create more endogenous sources of revenue. Yet, the reform has had short-term side effects. Faced with higher import costs after the floatation of the exchange rate in November 2016, importers had to choose between maintaining their margins or their market share. One important factor in this decision is the scale of the depreciation. A modest



change is easier to absorb in terms of costs. The depreciation in March 2016, of around 13%, did not result in a significant rise in inflation. After November's floatation—on top of the increase in prices for imported factors of production—most private corporations in the formal sector raised wages by 10-20%, making an increase in selling prices necessary, according to BNP Paribas' report. On the other hand, the positive impact of the reforms is beginning to appear. Egypt's transactions with the external world ran an overall BOP surplus of $ 7.0 billion in the first half of FY 2016/2017, against an overall deficit of $3.4 billion in the same period in FY 2015/2016, according to the CBE.

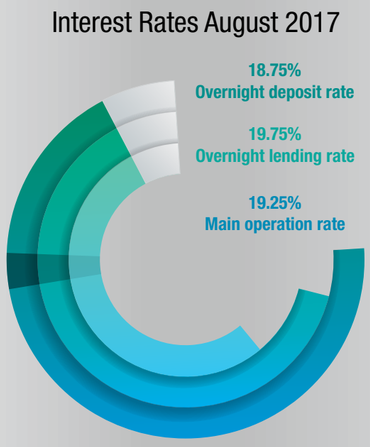
Reserves

Prior to the 2011 revolution, Egypt's international reserves reached $36 billion, but years of political and economic instability caused reserve levels to drop precipitously despite occasional upticks thanks to aid from Gulf allies and multilateral lenders. Government petroleum imports and basic nutritional imports, such as wheat, were the main causes behind the drop in foreign reserves, the CBE noted. Egypt's highest liquefied natural gas (LNG) imports were in FY 2015/2016 and reached around $3.55 billion, an Egyptian General Petroleum Corporation (EGPC) official told Reuters. In addition, political turmoil, decreasing tourism revenues, and low FDI flows—key sources of hard currency—negatively affected international reserves.

International reserves increased slightly to $15.2 billion at end March 2015, the equivalent of 2.4 months of imports of goods and services. This improvement gave the CBE extra room to maneuver. The EGP was gradually depreciated in several moves (i.e decreased by 6% against the US dollar since the end June 2013) and, more recently, the amount offered at hard currency auctions was increased by 25%.

Egypt's government decided to solve the reserves issue by floating the exchange rate. As a result of floating the EGP and sealing a $12 billion deal between the CBE and the IMF in November 2016, reserve levels have been climbing steadily. Egypt has already received two tranches of the IMF loan. The first tranche, of $2.75 billon, was received in November 2016. The second tranche, of $1.25 billion, was received in July 2017 and a $500 million installment of a $1.5 billion loan from the African Development Bank was received in March 2017, according to Reuters. Between November and mid-April, Egyptian banks reportedly pulled in $19.2 billion in foreign-currency deposits, according to Trading Economics. Reserves have increased by 60%, reaching $31.3 billion in June 2017, equivalent to nearly six months worth of goods and services imports, according to BNP Paribas' report.

In general, international reserves in Egypt have averaged $22.74469 billion from 2003 until 2017, reaching an all-time high of $36.5 billion in September 2017 and a record low of $13.448 billion in March 2013.



Budget Deficit

Egypt's fiscal imbalance has worsened since the popular uprising in 2011. This has been due to dramatic increases in both non-discretionary expenses—such as wages and salaries due to workers' strikes and demonstrations, appointment of temporary employees, and the application of minimum wage policies—and in subsidies and social benefits. Annual expenditure on current expenses, including wages, subsidies, and social benefits, doubled between FY 2010/2011 and FY 2015/2016, according to Economic Research Forum's Policy Brief No. 23, May 2017.

12%

Average fiscal deficit between 2011 – 2015.

With spending increasing, Egypt's fiscal accounts deteriorated substantially between 2011 and 2015, leading to an average fiscal deficit of nearly 12% of GDP, according to the Atlantic Council's study. This large fiscal deficit and the consequent rise in government debt, which in 2015 amounted to over 88% of GDP, has been due to dramatic increases in both non-discretionary expenses, such as wages and salaries, and in subsidies and social benefits. In addition, the annual cost of variable expenses such as wages, subsidies, and social benefits, dou¬bled between FY 2010/2011 and FY 2015/2016. The budget deficit for FY 2015/2016 was estimated at 11.5% of GDP, according to Ahram Online.

Wage payments and interest on public debt currently account for 43% and 49% of total fiscal revenues, respectively. Maintaining high interest rates and meeting social demands during a period of high inflation will make it hard to control these two expenditures. Despite the implementation of reforms, the primary fiscal balance should remain slightly negative in the medium term (less than 1% of GDP as of 2017/2018), according to BNP Paribas' report. Considering the current challenges and opportunities, public debt should narrow, but will remain at high levels. Estimated at 94% of GDP in 2015/2016, public debt could be trimmed to 87% in 2017/2018, according to BNP Paribas Bank. At the same time, the bank expects that the share of external debt will double to about 20% of total public debt. It worth noting that Egypt's budget deficit for the first nine months of the FY 2016/2017 dipped to 8% of GDP from 9.4% during the same period last year, a draft budget statement showed, according to Reuters.

Furthermore, reducing fiscal deficits and placing public debt on a clearly declining path is an important objective of the reform program, according to the IMF. To accomplish this goal, the government has pursued several key policy measures: the introduction of a value-added tax (VAT), the reduction of energy subsidies, and the optimization of the public sector wage levels. To mitigate the impact of the reforms on the poor, the authorities intend to use part of the fiscal savings to strengthen the social safety net. The planned fiscal consolidation is projected to reduce public debt by almost 10% of GDP by the end of the program.

A. Energy Subsidies Cut

Along with social benefits, subsidies are the biggest ticket item in the budget, exceeding even wages and interest payments. Energy subsidies increased in the FY 2011/2012 budget to around EGP 95 billion, up more than 40% since the FY 2009/2010 budget, according to the World Bank. Despite the importance of urgently reducing energy subsidies, combined energy subsidies increased again, reaching EGP 150 billion in FY 2013/2014, representing around 8.5% of GDP, according to the World Bank. In FY 2014/2015, the government took a major step in reducing subsidies by increasing fuel prices in the FY2014/2015 budget—although they still remained well below international prices.

In order to continue with the budget deficit reduction plan, the government announced a reduction in energy subsidies one day after floating the EGP in November 2016. A second reduction occurred in July 2017. The reduction in energy subsidies was a major factor of consumer inflation. Fuel prices rose to more than 100% higher than they were in 2014 while increases in electricity prices ranged from 29% to 124% higher, depending on the consumption tier, according to BNP Paribas' report.

Prior to the approval of the budget for the FY 2017.2018, the Egyptian state had earlier cut fuel subsidies in a move that will save around EGP 35 billion compared to FY 2016/2017, according to State Information Service. The government has followed through on its plan for a fourth round of electricity subsidy reform, lowering its expenditures on electricity subsidies to EGP 30 billion, although it has extended the deadline for phasing out electricity subsidies from 2019 to 2021.

B. Tax Reform

The VAT law is part of the government's fiscal-reform program. As part of the program, energy subsidies will be phased out gradually and new taxes will be introduced to reduce the country's ballooning budget deficit. The purpose of the VAT is to improve the efficiency of tax collections and broaden the tax base. In addition, the VAT will reduce the tax burden on

job-creating manufactures and improve Egypt's global competitiveness profile. A 13% VAT was introduced on October 2016, replacing a 10% sales tax. In January 2017, Egypt's government announced that it would increase the VAT to 14% on July 1, 2017. The original plan had called for the 1% increase on October 1, 2017, according to Daily News Egypt. However, the government still faces a large deficit. In addition, the VAT is expected to lead to further price inflation, ranging from 0.5% for low-income Egyptians to 2.3% for the upper classes, stated Amr El Garhy, Egypt's Minister of Finance.

C. Inflation Rates

Inflation rates were highly volatile between 2011 and 2015. In 2011, Egypt experience 11.4% inflation. This rate dropped slightly to 9.04% in March 2012. This inflation, according to IMF data, could have been attributable to the appreciation of the US dollar against the EGP. Moreover, the political and security unrest in Egypt negatively affected commodity supply in local markets. As a result of inefficient policies, the inflation rate increased again in November 2013, reaching 12.94%, which was the highest level since January 2010. This was attributed to government's decision to revise the prices of several regulated items within the Consumer Price Index (CPI) basket, which led to a pickup in the monthly share of most of the CPI sub-groups, especially restaurants and hotels, healthcare, and food and non-alcoholic beverages, according to Helmy, et al.

Public debt is forecasted to decline to 87% in 2017/2018 in comparison to the current 94% recorded in 2015/2016.

Lower prices for some of the commodity groups in the CPI at the beginning of 2014 slightly lowered the inflation rate and it dropped into the single digits again. However, the inflation rate picked up again, reaching 10.13% in December 2014, due to fuel and tobacco price hikes in July 2014. Headline inflation reached 11.3% in June 2015 but afterwards eased to 9.7% in October 2015. In December 2015, the inflation rate increased again, causing the MPC to raise the policy rates by 50 basis points.

The floatation of the Egyptian pound since November 2016 and the introduction of fiscal reforms have significantly increased inflation rates. Annual consumer price inflation has been running at an average of over 30% since January 2017. Furthermore, BNP Paribas' report expects that, in the short term, consumer price inflation is likely to remain elevated. CPI inflation reached 23.7% in FY 2016/2017 and it is expected to be at almost 25% in FY2017/2018. Further subsidy cuts, the persistence of higher import costs, and a possible upturn in domestic demand are all likely to continue driving inflation.

Increasing Interest Rate

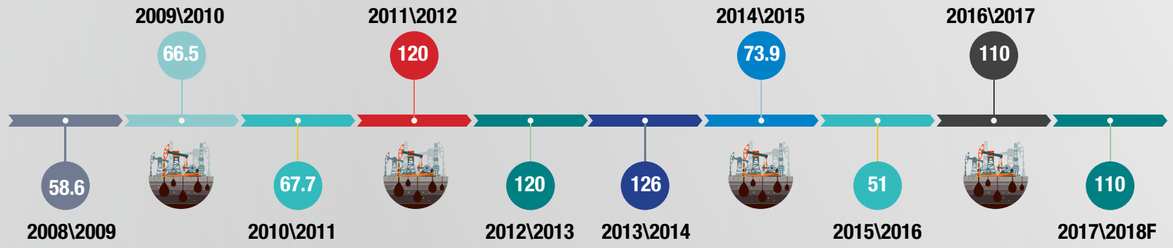
In the light the high inflation rates, the Egyptian government increased interest rates. The CBE raised its main policy interest rates by 300 basis points immediately after the November 2016 flotation decision. In addition, the CBE decided at its August 2017 monetary policy meeting to keep interest rate steady following two rounds of aggressive rate hikes. These hikes, which took place in May and July, were implemented in an attempt to halt the high inflation. The overnight deposit rate was held at 18.75%, the overnight lending rate at 19.75%, and the main operation rate at 19.25%. All decisions were in line with market expectations, according to the CBE. These rates still fall short of previous highs. In October 1991, Egypt's interest rates achieved an all-time high of 21.40%. In contrast, the interest rate was only 8.25% in September 2009, according to Trading Economics Data.

Moving Forward

Economic experts argue that several factors—such as the floatation of the EGP, improvements in foreign-currency liquidity, the accelerated pace of fiscal reforms, and the start-up of production at the Zohr gas field—will have a positive macroeconomic impact. Yet public and external accounts will continue to show deficits in the medium term, and the government will have to deal with growing social pressures during a time of high inflation. Only the return to strong growth through job-rich investments in non-energy sectors will enable the Egyptian economy to pull out of a five-year slump, according to the BNP Paribas report.

Five years of political, economic and social challenges, motivated the Egyptian government to start searching for opportunities and implement a serious economic reform program. While preferring to fix other economic and financial issues gradually, such as reducing subsidies, issuing new taxes, and increasing interest rates, the government dramatically floated the EGP to resolve its currency-flow problems. These economic reforms are meant to improve Egypt's foreign-exchange market, raise the competitiveness of its investment climate, reduce the inflation rate, and control the BOP and budget deficits. While there are more steps to be taken in order to complete the reform program, the government has decided to delay some decisions, such as cutting energy subsidies in FY 2017/2018, to control the high inflation rate and strengthen Egypt's social-security net in order to protect low-income citizens in the short-run.

Value of Subsidies 2008 – 2018



Source: Egypt Oil & Gas

Unit: Billion EGP

Historical Inflation Overview January 2011 – August 2017

Date	General CPI	Core CPI	Price Controlled Goods &Services	Fruits & Vegetables
	(YoY percentage change)			
Aug-17	31.916%	34.860%	22.563%	29.892%
Jul-17	32.952%	35.258%	24.456%	32.450%
Jun-17	29.763%	31.947%	17.727%	34.663%
May-17	29.710%	30.571%	17.727%	41.719%
Apr-17	31.464%	32.062%	20.297%	43.948%
Mar-17	30.912%	32.250%	20.297%	39.031%
Feb-17	30.249%	33.100%	18.943%	31.331%
Jan-17	28.138%	30.859%	19.602%	25.829%
Dec-16	23.269%	25.858%	18.733%	16.274%
Nov-16	19.427%	20.731%	18.624%	13.898%
Oct-16	13.563%	15.716%	12.641%	4.619%
Sep-16	14.088%	13.935%	12.701%	16.777%
Aug-16	15.469%	13.252%	10.594%	36.155%
Jul-16	13.999%	12.308%	5.882%	38.383%
Jun-16	13.969%	12.371%	8.137%	33.648%
May-16	12.300%	12.232%	8.137%	19.010%
Apr-16	10.274%	9.512%	5.912%	21.813%
Mar-16	9.015%	8.415%	1.912%	25.439%
Jan-16	10.098%	7.728%	5.626%	34.519%
Dec-15	11.061%	7.235%	8.269%	42.413%
Nov-15	11.079%	7.444%	8.461%	39.841%
Oct-15	9.701%	6.264%	8.430%	31.768%
Sep-15	9.210%	5.548%	10.713%	29.367%
Aug-15	7.880%	5.607%	12.046%	15.407%
Jul-15	8.377%	6.486%	12.458%	13.861%
Jun-15	11.388%	8.067%	19.170%	21.276%
May-15	13.113%	8.139%	19.170%	38.053%
Apr-15	10.964%	7.189%	20.607%	20.518%
Mar-15	11.506%	7.211%	25.341%	17.942%
Feb-15	10.561%	7.147%	22.752%	13.562%
Jan-15	9.658%	7.062%	22.271%	6.728%
Dec-14	10.128%	7.690%	18.348%	13.196%
Nov-14	9.087%	7.809%	16.082%	6.013%
Oct-14	11.836%	8.474%	19.106%	22.244%
Sep-14	11.119%	9.150%	17.178%	14.302%
Aug-14	11.494%	10.072%	16.509%	12.711%
Jul-14	11.042%	9.568%	16.224%	12.400%
Jun-14	8.200%	8.763%	7.005%	6.390%
May-14	8.242%	8.860%	6.060%	7.776%
Apr-14	8.871%	9.113%	4.712%	14.515%
Mar-14	9.816%	9.903%	5.239%	17.758%
Feb-14	9.765%	9.697%	5.239%	19.010%
Jan-14	11.362%	11.691%	3.400%	24.467%
Dec-13	11.656%	11.912%	6.257%	20.452%
Nov-13	12.972%	11.949%	8.948%	28.347%
Oct-13	10.445%	11.148%	5.212%	14.866%
Sep-13	10.145%	11.155%	8.042%	7.143%
Aug-13	9.745%	8.967%	9.479%	15.546%
Jul-13	10.279%	9.061%	9.183%	21.567%
Jun-13	9.753%	8.560%	8.901%	20.366%
May-13	8.198%	8.036%	9.872%	6.427%
Apr-13	8.112%	7.469%	9.196%	10.795%
Mar-13	7.589%	7.026%	7.570%	11.982%
Feb-13	8.210%	7.677%	8.695%	11.417%
Jan-12	6.274%	5.229%	8.041%	11.037%
Dec-12	4.663%	4.437%	4.953%	5.847%
Nov-12	4.255%	4.200%	4.175%	4.823%
Oct-12	6.701%	4.641%	8.968%	18.203%
Sep-12	6.220%	3.836%	5.862%	24.690%
Aug-12	6.465%	5.336%	3.052%	22.334%
Jul-12	6.392%	6.337%	3.052%	13.718%
Jun-12	7.255%	7.035%	5.007%	13.571%
May-12	8.300%	7.220%	6.751%	19.730%
Apr-12	8.778%	8.364%	8.933%	11.562%
Mar-12	9.027%	8.676%	10.258%	9.368%
Feb-12	9.188%	7.296%	8.764%	27.829%
Jan-12	8.602%	6.865%	8.626%	24.677%
Dec-11	9.550%	7.069%	9.678%	33.545%
Oct-11	7.104%	7.598%	6.364%	4.803%
Sep-11	8.213%	7.948%	8.123%	10.409%
Aug-11	8.486%	6.976%	8.932%	21.159%
Jul-11	10.364%	8.708%	8.932%	29.961%
Jun-11	11.792%	8.937%	12.946%	37.916%
May-11	11.799%	8.814%	11.402%	43.484%
Apr-11	12.077%	8.764%	9.860%	52.004%
Mar-11	11.486%	8.537%	9.630%	47.553%
Feb-11	10.710%	9.506%	9.985%	25.495%
Jan-11	9.068%	7.038%	10.242%	24.218%

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), and CBE calculations.

An Overview of Egypt's Discoveries and Acquisitions - Q3 2017

By Mariana Somensi

Amidst the economic reform ongoing in Egypt, the oil and gas industry has played an incredible role in designing prospects to rebalance the government's budget. In 2017, the hydrocarbon-rich country has obtained important achievements in the petroleum sector, and upstream activities were marked by several oil and gas discoveries and acquisitions. The natural gas market has been on the spotlight, as Egypt saw a year-on-year production increase of 28.6% to 3.37 million tons in July 2017, in addition to the country's expectations of achieving self-sufficiency by late 2018. Crude oil production, on the other hand, decreased to 485 barrels per day (b/d) in June from 486,000b/d in May; however, drilling results and new agreements set during the year also make the future of Egypt's crude oil promising.

Discoveries

West Gharib Concession

Drilling results in Egyptian fields during 2017 reveled new oil and gas discoveries throughout the country. The latest one, announced by SDX Energy in October, consisted of an oil discovery in the West Gharib Concession in the Western Desert. As much as 101.5 feet of net heavy oil pay with an average porosity of 20% were found in the Yusr and Bakr sand formations, located at the company's Rabul 2 well. In July, SDX drilled Rabul 1 and also discovered 14.5 feet of net heavy oil pay with a porosity of 21.2% at Yusr sands.

North Ras Qattara Concession

Besides SDX, IPR Incorporation also announced positive drilling results. The US company's Chairman, Mahmoud Dabous, stated to media that the firm's NRQ-11X and NRQ-9-2 wells were tested at 715b/d and 3,700b/d of oil, respectively, and obtained success. Both wells are located at North Ras Qattara Concession in the Western Desert. The discovery lead to a production increase of 60% to 4,100b/d.

North Damietta Offshore Concession

On natural gas exploration, British Petroleum (BP) found gas in North Damietta Offshore Concession in the East Nile Delta. The company drilled its Qattameya Shallow-1 well, and analysis confirmed the presence of 37 meters of net gas pay in high quality Pliocene sandstones. The well is located 60 kilometers north of Damietta city, and BP has 100% equity in the discovery.

Acquisitions

These announcements bring excitement to a sector that is starting to see the results of discoveries made in the past years. Egypt's plans of natural gas self-sufficiency, for instance, is on the table due to the finding of new gas reserves, whose fields are about to become operational. Although Egypt struggles against a fast-growing oil and gas demand, the new basins have opened prominent doors for investments, leading to more exploration and production activities. The fruitful environment in Egypt's petroleum industry has led many companies to seek shares in the country.

Zohr Gas Field

In October, Russia's Rosneft signed a $1.25 billion agreement with Italy's Eni to acquire a 30% stake at Eni's Zohr gas field, which is considered the biggest gas discovery in the Mediterranean, with around 30 trillion cubic feet (tcf) of gas. After the acquisition, Eni retained a 60% share, while BP hold 10%.

Abu Sennan Concession

After signing a farm-out agreement with Kuwait Energy in 2016, GlobalConnect also succeeded in acquiring shares in Egypt. In the beginning of October 2017, the federal government announced its final approval on GlobalConnect's acquisition of a 25% stake in the Abu Sennan Concession in the Western Desert. The company will carry exploration and exploitation duties as a full partner. Other partners include Kuwait Energy, which is the operator and holds a 25% share, Dover Investment Ltd, with 28%, and Rockhopper Exploration, with 22%.

North Bahariya Concession

Also in the Western Desert, Salah Diab's Cheiron PICO acquired 50% of Sahara North Bahariya Ltd, which owns North Bahariya Concession in the Western Desert. The acquisition costed $83 million. The amount was paid to EFG Capital Partners, and the company obtained approval from the Egyptian General Petroleum Corporation (EGPC). The concession acquired contains six oil fields: Abrar, Fardous, Jana, Rawda, Sedar, and Rayan. Production exceeds 8,000 barrels of crude oil.

West El Burullus Concession

In the Mediterranean waters, PICO Group subsidiary, Cheiron PICO, signed a deal with France's Engie and acquired 100% of the French company's West El Burullus gas concession. The companies obtained approval from EGPC in April. West El Burullus is estimated to have around 200 billion cubic feet (bcf) of gas, and production is planned to reach 100 million cubic feet per day (mcf/d) in 2020.

New Opportunities

The new discoveries, coupled with Egypt's great efforts to attract investments into the country, has promoted a positive outlook to the Egyptian petroleum sector. By being back to the spotlight, the government was enabled to announce bold targets, such as the country's goal of becoming an energy hub in the Middle East and North Africa, the prospects of stopping natural gas imports and covering local demand with domestic supply, as well as the possibility of exporting natural gas. Additionally, the foreign direct investment (FDI) facilitations promoted by the government are expect to speed-up the economic recovery and boost exploration and production activities for new discoveries and new output increases.

Fluctuations of Diesel Consumption:

A Market Shift or Rational Usage?

By Reem Hosam El-dein

The prices of petroleum products have recently changed after the latest government amendment to the energy subsidies in June of this year, increasing fuel prices by at least 50%, according to the ministry of electricity statements. The government's aim by the increase is to reduce the total amount of petroleum products subsidies to EGP 110 billion in fiscal year (FY) 2017/2018, according to an earlier statement by Tarek El Molla, the Minister of Petroleum.

In July, a month after the increase of prices of petroleum products, local consumption of diesel fuel dropped by 0.9%, to reach 1.165 million tons, compared to 1.176 tons in July 2016, according to the data by the Central Agency for Public Mobilization and Statistics (CAPMAS). A further figure from the Ministry of Petroleum, indicates that diesel consumption has fallen by an average of 15%.

This market response can indicate that increase in diesel fuel prices may have reduced citizens' daily consumption of diesel. However, as the vehicle and end user consumption of natural gas is increasing at a high pace, the decrease maybe a natural result to the substitution process between both fuels.

Market Production and Consumption of Diesel

Currently, the daily consumed amounts of diesel by Egyptian citizens are estimated to range from 40 million liters to 45 million liters, Hossam Arafat, Head of the petroleum products division at the Federation of the Egyptian Chambers of Commerce, told Egypt Oil and Gas, adding that the state imports 25%-30% of its diesel needs.

As for diesel production, it increased to 627,000 tons in July 2017 from 556,000 tons in July 2016, by 12.77% year-on-year (Y-o-Y), according to the information published by the Central Agency for Public Mobilization and Statistics (CAPMAS).

The Growing Appeal of Natural Gas

Natural gas, on the other hand, remains a relatively cheaper more eco-friendly fuel alternative for vehicles in Egypt, where the price difference between a cubic meter of natural gas and an 80-octane gasoline is EGP 1.65, while the price difference between a cubic meter of natural gas and 92-octane gasoline is nearly EGP 3, according to market figures.

The new difference of prices between petroleum products fuel and natural gas, which followed the government's recent subsidies amendment, would encourage more citizens to switch their vehicles to become gas-operated, especially taxies, said the First Undersecretary for Gas Affairs at the Ministry of Petroleum, Mohamed Radwan.

The Egyptian International Gas Technology Company (Gastec) witnessed an increase in the number of cars converting from diesel and gasoline to natural gas, where the number jumped from 10 cars per day before the government's decision to increase fuel prices, to 35 per day following the decision, with a 250% increase in demand, the Chairman of Gastec, Hesham Radwan, told Al Mal News. It only requires the customers four hours to convert the car's system from running by fuel to natural gas through adding to the car the necessary parts to start operating using natural gas, Radwan explained.

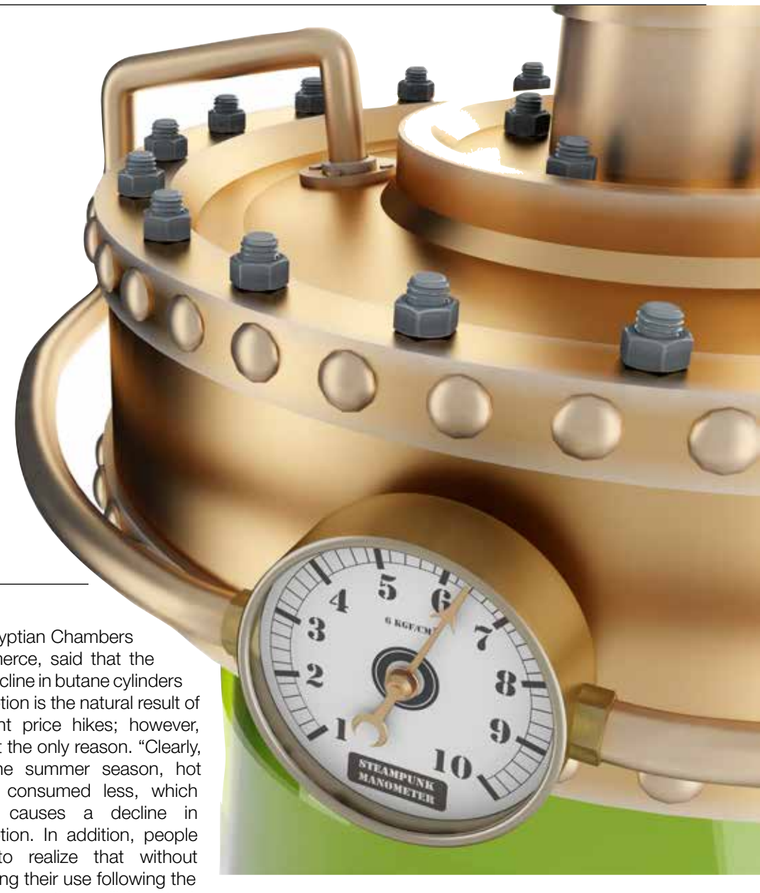
On the other hand, commenting on the attractiveness of natural gas to consumers Arafat told Egypt Oil and Gas that each type of fuel, whether petroleum products or natural gas, comes with a bundle of eventual costs, The conversion of a car's system to one that operates with natural gas comes with a hefty price, for example, ranging from nearly EGP 8,000 to EGP 12,000.

A Market Shift or a Decrease in Consumption

"The decreasing demand on petroleum products is not necessarily linked to the allegedly growing demand rates of natural gas at the present time. Everything comes down to consumers' purchasing power at the end of the day. Egyptians are generally learning to rationalize their consumption of fuels, including petroleum products as well as natural gas," Arafa explained.

The usage of diesel as a product is not limited to vehicles or end consumers, it is also used by small scale manufacturing and for different heating purposes. Rationalizing consumption by a different array of users maybe a key reason behind the change in figures; however, the rising potential of natural gas could also be the main driver of the decline in consumption; another possibility remains the mixture of these two influences, or a series of others. The question will become clearer as further subsidy cuts take place in the coming year.

Were Subsidy Cuts the Main Driver Behind the Fall of Butane Cylinders' Consumption?



By Mohamed Samir and Reem Hossam

Elimination of energy subsidies have been the focus of the Egyptian government since 2014, resulting in gradual, yet significant, increases in prices throughout the local market. As a core staple in Egyptian households, butane or liquefied petroleum gas (LPG) cylinders were often exempt from the different rounds of price escalations; however, encouraged by the reform measures in line with the $12b IMF loan program, in November 2016, the official price of LPG cylinders jumped from EGP 12.5 to EGP 15 per cylinder. In less than a year, and most recently in June 2017, the state further increased energy prices to save EGP 35 billion in its budget. The move increased the prices of LPG cylinders by 100%, to reach EGP 30 per cylinder.

Egypt currently produces 50% of its butane needs, around 355 million units annually; the rest is imported from the Gulf Cooperation Council (GCC) and Algeria, according to the Minister of Petroleum Tarek El Molla in a press statement.

In terms of consumption, LPG cylinders are an essential part of many Egyptian households. An estimated 12 million homes --70% of all Egyptian households-- depend on butane cylinders, while only 5.5 million are connected to the natural gas grid.

Following the price hike by one month, a noticeable decline in daily consumption of LPG cylinders was immediately noticed. Butane consumption decreased by 4.3% in July 2017 to reach 308,100 tons compared to 322,000 tones in July 2016, according to the figures announced by the Central Agency for Mobilization and Statistics (CAPMAS).

By economic standards, the market response is not a standard reaction to the consumption of a crucial inelastic commodity such as LPG cylinders.

Examining the Market Response

Explaining the near-immediate response, Hossam Arafat, Head of the Division of Petroleum Materials Division at the Federation of the Egyptian Chambers of Commerce, said that the recent decline in butane cylinders consumption is the natural result of the recent price hikes; however, this is not the only reason. "Clearly, during the summer season, hot water is consumed less, which naturally causes a decline in consumption. In addition, people started to realize that without rationalizing their use following the price increase, they will be stuck with a bunch of expenses including food and other daily needs, so now they are using butane more optimally," Arafat explained.

Furthermore, butane cylinders are used as well in small brick-manufacturing workshops as a cheaper substitute for heating oil. With the current LPG cylinder prices, their viability as a cheaper substitute for heating oil may have changed, Arafat clarified.

"However, over the coming period, consumption rates will be back to near-normal levels thanks to the elasticity of butane, but not as normal as before the price increase." Arafat forecasts, basing his view on the core nature of the product.

On the other hand, Gamal Kaliouby, an international energy expert and a professor of petroleum engineering, said that people have changed their consumption behavior to adapt to the new prices and that in Upper Egypt people are starting to use other substitutes, such as kerosene stoves or mud stoves, the latter which is a primitive form made of mud or clay and uses different types of fuel, such as wood, charcoal and briquettes.

Ahmed, a resident of the village of Azizia in Giza's Badrashin, told Egypt Oil & Gas that the street price of butane cylinders increased to EGP 50 and that his wife currently relies on an old kerosene stove for cooking. He added that many residents of his village are now using mud stoves, especially for water heating.

Impact on Imports

In terms of butane imports, they decreased to 197,600 tons in May 2017, compared to 222,800 tons a year earlier, recording a with 25,000 ton decline, based on CAPMAS's data.

"The decline in butane consumption is actually a positive factor as it reduces LPG imports," Hussein Fathy, Head of state-owned Butagasco.

Agreeing with this point the former head of the company, Ramadan El-Sayed Ibrahim, told Egypt Oil & Gas that the government still subsidizes around 75% of the real butane cylinder cost and that such hikes would reduce the attractiveness of the product in industrial usages. He added that poultry farms were one of the reasons behind the previously high levels of consumption of subsidized LPG cylinders.

Product Elasticity

As a pivotal product in the Egyptian household, LPG cylinders are inelastic by their economic nature, yet consumption levels responded in a very elastic manner, similar to luxury products.

Citizens' inevitable need for the vital butane cylinders is making them limit their consumption to counter the increased prices, however, to what extent will this mechanism help citizens deal with increased prices as the winter season approaches and butane becomes an even more crucial demand by Egyptian households?

Lessons from Existing Discoveries:

The Geology of the Eastern Mediterranean Basin

By Geologist Mahmoud Rashed

Recently, the Eastern Mediterranean has become an important region for natural gas production. It is the home to large hydrocarbon resources, even though the countries in the region—excluding Egypt—have been slow to find them. If these resources are successfully developed, they could dramatically change the energy situation for the region.

Natural Gas in the Eastern Mediterranean

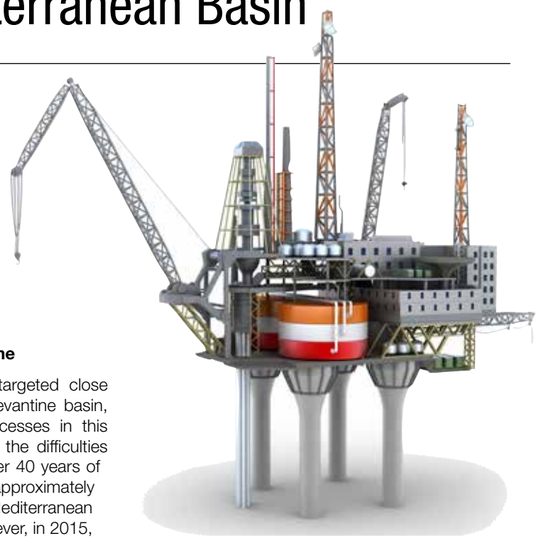
In 1969, Egypt pioneered the development of the natural gas potential in the eastern Mediterranean with its discovery of the offshore Abu Qir field. The commencement of deepwater drilling in 2000 opened new horizons for the development of natural gas fields in the eastern Mediterranean. More than 2,000 billion cubic meters (bcm) of natural gas have been discovered in Egypt's territorial waters in the Mediterranean Sea, according to Mediterranean Observatory for Energy. Despite these discoveries, the eastern Mediterranean remains underexplored and there are good prospects for additional discoveries.

In March 2010, the United States Geological Survey (USGS) released an assessment concerning the potential of undiscovered oil and gas resources in the Levantine Basin. It estimates that the undiscovered technically recoverable oil and natural gas liquids (NGLs) in the basin could comprise approximately 5.3 billion barrels of oil equivalent (boe).

What makes the basin important is the estimated volume of undiscovered natural gas resources—approximately 3,450 bcm in Levantine Basin-Egypt's neighbors. In May 2010, the USGS issued another assessment for the Nile Delta Basin, which corresponds to Egypt's Nile Delta and Mediterranean Sea areas. According to this assessment, the Nile Delta Basin contains an estimated 6,320 bcm in Egypt's territories of undiscovered technically recoverable natural gas and 7.6 Giga barrel (Gb) of oil and NGLs—more than the proven oil and gas reserves in Egypt at that time. Subsequent discoveries of natural gas fields, including several giant fields, have demonstrated that the region does include significant natural gas reserves. This means that, even before Zohr, there were estimates of huge hydrocarbon reserves in East Mediterranean –mainly Levantine and the Nile Delta basins.

Many of the regional gas discoveries are biogenic in origin, despite a thermogenic source under the Nile Delta, as evidenced by minor oil discoveries –especially in the pre-Pliocene period and the gas condensate discoveries. Exploration in the Nile Delta historically targeted silica-clastic plays after ENI's discovery of the Abu Madi field in the Nile Delta in 1967. The Abu Madi discovery was followed by several Baltim discoveries throughout the 1970s and 1980s. This play was exploited, following Miocene channel deposits, and broadly deposited during the Mediterranean drawdown of the Messinian Salinity crisis in shallow waters.

The Italian Egyptian Oil Company, (IEOC), an Egyptian subsidiary of ENI, drilled deeper targets in the 1980s and found over-pressured gas in Middle Miocene sands in the El Temsah field. In the 1990s, explorations in the Nile Delta targeted Pliocene turbidite play fairways in deeper waters (e.g. the discoveries of Ha'py by Amoco and Rosetta by BG) and more recently Early Miocene and Oligocene plays. These explorations have yielded good results, most notably for BP with the discovery of the Raven field. Large discoveries have also been made in the abundant Early Miocene clastics in the Levant. Submerged at more than 1,500 meters, the Early Miocene deepwater turbidites underlying the Tamar and Leviathan gas fields contain reservoirs of more than 30 tcf.



Zohr Discovery Changed the Game

While carbonate plays had been targeted close to shore along the edges of the Levantine basin, there had been no significant successes in this play due to reservoir variability and the difficulties of constraining source and seal. After 40 years of exploration and the discovery of approximately 120 tcf of natural gas, the eastern Mediterranean looked like a clastic play basin. However, in 2015, ENI made another game-changing discovery. After two disappointing wells in Cyprus targeting Miocene silica-clastic deposits, IEOC drilled in a new play 1,500 meters from the Egypt-Cyprus border. At the base of a thick sequence of Messinian evaporites, IEOC had identified an early- to middle-Miocene structure. In this structure, the company drilled the Zohr-1 well. The resultant discovery holds a 628 meter gross gas column, 430 meter net pay, and gas reserves initially estimated at 30 tcf. Recoverable reserves at Zohr account for around 25% of natural gas discoveries in the prolific Levantine basin over the previous 40 years. This discovery has bucked the exploration trend. The natural gas is drawn from Early-Middle Miocene limestone in a carbonate reef and lagoon build-up at the southern margin of a very large carbonate platform.

The discovery of a carbonate build up distal from the Nile Delta suggests that a new model for the paleogeographic evolution of the Levantine Basin may be required. It had been assumed that, with the exception of the brief Messinian salinity crisis, deepwater conditions had prevailed north of the Nile Delta basin during the Neogene period. However, the Zohr carbonate build-up would have required shallow-water conditions during the Early to Middle Miocene period, indicating the presence of a basin north of the Nile Delta. On other side, the stratigraphic development of the Levant Basin is shown in sequences of carbonate and silica-clastic deposits in both deepwater and shallow water environments. These units contain several petroleum systems, including source rocks and reservoir intervals, vertically stacked from the Triassic to the Miocene and the Pliocene periods. Like most Neo-Thetian realms, the Levant Basin displays a Triassic section of the shallow carbonate, siliciclastic, dolomites, and evaporites frequently associated with anoxic environments and black shales. Additional source rocks may be present in the Jurassic layer the deepwater equivalent of the waxy-coal-bearing delta sequences exposed onshore in the Northern Sinai.

The source rocks of biogenic gas are widely dispersed, while oil sources are restricted to pelagic marls and shales, most frequently in the Oligocene period The Messinian salinity crisis sealed the Miocene cycle in a deep basin under approximately 2,000 meters of evaporates. Shallow water areas were deeply incised due to a drop in the sea level. Finally, the Pliocene-Quaternary reached a notable thickness only in the cone of the Nile Delta where the clastic supply is dominated by the Tertiary northward flow of the Nile. The Levantine Basin comprises the easternmost part of the Mediterranean Sea, representing a discrete remnant of the Neo-Tethys Ocean. This ocean formed after the separation of the continental margins of Europe-Asia and Africa-Arabia began during the Permo-Trias period and was completed during the Early Jurassic rifting and the subsequent phase of Cretaceous drifting. While the northern Levant Basin became filled with the coarse clastic basin floor fan sediments supplied by the Nile Delta, the area of the platform to the north received largely carbonate deposition and developed large reefs and lagoon structures. These large reefs were not necessarily located at the platform margin and took up interior positions reflecting intra-platform topographic heterogeneities.

Zohr discovery in Early to Middle Miocene carbonate reefal build-up sits on the southern margin of a large platform area called the Eratosthenes Platform. Some authors refer to part of this platform as seamount; however, there is no evidence there is a volcanic origin for the platform. Some Geoscientists believe that regional scale compression of the northern margin of the African plate and oceanic obduction/buckling in the Troodos Ophiolites (Cyprus) during the Paleogene-Neogene period led to the formation of numerous carbonate build-ups—distributed along the Eratosthenes margin—which form the play-type of the recent Zohr discovery. As the hydrocarbon system for Zohr comprises a biogenic gas source from the enclosing Oligocene and Miocene shales and a top seal from wide-spread and thick Messinian halite, there is a high probability that a repetition of the Zohr-play discovery may occur on a very large scale in Egypt. Consequently, the opportunity exists to discover sufficient gas resources (30-100 tcf) in these geological features to rewrite the play book for the development of the gas industry in the whole eastern Mediterranean region.

Glimpse of Laws

Protecting Investments in Egypt and Cyprus

By Erica Fauser

Since 2009, a series of large natural gas discoveries in the Levant Basin have altered the dynamics of the region, and the Eastern Mediterranean basin became one of the latest areas of interest for the international oil and gas industry. Offshore fields in the area have great potential both in terms of economic activities and progress in the region as well as on an international political level. As such, international oil and gas companies are rapidly moving into this part of the world and the countries in the region are preparing for international petroleum activities by rolling out new laws and regulations, and organizing bidding rounds within their territory. Countries like Cyprus and Egypt have found new gas deposits in the area, which created the potential for Cyprus to export gas and for Egypt to meet more of its domestic gas needs. Following the sector's development, both countries have passed new laws to regulate the market and boost its oil and gas activities.

Egypt

When it comes to oil and gas exploration and production, Egypt is in a different league than its neighbors in the Eastern Mediterranean. Its crude activity spans more than one century and the country enjoys a colorful corporate landscape where large and small international companies and national companies cooperate and continue to make significant discoveries.

The country sits on proved gas reserves of more than 65.2 trillion cubic feet (tcf), according to the BP Statistical Review Report of 2017. These constitute the third-largest reserves in Africa, after Nigeria and Algeria, and 17th globally, just behind Norway (65.6 tcf). Unlike other hydrocarbon-rich Arab countries, Egypt has a settled relationship with international oil companies. Additionally, the country has the most diverse corporate landscape in North Africa. There are reportedly up to 100 international oil companies active in Egypt's oil and gas sector.

In terms of investment protection, Egypt has well established arbitration laws that make the settling of disputes more predictable. In 1994, Egypt enacted a new arbitration act, Law on Arbitration in Civil and Commercial Matters (the "New Law"), bringing its arbitration legislation within international standards. Due, at least in part, to its new arbitration act, Egypt has experienced increased foreign investment. In fact, most foreign investors were waiting for an arbitration act, which enabled them to settle by way of arbitration any disputes as to their investment, which was on hold until its issuance. The New Law tracks the UNCITRAL Model Law. Egypt has also ratified the New York Convention, ICSID (International Convention for the Settlement of Investment Disputes), and the Convention of 1974 on the Settlement of Investment Disputes Between the Arab States and the Nationals of other States.

However, the New Law differs from the Model Law in many areas. Specifically, it applies to arbitrations having venue in Egypt as well as those taking place abroad where the parties have agreed to Egyptian Law, and to both domestic and international arbitrations. The language of the New Law leads to the determination that Egyptian courts, when examining awards for leave to enforce are not bound by the decisions of the courts of the country where the award was made, or under whose law the award was made. Egypt did not adopt Article 36 of Model Law regarding the setting aside of international arbitration awards. Rather, the New Law provides the award can be set aside if it contravenes public order, whereas the Model Law provides for setting aside the award if it contravenes international public order. This is a key distinction because public order in Egypt may mean something entirely different in relation to the international public order. This would seem to give Egyptian courts a great deal of discretion.

Overall, however, the New Law is seen as a positive step for the Egyptian economy and investment in Egypt. Its enactment has helped the Cairo Regional Centre for International Commercial Arbitration become a stronger presence for arbitration in the Middle East, as well as have a positive impact on trade in Egypt.

Cyprus

The discovery of hydrocarbons within Cyprus's exclusive economic zone in December 2011 put the Republic of Cyprus on the world energy map, which was embraced with wide enthusiasm. The findings have since been followed by plentiful developments that seek to transform the initial surprise into a well-founded aspiration of becoming a producer and exporter of hydrocarbons.

The oil and gas exploration area is of 51,000 square km and is located in the south of Cyprus. This area has been separated into 13 exploration blocks. The recently formed state-owned Cyprus Hydrocarbons Company (KRETYK) has been given the mandate to manage Cyprus's hydrocarbon resources and proceeds. The company also represents Cyprus in PSCs and deals with potential investors in relation to the construction of a liquefaction and export facility.

Cyprus is a party to several international conventions, making it more stable and investor friendly. Namely, Cyprus is a party to the International Arbitration in Commercial Matters Law 1987; the New York Convention 1958; the United Nations Convention on the Law of the Sea (UNCLOS); as well as the UNCITRAL Model Law on International Commercial Arbitration of 21 June 1985.

The country has also initiated and concluded several bilateral agreements with neighboring states. This includes the delimitation of the Exclusive Economic Zone of Cyprus with Egypt. Cyprus and Egypt have capitalized on their cooperation with a framework agreement expanding on the development of a cross-median line concerning hydrocarbon resources.

Further, Cyprus has developed an extensive network of double tax agreements with almost 50 countries, ensuring that the same income is not taxed in more than one country. Under these treaties, entities registered in Cyprus will not only enjoy tax exemptions within Cyprus, but will additionally profit from analogous exemptions within other treaty countries, thus making Cyprus very attractive to investors looking to avoid dual taxation.

Safe Ground

As the Eastern Mediterranean oil and gas reserves continue to be explored and developed, investors can rest easy because the laws in place in Egypt and Cyprus were designed to encourage and protect investments. Nevertheless, the freedom to contract enables parties to have more flexibility in determining which law will govern their investment disputes. However, the fact that Egypt and Cyprus already have well established and settled laws make these countries more investor friendly for international oil and gas companies.

In partnership with

DirectFN

OPEC Oil Deal: Between Promises and Frustration

Cairo – Decypha: In an attempt to prop up the oil prices, the Organization of the Petroleum Exporting Countries (OPEC), along with 11 non-members, decided in November 2016 cut oil production as they battle a global glut of crude to push oil above $50 a barrel in 2017.

The dilemma started in 2014 when the prices of oil started to slide. In June 2014, the North Sea Brent crude oil, which is used as a price benchmark, reached $115. However, it fell to half of the amount by the end of the year. In January 2016, the price of Brent crude oil fell below $28 a barrel, according to the BBC.

The prices fell due to the global oversupply and the boost in the United States shale production, which led to the first decision to cut oil production in eight years, Bloomberg reported.

Amrita Sen, Chief Oil Analyst at Energy Aspects Ltd, said that this should be a wakeup call to those who argued the death of OPEC, as the organization wants to push inventories down.

In May, OPEC announced that it would expand its cuts to oil output until March 2018 after they had a meeting with non-members in Vienna. The expansion was announced after the first 6 months of the agreement, which started in January 2017, failed to clear a global supply overhang, according to CNBC. The move was also approved by OPEC and non-OPEC members and equate to about 1.8 million barrel per day (b/d), equivalent to 2% of global oil production, supply cut that will persist until 2018.

While the extension decision was predicted prior to its occurrence, investors had hoped OPEC would agree to longer and deeper cuts, according to Reuters.

After the extension of further nine months, Saudi Minister of Oil, Khalid Al-Falih, said that multiple options were discussed, including six, nine, and twelve months extensions. Higher cuts were also considered; however, there was a consensus that a nine-month extension is an optimum solution. The Saudi minister added that the extension period deems as a "safe bet", because a six-month extension would meet a seasonal build [of supply] in the first quarter of 2018 and could destruct what they have done.

The United Arab Emirates (UAE), however, believes that OPEC may have to extend its oil-cuts deals when the group meets in November this year, the UAE Minister of Energy, Suhail Al-Mazrouei, told Bloomberg. Additionally, Al-Mazrouei noted there must be some control on countries that are not part of the Organization. The cartel's next meeting is set to be held on November 30, 2017, in which the Organization will discuss the expansion of the time horizon.

Joining the UAE's vision, Johannes Benigni, Chairman of the JBC Energy Group, also argued that nine months are not sufficient and will be "insignificant", stressing that demand will not be balanced until, at least, the end of 2017, CNBC reported. "OPEC is implying that they will be doing great in 2018, but you will see that they will have to proceed with their cuts," Benigni told CNBC.

"OPEC members had a chance, but they bottled it. A nine-month extension is not enough to make a significant rise in oil prices as the United States will continue its fill the gap," Neil Wilson of ETX stated to media, according to the Guardian.

In June, OPEC struggled against the rising production from Iraq, Saudi Arabia, and Angola. However, efforts have improved by non-OPEC members, including Russia, Bloomberg reported. Howbeit, the two biggest producers of oil, without whom the deal will fall apart, Saudi Arabia and Russia, have considerably stuck to the deal and made 122% and 94% of their promised reductions in June, according to data from OPEC. Meanwhile, Iraq did not see an improvement as its compliance fell to 28% in comparison to 86% in April.

1.8 M B/D

Total production cut.

As OPEC is relentlessly pursuing a reduced oil output, Libya and Nigeria have boosted their production as both of them are exempted from the decision because of local conflicts. Yet, the Kuwaiti Oil Minister, Issam Al-Marzouq, said that the two African Nations will be invited to the committee meeting in July to discuss the stability of their production, Bloomberg reported.

Meanwhile, the crude oil production of the United States, which is not part of the deal, has risen this year, according to CNBC.

How Oil Prices are Responding?

While the oil-cut deal was initially made to boost the prices, the deal did not deliver the promised and expected result in the first six months. In May, the oil prices fell by 5% as the output curbs failed to impress investors who had been anticipating larger cuts, Reuters reported. "The oil prices are always choppy," Miswin Mahesh, an Oil Analyst at Energy Aspects, told CNBC.

2%

of global production has been cut.

In July, the oil prices rose modestly. However, the increased activity of the United States and the uncertainty that is revolving around the Libyan and Nigerian position is still imposing some vagueness, according to Reuters.

Despite the slight improvement in prices, Brent crude prices still are 17% below their opening level since 2017. Analysts said that the prices were pressured by the raise of the US and OPEC output, as well as exports, even though the strong demand limited the decline in prices.

The stubborn low prices of oil was predicted by Forbes earlier this year. Forbes said that global storage inventories should be substantially reduced before higher prices for oil can be achieved, adding that if all OPEC members adhered to the decision, results can be reflected on prices at least after a year, and it will last even longer if they stumbled and deviated through the process.

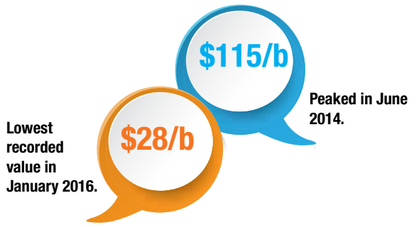
At the time the deal surfaced in November 2016, Andy Brogan, Global Oil and Gas Transaction Leader at EY, told Fortune that the deal will not bring the world again to the time of the $100 oil or even $75 oil. However, it will also not bring it back to the $28 any time soon.

The extension of the deal is more likely to keep the prices balanced. Oil prices are more likely to rise to $57 a barrel should the members adhere to the 2018 extension plan, Sushant Gupta, Research Director at Wood Mackenzie, told Reuters Global Markets Forum.

What to expect from OPEC's deal?

Analysis have differed on whether the oil prices will surge, balance or downfall as a result of the deal. An analysis from Eurosystem indicated that the oil prices are expected to increase by the end of 2017 to between 19% and 25%. However, this rise is surrounded by risks as well. One of the risks is the presence of massive inventories accumulated over two years, in addition to the aforementioned increased production of countries exempted from the decision.

Brent Crude Price Fluctuations



Article contributed by DirectFN™, a subsidiary of National Technology Group (NTG) - one of the largest ICT companies in the Middle East. DirectFN™ is a provider of exchange information to institutions via direct feeds or its DirectFN™ workstation, which includes reference data, charting tools and other content required by both the professional and retail investment community in the Middle East and global investment community.

OPINION COLUMNS

Lifting Energy Subsidies Lead to a Decreasing Consumption

The Subsidies system is based on delivering subsidies to the people eligible for it. Therefore, when subsidies decrease and prices increase, citizens start rationalizing their consumption. When the electricity prices hike, for instance, people reduce their usage of electricity, and the same goes for gas. Accordingly, we expect that the recent fuel price increase will lead to consumption rationalization, and that cars will not be used except when necessary. We cannot evaluate the fluctuations in consumption before six months; yet, the tendency of a drop in demand after increasing prices makes us believe that consumption will decline; which would significantly help the country decrease its imports of petroleum product, save foreign currency, and balance the trade scale, as it will increase the value of the Egyptian pound.

Lifting subsidies is an economic decision, not a commercial one, as the Egyptian economy would be drained if the subsidies were not decreased due to the increasing consumption.

So far, the fuel market did not see any changes in response to the price increase, as Egypt still secures the same fuel amounts in the market. However, the supplied amounts may decrease if the consumption is reduced. The fuel price hike will augment the state's budget; hence, if the consumption decreases, it will ease the burden of securing foreign currency.

In my opinion, the stat should aim at: creating markets, supported by the government, to exist in parallel; securing the product; spreading awareness; and having only one official source of information to avoid any market disturbances.

Lifting subsidies has a positive impact on rationalizing consumption and securing foreign currency, as well as lifting the pressure on the country's budget. It helps in implementing new national projects and securing local natural gas in order to reduce imports, and hopefully to secure local fuel demand and open the path to exports.

Lifting subsidies further helps the government to pay its arrears to international oil companies (IOCs), which encourages exploration and production (E&P) and enables the country to reach self-sufficiency, leading to the possibility of exporting products, increasing income, and securing foreign currency.

By Khaled Mohamed Othman
Executive Vice Chief Officer
for Internal Trade at EGPC

OPINION COLUMNS

Egypt's Oil Refineries and Capacity Upgrade

Egypt is one of the largest oil refining countries in Africa and holds 23% of the continent's total domestically produced crude oil. The country is expected to spend $18 billion over the coming years to build new refineries and modify existing plants in a move to increase its annual fuel output. Most of the facilities are located in Cairo, Alexandria, or Suez, with variable operating capacities.

The majority of Egypt's refined products are sold to local markets. Oil producers in Egypt are required to sell their crude oil to EGPC, and EGPC then sells the crude to its refineries. The country has to import diesel to satisfy local demand, since diesel consumption is two times bigger than the consumption of gasoline, also dependent on foreign products to satisfy the local demand.

Some of the upgrade plans include: The construction of the new Egyptian Refinery Company (ERC) was planned to begin in April 2014, and scheduled to last for three years. ERC is expected to increase Egypt's refinery capacity for the first time since 2001. The plant, 20km north of Cairo, will use around 4.3 million tons of fuel oil annually, of which Cairo Oil Refining Company (CORC) will supply approximately 3.5 million tons. As much as 1.2 million tons of crude oil will be imported and refined by CORC, which is expected to produce half the volume of diesel that Egypt currently imports.

EGPC aims to increase refineries capacity to reach 30 million tons of crude oil in the second half of 2017. When Mostorod refinery, affiliated to the ERC, begins production, it will make the prospective leap in the Egyptian refineries.

ERC's refinery is expected to start production in 2018. The project will meet a huge part of the local market needs of high-quality oil derivatives. When the scheme is finalized, it will fill approximately 50% of the gap in the local market, which is the difference between production rate and consumption of oil derivatives.

With all of the above facts, there is no doubt the upgrades will affect the Egyptian economy with positive impact by reducing imported products. Furthermore, in the next few years, Egypt will be able to satisfy the local demand of petroleum products by taking strong measures to reduce consumption of all energy resources. Meanwhile, the Egyptian government started to reduce subsidies at electricity and petroleum products. The Energy Supreme Council still has to regulate the energy consumption of all sectors and apply energy efficiency rules at transportation, industry, and residential area to save energy and money.

By Ahmed Abd El-Gawad Sultan
Petrophysics Department Manager, Exploration Department, Tharwa Petroleum Company

OPINION COLUMNS

Oil Prices Shocks - Winners & Losers

The oil industry is the biggest business today and has a unique position in the world's economy. Oil prices fluctuations play an important role in driving recessions to some countries, and the downturn in oil prices from a peak of above $100 a barrel to below $50 a barrel, has imposed many challenges to economies based on oil since mil-2014.

Recently, oil prices have shown signs of recovery after touching a low of $26 per barrel in January 2016. While many forecasters are optimistic about the recent price rise and are predicting that the oil glut may be over, some are concerned that there is a lot of uncertainty surrounding the current rebound.

After mid-2016, there is substantial uncertainty around how demand and supply dynamics will evolve in the future. The direct influence of the Organization of Petroleum Exporting Countries (OPEC) on oil prices has changed due to rising competition from US shale oil producers, and the industry has faced lower demand for oil in Europe and China.

Lower oil prices result in a redistribution of resources. Gains will likely be spread across many economies, while losses may be concentrated among a few. The beneficiaries of persistently low oil prices are likely to be the oil-importing nations, because of improved household consumption spending, business investment as production costs fall and profits increase, and external accounts. Low oil prices also provide these nations an opportunity to cut down energy subsidies, which improves fiscal balance overall, but reduces the benefits accrued to households and businesses.

On the other hand, oil-exporting nations will likely be adversely impacted as real income goes down and profit margins for oil producers get stressed. Energy companies' weak financial positions may deteriorate the balance sheets of the financial institutions that lend to these companies and thus may threaten the financial stability of these economies. At the same time, the governments will likely take in less revenue, and their budgets and external balances are expected to come under pressure.

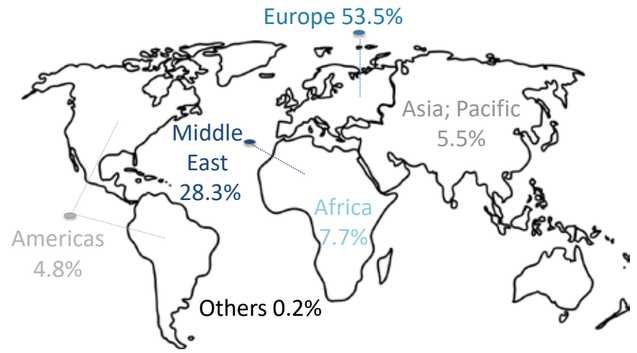
Accordingly, wide oil prices fluctuations forced the oil exporting countries to rethink revenue generation strategies and adopt abstinent measures to curtail public expenditure and carry on fiscal reforms. However, the pace of reform is slow, primarily due to strong resistance from the existing system and its users. Yet, there is no doubt that now is the right time to take reform measures to the next level in order to create balanced and competitive economies.

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

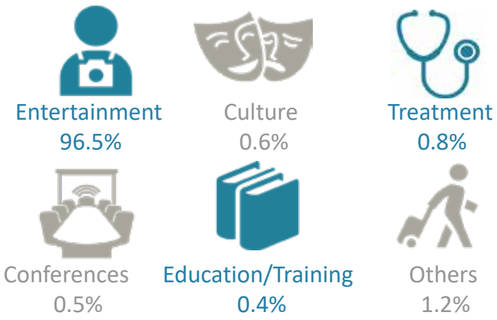
Economic Snapshot: Egypt's Tourism Sector

Dcode Economic & Financial Consulting

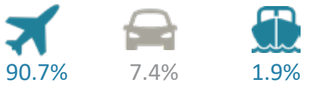
Tourists' Profile



Purpose of Visiting



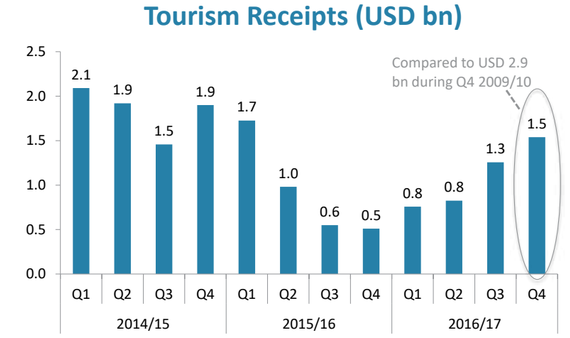
Travelling Methods



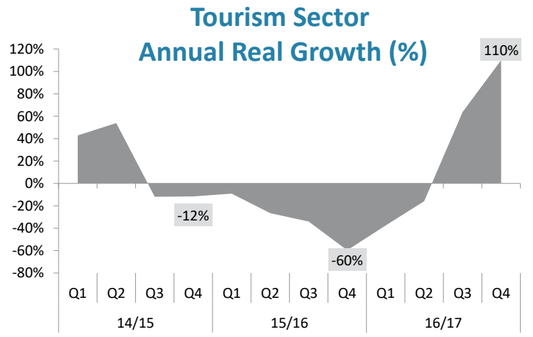
Source: CAPMAS and Dcode EFC Calculations
, (Percentages as of July 2017)

Revenue & Growth

Tourism Receipts (USD bn)



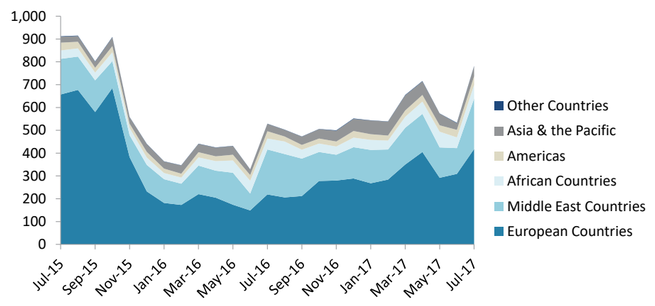
Tourism Sector Annual Real Growth (%)



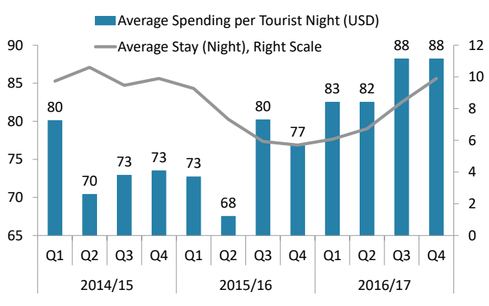
Sources: Central Bank of Egypt and Ministry of Planning

Tourist Arrivals , Duration of Stay, and Spending

Tourist Arrivals (Thousands)



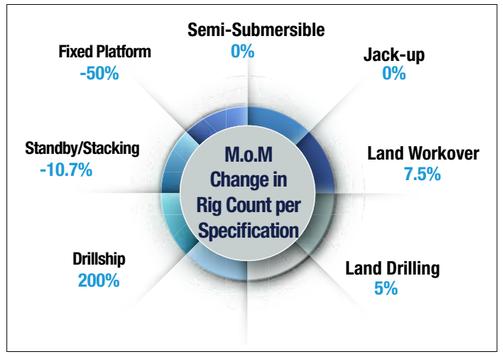
Tourist Nights



Sources: Central Bank of Egypt and Dcode EFC Calculations

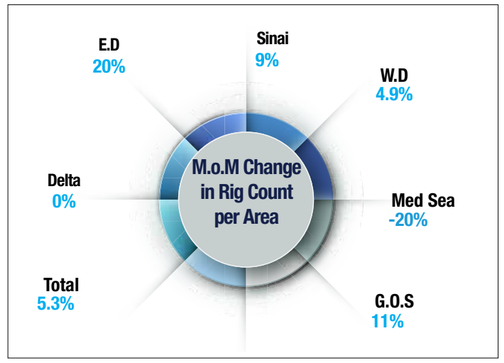
Rigs per Specification

Date	Land-Drilling	Land Workover	Jack-Up	Semi Submersible	Fixed Platform	Standby/ Stacking	Drillship	Total
1\2017	34	30	10	1	0	71	2	148
2\2017	35	30	10	1	0	70	2	148
3\2017	39	35	10	1	0	62	2	149
4\2017	41	36	11	1	0	58	2	149
5\2017	44	37	11	1	1	53	2	149
6\2017	45	40	11	1	1	49	2	149
7/2017	45	37	11	1	1	52	2	149
8/2017	42	37	11	1	1	55	2	149
9/2017	39	40	10	1	2	56	0	149
10/2017	41	43	10	1	1	50	2	148

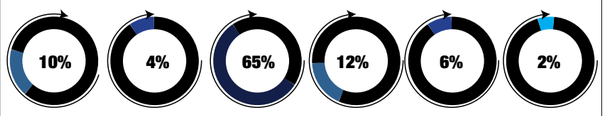


Rigs per Area

Month	G.O.S.	Med. Sea	W.D.	Sinai	E.D.	Delta	Total
Jan-17	8	5	45	12	5	2	77
Feb-17	8	5	47	11	5	2	78
Mar-17	8	5	53	11	6	4	87
Apr-17	8	6	55	11	6	5	91
May-17	9	6	58	12	6	5	96
Jun-17	9	6	61	13	6	5	100
Jul-17	9	6	59	14	6	3	97
Aug-17	9	5	59	13	5	3	94
Sep-17	9	5	61	11	5	2	93
Oct-17	10	4	64	12	6	2	98



Distribution of Rigs October 2017



PRODUCTION SEPTEMBER 2017

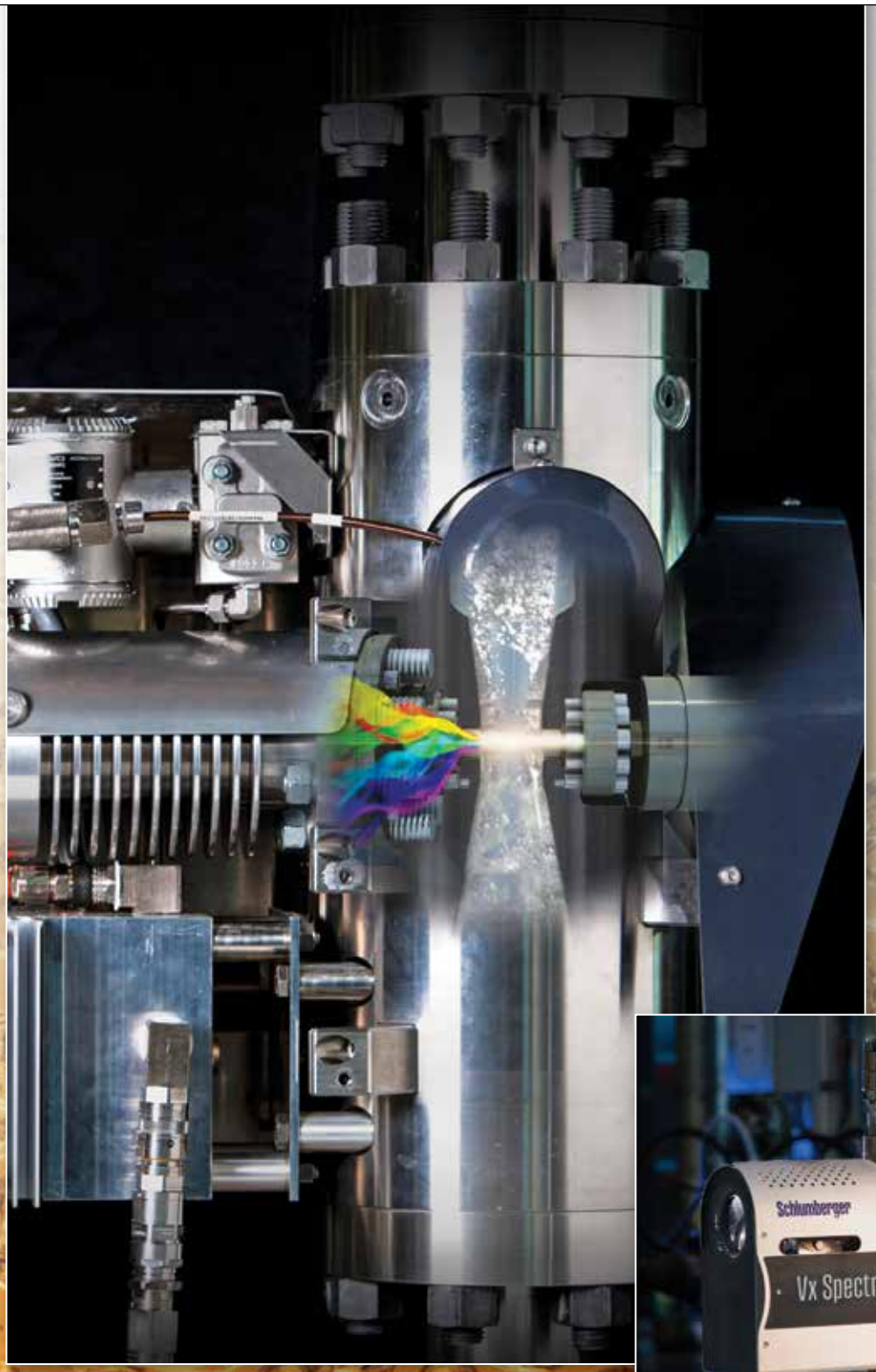
	Crude Oil	Equivalent Gas	Liquified Gas	Condensate
Med. Sea		13,451,436	193,256	609,295
E.D.	1,742,659	15,192	4,050	1,001
W.D.	9,216,732	7,748,503	619,021	1,434,526
GOS	3,952,359	715,564	262,586	78,111
Delta	38,259	7,629,951	140,362	405,168
Sinai	1,653,859	10,001	35,756	18,296
Total	16,603,868	29,570,647	1,255,031	2,546,397

Unit: Barrel

*Equivalent gas figures are for August 2017.

DRILLING UPDATES

Region	Company	Well	Well Type	Rig	Depth	Well Investments
Western Desert	Khalda	MENES-3	Development	EDC-61	12100	$1.4 M
	Khalda	QASR-58	Development	EDC-1	14000	$3.545 M
	Khalda	QASR-SE-1X	Exploration	EDC-67	9300	600,000
	BAPETCO	EL MAGD H	Development	EDC-72	10531	750,000
	Apache	WKAL-Y-2X	Exploration	EDC-54	16100	$2.951 M
	Agiba	NADA-3	Development	ST-8	11120	$1.801 M
	Agiba	AMAN-62	Development	ST-7	7800	465,703
	Norpetco	ABRAR S-9	Development	ECDC-2	6820	$1.2 M
	Petrosilah	N.SILAH 3-1	Development	ECDC-1	7777	$1.122 M
	Qarun	WON C212	Development	EDC-63	6950	$1.11 M
	Qarun	E.BAH LN-2	Development	EDC-65	9200	$1.395 M



Vx Spectra

SURFACE MULTIPHASE FLOWMETER

Full-spectrum, single-point measurement for the most accurate production flow rates.

Only the Vx Spectra flowmeter captures the complete spectrum of gamma energy levels at high frequency from a single point in the venturi throat, ensuring accurate, repeatable flow rate measurements independent of the flow regime.

Specifically designed for surface production facilities and eliminating separation requirements, the Vx Spectra flowmeter is now available in five venturi sizes for measuring any flow regime and all fluid types in producing wells worldwide.

Find out more at
slb.com/VxSpectra

Schlumberger