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UNDER THE HIGH PATRONAGE OF **HE. ENG. TAREK EL MOLLA**
MINISTER OF PETROLEUM & MINERAL RESOURCES - ARAB REPUBLIC OF EGYPT

PART OF THE EGYPTIAN OIL AND GAS SECTOR MODERNIZATION PROGRAM

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

TECHNICAL WORKSHOP **SESSIONS**

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- Maximize safety-sustainability and productivity by turning unplanned downtime into planned downtime.
- Greenhouse gas emissions & Environmental Compliance.
- Radioactive Waste Management.
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- AI & Machine Learning for Predictive Maintenance.
- Automate Data Collection.
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- Key Economic Parameters.
  - Net Present Value "NPV"
  - Discounted profit to investment ratio
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- Talk to your reservoir, Oil in place & Recovery factors.
- Production optimization for maximized recovery.
- New technology adaption.
- Novel approaches and case studies for cost optimization.

ABSTRACT **CONTENT:**

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

ABSTRACT **CONDITIONS:**

- Must be technically factual and includes lessons learned
- Should avoid commercialisation
- Must be written in English
- Should be submitted in electronic format and be a maximum of **500** words

ABSTRACTS **DEADLINES:**

AUGUST **15, 2020** – ABSTRACT SUBMISSION
AUGUST **30, 2020** – NOTIFICATION OF ACCEPTANCE
OCTOBER **15, 2020** – PRESENTATION SUBMISSION

Please send your Abstracts to:
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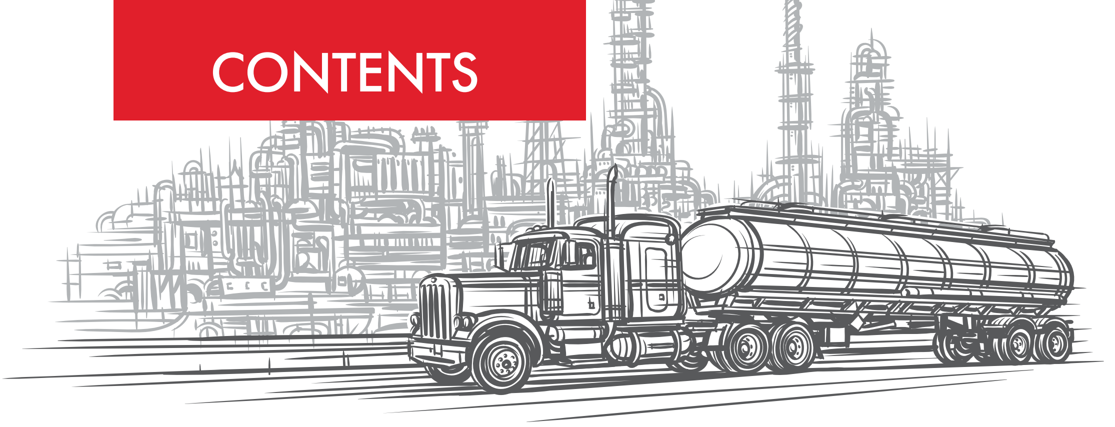

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EDITOR'S LETTER

Be Ready for the New Normal!

Life in Egypt is back to normal with most of restrictions lifted. Although the coronavirus is not over yet, most of the world governments opted for returning to normal life, while working to ensure the safety of their citizens with precautions in place.

However, the unprecedented social distancing measures seemed to have changed life beyond recognition and thus the world has to cope with a new normal.

The new normal for oil companies is more complicated as the industry has to cope with slumping demand, unstable market and be sure at the same time to ensure a safe work environment for its employees.

In this issue, we tried to explore the features of the new normal in the oil and gas sector to offer our readers different topics related to how the industry was coping with the ongoing coronavirus effects and the unstable oil market.

Our industry insights section focused on the effects of COVID-19 on the industry's dynamics and the companies' efforts to adapt. Our writers cast light over the difficulties facing mergers and joint ventures in time of social distancing and uncertainties. We also depict the job market in the sector in light of the coronavirus challenges and how Health, Safety, and Environment (HSE) became a cornerstone in facing the virus.

As the confrontation with coronavirus is getting hotter, two of the world superpowers began to beat the drums for what may develop into a new cold war. In the political section, we try to shed light over the prospects of the new trade war between the US and China.

In the research and analysis section, we provide our readers with an analytical report about Egypt's petroleum transportation path.

We wish you an informative read on how to embrace the new normal while staying safe.

IHAB SHAARAWY MANAGING EDITOR

PROUDLY THE OFFICIAL PUBLICATION

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EGYPT OIL&GAS NEWSPAPER

EGYPT'S LEADING OIL AND GAS MONTHLY PUBLICATION

PUBLISHER MOHAMED FOUAD

This publication was founded by
MOHAMED FOUAD AND **OMAR DONIA.**

EXPLORATION & PRODUCTION

NEW PETROLEUM DISCOVERY IN ABU SENNAN

Borg Al Arab Petroleum Company achieved a new petroleum discovery in Abu Sennan concession after drilling Al Salemia Well-5 at the Western Desert.

The new discovery has been put on the production plan at a rate of 4,100 barrels per day (bbl/d) of crude oil and 18 million cubic feet of natural gas per day (mmcf/d). It is worth noting that Borg El Arab Petroleum Company announced in December 2019 a new petroleum discovery in the ASH-2 area of Abu Sennan concession.

EL MOLLA INITIALS CONTRACTS WITH WINNERS OF RED SEA BID ROUND

Minister of Petroleum and Mineral Resources Tarek El Molla announced the initial signing with the winning companies of the Red Sea bid round. Currently, legislative measures are being taken to submit a proposal to the Cabinet.

The minister affirmed the continuation of exploration and production (E&P) activities in concessions located in Upper Egypt despite the coronavirus (COVID-19) outbreak, stressing that the ministry remains involved in the development of Upper Egypt by implementing E&P investments.

Chairman of Ganoub El Wadi Petroleum Holding Company (Ganope) Mohamed Abdel Azim detailed the company's E&P activities in Upper Egypt during the current fiscal year (FY) and until the end of March. Ganope signed 13 E&P agreements, and is assisting in the production phase of 10 petroleum agreements with the Egyptian General Petroleum Corporation (EGPC).

Additionally, Ganope increased its production rates where the total production exceeded 7 million barrels (mmbbl) and recorded daily production rates amounting to 23,000 bbl/d.

EGYPT DRILLS 10 NATURAL GAS EXPLORATION WELLS WORTH $314 MM IN FY 2019/20

A report received by the Minister of Petroleum and Mineral Resources Tarek El Molla indicated that Egypt has drilled 10 exploration wells of natural gas during the current fiscal year (FY) of 2019/20 with total investments of $314 million.

According to the report, ten wells have already been drilled, while one well is in progress. The report indicates that Egypt signed five agreements for natural gas exploration in addition to another two agreements which are yet to be signed. These agreements are valued at $975 million and a signature bonus worth $46 million. Another seven agreements have been initially signed with investments of $690 million and a signature bonus of $19 million.

Additionally, Egypt's production average of natural gas reached 7.2 billion cubic feet per day (bcf/d). Six natural gas projects have been implemented in addition to four others which are underway with a total of 28 wells in production as well as 13 development wells.

KHALDA PETROLEUM PUTS NU-10 WELL TO PRODUCTION

Khalda Petroleum Company has streamlined NU-10 well with an average oil production rate of 1,350 barrels per day (bbl/d). The well, located near Om Baraka in Western Desert, has an investment value of $3 million. Additionally, it was confirmed that the well is producing from Alam el-Buieb formation.

AGREEMENTS

WEPCO SIGNS A $5 MM DEAL WITH ENPPI

Western Desert Operating Petroleum Company (WEPCO) has contracted a $5 million deal with the Engineering for the Petroleum and Process Industries (Enppi) to engineer the Distributed Control System (DCS) of crude oil project at Al Hamra Petroleum Port in El Alamein.

The project aims to control all Al Hamra Port's facilities and to develop crude oil trading operations with the latest control and safety systems. This includes warehouse radar measurement systems, emergency stopping systems, and integrated management systems for trading ports. The project is expected to be completed and begin operational experiments in 2021.

The project aligns with the Egyptian General Petroleum Corporation's (EGPC) strategies to adopt the latest control and safety technologies. Additionally, trading at Al Hamra Petroleum Port deals with about 50% of the production of crude oil in Egypt which aligns with the Ministry of Petroleum and Mineral Resources plans to make Egypt a regional energy hub.

SUEZ CANAL BANK SELLS MIDOR STAKES TO EGPC FOR $30.6 MM

The Suez Canal Bank has sold its 1.27% stake in the Middle East Oil Refinery (Midor) for $30.6 million to the Egyptian General Petroleum Corporation (EGPC).

The bank added that the capital gains from this sale will amount to $5.7 million without the tax impact and implementation expenses.

The bank's Board of Directors previously agreed to sell its share of 560,000 stocks at $54.70 per stock to EGPC, which is the main shareholder of the company. The deal was finalized after obtaining the necessary approvals from the Financial Regulatory Authority (FRA) and the Egyptian Stock Exchange (EGX).

PORT SAID TO BUILD A FULLY-INTEGRATED FUEL STATION

Port Said plans to build a fully-integrated fuel station in collaboration with the Egyptian International Gas Technology (Gastec) and Misr Petroleum Company.

Adel El Ghadban, Governor of Port Said, ensured that an integrated fuel station will be established in front of the governorate's land port. The fuel station will utilize both natural gas and liquid fuel, in addition to making electric car charging available.

The new fully-integrated fuel station will be the second of its kind in Port Said. The first one was established by the Italian giant, Eni, as part of their corporate social responsibility (CSR). El Ghadban added that a plan to increase efficiency in other fuel stations and convert them into integrated stations will be developed in cooperation with Gastec and Misr Petroleum.

INVESTMENTS

EMGF SUBCOMMITTEE ASSESSES COVID-19 IMPACT ON OIL, GAS INDUSTRY

The East Mediterranean Gas Forum's (EMGF) Gas Industry Advisory Committee held its third meeting to prioritize the assessment of the COVID-19 impact on the regional oil and gas industry, in accordance with the subcommittee's plans.The Gas Industry Advisory Committee (GIAC) presented the subcommittees' collective work plan and the timetable for the committee's comprehensive plan for 2020-2021. Throughout the COVID-19 crisis, EMGF has continued its activities effectively despite the current conditions and their economic repercussions on the oil and gas industry. This has only strengthened the need for cooperation and coordination between all parties to face these new challenges, which align with EMGF goals.

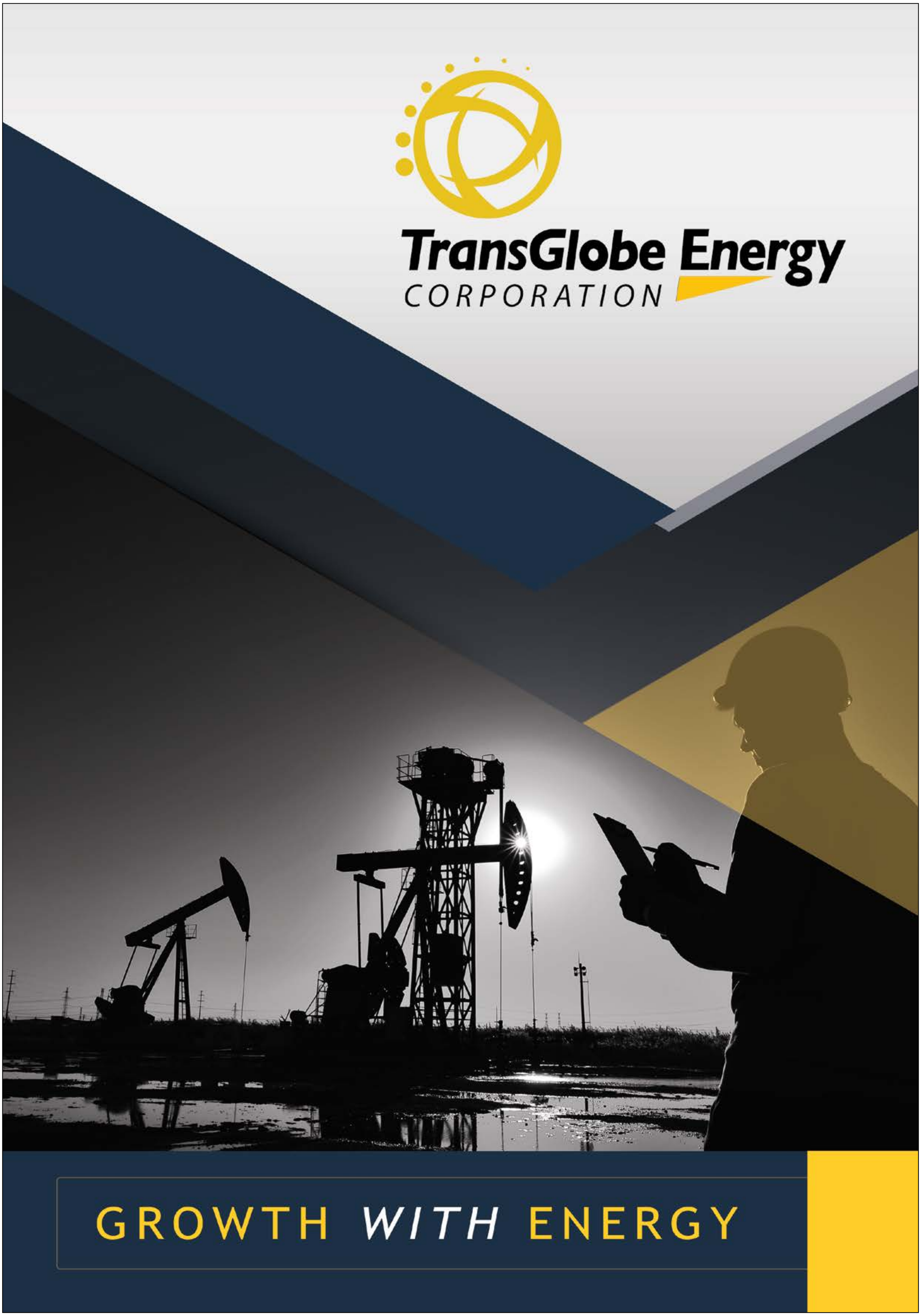
Such goals include creating a dialogue and formulating a common vision and make the best use of the region's potentials from gas reserves, as well as paving the way for a sustainable regional natural gas market.

The EMGF has continued to establish technical, economic, and organizational subcommittees, under the umbrella of GIAC.

CABINET APPROVES LICENSING OF NATURAL GAS-BASED INDUSTRIES

The Cabinet approved the General Authority for Investment and Free Zones' (GAFI) proposal to allow licensing of projects of natural gas-based industries to work according to Free Zones regulations.

The amendment comes under Article No. 34 of the Investment Law No. 72 of 2017, and will allow the fertilizers and petrochemicals industries to utilize the free zones system. This decision was made in order to encourage investments, operations, and exports, especially after recent discoveries led to a surplus of natural gas. he amendment does not include industries such as iron and steel, alcohol, arms, ammunition, explosives, and other industries related to national security.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SCHLUMBERGER SIGNS AGREEMENTS TO TRAIN STUDENTS OF FOUR UNIVERSITIES

The Minister of Petroleum and Mineral Resources, Tarek El Molla, has witnessed the signing of agreements between Schlumberger and four Egyptian universities including Ain Shams University, the American University in Cairo (AUC), the German University in Cairo (GUC), and the British University in Egypt (BUE) for training their science, technology, engineering, and mathematics (STEM) students.

According to Karim Badawy, Managing Director – Egypt and East Mediterranean at Schlumberger, the company has allocated $30 million to finance software grants for the agreements, noting that the training program is composed of several practical and training aspects to help students to get acquainted with work environment and gain practical skills.

Badawi elaborated that according to the agreements, Schlumberger is introducing a training program that supports the academic experiments of STEM students and helps them develop their academic and practical skills.

For his part, El Molla said that the ministry supports such agreements between the Egyptian universities and international oil companies (IOCs), asserting the importance of this agreement in minimizing the gap between academic and practical aspects and recognizing the job market needs.

EDISON COMPLETES AMEEQ-1 WELL IN NORTH THEKKA

Edison Exploration and Production (E&P) has successfully completed Ameeq-1 exploration well in the Eastern Mediterranean waters of Egypt.

The well, located in the North Thekka Concession, was drilled by Maersk Discoverer semi-sub in a water depth of 985 meters and reached the final total depth of 5670.5 meters in the Oligocene (Chattian). The well which Edison E&P has 100% of its operating rights has been released on April 14 and has been put to work for three months.

To evaluate the reservoir quality, the hydrocarbon presence, and possible resources in Tortonian and Chattian, a collection of extensive data was acquired. This included logging-while-drilling, wireline logs, formation pressures, fluid samples, and sidewall core.

The initial drilling results show an encouraging future exploration of the Eastern Nile Delta.

IDKU, SVITZER EXTEND CONTRACT FOR 5 YEARS

Svitzer, a leading provider of marine services, extended its ongoing contract with the Egyptian liquefied natural gas (LNG) Idku plant for five years.

Svitzer will provide Idku's plant with four tugs, two mooring boats, and one pilot boat. The statement denoted the company's interest in providing the local workforce where it operates with training and professional development.

This is not the first contract between Egypt and Svitzer, as in 2019 the company acquired a 10-year contract with Suez Canal Authority (SCA) to deliver two 70tbp ASD tugs to provide towage services at the Suez Canal Container Terminal (SCCT).

SOUTH DISOUQ RAISES SDX PRODUCTION BY 117% IN Q1 2020

SDX company announced that its entitlement production recorded 8,061 barrels of equivalent per day (boe/d) which is increased by 117% during Q1 2020, compared to 3,715 boe/d produced in Q1 2019 despite coronavirus outbreak.

The company stated that these strong production levels were driven by the performance of South Disouq which came ahead of expectations by achieving a gross production of 51.4 million standard cubic feet per day (mmscf/d) of dry gas and 551 billion of condensate per day equating to 4,994 boe/d net to SDX.

SDX added that its netback increased by 30% to $12.1 million in Q1 2020, compared to $9.3 million in the same period 2019. The company revised up its capital expenditures (Capex) guidance from $24.7 million to $28.2 million due to its strong performance, noting that coronavirus has not impacted Egypt's production operations. This resulted from a full quarter of production above expectations from South Disouq.

South Disouq has successfully drilled and completed a new production well in West Gharib, which was tied into the field production system in April.

CENTAMIN APPOINTS HENNIE FAUL AS NON-EXECUTIVE DIRECTOR

Centamin company announced the appointment of Henrik Hennie Faul to the board as a non- executive director starting from July 1.

According to the new position, Hennie will chair the Technical Committee and become a member of the Audit and Risk and the Sustainability committees.

Mark Bankes, the current non-executive director, will rotate off the Audit and Risk Committee once Hennie is appointed to the new position.

It is worth noting that Hennie has more than 30 years of mining industry experience across a range of commodities and jurisdictions.

ATON CEDES 25% OF ABU MARAWAT CONCESSION

Aton Resources Inc. ceded 25% of its fully-owned Abu Marawat concession located in the Eastern Desert.

The Egyptian Mineral Resources Authority (EMRA) has approved the relinquishment on June 3, and the concession's area has been reduced to 447.7 kilometer square (km²). No changes will occur to the western Hamama block, while the larger Eastern block was reduced to 423.2 km². Aton noted that the ceded 25% did not show potential for the discovery of economic gold mineralization.

It should be noted that previous to the relinquishment, Aton was granted a three-year extension to the final exploration period at its Abu Marawat Concession.

ATON BORROWS $77,000 FROM BRIDGE LOAN FACILITY

Aton Resources Inc. drew an additional $77,000 pursuant to its bridge loan facility with Ou Moonrider.

A portion of the fund will go towards the company's Abu Marawat Concession, and the general working capital purposes. Per the original agreement, the company is allowed to borrow up until $300,000 from Moonrider and it is expected to be paid out in total of at least six months from closing.

Based on the latest updates, Aton has now fully drawn down the $300,000 available to it. The first loan was estimated at 82,000, drawn on December 17, 2019, and the second was estimated at $141,000, drawn on February 27 of this year.

ABU SENNAN PRODUCTION INCREASES BY 69% IN JUNE

United Oil & Gas' (UOG) Abu Sennan concession has exceeded the company's pre-completion expectation with a production rate of 13,900 barrels of oil equivalent per day (bbloe/d) during the first half of June. This indicates a 69% increase compared to an average production of 1,810 bbloe/d during April.

This was largely due to the production of El Salmiya-5 well-testing which averaged at around 4,000 barrels per day (bbl/d) and in excess of 16 million standard cubic feet per day (mmscf/d).

Additionally, a report from Gaffney Cline & Associates showed an increase of about 12.5% in Abu Sennan's proved and probable reserves to 13.5 mmboe compared to 12 mmboe at the beginning of 2019.

SDX EXPECTS CONTINUATION OF PLATEAU PRODUCTION RATES

SDX Energy company said that gross plateau production at South Disouq is expected to be maintained at 50 million standard cubic feet equivalent per day (mmscfe/d) for another 18-24 months until mid-2023 with the probability to be extended to mid-2026 depending on the results of planned future exploration drilling.

The company mentioned that these predictions are a result of the discovery of Sobhi well which is estimated to generate about $25 million of un-discounted post-tax cash flow equivalent to $1.04 per one thousand cubic feet (mcf).

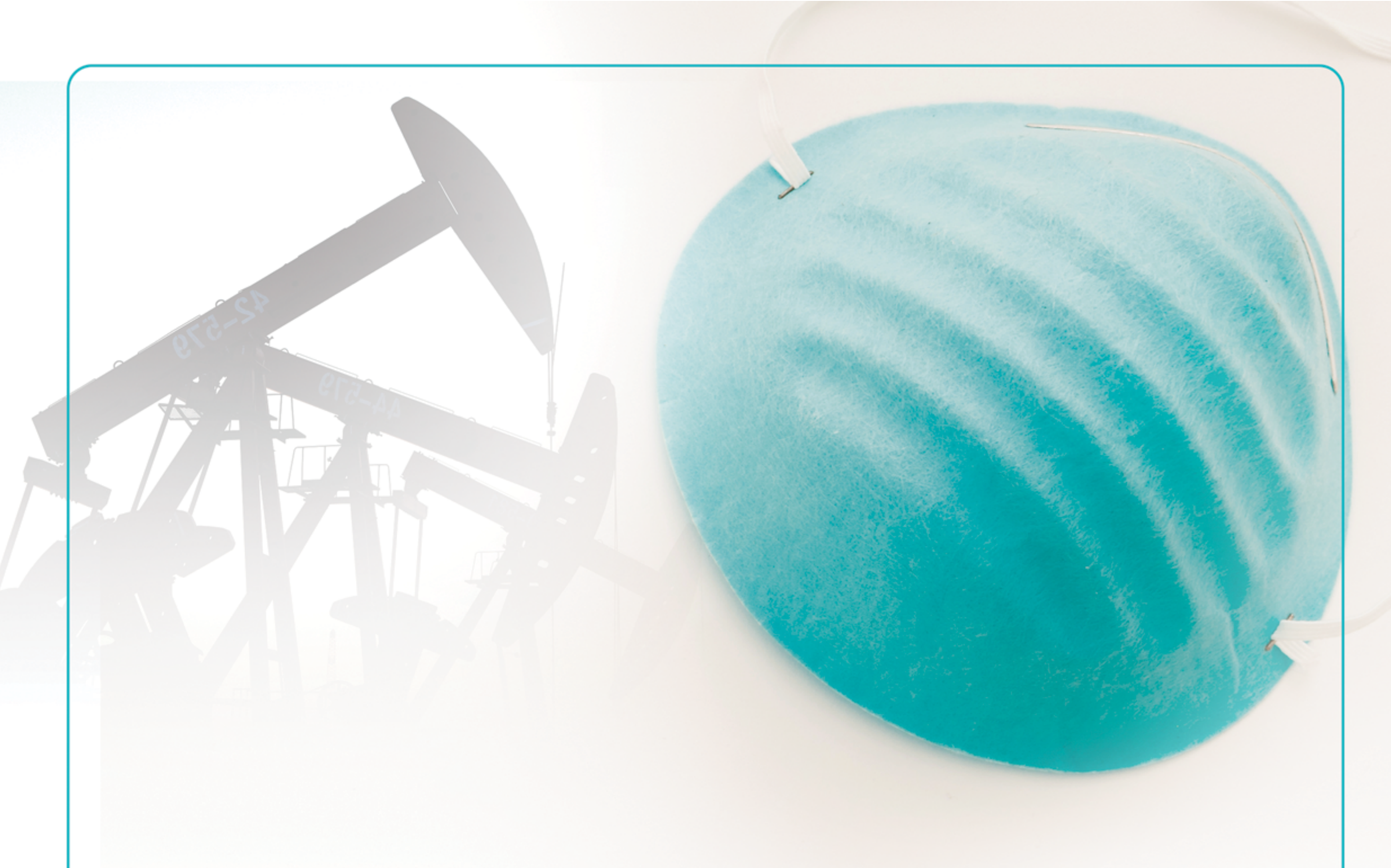
SDX added that it planned to drill from eight to ten wells in West Gharib concession during the period between 2021 and 2023 at a gross cost of approximately from $8 million to $10 million with potential of gross production increase from 3,200- 3,300 billion barrel per day (bbl/d) to 4,000 bbl/d by 2022. This incremental production at West Gharib may achieve about $5-6 million in low risk, un-discounted post-tax cash flow net.

CENTAMIN ISSUES SUSTAINABILITY REPORT OF 2019

Centamin Company has announced publication of its third sustainability report for fiscal year (FY) 2019 according to the Core Global Reporting Initiative (GRI) standards and GRI Mining and Metals Sector Supplement.

According to the report, the company recorded zero environmental incidents during 2019 in addition to 57% improvement in water efficiency at Sukari mine. It added that the company inscribed 33.86 carbon dioxide (CO2) emissions intensity at Sukari mine and planned to integrate solar power by 2021.

Moreover, Centamin paid $106.8 million to the Egyptian government in profit share and royalties noting that it started a screening program in collaboration with the Egyptian government to test all the employees and contractors at Sukari mine against Covid -19 to prepare site for increased workforce mobility.



SAUDI ARABIA

Saudi Arabia and Russia have agreed to extend the existing record oil cuts by another month and intend to ramp up pressure on non-compliant oil producing nations. Instead of easing off the oil cuts of 9.7 million barrels per day (mmbbl/d) in May and June, Organization of the Petroleum Exporting Countries and allies (OPEC+) are expected to extend the cuts for July to aid oil price recovery. OPEC+ members such as Iraq and Nigeria have shown weak compliance figures so far. Meanwhile, Saudi Arabia, Kuwait, and the United Arab Emirates (UAE) said that they are not extending their additional voluntary cuts to production of 1.18 mmbbl/d beyond June.

Saudi Aramco has announced its completion of the 70% stake acquisition in the petrochemical company Saudi Basic Industries Corporation (SABIC) from the Public Investment Fund (PIF). The completion of the acquisition is set to enhance Aramco's petrochemical strategy by integrating upstream production with SABIC feedstock; expanding capabilities in procurement, supply chain, manufacturing, marketing and sales; complementing geographic presence, projects and partners; and increasing the resilience of cash flow generation. This integration is part of Aramco's long-term plans in the petrochemical industry to grow its integrated refining and petrochemicals capacity and create value from integration across the hydrocarbon chain.

Saudi Arabia's oil exports increased by 113,000 barrels per day (bbl/d), reaching 7.391 mmbbl/d in March, up from 7.278 mmbbl/d in February. Despite this, the world's top oil exporter's crude oil production dropped by 0.051 mmbbl/d month-on-month to 9.733 mmbbl/d in March. The kingdom built up its crude stocks in March by more than 3.5 mmbbl/d, reaching 2.964 mmbbl from negative 0.683 mmbbl in the previous month. Domestic refinery crude throughput in Saudi Arabia fell 0.244 mmbbl/d to 1.968 mmbbl/d in March from 2.212 mmbbl/d in February.

Saudi Arabia and Kuwait will suspend oil production from their joint Khafji oil field and shut down affiliated facilities for one month starting from June 1. At first, Kuwait and Saudi Arabia considered voluntarily reducing production by 50% of production of Al-Khafji, but due to market concerns, it was closed completely.

Saudi Arabia-founded Arabian Geophysical and Surveying Company (ARGAS), the largest seismic acquisition company in the Middle East and North Africa (MENA) region, is to expand its business internationally. This comes in line with an agreement signed by ARGAS' shareholders, Industrialization and Energy Services Company (TAQA) and CGG, to allow ARGAS' operations to turn global. The agreement waives all territorial, technical, commercial exclusivities and any other restrictions on the signatories, allowing ARGAS to expand its integrated marine and land seismic solutions to oil and gas operations globally. All other exclusivities and restrictions on CGG or any of its affiliates will be waived as well.

RUSSIA

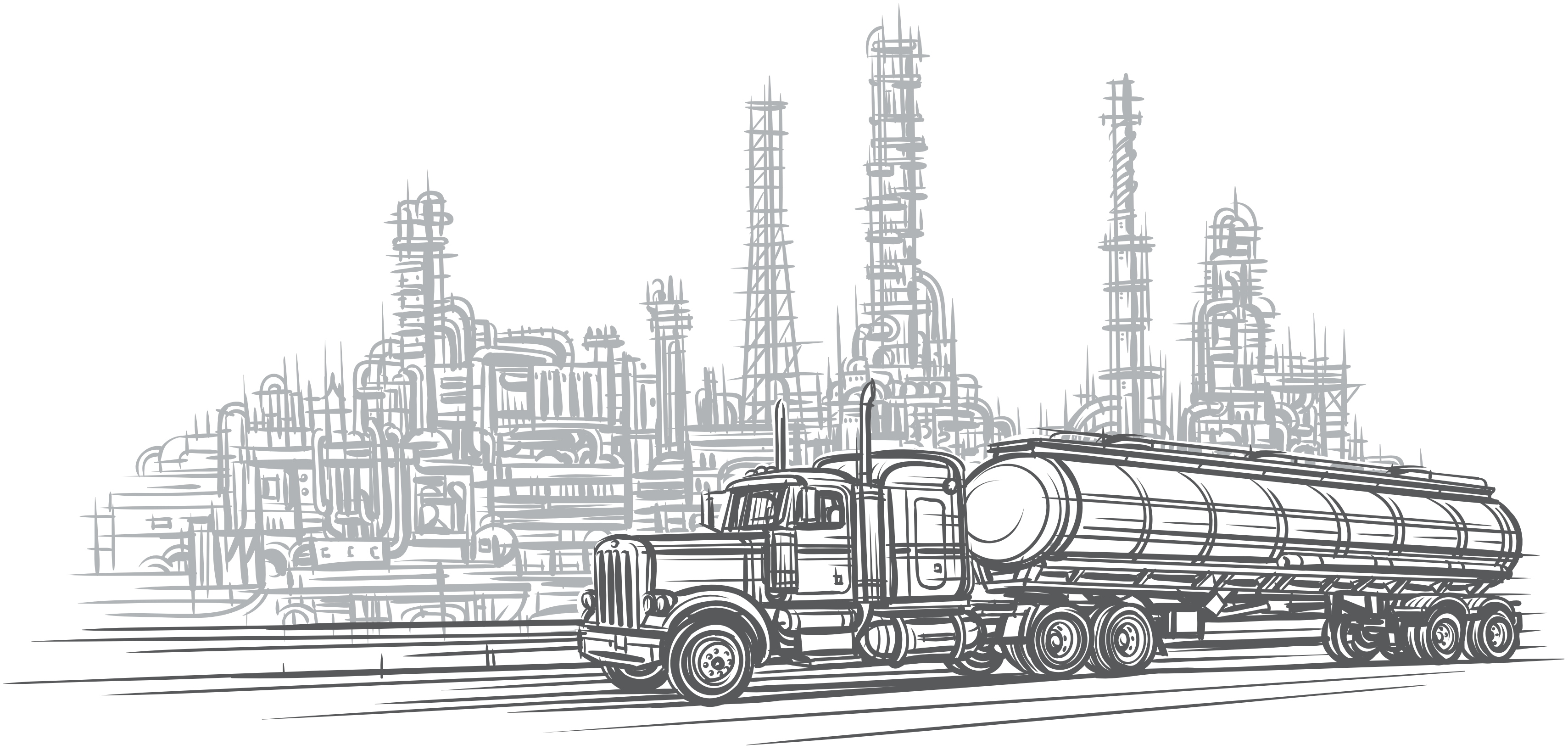
Russia's oil production fell to between 8.59-8.69 million barrels per day (mmbbl/d) in May, nearing Moscow's previous pledge of reducing production to 8.5 mmbbl/d. Under the OPEC+ agreement, Moscow has pledged to reduce its oil output by around 2.5 mmbbl/d to 8.5 mmbbl/d to help support oil prices. The deal does not include output of gas condensate. Russia usually produces 700,000-800,000 barrels per day (bbl/d) of gas condensate.

Russia is set to further reduce its overseas supply of Urals Crude oil in July due to an unexpected spike in domestic demand as COVID-19 restrictions ease. The increase in demand coupled with the finishing of refineries' seasonal maintenance is expected to further increase the appetite for the crude from processing plants. Exports of Russia's Urals oil has been aggressively cut in May and June in accordance with the OPEC+ cuts and are on track to decline to the lowest levels in months by the end of June, to 4.4 million tonnes from the Baltic ports and 1.2 million tonnes from the Black Sea's Novorossiisk.

Gazprom and RusGazDobycha have reached a final decision on the development project for the Semakovskoye gas field. RusGazAlyans started development drilling, while construction is underway for the first horizontal development well with a vertical deviation of more than 2,000 meters. The well is designed to have a measured depth of about 2,700 meters, with a vertical depth of 830 meters. Its completion is expected at the end of June and six more development wells are expected to be completed by Q1 2021. The Semakovskoye field is expected to commence operations in 2022. This will include the construction of 19 wells and the extracted gas will be fed into Gazprom's gas transmission system.

Russia's gas major Gazprom has started a feasibility study for its Power of Siberia-2 pipeline project. Power of Siberia-2 pipeline is a project that would pump up to a yearly 50 billion cubic metres (bcm) of natural gas to China per year via Mongolia. The 3,000-km-long Power of Siberia pipeline will transport gas from theChayandinskoye and Kovytka fields in eastern Siberia, a project that is expected to last for three decades and to generate $400 billion for Russia.The initial pipeline was launched in 2019.

The Bazhenov Technology Centre, a subsidiary of Gazprom Neft, will start development of Bazhenov Formation deposits at Salym-group license blocks in the Khanty-Mansi Autonomous Okrug-Yugra. Data interpretation is expected to be completed by the end of 2020, while commercial production of non-conventional oil at the Salym license blocks is expected to start in 2025. Gazprom Neft has completed 3D-seismic investigations at the Salymsky-3 block, having surveyed more than 300 square km using green seismic technology. The Salymsky-3 and Salymsky-5 blocks are estimated to contain in excess of 500 million tonnes of oil.



ANALYZING EGYPT'S PETROLEUM **TRANSPORTATION PATH**

BY AMINA HUSSEIN, REHAM GAMAL, AND TASNEEM MADI

Transporting hydrocarbon products, from fields to refineries to end users, plays a vital role in facilitating both upstream and downstream activities. Globally, there are various means of transporting petroleum products including Railway tanks, pipelines, coastal tankers, and trucks. Likewise, Egypt depends on a variety of means and channels to transport petroleum products on both domestic and international levels.

In Fiscal Year (FY) 2018/19, the SUMED pipeline came on the top of these channels as it transported around 41% of Egypt's petroleum products. Other pipelines came second as it transported 37.2% of national petroleum products. Furthermore, trucks, tankers, and railways transported 18%, 3.5%, and 0.2% of Egypt's petroleum products, respectively, according to the Central Agency for Public Mobilization and Statistics' (CAPMAS) Annual Bulletin of Petroleum Materials Means of Transportation and Natural Gas in Egypt 2018/2019.

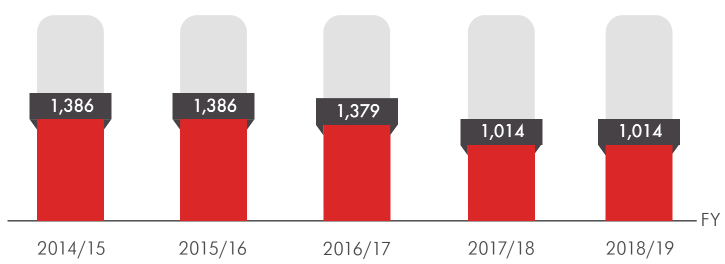
This report tracks the developments of transporting petroleum products in Egypt over the period from FY 2014/15 to FY 2018/19 mainly using the CAPMAS's annual bulletins of Petroleum Materials Means of Transportation and Natural Gas in Egypt.

MAIN TRANSPORTATION CHANNELS

1. RAILWAYS

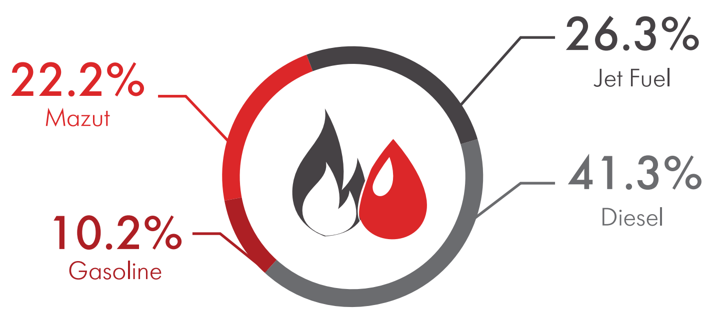
Over the referred period, the number of railways tanks, along with their respective capacities, and the quantity of petroleum products transported (by the railway tanks) exhibited a continuous declining trend.

Number of Petroleum Products Railway Tanks

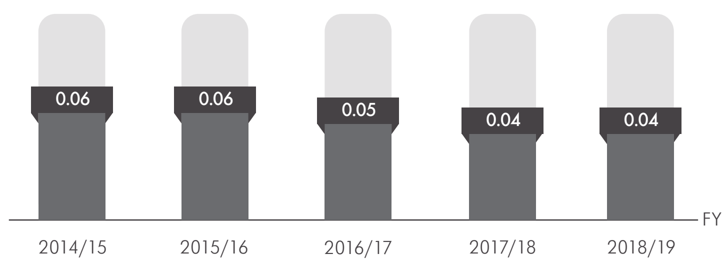


The number of railways tanks transporting petroleum products has declined by 27% from 1,386 to 1,101 in FY 2014/15 and FY 2018/19, respectively. On an annual average, 1,236 railways tanks are available to transport petroleum products. Diesel had the highest share of the total number of railways tankers. In fact, on average, 502 tanks are used to transport diesel, annually. On the other hand, gasoline has the lowest share of railway tanks with an annual average of 124 tanks.

Transported Petroleum Products' Share in Number of Tanks



Petroleum Products Transportation Capacity of Tanks (mmt)



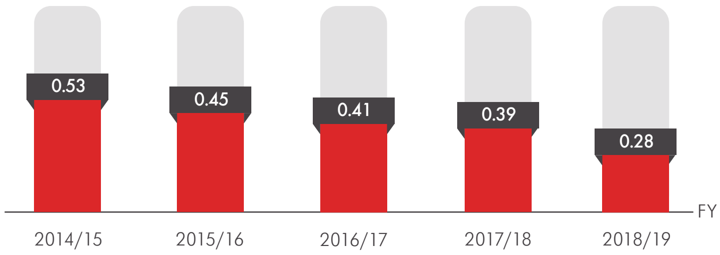
The worn out tanks led the capacity of railways to decline by 29%, from 0.06 million tons (mmt) in FY 2014/15 to a record 0.04 mmt in FY 2018/19. On average the railways tanks have a total capacity of 0.049 mmt, annually.

Transported Petroleum Products' Share in Tanks Capacity

The railways transport a yearly average of 0.41 mmt of petroleum products. Despite being the least costly means of transportation, the overall change in capacity over the referred period declined by 47%, as it has fallen from 0.53 mmt in FY 2014/15 to 0.28 mmt in FY 2018/19.

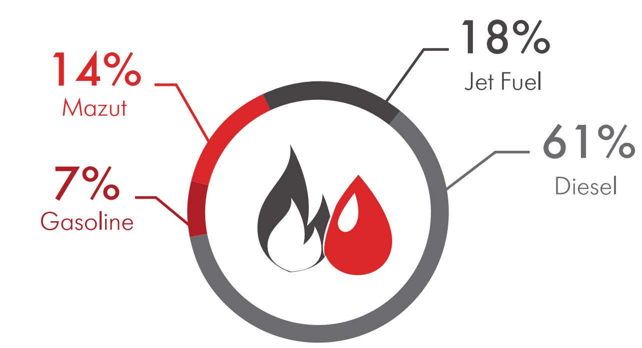
This paradox can be explained by the technical problems facing the transportation process through the railways including the lack of an equipped and sufficient fleet to transport the products. In addition, the railways freight stations lack several developments as they are not sufficient for shipping, distributing, and storing the products.

Petroleum Products Quantities Transported by Tanks (mmt)



The annual average of transported quantity of diesel reached 0.25 mmt, representing the highest share, while gasoline's annual average was the lowest and recorded 0.03 mmt.

Petroleum Products' Share in Total Quantities Transported by Tanks



2. PETROLEUM PIPELINES

Petroleum pipelines are used to transport petroleum products including crude oil, condensates, diesel, and other petroleum derivatives. The pipelines are the best in transporting crude oil when it comes to long distances as they are fast and efficient.

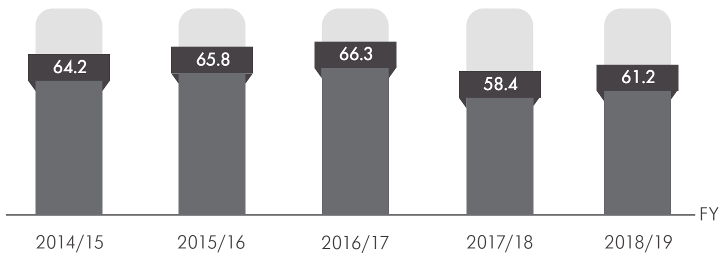
In Egypt there are three main types of petroleum pipelines. The first type of petroleum pipeline is the main pipelines which transfer the petroleum products via high-pressure techniques. The second type is the distribution pipelines that bring the petroleum products from nearby wells to a treatment plant or a facility. Finally, the gathering pipelines which consist of several interconnected pipelines that deliver the petroleum products to the final consumer.

I. THE SUMED PIPELINE

The SUMED pipeline, a pipeline with a 42-inch diameter with a length of 320 km and a capacity of 117 mmt annually, is the main pipeline in Egypt. The pipeline extends from the Ain Sukhna terminal on the Gulf of Suez to offshore Sidi Kerir, on the Mediterranean Sea and is managed by the Petroleum Pipelines Company (PPC). Furthermore, the pipeline is a global center for crude oil storage and marketing, from the producing countries such as Arabian Gulf and the Arabian Peninsula to the US and Europe.

Over the period from FY 2014/15 to FY 2018/19, the transported petroleum products (crude oil and condensates) amounted to 316 mmt. Between FY 2014/15 and FY 2016/17, the quantity of transported petroleum products has been increasing. Yet, the expansion of the Suez Canal in late 2015 led the crude oil trade to shift from SUMED to the Canal. For instance, in 2017, the transported crude oil and other products by the Canal rose by 18% compared to 2016 then further increased by 7% in 2018, according to the Suez Canal Authority's (SCA) Data. the increase in 2017 and 2018 was due to the expansion in the Canal in 2015, which allows more than 60% of the tankers pass by the Canal as a transit route, according to a report titled by "The Suez Canal After the Expansion", published by SRM Maritime Economy and AlexBank, in October 2018. Correspondingly, in FY 2017/18, the transported quantity by SUMED remarkably declined by 12%. However, in FY 2018/19 these quantities slightly increased again by 4.8%.

Petroleum Products Quantities Transported by the SUMED Pipeline (mmt)

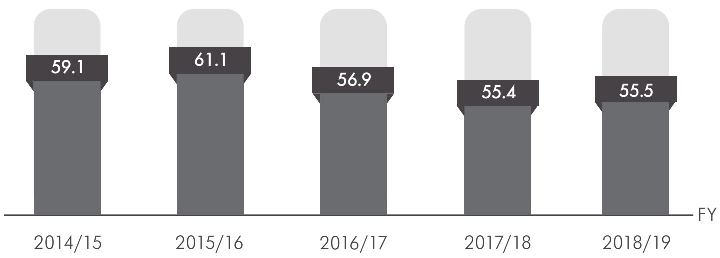


II. MAIN AND INTERNAL PIPELINES

Over the period from FY 2015/16 to FY 2018/19, the number of petroleum pipelines increased by 38% to reach a total of 80 pipelines. This shift was mainly due to the increase in the number of crude oil pipelines, which doubled over the referred period, in addition to a 20% increase in the number of LPG and product pipelines. By constructing more pipelines, the network's total length increased by 9% to reach 5,842 km in FY 2018/19 compared to 5,374 km in FY 2014/15.

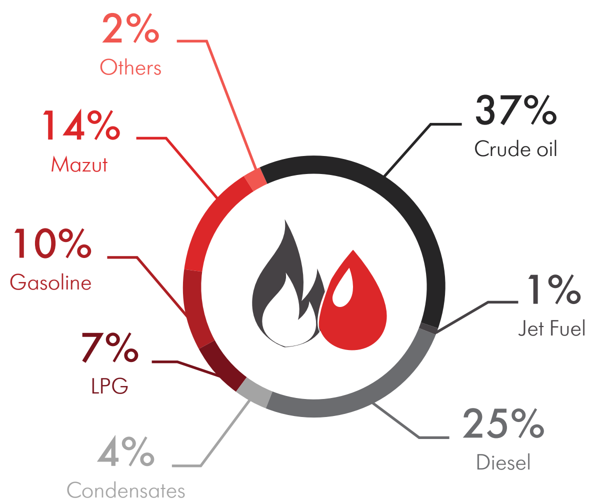
Over the period from FY 2014/15-2018/19, the transported petroleum products through the main and internal pipelines accounted for 288 mmt. It is noteworthy to point out that FY 2015/16 represented the year with the highest transported quantity with an increase of 3.5% compared to FY 2014/15. This resulted in the increase in the transported quantity of diesel by 24%.

Petroleum Products Quantities Transported by Main and Internal Pipelines (mmt)



Over the referred period, the transported crude oil was the highest with 107 mmt an average share of 37% of the total products. It is worth mentioning that, in FY 2016/17, when crude oil production naturally declined by 8%, compared to FY 2015/16, its transported quantity significantly declined by 10% to reach 20.5 mmt. Thus, the total transported products through pipelines remarkably decreased by 7% in the same year.

Petroleum Products' Share in Total Quantities Transported through Pipelines

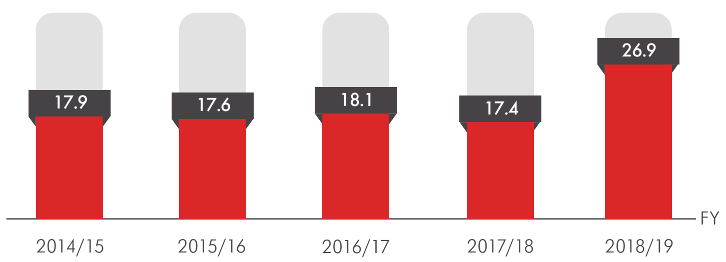


3. TRUCKS

Trucks are mainly used for transporting gasoline, diesel, mazut, and LPG products. Over the period from FY 2014/15 to FY 2018/19, the transported quantity totaled 98 mmt, according to the CAPMAS's data.

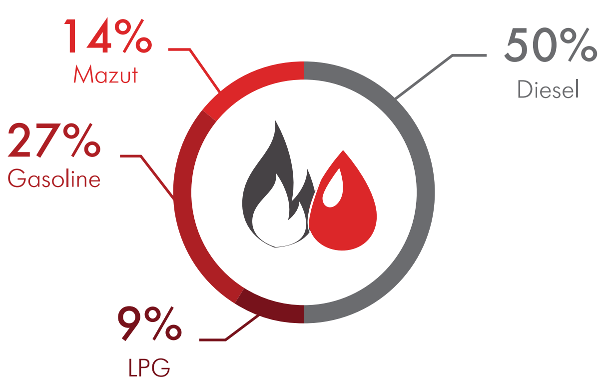
It is worth mentioning that FY 2018/19 saw a leap in the transported quantities of diesel, gasoline, and mazut, which outstandingly rose by 50%, 60%, and 106%, respectively. Consequently, the total transported quantity significantly increased by 55% in FY 2018/19 compared to FY 2017/18. This made FY 2018/19 the year of the highest transported amount at 26.9 mmt.

Petroleum Products Quantities Transported by Trucks (mmt)



Over the referred period, the transported quantity of diesel represented almost half the total transported quantity, amounting at 48.5 mmt. On the other hand, LPG was the least transported quantity with only 8.8 mmt.

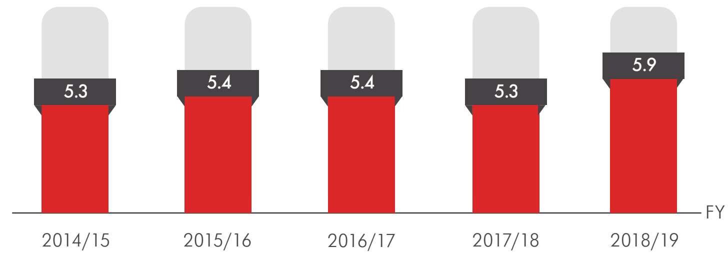
Petroleum Products' Share in Total Quantities Transported by Trucks



4. WATER TRANSPORT UNIT

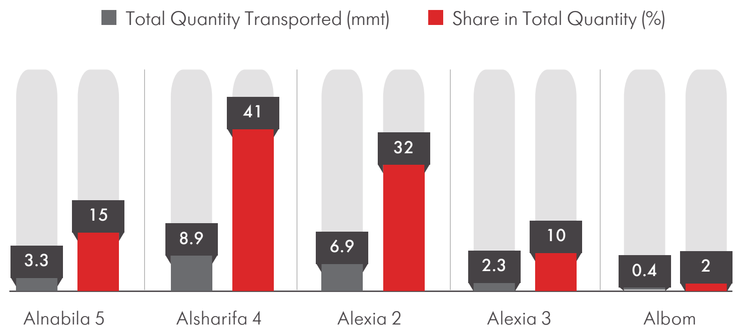
Egypt mainly has four coastal tankers which are Alnabila 5, Alsharifa 4, Alexia 2 and Alexia 3. Recently, however, Albom tanker also engaged in the transportation process. Over the period from FY 2014/15 and FY 2018/19, these tankers were capable of transporting about 22 mmt of petroleum products. The referred period witnessed a fluctuating trend while FY 2018/19 remarked the highest year of transporting petroleum products by 5.9 mmt, representing 27%.

Petroleum Products Quantities Transported by Coastal Tankers



CAPMAS's figures show that Alsharifa 4 transported 8.9 mmt, which is the largest transported amount in comparison to the other tankers, representing an average of 41% of the total transported quantity by coastal tankers. On the contrary, Alexia 3 transported only 2.3 mmt, representing on average only 10% of the transported quantity. The Albom tanker transported only 0.4 mmt as it started operations in FY 2018/19, contributing by only 2%.

Petroleum Products Quantities Transported per Coastal Tanker



LEADING INDICATORS

The costs and quantities of transporting petroleum products are two leading indicators to be considered for an efficient transportation process. The total transported quantities of crude oil, condensates, LPG, and other petroleum products were the highest in FY 2015/16, according to the CAPMAS.

In FY 2015/16, the total transported petroleum quantities increased by 2%, reaching 150.4 mmt. The SUMED pipeline transported the greatest amount of petroleum quantities in FY 2015/16, which was 65.8 mmt, representing about 43.8% of total transported quantities. However, the other pipelines transported about 61.1 mmt in the same year, representing about 40.7% of total quantities. For railway tankers, which are the least means used for petroleum transportation (as well as the cheapest), recorded 0.45 mmt in FY 2015/16, representing a negligible percentage of the total transported quantities.

On the other hand, the total transported petroleum quantities in FY 2017/18 were the least within the period from FY 2014/15 to FY 2018/19. In FY 2017/18, the total transported petroleum quantities decreased by 7%, recording 136.9 mmt compared to 147.1 mmt in FY 2016/17. Similar to FY 2015/16, the SUMED pipeline was the most used transportation means, where the pipeline transported 58.4 mmt, representing about 42.7% of total transported quantities in FY 2017/18. Furthermore, all other pipelines contributed about 40.5%, and trucks contributed 12.71%. Moreover, railway tankers and coastal tankers transported about 0.3% and 4%, respectively. In FY 2017/18, the transported quantities by all channels, except for condensates pipelines, decreased by 5% compared to the previous year. The reduction in quantities transported can be explained by the decline in demand that happened as a result of the increasing prices of petroleum products after reducing energy subsidies. Meanwhile, petroleum quantities transported through condensate transfer pipelines increased by 45%, reaching 2.5 mmt in FY 2017/18 instead of 1.7 mmt in FY 2016/17.

Total petroleum transportation costs during the period from FY 2014/15 to FY 2018/19 have been facing an increasing trend, with the highest growth rate of 28% occurring in FY 2015/16. The total petroleum transportation costs increased by 10%, reaching EGP 21.9 billion in FY 2018/19 up from EGP 19.9 billion in FY 2017/18.

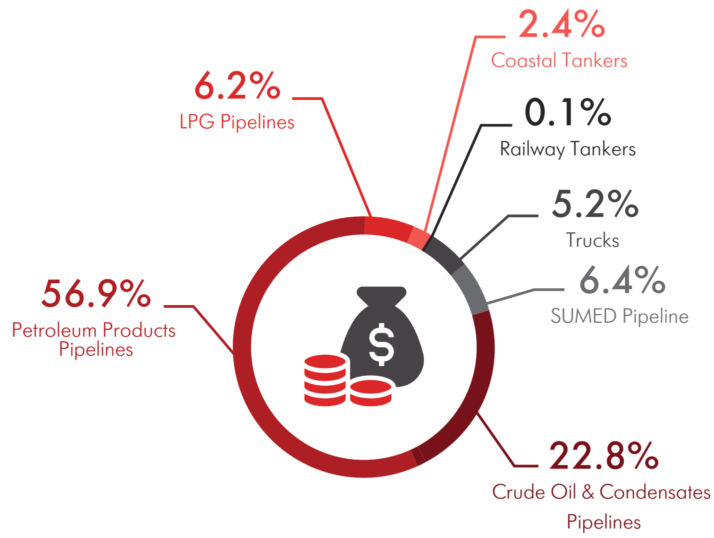
In FY 2014/15, transportation costs for petroleum products pipelines, which are the most expensive means of transportation, reached EGP 7.84 billion, representing 55.5% of total transportation costs. In addition, transportation costs for petroleum pipelines represented 22.7% of total cost by recording EGP 3.2 billion in FY 2014/15. Transportation costs for railway tankers were the least among all other channels, representing combined 0.07% of total transportation costs. All other means of transportation recorded EGP 3.1 billion representing 21.8% of the total transportation costs.

In FY 2018/19, transportation costs by petroleum products pipelines reached EGP 12.1 billion, representing a share of 55.4% compared to 62% in FY 2017/18.

Also, FY 2018/19 witnessed a record of 26% of the transportation costs for petroleum pipelines. All other means of transportation recorded EGP 4.1 billion, representing 18.6% of the total transportation costs.

The Ministry of Petroleum and Mineral Resources (MoP), exhibits efforts to enlarge the infrastructure needed for the storage and transportation of petroleum products in order to deliver a quality service to the final users while taking safety, security, and environment protection into account. These efforts can be viewed in the results as the transported quantities increased from 146.9 mmt in FY 2014/15 to 149.8 mmt in FY 2018/19, representing a 2% increase in the total transported quantity.

Transportation Channels' Share for Total Cost



LESSONS FROM A TIME OF CRISIS: ADAPTABILITY, DIGITALISATION AND TEAM-CULTURE

SAMEH SABRY, SENIOR VICE PRESIDENT - MANAGING DIRECTOR WINTERSHALL DEA EGYPT

2020 has brought unexpected challenges. Working in the oil and gas sector, I'm used to volatility, but nothing could have prepared us for the scale of the changes we would experience in everyday life. Schools and offices shut, parents juggling work and childcare. An altogether different Eid Al-Fitr holiday, involving less contact with friends and family as usual. And from a business perspective, plunging demand for oil and gas as the shutters came down on the global economy.

While everything is far from being back to normal, after four months of working from home, it's a good moment to reflect on a few key learnings from the last few months.

One is that people and teams are actually great at adapting to new challenges.The concept of working from home is of course not a particularly common one in Egypt, less so than in Europe and North America. Therefore, the transition for my team from normal office life to working exclusively from home, in just a few days, was a major one. Our colleagues found themselves in a completely new situation: juggling a strange mixture of home and working life. In my personal experience, working from home allowed me to spend more time with my wife and two daughters. However, it made everyone realize how busy I can be during a working day, where breaks and quick chats with family members during the day can be sometimes difficult to have.

However, my team handled the situation perfectly, quickly adapted, and went the extra mile to maintain operations and business as usual. And while we hope to never go through the same experience again, we have learnt something valuable for the future. Our people can rise to new challenges, do things differently, change, learn and adapt in quite extreme ways. Our sector will change in the coming years, as global energy markets respond to environmental demands. Our experiences in the last few months should be a reminder that we can be confident, not nervous, when confronted with the need to adapt.

Secondly, the crisis has highlighted the critical importance of digitalisation, and reminded us that a reliable digital infrastructure is essential. At

Wintershall Dea, digital and networked working is nothing unusual, but rather normal practice. In fact, the extent of digitalisation is shown by the fact that in some of our Business Units, such as in the Netherlands and Norway, our production platforms are operated unmanned, controlled by mouse click from a control centre. By enabling home working and remote operations, digitalisation makes us more resilient. In Egypt, we have fully utilized the available tools and pushed ourselves to be more digital to cope with current situation. However, I still look forward to introducing more digital solutions into our Egyptian business in the coming years.

My final learning is not about technology but about people. If there's one thing this crisis has shown, it's the importance of a strong and positive internal culture. A culture in which people trust, support and look out for one another. At Wintershall Dea, that starts at the very top, and we've enjoyed participating in a weekly video update with our Chief Executive, Mario Mehren, who has encouraged all of us to take care of our physical and mental health during this difficult time. And in my team, I've been proud to see our people sharing advice, virtually meeting, and staying in touch online, even when we can't see each other in person. That's helped us all feel connected and motivated to perform. I have also enjoyed holding all staff online meetings a number of times and speak with the team from home. A strong positive internal culture isn't – in my opinion – a 'nice to have', it's essential for a high performing team.

We still have a long road to travel to get through the corona-crisis. This is a difficult time, and the shadows over our everyday lives will not lift for some time yet. But as I reflect on our business challenges, there are positives we can take from this crisis. Adaptability, digital excellence, and a positive team culture are three essential ingredients for success in 2020: and I believe for the post-corona world too.

UNDER THE HIGH PATRONAGE OF
HE. ENG. TAREK EL MOLLA
Minister of Petroleum & Mineral Resources - Arab Republic of Egypt

ORGANIZED BY EGYPT OIL&GAS NEWSPAPER

TECHNICALLY PREPARED BY EGYPT OIL AND GAS TECHNICAL COMMITTEE

LEAD BY wintershall dea

EOG FIRST WEBINAR DISCUSSES PANDEMIC, COMMODITY PRICE CRASH

BY JACK BECKFORD

Egypt Oil & Gas (EOG) held its first online webinar on July 1 to discuss the impact of the novel coronavirus on Egypt's oil and gas sector. The webinar, titled "Egypt's Oil and Gas Sector Pandemic and Commodity Price Crash", hosted industry experts to share their insight on these prevalent issues and also give insight as to how their companies were dealing with the ensuing pandemic.

The webinar was moderated by the President and CEO of Apex International Energy Thomas Maher. Speakers at the webinar included Abed Ezz El Regal, CEO of the Egyptian General Petroleum Company (EGPC); Sameh Sabry, VP and Managing Director of Wintershall Dea – Egypt; Colby Fuser VP of Halliburton – Egypt and Libya; and Nicolas Katcharov, VP Operations MENA Edison SpA. Wintershall Dea was the lead sponsor of the webinar.

ABED EZZ EL REGAL
CEO EGPC

"We have clear policies and by rotating the workforce we have managed to keep production at the same level."

EGPC

SAMEH SABRY
VP and Managing Director of Wintershall Dea – Egypt

"We tried to maintain the company's readiness to capture operational value once the market returns back to normal and not to cripple ourselves with short-term measures."

wintershall dea

PRODUCTION, HSE ARE TWO SIDES OF THE SAME COIN

The recurrent theme throughout the webinar was that of employee safety. The main challenge has been to maintain production levels whilst simultaneously safeguarding employees' health and safety. Speaking on the role of the Egyptian government in supporting the sector during COVID-19, Ezz El Regal said: "We have clear policies and by rotating the workforce we have managed to keep production at the same level." He also added that this was a joint effort between Egypt's Petroleum Minister, Tarek El Molla, and other sector entities.

From a company standpoint, Sabry announced that Wintershall Dea is taking all the precautionary health and safety measures to reduce its employees' exposure to the pandemic. Speaking on the company's policies he said: "We have encouraged people as much as possible to work from home, we have reduced staff in the operational field as well as other measures such as social distancing and banning business travels."

However, the general sentiment running throughout the webinar was that the Egyptian government had supported the companies' health, safety, and environment (HSE) efforts throughout, with Fuser pointing to the success of Egypt's Ramadan campaign which was aided by the Ministry of Petroleum and Mineral Resources.

MANAGING E&P ACTIVITIES WITH PRODUCTION CUTS

With regard to exploration and production (E&P), there was a focus on how to maintain E&P activities amidst production and budget cuts. Abed assured that "until now there have been no severe effects on E&P in Egypt." This can be showcased by Wintershall Dea's E&P activities that have maintained production stability in the Western Delta as well as the company's project in Disouq onshore the Nile Delta. Regarding exploration, Sabry exclusively revealed that Wintershall Dea is actively restarting work on exploration in Egypt again, stating that the company is preparing five to seven well drilling campaigns in the East Damanhour block, which the company obtained drilling rights for last February.

Katcharov revealed that Edison SpA's production has dropped by 10%, however, it is actively continuing to develop the company's gas production capacity, particularly in Egypt which it views as a top priority country. Talking about future exploration investments he said: "We will be very carefully screening to catch the strategic exploration opportunities in the gas potential for preparing for our growth in the future."

ACHIEVING OPERATIONAL EXCELLENCE, COST-EFFICIENCY

After the pandemic has passed, Ezz El Regal believes that EGPC can achieve a more efficient economic process for development and exploration so as to maintain pre-pandemic levels of E&P.

Edison SpA has placed more of an emphasis on optimizing operations, with Katcherov announcing that the company's long-term focus will be more on synergies and connecting existing infrastructures to decrease costs. In the short-term, the company has altered the shift timetable so as to minimize downtime. Furthermore, the current active workforce has been reduced to 35% and will be further reduced to 15%. Due to careful reduction in non-essential practices Edison has managed to reduce operational costs by 20%.

HANDLING THE UPS AND DOWNS OF OIL PRICES

Due to the oil price crash and the subsequent reduction in profit margins, a large emphasis has been placed on operational efficiency and creating a leaner business model; as Sabry says, "In this perfect storm, only the fittest will survive." In order for the government to help companies handle the market's volatile nature, it has further aided the sector by reducing the fuel price for industries to help the value chain, according to Ezz El Regal.

Haliburton has reduced its operational activity and has placed more emphasis on value proposition. Fuser announced that Haliburton has further refined costs since the 2014 oil crash. On further reducing Haliburton's cost base, Fuser said, "We have worked on efficiencies which has been achieved by collaboration with the ministry and our customers."

Wintershall Dea has taken budgetary cuts in capital expenditure (Capex) 30%, operational expenditure (Opex) 10%, and the exploration budget 20%. Despite these cuts, Sabry insists that Wintershall Dea is "trying to maintain the company's readiness to capture operational value once the market returns back to normal and not to cripple ourselves with short-term measures." With this said, the company has managed to maintain asset integrity portions, with the example of the current investment in waste water treatment at Disouq.

THE NEW NORMAL FOR THE OIL INDUSTRY AFTER COVID-19

Another key area of discussion was the role that technology has played in alleviating the impact of the pandemic.

As Katcharov says, "The world has already moved towards structural change," adding that "there has been a structural progress from the Egyptian government." According to Ezz El Regal, this structural change comes in the form of utilizing new modern technologies to increase efficiency when dealing with international oil companies (IOCs).

As a service-based provider, Halliburton has placed increased importance on technology to optimize profits during the pandemic. Colby Fuser announced that "We [Haliburton] have managed to bring new technologies that have helped to lower overall customer costs and complete wells in a manner that optimizes that asset value."

COLBY FUSER
VP of Halliburton – Egypt and Libya

We have worked on efficiencies which has been achieved by collaboration with the ministry and our customers

HALLIBURTON

NICOLAS KATCHAROV
VP Operations MENA Edison SpA

We will be very carefully screening to catch the strategic exploration opportunities in the gas potential for preparing for our growth in the future.

EDISON Exploration & Production

SMART METERS SOLUTION:
THE FUTURE OF NATURAL GAS BILLING SYSTEM

BY **FATMA AHMED**

Lately, the world has been directed to the digitalization of all industrial sectors, replacing human beings with machines. By the evolution of machine learning, artificial intelligence (AI) and internet of things (IoT), new smart machines enabled easier, faster and more accurate data through cost-saving devices. Also, these devices are saving human efforts and enabling distant working, which is the future trend.

One of the neonates of IoT technology is the new smart meter solutions. Smart meters have emerged within the past few years to measure energy consumption, replacing traditional meters in homes and commercial institutions. Before discussing smart meters, it is essential to understand, briefly, how IoT technology works.

IOT ENABLES SMART GAS METER

IoT is the concept of connecting any device to the internet and other connected devices. It is a giant network of connected things and/or people that allows for the sharing and collecting data. It generally refers to scenarios where network connectivity and computing capability extend to objects, sensors and everyday items not normally considered computers; allowing these devices to generate, exchange and consume data with minimal human intervention.

Devices and objects are provided with sensors that are connected to an IoT platform which integrates data from different devices and applies analytics. These sensors are recognizing any changes that can happen. They can measure physical changes like temperature, light, height, pressure, etc. This concept generated the idea of applying smart gas meters.

Karim Heakal, Head of Pipelines projects at the Egyptian Natural Gas company (GASCO), defined Smart gas meters as tools used to manage and record gas consumption and performance of gas devices at homes. Heakal said "what makes the meters 'smart' is their ability to provide detailed and accurate analytics on gas usage in real-time or at predetermined intervals, all without a technician".

TYPES OF SMART METERS

Mohamed El Gamal, Project Manager at Smart Gas company, explained that there are two types of smart gas meters. El Gamal explained that "the [first one is] prepayment meter, where you use a card to load more money onto your meter. Just like a mobile phone, money is taken from that balance every time you use gas, and if you run out of credit, your gas will be temporarily switched off until you top up."

El Gamal added that the second type is a network-capable device that measures gas consumption of a building or home with two-way communication between the meter and the central system (supplier). "Communications from the meter to the network may be wireless, or via fixed wired connections such as power line carrier (PLC). Wireless communication options in common use include cellular communications (which can be expensive), Wi-Fi (readily available)", El Gamal elaborated.

SMART GAS METERS BENEFITS

Smart gas meter solutions provide real-time data and analysis. This will enable showing how much gas is being used precisely which help in making better decisions about how to use natural gas. Additionally, this will prevent wrong estimation that many people

may face when the time comes to pay their bills and give accurate consumption readings.

Seham Osman Abd El Hady, a natural gas consumer, said that the main problem she is facing in using traditional gas meters is that the readings are not frequently taken by the collector. In addition, the collector's working hours are not convenient with hers. "From my point of view, I can see that applying smart gas meters would facilitate the methods of reading and payment for both sides", Abd El Hady explained.

Additionally, Bassem Bellal, another user, advocated this opinion commenting that "]smart meters[provide actual reading, enabling monitoring gas system in real time and more control of consumption". In parallel, Sara Gado, one of the natural gas consumers, welcomes smart natural gas meters utilization saying that "[traditional gas meters] are hard to be read and big in size, but I think smart meters will be easier to be used and pay for as well".

Another important benefit from smart meter usage is that it ensures safety through eliminating needed house visits to get readings as well as collecting the bills. It facilitates getting the readings remotely and paying without any need for having collectors come over. All the insights of consumers and experts concurred that this issue is vital nowadays due to coronavirus outbreak.

POSSIBLE CHALLENGES OF APPLICATION

Despite these advantages of smart gas meters, its application may confront some challenges. El Gamal explained that "it tends to be more expensive; you'll pay more when you use more and if you run out of credit, you'll be cut off". Keeping on the same track, Ghaydaa Gamal, a consumer for natural gas, saw that the application of such solution is not beneficial in Egypt, preferring the traditional meters by saying "it [will] make the consumer pay every second or the service will be cut."

In addition, Heakal noted that the application of this new solution may place more responsibility upon the consumer for maintenance.

Mohamed Tawfiq, Head of Quality Assurance Department at Cairo Gas, noted several pieces of advice for the problems that may be faced when applying smart meters. Tawfiq stated that "before starting to use such smart solution, it should be tried to avoid any probable problems may occur while usage." He added that costs of exchanging traditional meters by smart ones should be considered and shouldn't overburden the consumers.

SMART GAS METERS IN THE EGYPTIAN MARKET

During the last year, the Ministry of Petroleum and Mineral Resources (MoP) adopted the trend of applying the prepaid smart gas meters solution across the state. In April 2019, the Egyptian Natural Gas Holding company (EGAS) signed a cooperation protocol with the National Organization for Military Production (NOMP) for improving and producing prepayment smart gas meters under the international standards. According to the protocol, the Ministry of Military Production will design the prepayment method for smart gas meters and provide technical support for its operation.

In August 2019, an official source in EGAS said that the MoP will install and activate 20,000 prepaid gas meters during H2 of 2019. The official elaborated that these meters will be implemented in the new compounds of Bashayer Al Khair 2 and Al Asmara, in the cities of Alexandria and Cairo, respectively.

The experts commented on these efforts, optimistically, seeing that these smart solutions will reflect positively on the local market. Tawfiq mentioned that "the application of smart gas meters will benefit the Egyptian market by saving the collectors' salaries who will change their working filed to another activity more important than reading meters and collecting bills".

Boosting this view point, Heakal said that "in the next years, whole world will change the manual concept into technological concept specially in paying bills and self -services like online shopping also the gas meter will serve this plan to eliminate the reading workers to use them in another duties". For El Gamal, the new smart solutions "will enrich the technology market [in Egypt] and reduce of course the cost of bill collection."

FUTURE SCOPE

The Global Market Insights published in 2018, a report about the smart gas metering systems market, stating that its revenues reached more than $1 billion in 2016. The report covered smart metering market systems in 24 countries worldwide including Egypt. It predicted an increase in the revenues from using smart gas meters reaching to $9 billion at Compound Annual Growth Rate (CAGR) of over 21% between the years of 2017 and 2024.

Additionally, Markets and Markets published in March 2020, a report where it mentioned that global smart meters market size is expected to grow from estimated revenue of $20.7 billion in 2020 to $28.6 billion in 2025 at CAGR of 6.7%.

Consequently, these numbers, in addition to the efforts exerted in that trend worldwide, indicate that the era of traditional meters will end soon in Egypt and in the whole world as well.

Deal or No Deal:
A Post Coronavirus M&A Landscape

BY JACK BECKFORD

Aftershocks of the recent oil-price war and production cuts, fueled by the COVID-19 pandemic, have created an unprecedented environment for mergers and acquisitions (M&A) in the oil and gas industry. During uncertain times, companies tend to place a stronger emphasis on cash flow and, as Adi Karev, the global oil and gas leader at EY, says, "Everything in the oil and gas sector has switched to a short-term perspective." Subsequently, many upstream companies have announced major cuts in planned 2020 operational expenditure (Opex), in some cases in excess of a 50% decrease from 2019 figures. However, opportunities present themselves in times of chaos and companies may have the chance to enact structural change by making strategic and opportunistic investments, securing their long-term success.

STATE OF EGYPTIAN OIL & GAS MERGERS

As a global trend, the M&A sector has been hit hard by the pandemic and subsequently there has been a noticeable decline in the number of M&A in the oil and gas sector globally. According to analytics from GlobalData, there have only been 262 M&A deals announced in the sector this year, compared to the 354 confirmed across the same period in 2019.

As of recent times, Egypt has shown incremental growth in the oil and gas M&A sector, boasting an impressive increase of nearly 286% from $389 million in 2017 to $1.6 billion in 2019, according to data from Mergermarket. What's more, as of late there have been no indications of a slowdown in the sector with Shell announcing its intention to sell its onshore portfolio in the Western Desert for $775 million, BP indicating that it is planning to invest an eye watering $3 billion in Egypt in the near future, along with Chevron's, Shell's and Mubadala's success in the Red Sea bid round.

However, with the pandemic wreaking havoc in the sector, low oil prices have put into jeopardy the immediate future of successful M&A. For example, on April 22 Pharos Energy pulled out of the previously mentioned acquisition of Shell's onshore assets in Egypt. The tripartite consortium made up of Pharos, Cheiron, and Cairn Energy reached the second round of bidding. At present, this M&A looks dead in the water with investors unwilling to fork out large sums of money in these uncertain times.

BREAKTHROUGH LEGISLATIVE CHANGE

The reason behind Egypt's meteoric rise in oil and gas M&A can be attributed to an array of enticing legislative changes being made to attract foreign investment.

The groundbreaking legislative change was the introduction of Investment Law No. 72; this has significantly facilitated investment. The new Law repeals the restrictive Investment Guarantees and Incentives Law No. 8 of 1997 and aims to promote foreign investments by offering further incentives to the investors, reducing bureaucracy, and simplifying once overly complicated processes.

In terms of the new bankruptcy law, it revokes the criminal status of bankruptcy and introduces new mechanisms such as renegotiation and mitigating retribution. According to Toka Hasan, CRM specialist at Sharkawy & Sharhan, the amendments represent "a new philosophy". The new legislation benefits all parties by "open[ing] an outlet for non-viable companies to entail the continuation of the business and to prevent bankruptcy complex procedures with the court intervention, which was not the case previously."

Furthermore, the New Gas Law No. 196 signifies a devolution of power away from the State sector and into the hands of the private sector. This new development may permit private sector investors to undertake a multitude of activities such as distribution, transmission, supply and shipping of natural gas, all of which were formerly carried out by State entities.

However, in the wake of COVID-19 a report carried out by international law company Baker Mckenzie, argues that globally oil and gas mergers may be impacted by the tightening of foreign investment as a measure to safeguard smaller companies, making it tricky for investors to navigate these new rules. However, Khaled Sherif, a senior associate at Shalakany law firm, believes that "the Egyptian government is not introducing any changes in legislation that may hinder the Oil & Gas Market." He believes this to be the case because the government does not want to impede the rich vein of foreign investment seen in Egypt recently.

THE FURTHER RISE OF SUPERMAJORS?

Due to the prominent role that oil and gas supermajors play in Egypt, it is worth evaluating to what extent these industry giants will dominate the future M&A landscape in Egypt. According to Jean-Baptiste Bouzard, a Senior Analyst at Wood Mackenzie, supermajors "will likely play a leading role in future M&A, but there will be opportunities for other players too."

Bouzard maintains that the gas sector is already saturated with supermajors such as ExxonMobil and Chevron, who have recently entered the scene. This means that due to their pre-existing prominence, supermajors will by default play a leading role in future M&A.

However, it is a different story regarding the oil sector where Bouzard predicts that opportunities will prevent themselves for smaller companies. He says "while Shell and Eni acquired additional onshore blocks during the latest EGPC bid round, the supermajors are still on a trend to divest non-core assets in mature areas. This is why Shell put its Western Desert portfolio up for sale. These transactions could open opportunities for smaller players – particularly those with brownfield experience – to expand their footprints into Egypt."

FUTURE M&A ACTIVITY POST CORONAVIRUS

If one looks back to the late 1990s, there was a wave of bold oil and gas M&A against the backdrop of low oil prices and high production costs. This led to a consolidation of oil companies and in 1997 and 1998 the value of M&A in the oil sector amounted to approximately $88.99 billion and $66.6 billion respectively, according to data provided by Rajesh Kumar in the paper "Mega Mergers and Acquisitions".

In the current low oil price environment, Aiden Mckay, General Manager at Energy Egypt, believes that now would be a great time to make bold M&A in Egypt as "lots of companies would love to get out, given the global market conditions." However, he adds that this is unlikely saying "given global market conditions, I don't think that companies would be looking at investments just now. The drop in oil prices has placed a real strain on companies and their cash management." Thus, one of the major obstacles would be finding buyers that are willing to make counter cyclical investments in this challenging environment.

With regards to the long term impact of COVID-19, Bouzard estimates that this may only have an indirect impact on M&A: "The outbreak resulted in subdued demand for petroleum products, hence contributing to excess supply and lower hydrocarbon prices globally. This may in turn trigger sales of distressed assets." Furthermore, McKay asserts that COVID-19 will only have a short term impact on Egypt's M&A landscape, with likely reduced M&A activity in 2020 but by 2021 there may be an "increase in both mergers and in investments in enhanced oil recovery techniques as companies try to get a return on their investment."

Despite the detrimental impact of COVID-19 on the global M&A landscape, the impact in Egypt looks to be temporary. With investors increasingly willing to invest in Egypt coupled with groundbreaking legislative change, the long term future is looking bright for oil and gas M&A activity in Egypt.

CORONAVIRUS Brings HSE to the Forefront

BY JASMINE SHAHEEN

For the past several months, most of the world had shut its doors, creating an eerie and deafening silence among the oil and gas industry. Now, gradually, the world is beginning to reopen its doors in a cautious and careful manner, with a sense of fear and anticipation still lingering in the air. As the world is getting back to a new normal after the coronavirus (COVID-19) crisis; now more than ever health, safety, and environment (HSE) measures should be a priority to all of us.

SAFETY CHALLENGES

For the oil and gas industry, exploration and production (E&P) activities have witnessed a setback due to the pandemic, in addition to the much-needed oil production cuts issued by the Organization of the Petroleum Exporting Countries (OPEC+). However, getting back to a new normal on the field comes with risk as field personnel are always facing safety challenges. One of the main HSE issues when it comes to working in the midst of a pandemic is "[lack of] awareness where until a very short time many people were still handshaking. But now the face mask [became obligatory] by a decision from the ministry of petroleum and mineral resources," said Ahmed Moussa, an HSE Engineer at a downstream company.

Additionally, there is the matter of social distancing which could be quite difficult to control during such times. Mohamed Fouad, a Senior HSE Engineer at the Gulf of Suez Petroleum Company (GUPCO), reiterated Moussa's point, stating that masks are essential during these uncertain times, and added that maintaining social distance practices are essential. He noted that social distancing can be managed by issuing a rule that limits the number of personnel at certain places.

One aspect of safety that is usually discarded is mental health and its effect on employees and productivity. The conditions COVID-19 has exposed employees to include a different lifestyle by working from home, which has proven to be a double-edged sword and it was bound to take its toll as time passes. Mohamed Nassar, HSEQ Manager at Cheiron, weighed on the topic noting that "those human interactions we take for granted on a daily basis - passing someone in the coffee corner, having a quick briefing, whatever the daily rhythm might be - you don't realize how efficient those interactions can be until you're trying to manage that remotely."

LEADERSHIP AND HSE

Drawing on Nassar's point, management certainly plays a role in regulating and implementing HSE guidelines, but more importantly, is identifying the qualities of good leadership. To Senior HSE Engineer Rana ElKady, good leadership begins with "the human element, [as it is] the most important element at the organization in parallel with the continuation of productivity and work."

Managing such an unprecedented crisis like the pandemic is not an easy task, as crucial and necessary decisions need to be taken quickly. On his part, Moussa noted that the management role did not meet the par as "they refused to reduce employees beyond the prime minister's decision and they were too late to distribute facemasks to workers." Another mishap taken by management was the refusal "to assign medical vacation on suspicion of corona[virus] symptoms until many confirmed cases had been reported," added Moussa.

Infection is not the only concern that management is worried about, but also the accidental injuries in the workplace. According to the International Association of Oil and Gas Producers (IOGP), approximately 25,195 days of work were lost as a result of work-related injuries in 2018. Such actions, or lack thereof, do not only compromise the safety of personnel and their families, but they contribute to halting production as well.

HSE Manager, Nassar, mentioned several qualifications that should be in an effective leader including leading by example and promptly challenging any unsafe behavior, while also keeping an eye on significant risks and implementation of adequate controls. Additionally, the responsibility of acknowledging HSE risks and paying attention to the danger surrounding the workplace should not only concern management but it should be acknowledged by personnel as well. A paper entitled Study on the HSE Management at Construction Site of Oil and Gas Processing Area, published in 2012 indicated that about 76.41% of all serious incidents are a result of human's unsafe behavior.

In times like these, communication is of paramount importance and leaders should play a role in creating a safe environment for employees to voice their concerns. The International Labour Organization (ILB) published a report on Occupational Safety and Health and Skills in the Oil and Gas Industry Operating in Polar and Subarctic Climate Zones of the Northern Hemisphere denoting the importance of effective communication in yielding better results by creating a safe space to speak up, incidents can be limited or at least eliminated with time.

Nassar appealed to the same ideal that communication is essential in ensuring the safety of employees "various studies have found that social support increases our resilience and ability to cope. Listening to your employees is one effective way to make them feel supported and learn what they need."

BEYOND THE PANDEMIC

COVID-19 might have the spotlight at this time, but like everything else, it is bound to disappear. However, the pandemic has given HSE a push in the right direction, it has created a collective consciousness about the importance of HSE. It also brought back the attention on the HSE reporting mechanism and its need for expansion and to be included within the digital transformation plan, as Moussa noted.

The reporting mechanism needs to be efficiently developed to crush the consequence of the ongoing blame culture. ElKady stated that it leads to a failing system that begins with [a] fear of reporting; "[it] leads to wrong decisions and a failure in the production process and can lead to accidents at the organization with a big loss in production and market reputation." Instead of blaming others, ElKady suggested that providing training sessions to prevent any further incidents and cultivating a culture of responsibility is more efficient.

Despite the worldly fallout that accompanied the pandemic, it shined the light on some of the fragments in the oil and gas industry. It has provided a path of transformation towards a new revolution of change.

EGYPT UPSTREAM GATEWAY
MINISTRY OF PETROLEUM & MINERAL RESOURCES

EUG:
LEVERAGING DIGITALIZATION TO UNLOCK EGYPT'S BASINS POTENTIAL

For the past four years, the Egyptian Ministry of Petroleum has been reaping the fruits of the ambitious modernization project that was launched in 2016. Under the leadership of H.E. Eng. Tarek El Molla, Egyptian Minister of Petroleum and Mineral Resources, this unique overhaul transformation project was designed to unlock the petroleum sector's potential to further increase its contribution in Egypt's economic growth.

Exploration and production activities were at the heart of the modernization project, with dedicated teams working on innovative approaches to attract new investors to the market under the support of Geo. Ashraf Farag, First Undersecretary for Agreements and Exploration for the Ministry of Petroleum and Mineral Resources.

The team successfully worked on a project that aims to digitally promote Egypt's oil and gas bid rounds through seamless online access to the sector's data. The Egypt Upstream Gateway (EUG) is a unique national project for digitizing subsurface information and delivering a digital subsurface platform to ensure Egypt's reservoir data is kept evergreen. It will also promote Egypt's exploration and production potential worldwide.

In February 2017, the team started the technology sessions with key upstream technology providers, and in November 2018, the Egyptian General Petroleum Corporation (EGPC) launched the EUG tender. By February 2019, EGPC received offers from the bidders. After conducting a thorough evaluation process, the team reached the project award decision in November 2019.

During EGYPS 2020, an agreement was signed between EGPC (EGPC, EGAS, and Ganope) and Schlumberger. The agreement was signed by Eng. Abed Ezz El Regal, CEO of EGPC, and Karim Badawi, Schlumberger Egypt Managing Director, and was witnessed by H.E. Eng. Tarek El Molla. EGPC and Schlumberger will collaborate to form a world-class National Data Repository (NDR) for Egypt that will preserve, develop, promote, and maximize the value of the country's natural resources data, particularly data related to the petroleum E&P sector.

"The Egypt Upstream Gateway will provide a platform to attract new investments to Egypt from around the world through state-of-the-art digital enablement of bid rounds. EUG reflects the Ministry's progressive vision for digitalization and will be a key enabler in positioning Egypt as a modern East Mediterranean hub," said H.E Engineer Tarek El Molla- Minister of Petroleum and Mineral resources.

> EUG REFLECTS THE MINISTRY'S PROGRESSIVE VISION FOR DIGITALIZATION AND WILL BE A KEY ENABLER IN POSITIONING EGYPT AS A MODERN EAST MEDITERRANEAN HUB

HIS EXCELLENCY ENG. TAREK EL MOLLA
MINISTER OF PETROLEUM AND MINERAL RESOURCES
ARAB REPUBLIC OF EGYPT

One of the main pillars of the Gateway is "evergreening," defined as supporting regional geological, geophysical, and petrophysical studies to use data to both address current E&P subsurface challenges and to renovate existing assets for further E&P progress. Access to evergreen data helps accelerate decision making and reduce exploration turnaround time for operators more efficiently than ever before. Similarly, prospecting and licensing rounds are enhanced as the availability of quality data is continually improved. With this step, Egypt joins the league of countries that have NDRs and can effectively compete in the global energy E&P sector.

EUG signature ceremony at EGYPS 2020.

EUG review meeting between H.E. Eng Tarek El Molla;
Geo Ashraf Farag, First Undersecretary for Agreements and Exploration,
Ministry of Petroleum and Mineral Resources; and Schlumberger representatives.
Note: This photo was taken before the COVID-19 pandemic outbreak

EUG signature ceremony at EGYPS 2020.

The EUG is implementing the latest Schlumberger digital technologies and solutions, such as the underlying technology for the EUG web portal and the GAIA* digital subsurface platform. Using the power of the DELFI* cognitive E&P environment, the GAIA platform integrates all relevant data and workflows into a personalized data discovery experience that accelerates energy discovery and increases production. All relevant cross-domain data, including seismic, well and production logs, subsurface measurements, basin history, documents, and reports, are quickly accessible. Oil and gas companies can subscribe via membership levels depending on their business needs and interests.

Olivier Le Peuch, CEO of Schlumberger, added that "the EUG will significantly enhance the traditional NDR solution by digitalizing all the subsurface information and putting data at your fingertips anytime, anywhere—securely. The Gateway will accelerate energy discovery, enable collaboration anywhere around the world, and spark new investment. This is a giant step in digital modernization of core processes in our industry."

"Schlumberger combines deep domain expertise with transformative digital technologies using the GAIA platform, which will enable us to enrich Egypt's subsurface data and deliver the EUG. This industry-first platform will accelerate Egypt's discoveries, reduce uncertainty, mitigate risks, and enable Egypt's Ministry of Petroleum and its affiliates—EGPC, EGAS, and Ganope—to digitally showcase their assets to investors worldwide," said Maurice Nessim, President of WesternGeco®, Schlumberger.

On 13 May 2020, H.E. Eng. Tarek El Molla issued a ministerial decree assigning Geo. Alaa El Batal and Geo. Salah Khaled as members of the Executive Joint Operating Committee and Geo. Mohamed Said Radwan as the EUG project manager representing EGPC. With Geo. El Batal's recent appointment as Ganope Chairman, Geo. Adel Samaha will succeed him in the EUG Executive Joint Operating Committee. From Schlumberger, the ministerial decree assigns Karim Badawi and Ayman Shabrawi as members of the Executive Joint Operating Committee and Ahmed Sameh as the EUG project manager representing Schlumberger as EGPC partner. Both project managers will join forces to lead the project operations and cooperate with EUG members regarding data licensing and gateway accessibility.

Egypt continues to have significant and promising oil and gas potential, and through the Egypt Upstream Gateway, it aspires to attract more investors to the market and achieve new discoveries in different basins to boost production.

EUG committee team members from EGPC, EGAS, and Ganope.
From left to right: Geo. Rana Abdel Hakim, Geo. Rehab Atef, Eng. Eman Fahmy, Aml Adam, Geo. Mohamed Saber, Geo. Mostafa Abdelghaffar, Eng. Inas Osman, Eng. Dawlat Hashem, Geo. Mohamed Radwan, Geo. Salah Khaled, Geo. Alaa El Batal, Eng. Nabil Salah, Eng. Ahmed Elsaeed, Eng. Walid Elaasar, Eng. Hany Shaker, Dr. Samir Raslan, Geo. Mahmoud Elsaber, Geo. Mahmoud Abdelsalam, Geo. Karim Ali, Geo. Mahmoud Rashed, and Geo. Nader Labib.
Note: This photo was taken before the COVID-19 pandemic outbreak

EUG Joint Operating Committee. From left to right: Ayman Shabrawi, Salah Khaled, Samir Zedira, Adel Samaha ,Karim Badawi, Mohamed Radwan, and Ahmed Sameh.

CORONAVIRUS CREATES A NICHE FOR JOB MARKET IN THE OIL AND GAS FIELD

BY: **RANA AL KADY**

Recently, due to the Coronavirus pandemic, there has been instability in most jobs in the oil and gas field. In fact, many industry professionals around the world have been victims of salary deductions or lost jobs as a result of the low production in the industry. This has not only resulted in a series of staff eliminations, but has also generated a new niche in the job market in the oil and gas field.

GENERAL OVERVIEW OF THE CURRENT JOB MARKET IN THE OIL & GAS FIELD

To begin with, the impacts on the job market in the oil and gas field as a result of the Coronavirus, while problematic, have been tolerable considering other sectors that have taken a harder hit. The pandemic has shown to have a huge negative effect on the job market in the hospitality sector, wholesale and retail sector, manufacturing sector, construction sector, transportation (including aviation activities) and storage sector. The main factor that all of these sectors have in common is the need for employees and consumers (or customers) to be physically available for such goods or services.

According to an article published by BBC, the recent unemployment dip in the oil and gas sector has resulted in a 25% decrease in the total numbers of hours completed by employees as a result of low demand and low production. However, this does not necessarily imply that there is no demand for employees. Various studies have been carried out over the course of the last couple of months, indicating that the presence of the Coronavirus has created a new niche for certain jobs in the oil and gas sector.

EMPLOYMENT IN THE OIL & GAS SECTOR

In the oil and gas sector, specifically, it is assumed that nearly every one in five oil and gas employees have been terminated over the last quarter (Q2) in 2020, as reported by BBC. For companies that have minimal to no cash flow, employers find difficulty in supporting employees at low revenues. In fact, nearly 30% or more of employees have faced salary cuts to ensure that most employees can get most of their salary (as an alternate solution to laying off employees). Taking this into consideration, it is important to note that employees in the oil and gas field underTech Support, Healthy Safety and Environment (HSE) as well as Transportation departments are sought out during this time as their role becomes more imperative. More or less, it can be said that there has been a shift in the market depending on the importance of the job type.

THE NEW NICHE

Nevertheless, it is crucial to indicate that, while Tech Support, HSE and Transportation jobs are not new to the oil and gas sector, their importance has increased greatly over the last several months. In fact, there has been more demand for experts in this field than any other to ensure that operations continue running as smooth as possible.

Each department in demand has the potential to provide their respective companies with essential contributions during the unprecedented times. For instance, the role of Tech Support employees is mainly to ensure that communications tools are up and running at all levels, and that all activities involving machines or equipment that can be operated remotely to remain operational and fully-functional. As for HSE employees in the oil and gas field, it is essential that operations that require physical presence run safely; this entails ensuring that staff are sterilized efficiently and have taken precautions to avoid contamination while attempting to create a 'business-as-usual' atmosphere. Finally, Transport staff (i.e. drivers) are fundamental personnel during times where online deals, deliveries, and the storage of consumer goods need to be taken care of effectively. The importance of such jobs will remain crucial Post-Coronavirus to ensure that operations continue smoothly.

CASE STUDY

At the moment, the oil and gas sector has seen some of the highest cuts in employees as a result of both, the Coronavirus pandemic as well as the recent plunge in oil prices. Keeping this in mind, oil and gas companies are finding it more and more difficult to keep employees (along with their respective salaries), especially with the recent low cash flow rates.

Currently, companies are seeking alternate solutions that create compromises between the company and its employees. For example, in the second half of March of 2020, Halliburton (in Houston, Texas) took a decision to furlough nearly 4,000 employees. With operations running at minimal capacity, Halliburton viewed this decision as a compromise between laying off essential workers and continuing to pay salaries in their entirety. While the response to this decision was controversial, many argue that this decision has, at least, reduced employees' concerns to find a new job during such versatile and unpredictable times.

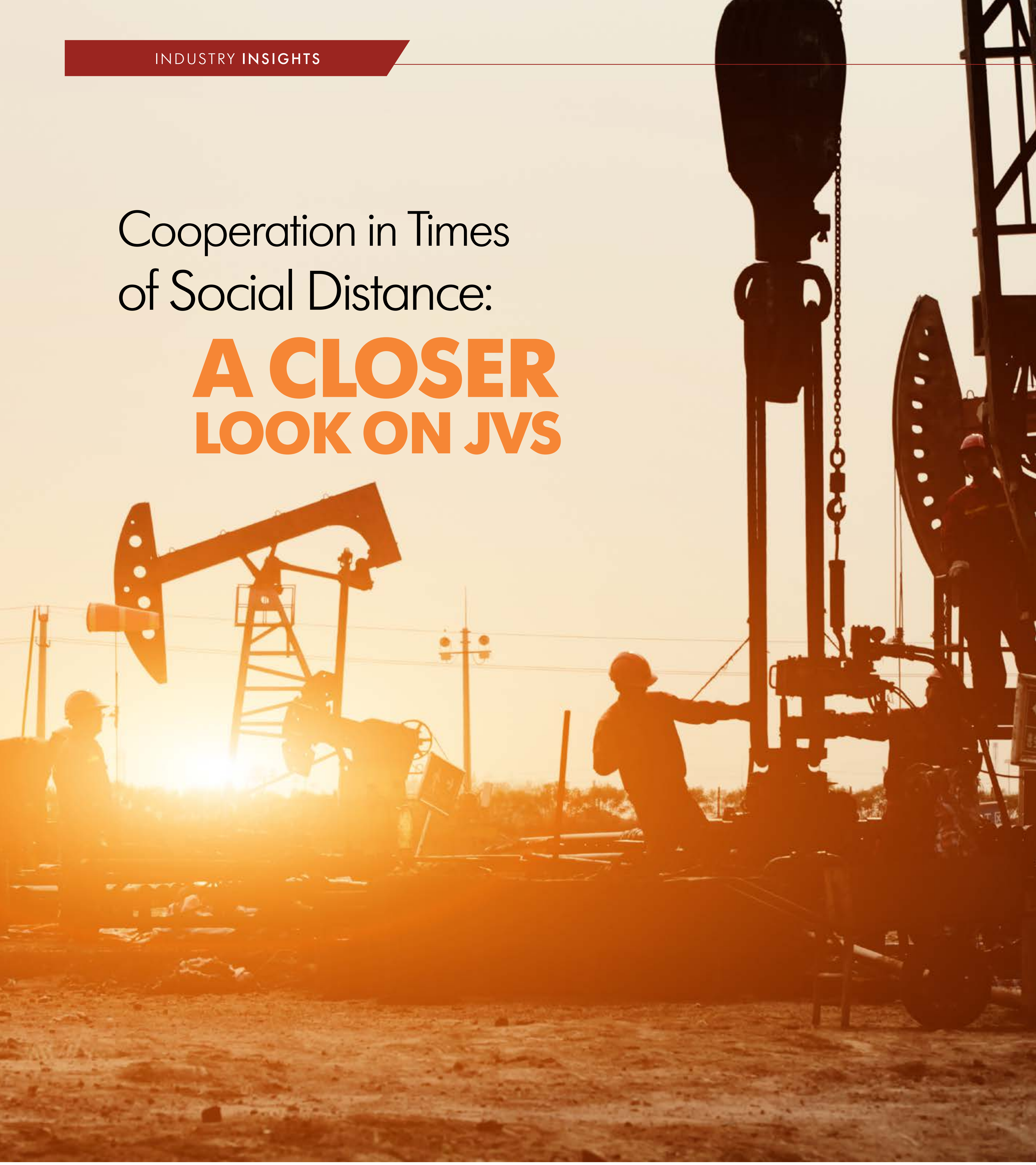
THE WAY FORWARD

As per a study conducted by Forbes, there are some essential skills that most employees should develop Post-Coronavirus in order to become more versatile to the fast-paced changes of the job market in the oil and gas field. This concept is meant to be considered a preventative precaution and not just when disaster strikes, in order to soften the blow.

Surprisingly, most skills are relevant to Tech Support, HSE and Transportation employees. For example, Forbes mentions the top essential skills to develop include innovative skills (i.e. ability to adapt to new situations given the circumstances), data literacy (i.e. the ability to read and analyse given data), critical thinking (i.e. the skill that enables employees to make responsible decisions and analyse situations carefully), adaptability (i.e. the ability to accommodate for negative or positive impacts), and – most importantly – emotional intelligence (i.e. the skill that encourages a positive atmosphere and the ability to connect with others during difficult times). As stated by an anonymous source in the talent acquisition field, "of course, there are always changes in oil and gas because of the field is very flexible. Now, the Coronavirus shows that no matter what job you have, it is important to become flexible and try to do capacity building exercises or find a way to work on skills that we never knew were important." By developing such crucial skills, employees become more flexible and open-minded to changes and difficulties in the work space.

To conclude, the current availability of job niche markets within the oil and gas sector is affected by the plunge in global demand and the recent Coronavirus pandemic. Additionally, in the oil and gas sector, the jobs with the highest demand are those within Tech Support, HSE and Transportation departments due to their importance during times where remote operations are necessary and minimal physical presence is crucial. To summarize, the unpredictable shift in the market should encourage employees to develop their skills for Post-Coronavirus and better economical situations.

Cooperation in Times of Social Distance: A CLOSER LOOK ON JVS



BY **MAI EL GHANDOUR**

As joint ventures (JVs) involve two or more businesses pooling their resources together, their goals as well as their risks become also commonly shared. However, overshadowed by the COVID-19 crisis in addition to a global oil price war, oil and gas JVs are under the growing pressure from shareholders, governments, and the general public to adjust their business models and transparently compete in a new energy landscape.

Oil and gas companies typically form a JV to expand into new markets, particularly overseas. This provide companies with more resources, greater capacities, increased technical expertise, access to established markets and distribution channels. But as travel restrictions still remain in place to curb the spread of the virus, JVs do in fact have to rethink their agendas and business models.

"JVs, regardless of their geography and location, have one thing in common in their set up and that is the amount of patience required. The overall quantity of patience required has only been increased by the COVID 19 pandemic," Hugh Fraser, Managing Director of HFI Consulting International, told Egypt Oil & Gas.

THE ELEPHANT IN THE ZOOM: JVS IN A CRISIS

According to the multinational law firm Freshfields Bruckhaus Deringer llp, the new work environment imposed by the pandemic will inevitably strain the ability of boards to maintain governance and control while they work remotely. Currently, JV boards are making a great effort to ensure that accurate daily reports are maintained – if not enhanced.

Some JVs began to create COVID-19 committees to accelerate decision-making, authors from Freshfields Bruckhaus Deringer llp wrote on Lexology. These committees are receiving so much attention at this critical time; however, the law firm warns that directors should be mindful that any decision taken during the pandemic will be judged afterwards. Thus, JV risks and good governance should be carefully assessed.

"The longer the pandemic continues, questions of future strategy will need to be tackled when approving new business plans and budgets. These discussions will provide plenty of room for disagreement between shareholders, particularly as to capital allocation and distribution policies. Early and constructive engagement with partners could help," the authors said on Lexology.

The authors recommended that an emergency funding for JVs should be intact to streamline source funding from individual shareholders. This way, shareholders will be able to guarantee that any prescribed processes and deadlines are strictly met without risking that the emergency fund becomes a burden later on.

CROSS-BORDER JVS

The Managing Director of HFI Consulting International explained to Egypt Oil & Gas that "there is a degree of chemistry in finding the right JV partner and our advice has always been to find trusted intermediaries who know the locality, and the players in that sector, well, rather than trying to find local partners from scratch. I see this becoming even more important when travel is restricted."

"It is a time of great opportunity for cross border JVs and not just in oil and gas. Energy transition technologies are developing in parallel; solar, wind, carbon capture and storage and hydrogen will all be key to a sustainable future for businesses - as well as for the planet. There will be no quick economic fix for some areas of the globe and its eminently sensible for businesses which are facing unprecedented trading conditions to look to cross border JVs. A JV business model is best for combining international technologies and know-how transfer with local skills, localization and market connectivity," he added.

Fraser also stated that "a bridgehead cluster venture approach where several synergistic, non-competitive companies collaborate to penetrate a new market is a JV model which we are likely to see increase in a post COVID 19 world. This gives end clients a much more interesting and attractive collective offering of technologies. The collaborating partners benefit from significant cost sharing and thus it is a highly attractive model for small and medium-sized enterprises (SMEs) which need to adapt quickly. In addition, it is a model which will not compromise the principle of operational independence and sole operational risk."

LIQUIDITY CHALLENGES AND RISKS

According to a report by international law and tax experts from CMS international law firm, previous oil price lows have caused JV issues such as: cash calls; insolvency; failure to agree work programs and budgets; and disputes concerning payments under decommissioning security deeds. Thus, oil and gas JVs should inevitably put in mind coventurer risk.

The report further states that due to the current economic and financial climate, there is a high risk that JV operators will develop opposing views regarding work programs and budgets. This is a particular risk which arises due to capital expenditure (capex) intensive operations and coventurers simply prioritizing different assets. It is suggested that in order to settle on work programs and budgets, companies with immediate financial constrains will need to consider: directors' duties in approving future spending commitments that may not be within the financial ability of the company and the risk that a work program and budget may be setting the company up for a greater loss.

EGYPTIAN JVS' FRAMEWORK

According to a chapter on Egypt by the Oil and Gas Law Review, the Egyptian General Petroleum Corporation (EGPC) works as a holding company and shares in around 58 JVs with foreign partners including several major international companies. The EGPC manages its exploitation and production (E&P) operations through these JVs. The EGPC leads any negotiations with the other party on the terms and conditions of the relevant agreements. Moreover, EGPC or Egyptian Natural Gas Holding Co (EGAS), a subsidiary of EGPC, holds a 50% while the other shareholder holds a 50%. Both parties have the right to nominate four directors to its board of directors. It is important to note that whenever a decision, action or a proposal should be made, such decisions are taken by the EGAS or EGPC and the contractor jointly.

An overview on JVs in Egypt by Ingy Rasekh and Khaled Ragheb, AMERELLER Legal Consultants, also assured that JV agreements among Egyptian or foreign partners are a matter of mutual agreement, defined by their contract, not by a special law. Alternatively, the members of the JV can elect to formally incorporate a special purpose vehicle (SPV) which carries out activities realizing the JV's purpose.

In terms of limiting member liability, the overview mentioned that one of the most essential pillars constituting a JV agreement is that all partners share the risks, losses and rewards of their venture. Furthermore, if the JV members do not equally incur risks, losses or rewards, the JV will be deemed void.

However, Rasekh and Ragheb further noted that JV members can regulate matters relating to the JV freely as long as it does not breach the mandatory legal provisions.

JVS COVID-19 RESPONSES

In line with the Ministry of Petroleum and Mineral Resources' COVID-19 Emergency Response Plan, many JVs in Egypt began implementing precautionary measures such as working from home or employee rotation, wearing masks, and sterilizing buildings, etc. Companies' Corporate Social Responsibilities (CSR) and health, safety, and environment (HSE) teams were making headlines regularly.

On March 4, Badr El Din Petroleum Company (BAPETCO), a JV between EGPC and Shell, became one of the first petroleum companies in Egypt to suspend the fingerprint work system to ensure workers' safety from any risks. BAPETCO measured employees' temperatures before entering the company, as part of the precautionary measures to prevent coronavirus, and according to the directives of Tarek El Molla, Minister of Petroleum and Mineral Resources, to limit the spread of the deadly virus.

The company put antiseptics in across its buildings and examined foreign experts upon entry. In addition, the company sterilized employees 'offices, toilets, and company exits. Since March, it has sought to reduce the workers' capacity and has formed the group necessary for the conduct of business while providing the necessary programs to work from home, especially for the groups most vulnerable to infection.

BAPETCO has topped the list of the 10 best Egyptian companies that have succeeded in taking all precautionary and preventive measures against this pandemic, protecting workers and maintaining production.

THE WAY FORWARD

According to Fraser, "Businesses, wherever they are located, have never needed to be more adaptable and have an ability to pivot their business model than now. I am sure we will find a more collaborative approach comes to the forefront in the coming months. The Middle East is in the enviable position of having the longest potential future in the oil and gas industry due to the large reserves and low production costs and so the next generation of business is secure, unlike in other regions. It could be a time of great opportunity for Egyptian JVs."

"Regular and proactive communication between potential JV partners will continue to be vital, but this is now likely to become driven by virtual meetings. It's a way of life for many of us who have worked in these territories for years, but for those who hope to expand or diversify in, or into, Egypt, developing relations virtually and working out how to avoid friction points will be a skill to be quickly developed. Egypt's congestion problems can be mitigated by a radical change to working practices with digitalisation and technology which enables remote working. A move towards these technologies and ways of working will be vital for success," Fraser concluded.

A NEW COLD WAR, OR AN ELECTION PLOY?

BY: **IHAB SHAARAWY**

As the world struggles to contain consequences of the COVID-19 pandemic, an escalating trade war rhetoric between the US and China seems to add insult to injury for the global economy.

The new escalation began with a trade of accusations between US President Donald Trump and China over the coronavirus where the US president said he was very disappointed with China's failure to contain COVID-19, explaining that the pandemic had cast a pall over his January trade deal with Beijing and that he had no interest in speaking to President Xi Jinping at the moment.

The prospects of the trade war have triggered sell-off in global financial markets and spread fears among investors that a renewed US-China trade conflict could inflict additional damage for global growth, while the world is heading for the worst recession since the Great Depression in the 1930s.

The protracted conflict between the two superpowers, which started in 2018, had reached a turning point in January 2020 with the signing of phase one of the trade deal. However, the deal failed to have any effects on the global economy due to additional tariffs imposed by both China and the US.

The US has continually accused China of unfair trading practices, including intellectual property theft, forced technology transfer, denying market access for US companies in China, while China believes the US is determined to restrict the dragon's rise as a global economic power.

With the emergence of the pandemic, relations between the two powers plunged to rock bottom as the US president even threatening to "cut off the whole relationship" with China. He even tended to raise China's anger by calling the coronavirus the "Chinese virus" and threatened to seek compensation from China for the damages caused by the outbreak.

The novel coronavirus crisis has really encouraged both countries, already reeling under trade, technology and maritime disputes, to take a more hostile position towards each other as Beijing accused the US of pushing relations towards a "new cold war".

A NEW COLD WAR IN THE MAKING?

According to media reports, China's top leaders have already received a report from the Ministry of State Security stating that hostility in the wake of the coronavirus outbreak could tip relations with the US into confrontation. Many analysts referred to the report as China's version of the 'Novikov Telegram', referring to the report that Nikolai Novikov, the Soviet Ambassador in Washington, sent to Moscow in September 1946, laying out his analysis of the US conduct and ushering for decades-long cold war that brought the world to the edge of nuclear confrontation several times.

However, many analysts see that if the US-China trade war really develops into a broader cold war, it will be nothing like the first Cold War as the US and the Soviet Union never had a chance to develop a significant economic relationship before things hardened into a stark East-West divide.

The question today will be how the US can launch such a war against the world's largest exporter of merchandise and the second-largest importer of both goods and services. China has also become the largest exporter of intellectual property-related services among middle-income developing countries. Furthermore, China emerged as one of the top two or three countries as both a source of and host to foreign direct investment.

Besides, China is the third-largest trade partner for the US itself and a major supplier of US consumer goods.

It seems that the new cold war between the US and China is a different kind of competition with different terms. However, it is not less dangerous. The struggle is expected to be more complex and multi-dimensional as the US and China are intimately entangled in many terms.

Some analysts expect that a full-scale cold war between US and China could trigger a new stage of de-globalization, or at least a division of the global economy into two incompatible economic blocs where others should make their choices and bear the consequences.

A WEAPON THAT BACKFIRES

The most wielded weapon in this war until now was the imposition of tariffs. Trump's tariffs policy aimed to encourage American consumers to buy local products by making imported goods more expensive.

The US started in 2018 to impose tariffs on over $300 billion of US imports from China, increasing the average tariff rate from 2.7% to 17.5%. However, more escalation in tariffs occurred in Q2 and Q3 of 2019. The Chinese government retaliated by increasing the average tariff on US exports from 5.7% to 20.4 %.

But it seemed that the trade war has partly backfired on both nations.

According to a new study by the National Bureau of Economic Research, trade war reduced US investment growth by 0.3% by the end of 2019, and is expected to shave another 1.6% off of investment growth by the end of 2020.

While trade war tariffs directly hurt targeted firms and sectors in US and China, they indirectly affect stock prices through global value chain linkages in the US, China, and in other countries which do not directly participate in this trade war.

A research, published on the economic portal VoxEU, found that US tariffs boosted share prices of some US companies by up to 7%, but cut the value of others by up to 2%. Looking at China, tariffs imposed by Beijing had a similar negative impact on domestic firms as well as US companies.

Another research by the US Federal Reserve found that Trump's tariffs had led to job losses in the industrial sector and higher prices for producers and consumers.

With the prospects of losses in the horizons for everyone, why should President Trump be insisting to go on with the cold war rhetoric against the Asian giant?

WHO CAN WIN?

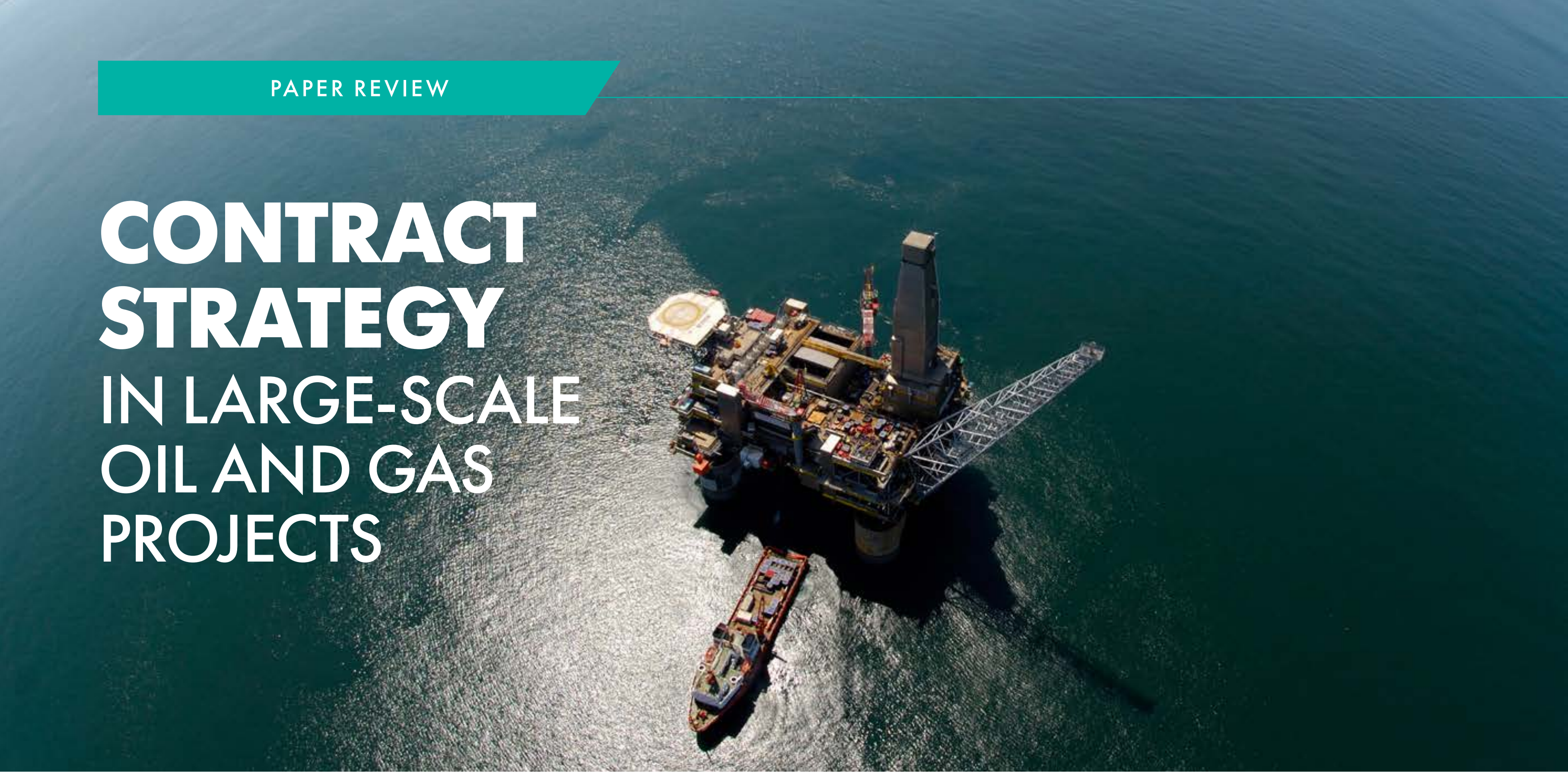
For many experts the conflict may be politically motivated.

They see that coronavirus cannot be the real reason for the new attack by Trump who cannot win another term under distressed economy.

The economy, which was known to be Trump's greatest political asset, has become his biggest weakness as unemployment is spiking at an unprecedented rate, while consumer spending is vanishing and the gross domestic product (GDP) is collapsing.

With coronavirus casting shadow over any hope to fix the situation anytime before election, being tough against China may help Trump to please his supporters. Still we have to wait and see if this will be enough for him to be reelected.The trade war has negatively impacted the economies of both the US and China. It has led to higher prices and economic difficulties for the US farmers and manufacturers . While in China, economic growth has slowed to its lowest in decades. In other countries it has also caused economic damage, though some countries have benefited from increased manufacturing to fill the gaps. It has also led to stock market instability. Governments around the world should now ponder steps to address the expected damage caused by the economic conflict.

And even as many countries are trying to hedge, the choice for neutrality or non-alignment seem to be very narrow this time.



CONTRACT STRATEGY IN LARGE-SCALE OIL AND GAS PROJECTS

BY JACK BECKFORD

Due to the dynamic nature of the oil and gas industry, many factors force companies into signing agreements such as engineering, procurement, construction (EPC) contracts. Any delay or inefficiency in these contracts can have a devastating impact. Thus, ideal contract strategy is of paramount importance to avoid deviation from the project schedule or budget to reap the maximum benefit for companies. Unsurprisingly, contract strategy is at the forefront of oil and gas companies' agenda.

Contract strategy is discussed in a paper titled Evaluation of an OBCE Conversion Contract in a Large-scale Oil and Gas Project. The study, which is written by Ruveyda Komurlu, Associate Professor at Kocaeli University, and Akin Er, General Management at Turkey's oil refining company TUPRAS, seeks to offer a unique analysis on contract strategy by evaluating the successes and failures of EPC contracts. Defined by the organizational and contractual policies, contract strategies are selected for the execution of a specific project. This paper maintains that contract strategy is one of the key parameters which has significant effects on the project.

OVERVIEW OF CONTRACT STRATEGY

Contract strategy shapes the management decisions of all parties in the project. It is dependent on three main components: project delivery method, contract price arrangement, and contract clauses.

Project delivery method divides up the responsibilities of each project phase between the respective parties of the contract and can be compartmentalized into Design-Bid-Build, EPC, Construction Management (CM), and Relational Contracting Model (RCM). These contract methodologies are rigid in their procurement apart from RCM which offers greater contract flexibility dependent on the other party's objectives.

Secondly, contract price management can be split into three parts: Price Based Contracts (PBC) determines all prices of the project but costs remain unknown to anyone but the owner. Secondly, in Cost Based Contracts (CBC) the contractor is reimbursed for all costs plus fee and all costs are known. Lastly, Guaranteed Maximum Price Contracts (GMPC) is a combination of price and cost-based contracts whereby the contractor is entitled to be reimbursed up to a maximum fixed amount.

Finally, contract clauses principally adjust general responsibilities of parties during the execution

of the project. The majority of contract clauses cover basic project matters such as reference documents, penalties, and bonuses. However, clauses should be tailored to specific projects taking into account the company's own contract strategy.

LARGE-SCALE OIL & GAS PROJECT CONTRACTS

A large-scale oil and gas project begins with idea generation (project maturity) and ends with an operational start-up (implementation of project). At the end of the project maturity, project cost estimates are updated and investment feasibilities will be reassessed.

Generally, the execution stage of the project takes the form of EPC. Due to the costly nature of downtime in the oil and gas industry, there is an extra incentive to speed up the execution period. Therefore, large-scale oil and gas projects are usually fast-tracked by means of overlapping the different stages of the EPC.

Accuracy of Capital Expenditure (CAPEX) is another important aspect in these projects. CAPEX directly affects the financial parameters of the investment and has a significant role when it comes to the investment decision. The AACE Cost Estimate Classification is used to calculate the CAPEX before commencing the project execution. Its corresponding accuracy ranges regarding the maturity level of project deliverables.

EPC CONTRACTING METHODOLOGIES

It is widely accepted that EPC contracts are the most advantageous strategy for the owners because they ensure the most reliable budget, minimum risk levels, and allow fast-track execution. Needless to say, EPC contracts do come with disadvantages such as maximum contingency in the contract price and less involvement of the owner in the detailed design phase.

Owners may prefer to award the EPC contract directly. Alternatively, they could have a front-end engineering design (FEED) study done first and award the EPC contract afterwards. Owners could also set up a Convertible Contract and convert it to EPC after an open book cost estimate process. The last two methodologies have been developed to minimize the disadvantages of EPC contracting.

In the case of a direct EPC contracting, the owner defines the project frame and assigns

a contractor to follow all EPC activities. However, the contractor bears the risks and responsibilities. Therefore, the contract price includes a maximum contingency. A way to counter this is to have a FEED contract first and award the EPC contract afterwards.This way, design development will reach a reasonable level of maturity before an EPC contract is awarded. Furthermore, this allows project cost to be estimated more precisely as cost deviation is inversely proportional to the level of information.

CONVERTIBLE CONTRACTS

In order to prevent the discontinuity of joint FEED and EPC contracts, one can introduce a convertible contract where the owner and the contractor agree on a two-stage contract. Firstly, detailed design is advanced up to a certain level where project cost can be calculated accurately by using an Open Book Cost Estimate (OBCE). This is the crucial element in a convertible contract because it allows the contractor to be paid in any price adjustment structure. The second part of the contract is then converted into an EPC lump sum. This technique benefits the owner by knowing all project costs upfront, the contingency amount, and also the contractor's profit.

The research concludes that OBCE convertible contracts allow the owner to optimize the combination of important project parameters such as initial cost, change order ratio, duration of the project, and management organization. Because of this, they are the most favored contract type in the oil and gas sector due to the contract's ability to adapt to the dynamic and complex nature of the sector.

OIL INSTABILITY AND EGYPT'S SUSTAINABLE RESOURCES

Because of the COVID-19 pandemic and the exceptional measures to contain the spread of the virus, the worldwide oil sector has faced serious difficulties. With the government easing restrictions, the hydrocarbon sector has been cleared off from lockdown measures; nonetheless, operations have been profoundly influenced by market instability.

To begin with, the pandemic paved the way for an amazing decrease in oil prices, which started by the beginning of the year at around $63 for each barrel and as of May 14 remained at $30.21. The incident was activated by the Saudi Arabia-Russia oil war, which began toward the beginning of March after the Organization of the Petroleum Exporting Countries (OPEC) called upon producers to curtail production by an aggregate 1.5 million barrels per day (mmbbl/d) in Q2 2020. However, Russia scaled up its production, and from there on Saudi Arabia went with the same pattern. Prices began dropping in the beginning of March, with the excess of oil in the market driving worldwide oil and gas organizations to reduce their spending and activities.

Worldwide experts have warned that a mix of COVID-19 and oil unpredictability showcase the dangers subverting the speed of the worldwide progress towards sustainable power resources.

This mix has made noteworthy buyers interested in renewables. This is particularly the situation among mechanical and business buyers, who promptly observe the advantage in paying higher forthright expenses and afterward go into a 25-year fixed-value contract. This is significant for industry prioritization as renewables are on a very basic level a steadier component than oil or gas.

Plunging oil prices will likewise disturb global from exploration projects. It's probably going to place numerous upstream companies into base redetermination. If the oil value remains around the $30 imprint, the business will be compelled to make further cuts in its operations, conceivably adjusting the market scene.

The full impact on the petroleum sector will unfold over the coming months. With Brent prices at $29–30 for every barrel, lower oil costs will probably positively affect Egypt's hydrocarbon bill. In case that oil prices stay discouraged over the coming timeframe, the import bill is probably going to decrease considerably, which emphatically impacts Egypt's subsidy financial plan. Fuel subsidies have been cut by practically a large portion. In fiscal year (FY) 2020/21, the Ministry of Finance is assigning EGP 28.1 billion ($1.8 billion) for oil-based commodities' subsidies , a 47% drop from the past financial year.

Finally, we can say that Egypt's expected progress in the coming year is likely to face a setback amid the uncertain circumstances. The longer the oil prices remain depressed, the more extensive the impact will be on the exploration and production segment. However, the trade balance will even out as a result of Egypt's improving performance in local production over the years.

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

DRILLING OPTIMIZATION AND COST REDUCTION

Major international oil companies (IOCs) and corporations worldwide are currently seeking to minimize the final cost of oil wells and to maximize the net profit of them in light of the current low oil price without neglecting the safety policies and the technical viability of the well-bore. There are methods that have been developed to evaluate drilling cost then trying to minimize it, but because of the large number of factors and unscheduled events that impact drilling performance, quantifying well costs represents a challenge due to restrictions on data collection, unclarity and availability.

Drilling rates are often constrained by factors that cannot be controlled and in ways that cannot be documented, evaluated or directed. Recently, the concept of Mechanical Specific Energy (MSE) has been used to obtain a more accurate assessment of drilling efficiency.

Drilling a well for exploration or production of oil and gas is a complex and multifaceted activity that is subject to several variables. Although the nature or basics of drilling is the same worldwide, geologic conditions, contractors experience, technical limits, equipment availability, well design considerations, and numerous other factors can lead to a great difference in drilling performance and well costing.

Well drilling performance studies and comparisons are mostly done on a well-by-well and actual-versus-plan basis, or seek to correlate costs to performance indicators, or drilling parameters. To evaluate the deviations in drilling wells performance and to compare costs, it is required to set-up a data base containing all available drilling and the Advanced Flow Engineering (AFE) data then establish statistically reliable relationships between performance indicators and the factors that impact drilling and the total well cost.

There are two methods to evaluate drilling performance. The first method is based on experimental design and field experiences. The most common is the "drill-off" test, in which the driller experiments with various weight on bit (WOB) and revolutions per minute (RPM) are valued, and then the parameters that result in the highest rate of penetration (ROP) are selected. The second method is based on collecting several case-histories and studying the factor effects and inter-related parameters based on an overall assessment of wells data collected from a variety of drilling contractors, locations, and wells.

It is so important for oil and gas well drilling projects to review the factors that impact drilling cost and how to reduce the final total cost of the well to set a good plan to achieve the minimum well cost.

The foundational basis of the approach is "improve drilling performance – reduce drilling time – minimize drilling cost".

Mohsen Ahmed Farhan
Drilling Department Head
General Petroleum Company (GPC)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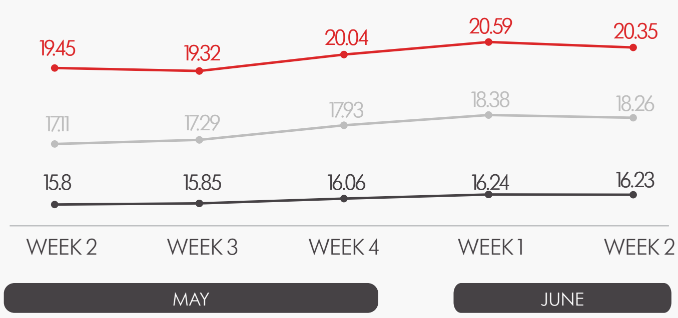
EGYPT OIL&GAS
RESEARCH & ANALYSIS

Annual Inflation Headline CPI (%)
APR 2020: 5.9 — MAY 2020: 4.7

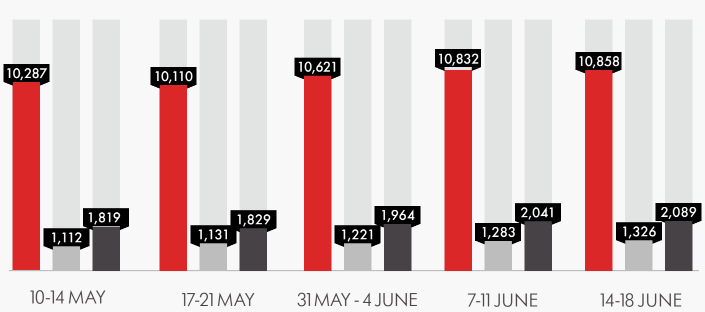
Net International Reserves ($ billion)
APR 2020: 37 — MAY 2020: 36

Non-Oil Private Sector PMI (Points)
APR 2020: 29.7 — MAY 2020: 40.7

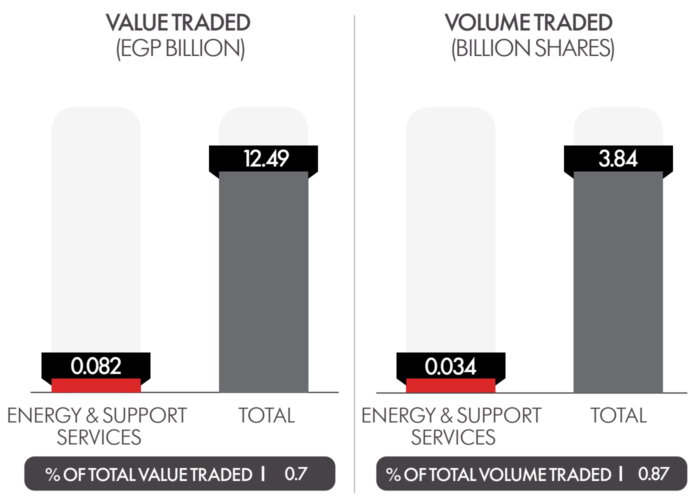
Exchange Rates



Capital Market Indicators



Performance of Petroleum Companies in the Egyptian Exchange in May 2020



National Drilling

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
USD	4.96	0

Alexandria Mineral Oils Co.

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
EGP	2.31	▼ 36.36

Egypt Gas

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
EGP	49.01	▼ 11.69

Sidi Kerir Petrochemicals

CURRENCY	CLOSE PRICE	YTD PRICE CHANGE (%)
EGP	5.77	▼ 35.75

Source of Raw Data: CBE, CAPMAS, Egyptian Exchange, HIS Markit

SDX's SOBHI WELL NATURAL GAS PRODUCTION RATE (MMSCF/D)

1st Hour	3rd Hour	Stable Rate	Maximum Expected Rate
25	15	10	10-12

KHALDA PETROLEUM PUT NU-10 TO PRODUCTION

Location	Near Om Baraka Western Desert
Investments	$3 million
Crude Oil Production	1,350 bbl/d

EDISON COMPLETES DRILLING AMEEQ-1 EXPLORATION WELL

Location	Rig	Depth
North Thekka East Mediterranean	Maersk Discoverer	5670.5 meters

NEW DISCOVERY IN AL SALEMIA WELL-5 IN THE WESTERN DESERT

Location	Operator	Production Rate
Abu Sennan Concession	Borg Al Arab Petroleum Company	4,100 bbl/d Crude Oil; 18 mmcf/d Natural Gas

PETROLEUM & MINERAL EXPORTS IN Q2 2019/20 ($ MILLION)

Crude Oil	1,307
Petroleum Products	1,569
Ethylene & Propylene Polymers	142.9
Phosphate & Mineral Fertilizers	272.1
Gold	517.1

TAQA ARABIA's MASTER GAS INKED A DEAL

Target: Provide natural gas to Pyramid Poultry Co.

Annual Capacity: 650,000 m^3

TOTAL EXPORTS OF FUEL, MINERAL OILS & THEIR PRODUCTS ($ BILLION)

2018/19	2019/20 Q2
1.337	2.652

98.4%

BUTANE CYLINDERS DISTRIBUTED BY BUTAGASCO (MILLION) (YoY)

2019	2020 (targeted)
87.8	90

2.5%

INTERNATIONAL OIL PRICES

BRENT PRICES ($/bbl)

07-April	31.87
30-April	25.27
07-May	29.46
29-May	35.33
05-June	42.30
19-June	42.19

OPEC BASKET PRICES ($/bbl)

07-April	22.67
30-April	18.05
07-May	22.91
29-May	29.01
05-June	36.83
19-June	39.45

NATURAL GAS PRICES ($/mmBtu)

07-April	1.85
30-April	1.95
07-May	1.89
29-May	1.85
05-June	1.78
19-June	1.67