

EGYPT OIL & GAS NEWSPAPER

CELEBRATING



ISSUES

WE CREATE. WE ACHIEVE. WE CELEBRATE



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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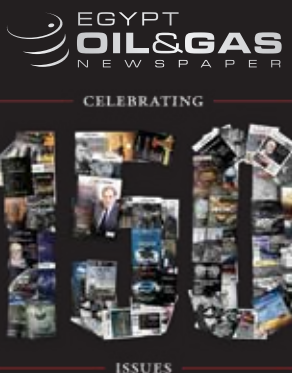


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EGYPT OIL & GAS
NEWSPAPER

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150

ISSUES

This month, Egypt Oil & Gas Newspaper marks its 150th issue. Our success lies within this huge milestone that we would like to celebrate with all our partners. Egypt Oil & Gas has been connecting the industry pieces since 2007, and it will continue to do so and provide its readers with insightful analyses.

This issue is dedicated to Human Resource (HR) Management, which stands as one of the seven pillars of the Ministry of Petroleum and Mineral Resources' Modernization Project.

The issue delves into the different aspects HR Management within the sector, as we review the ministry's middle-management program; analyze the modernization of joint ventures, the effect of human resource management on performance within oil and gas firms; as well as bridging the skills gap, and building digital capacities for the future.

"We Create. We Achieve. We Celebrate" is our motto this issue. Thus, the team is always striving to hit further successful milestones. Finally, we would like to express our sincerest gratitude to all our loyal partners for their continuous support.

MAHINAZ EL BAZ
Acting Editor In Chief
Research & Analysis Manager



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Egypt's Leading Oil And Gas Monthly Publication

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CELEBRATING



ISSUES

150 ISSUES, WE HAVE COME SO FAR!

It is an occasion to celebrate, an opportunity to momentarily look back, but a golden ticket to chart the path forward. In the space of 15 years, Egypt Oil & Gas has gone from a little-known publication - often asked if the Ministry of Petroleum recognized its scope of work- to where it is today, with the number of readers inching up year-by-year, and more and more global industry players and key market leaders, considering it the ultimate credible gate away of information in the oil and gas sector.

In the words of Lao Tzu, "A journey of a thousand miles begins with a single step." But through it all, we have continued to focus on building something that we can stand behind and that we are proud to be a part of, accompanied by a strong vision, dedication, and eagerness. In fact, nowadays, Egypt Oil & Gas represents an icon for the Egyptian petroleum sector, with objective analyses, accurate statistics, latest technology perspectives, and professional staff capable of convening major events and roundtable discussions, catering to the industry's demands and interests.

Looking back on our growth, we have outgrown a few spaces now. In April 2007, a year after we made debut with our very first issue, we launched the magazine's Research and Analysis (R&A) Department and released the first premium report, "Egypt Rig Market." During the same year, in September, Egypt Oil & Gas organized its first conference, held under the patronage of the ministry of petroleum, aiming to provide a networking platform for the private and public sectors of Egypt's energy industry. Delving deeper into the R&A's achievements, the team was proud to publish "Egypt's Petroleum Sector in a Year" report, in partnership with the Ministry of Petroleum, in February

2019, which covered for the first time gains made under the ministry's modernization program.

Shortly after the Egyptian Uprising, Egypt Oil & Gas took up a patriotic mission to act as the industry facilitator and created the EOG Technical Committee back in December 2014, representing the industry's top officials to enhance the petroleum industry and address challenges and provide profound solutions.

Further accomplishments to highlight Egypt Oil & Gas' glittering success include being the official publication of EGYPS' editions in 2017, 2018 and 2019. The leading exhibition brings together experts from the oil and gas sector to share their industry experiences and offer critical insights on Egypt and North Africa's fast-evolving hydrocarbon businesses. With more in the pipeline, Egypt Oil & Gas has managed to stand significant through the past years and proved itself to be more than just a magazine; it is rather a source of reference, guidance, and information across the energy sector in Egypt, not to mention Africa and the entire MENA regions.

You can recite the highlights, you may know when Egypt Oil & Gas was born; but no one has a clue about our journey, what it took to create the vision, the persistence necessary to achieve it, and most importantly the accomplishments, big and small; and that is what I, today, among my team, stand proud of.

The bottom line here is that the need to act together has never been greater and Egypt Oil & Gas is certainly up to the job of strengthening delivery channels to make room for more investments into the industry. With your help and support, I sincerely look forward to celebrate the many coming Egypt Oil & Gas milestones.

MOHAMED FOUAD
CEO & FOUNDER, EGYPT OIL AND GAS





HE.ENG. TAREK EL MOLLA
Minister of Petroleum and Mineral Resources



My warmest congratulations to Egypt Oil & Gas for issuing its 150th edition. We commend this outstanding publication, wishing it a further success in its mission as a trusted source of information that highlights Egypt's substantial progress and ambitious developing plans in the oil and gas industry.

There is no doubt that since the first edition that was published in 2007, Egypt Oil & Gas proved to be a model of specialized information worth emulating.

Egypt Oil & Gas worked hand in hand over the years with the Ministry of Petroleum showcasing and narrating its major success stories, which helped attract investment opportunities with major global industry players. In addition, they have been objectively raising

vital project related issues that can help enhance our industry performance through its Technical committee, through continuous debates and dialogues, this committee was able to reach clear cut solutions and implementation plans.

I personally thank Egypt Oil & Gas for their partnership and for being one of the true valuable sources of information for attracting investments especially in the upstream industry.

We always consider Egypt Oil & Gas as a critical tool promoting our sector's successes locally and globally.

My sincerest congratulations and wishes for further successes and more issues to come.



ABED EZZ ELREGAL
CEO of the Egyptian General Petroleum Corporation (EGPC)

Egypt Oil & Gas represents a trusted information provider, with objective analyses, accurate statistics, the latest technology perspectives, and a professional staff capable of handling major events and roundtable discussions on the petroleum sector activities.

Congratulations! Wishing you a continuous success.



OSAMA FAROUK
Chairman of the Egyptian Mineral Resources Authority (EMRA)

Congratulations to one of the top petroleum industry magazines in the world. It is my pleasure to join the celebration of the 150th issue of Egypt Oil & Gas. Egypt Oil & Gas is a consistent reliable news source following the current developments in the Egyptian petroleum sector. The interviews, discussions, and the deep analysis, which covers major projects and company updates, provide great valuable information. Egypt Oil & Gas also covers a wide range of related topics, including exploration, production, financial and legal services. I want to thank the Egypt Oil & Gas team for their great efforts. I wish to you more and more success in the next 100 issues. Thank you!



OSAMA EL-BAKLY
Chairman of Egyptian Natural Gas Holding Company (EGAS)

Egypt Oil & Gas Newspaper has been providing readers with professional analysis and good insights from industry experts working in the Egyptian oil and gas sector in upstream, downstream, and midstream operations. Egypt Oil & Gas has been focusing on the achievements of the Egyptian Petroleum Sector and its outstanding results, under the umbrella of the Ministry of Petroleum's Modernization Project over the past four years, by sharing its positive impact on the Egyptian economy and society.

Congratulations on the grand success of the Egypt Oil & Gas Team, whose perseverance and determination have helped the publication to reach this place, especially in celebrating the 150th issue. I hope it will continue to be a vessel to inform engineers, geologists, and all oil and gas professionals about the sector's values and principles; work ethics; health and safety practices; and innovative technologies, while encouraging positive interactions among the industry stakeholders.



MOHAMED ABDEL AZIM
Chairman of Ganoub El Wadi Petroleum Company (Ganope)

Egypt Oil & Gas Newspaper is an icon for the Egyptian petroleum sector. It is the best platform to know everything about oil and gas, and a bridge that connects all those interested in the industry. Egypt Oil & Gas was able to hugely impact the younger generations in the sector, providing them with knowledge and continuous cultural development through the articles and research notes written by an elite of experts. Since its first issue, Egypt Oil & Gas successfully set its identity and destination until it reached its targets with dedication and creativity, while remaining an open platform to all industry workers of all ages and from all places, until it became a leading publication.



FABIO CAVANNA

Managing Director of International Egyptian Oil Company (leoc), Eni.

On behalf of leoc, I wish to congratulate all those who work for “Egypt Oil & Gas” for this remarkable achievement. Eni has been present in Egypt since 1954, and as the main producer through leoc in the country, we appreciate your support and wish you all to continue for a long time to tell the world of energy, the increasingly crucial role of Egypt in the Eastern Mediterranean, today's results and tomorrow's challenges with the same passion, integrity and competency ever.



DAVID CHI

Vice President and General Manager, Apache Egypt.

Congratulations to Egypt Oil & Gas on the publication of your 150th issue. Along with your magazine, e-communications, and the Upstream Technical Committee, you continue to add value and important perspectives and insights to those in Egypt's petroleum industry. Thank you for your efforts. Keep up the good work!



KHALED KACEM

VP Egypt & Chairman, Shell.

I would like to congratulate Egypt Oil & Gas Magazine for its 150th issue. For 13 years now, the magazine has successfully managed to position itself as a key source of the Sector's news, trends and latest updates, gaining the trust of the government and key market players. Wishing EOG all the success for years to come.



HESHAM ELAMROUSSY

Chairman and Managing Director, ExxonMobil Egypt.

Egypt Oil & Gas newspaper is a rich and comprehensive platform for the industry that continues to shed light on the most recent trends, major projects and business opportunities. Congratulations on your 150th edition, wishing you continued success and prosperity.



THOMAS MAHER

President and COO of Apex Energy, and EOG Technical Committee Chairman.

Congratulations to Egypt Oil & Gas newspaper (EOG) on the milestone of publishing their 150th issue. For the last 12+ years, Egypt Oil & Gas newspaper has been the premier source of news and information concerning Egypt's oil and gas sector. Over those 12 years the EOG team has grown in numbers and sophistication utilizing the internet and other social media handles. A recent focus on research is also a welcomed addition to the other valuable services that EOG news provides the sector



SAMEH SABRY

Senior Vice President, Managing Director Egypt, wintershall dea.

On behalf of Wintershall Dea, I would like to congratulate Egypt Oil & Gas team for their 150th issue. As an Egyptian and as an oil and gas professional, I am quite proud to have such a professional media service in Egypt, covering our industry news and areas of focus. I wish you more and more success and hundreds of more issues to Publish

TESTIMONIALS



KHALED ABU BAKR
Chairman of TAQA Arabia.

I am glad to hear that Egypt Oil & Gas newspaper has successfully completed 150 editions. Over the years, your esteemed newspaper has developed and became a key platform covering the different aspects of the energy sector and a major source of news for different organizations working in the field. Certainly, Egypt Oil & Gas newspaper has been an added value to the energy sector through its constantly dialogues with different key influencing figures, sharing the different point of views, and featuring with complete objectivity the latest news related to this field. For sure, the credit for this success goes to the professional management team and the dedication of the editorial team. Once again, congratulations and I hope that Egypt Oil & Gas will reach great heights in the years to come



CRAIG ROBERTSON
Country Manager, TransGlobe Energy Egypt

TransGlobe has enjoyed many years of collaboration with Egypt Oil & Gas, most notably with Egypt Oil & Gas technical committee and EGYPS, however, their Monthly magazine is the bed rock of our relationship with Egypt oil and Gas. The magazine is far more than just a magazine, it is a source of reference , guidance and information across the oil and gas industry in Egypt and we are so proud to have been involved with Egypt Oil & Gas over the years in the “must have” publication



DAVE THOMAS
Cheiron CEO

Egypt Oil & Gas newspaper is a high quality and informative publication which always includes topical articles of real relevance to our business. I wish the newspaper team every success on the event of this milestone achievement and look forward to reading future issues



PATRICK ALLMAN-WARD
Dana Gas CEO

Congratulations Egypt Oil & Gas newspaper on its 150th issue. The newspaper has become the leading oil and gas monthly publication for the industry sector in Egypt and a must read for anyone either in the sector or interested in the sector. Its high-quality interviews, articles and infographics mean that it is not only an informative, but also an enjoyable read as well.



KAMEL EL SAWI
President of Kuwait Energy Egypt

Egypt Oil & Gas “EOG” continues to be the most reliable, leading and largest portal that connects the Egyptian oil and gas industry network together and remains the most trustworthy gateway journal in the industry. EOG grows year by year and turned to be most reliable resource in the main events and exhibitions with the partnership of important international organizers.



AYMAN KHATTAB
BHGE President, Gulf & North Africa

Egypt Oil & Gas newspaper is one of the leading publications in Egypt and a great platform and voice for the oil and gas industry in the country. I’m proud to see the publication reach its 150th issue; this is a true indication of its success and continuity as a reliable and dependable source of information for the sector



AHMED KENAWI
Senior Vice President Middle East and North Africa Region
Halliburton

Congratulations to Egypt Oil & Gas on your 150th Issue – you will serve the Egypt Oil and Gas community with your professional and insightful news and contributions to our industry.



Schlumberger

KARIM BADAWI

Managing Director, Schlumberger
Egypt and East Mediterranean

I have come to my new role about exactly a year ago and it has been a tremendous pleasure to join the Egypt Oil & Gas Technical Committee. It has been a great experience to see how the fantastic teamwork and collaborative spirit try to improve and have a positive contribution in the oil and gas sector in Egypt amongst all various stakeholders. I would like to congratulate Egypt Oil & Gas for the key critical milestone achieved and wishing many more successes ahead



WALID YASSIN

Vice President-North Africa, Weatherford

We had the opportunity to work closely and cooperate with Egypt Oil & Gas newspaper in many occasions and events; to say the least we were impressed by their professionalism, attendance and caring for their clients and partners. Their publications are becoming essential source of trusted information for the oil and gas activities in Egypt. The produced weekly E-Newsletter from Egypt Oil & Gas has become a very important publication to everyone who works in the oil and gas domain in Egypt and the authenticity of the news is unmatched by any other publication. I wish Egypt Oil & Gas a very happy 150th anniversary with many more successful years to come



RAMY BAKIR

Vice President Operations Middle East & North Africa -
NOV Completion & Production Solutions

Congratulations Egypt Oil & Gas team for the 150th issue. You have been a remarkable media platform for the industry. Wish you all the best for the future and more successes.



HALLIBURTON

COLBY FUSER

Halliburton Vice President Egypt and Libya

Egypt Oil & Gas is on the cutting edge of communication. 150 issue of successful sharing and collaboration making the link between our business and our customers happen. We are happy to be partnering with EOG in everything they do and I have seen more value from this team than any other notable organization during my global travels... keep up the good work Mohamed and team and congratulations.



HELMY GHAZI

Managing Director, HSBC Bank Egypt.

The Egyptian petroleum industry is witnessing an unprecedented boom. Egypt Oil & Gas Newspaper is a key source of information for all professionals interested in the sector. Congratulations on reaching your 150th issue. This is an impressive achievement.



MARTIJN MURPHY

Senior Research Manager, Africa Upstream.

Wood Mackenzie would like to congratulate Egypt Oil & Gas on its 150th edition. This is three times as many editions as Mo Salah has scored goals for Liverpool! A marvelous achievement. Wood Mackenzie wishes Egypt Oil & Gas the best for the future as Egypt's energy industry goes from strength to strength.

TESTIMONIALS



MAGED NADEEM

Chief Commercial Officer, Maridive

Congratulations Egypt Oil & Gas on the publication of your 150th issue. Thank you for being a great supporter to the industry and being a great partner to Maridive



SAMIR ABDELMOATY

Country Manager, Egypt at Rockhopper Egypt.

When I look for a professional discussion of a subject in publications, I go to Egypt Oil & Gas newspaper. It succeeded to attract and interviewed top leaders of the industry to share their views on the future of our industry in a more of cooperative way



MARWAN EL SHAZLY

Vice President, Pan Marine Group

'150th issues of excellence and successfulness, Congrats! Egypt Oil & Gas newspaper undoubtedly became a major in oil and gas accurate news provenance. I believe that Egypt Oil & Gas is a great asset for everyone who's working in the oil and gas field. Pan Marine considers EOG a reference book for the latest exclusive news, concession maps, events and analysis. I look forward to its continued success.



subsea 7

SAMI AMIN

Egypt Managing Director, Subsea 7.

One of Subsea 7 communication channels to the Egyptian market is Egypt Oil & Gas (EOG), both the website and the monthly publication. This channel is our trusted gateway to the oil and gas community for the past years, not only for outward communication, but also for receiving market information and insightful updates. More importantly, it is a pleasure working with EOG team who are always available and willing to adapt and support. I wish them all continued success



dmg::events

SALMAN ABOU HAMZEH

Vice President, Energy, Middle East, dmg events

Egypt Oil & Gas magazine is one of the leading oil and gas publications in North Africa and an excellent source of market knowledge and information with a wide readership reach in the region. Each issue contains great quality content that addresses the hot and current industry topics and upcoming opportunities. We will continue our strong partnership with Egypt Oil & Gas magazine which is the official publication of the Egypt Petroleum Show (EGYPS) since its launch.



HESHAM EL MELIGY

General Manager, Enap Sipetrol, Egypt Branch

Egypt Oil & Gas newspaper is a reflecting mirror to the Egyptian oil and gas industry; upstream, midstream, and downstream. I would like to thank you for your appreciated efforts over the past years, you have shed the light on the most important topics related to the oil and gas sector developments. Today is a milestone for the hundred and fiftieth releases and my warmest congratulations to Egypt Oil & Gas team for this event wishing you many more years of success.

EOG IN NUMBERS



Covered Events, Workshops
— & Conferences —

+80



Published
— Advertisements —

+1500



Published
— Reports —

+40



Followers
— on Social Media —

+45,000  | **+15,000** 



Published
— Maps —

+30



Sent
— Newsletters —

+400



Organized
— Events —

5  | **11** 



Conducted
— Interviews —

+10  | **+90** 



MILESTONES (2007 - 19)

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ISSUES



NEWSPAPER LAUNCH - 2006

In **December 2006**, a staff of five journalists launched the first issue of the newspaper. Major sponsors such as PICO, Castrol, and Union Fenosa advertised in the paper from the beginning. The publication focused completely on the oil and gas sector in Egypt.



FIRST PREMIUM REPORT - 2007

In **April 2007**, the Research and Analysis (R&A) team published their first premium report "Egypt Rig Market", which included classification of rigs, contractors, operators and their explorative pursuits. The report further showed rig rates and tackled the Egyptian Pricing Strategy problem with future expectations of the market amid the global economic crisis.



FIRST CONFERENCE - 2007

To connect the private and public sectors of Egypt's energy industry, Egypt Oil & Gas organized its first conference in **September 2007**. Held under the patronage of the then Minister of Petroleum Sameh Fahmy, the primary focus of the conference was to tackle the transition from greenfields to brownfields.



INVESTIGATIVE REPORTS - 2010

In **2010**, Egypt Oil & Gas produced a number of high-quality investigative reports focusing on the potential of offshore Mediterranean fields, best practices with cost recovery and other contract terms, in addition to outlining the obstacles that are hindering the petroleum sector from progressing.

WEBSITE & NEWSLETTER - 2007

As the only Egypt-based oil and gas-focused information provider, Egypt Oil & Gas launched its website in **February 2007**, displaying timely and accurate news in addition to maps, events and analysis. Besides, the website allows subscription for the newsletter to keep industry stakeholders updated with the latest news and events.



FIRST SOCCER TOURNAMENT - 2007

Egypt Oil & Gas hosted its first soccer tournament in **July 2007** during the holy month of Ramadan. The first tournament featured six companies, and was so successful that the number of participants more than doubled in the next season. The tournament continued engaging more companies over the past years.



FIRST MAP - 2009

In **2009**, Egypt Oil & Gas researched, designed, and distributed its first map. The map showed all the major concession areas in Egypt, including blocks in the Nile Delta, Western Desert, and offshore Mediterranean. The map's attention to detail made it an instant hit and EOG made several re-printing runs.



SOCIAL MEDIA



Having a strong social media presence helps Egypt Oil and Gas newspaper to grow and develop. LinkedIn is the main platform with +45,000 followers. The newspaper's Facebook page have a follower's reach of 15,000. Social media channel is a key player in promoting events coverage.

RE-LAUNCHING R&A DIVISION - 2018



In **August 2018**, Egypt Oil & Gas re-launched its R&A division. The R&A division aims to provide petroleum industry stakeholders with different types of information covering the latest updates in the promising sector. Egypt Oil & Gas R&A's mission is to transform raw data into valuable original research and analysis.

100TH ISSUE - 2015



In **April 2015**, our 100th issue was published. The issue focused on people in the Egyptian oil and gas industry, celebrating those that are making a difference within their companies and fields. Special highlights included features about women in the industry, young professionals, and (now retired) industry veterans.

FIRST CONVENTION - 2014



In **May 2014**, Egypt Oil & Gas organized and hosted a convention to tackle the problem of Brownfields. Industry executives met with leaders from the Egyptian Ministry of Petroleum and its related affiliates to discuss Brownfield solutions and combat the decline in production.

MAJOR ROUNDTABLE - 2012



In **April 2012**, Egypt Oil & Gas organized one of the first major roundtables in the Egyptian energy industry. The event, titled "Standing on the Shoulders of Giants," connected major players from international oil companies (IOCs) with their Egyptian counterparts to develop the industry in the aftermath of the 2011 revolution.

JOINT PROJECT WITH THE MINISTRY OF PETROLEUM - 2019



In **February 2019**, the R&A team was proud to publish "Egypt's Petroleum Sector in a Year" report in partnership with the Ministry of Petroleum and Mineral Resources. The report covered the Ministry's achievements under the modernization program for the first time.

EGYPS - 2017-19



Egypt Oil & Gas is proud to have been the official publication of EGYPS **2017**, EGYPS **2018** and **2019**. EGYPS brings together experts from the oil and gas sector, to share their industry experiences and offer critical insights of Egypt and North Africa's fast evolving hydrocarbon businesses.

DEVELOPMENT OF CONCESSION MAPS - 2014



Building on the great success of the previous development maps, Egypt Oil & Gas debuted in **December 2014** a map of the Mediterranean that not only depicted concession blocks, but also showed the entire development field where those blocks lie within. The maps were a success for EOG for their thorough details.

EOG TECHNICAL COMMITTEE - 2012



In light of enhancing the petroleum industry performance, Egypt Oil & Gas Technical Committee was launched in **2012** to bring together exploration and production (E&P) companies, service companies, government entities, and leading industry experts under one roof to address the challenges the industry is facing and to find potential solutions.

50TH ISSUE - 2011



In **February 2011**, the newspaper published its special 50th issue discussing the revolution's impact on the petroleum sector. It covered the first Egypt Oil & Gas roundtable and discussed the challenges of development fields, featuring industry pioneers that analyzed development potentials and drew a plan for the future.

THANK YOU NOTE

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As Egypt Oil & Gas celebrates its 150th issue, we take this opportunity to thank you for helping us succeed. In this issue, we want to make sure you know how much you are appreciated as a partner for our newspaper and to show how much we value your patronage over the years. The positive exposure you gave us provided the petroleum community with an introduction to our goals and services. Over the years, to name a few, we published thousands of reliable news, covered hundreds of events and interviews, participated in a lot of sponsorships and other services. The entire staff appreciated the professionalism in working with you. Accordingly, we would be more than pleased to cooperate more with you in the upcoming years in new diversified and valued services and projects. We are grateful for keeping our newspaper number one in the sector. We promise to stay reliable and maintain this upward momentum with quality services and to stay living up to your expectations.

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BALTIM FIELD TO ADD 500 MMSCF/D OF NATURAL GAS

Belayim Petroleum Company (Petrobel) is working on expediting the production of Baltim field, adding 500 million standard cubic feet per day (mmscf/d) of natural gas. Development projects as well as the field's completion will directly contribute to commencing the production from Baltim field by Q3 2019.

The production will help attain the oil and gas sector's plans to export natural gas in 2019. The company will drill up to six wells in the field's development, the source stated, adding that Petrobel is developing all the fields located in its concessions, especially those in the Mediterranean deepwater.

ELECTRICITY MINISTRY ESTIMATES GAS DEMANDS TO REACH 4.4 BCF/D IN SUMMER

The Egyptian Ministry of Electricity's natural gas needs for power generation is estimated to be 4.4 billion cubic feet per day (bcf/d) during the summer months. The consumption of electricity-generating plants has begun increasing gradually, reaching 3.4 bcf/d during May, compared to 3.3 bcf/d consumed

in March. The plants' consumption of natural gas in summer decreased compared to past years due to the new stations' high efficiency. The Egyptian electricity sector consumes around 61% of the country's total natural gas consumption.

EGYPT INCREASES GAS PRODUCTION TO 6.9 BCF/D

Egypt's natural gas production increased by around 300 million standard cubic feet per day (mmscf/d), reaching 6.9 billion cubic feet per day (bcf/d). The development of gas fields, including Zohr, as well as a number of new operating wells, directly contributed to increasing natural gas

output and meeting sectors' demands. Egypt secures its projects' natural gas needs, especially in the sectors that consume gas the most, such as the electricity; residential and industrial sectors, then it exports surplus as it works to develop its petrochemical industry to increase the value of gas.

EGYPT TO ADD 10.5 M HOUSEHOLDS TO GAS GRID END OF 2019

Egypt is set to have a total of 10.5 million households across its governorates connected to the natural gas national grid by the end of 2019. The country has linked a total of 9.6 million households to the national gas grid so far since the project's initiation to the beginning of 2019. Egypt's natural gas

total production increased by around 300 million standard cubic feet per day (mmscf/d), reaching around 6.9 billion cubic feet per day (bcf/d). Egypt secures its projects' natural gas needs, especially in the sectors that consume gas the most, such as the electricity, residential, and industrial sectors.

IDKU GAS EXPORTS DECREASE TO 500 MMSCF/D

The Egyptian Natural Gas Holding Company (EGAS) decreased natural gas amounts exported via Idku liquefaction plant to 500 million standard cubic feet per day (mmscf/d) instead of the 800 mmscf/d exported in March. This took place as Royal Dutch Shell decreased its gas exports to global markets according to contracts that

have been agreed upon. The exported amounts are decided based on the contracts, while ensuring the regular natural gas supply in the national grid does not get affected. By June 2019, the total gas amounts required for Idku to operate, with 1.13 billion cubic feet per day (bcf/d) will be available in the grid.

EGYPT RECEIVES 2 M BARRELS OF IRAQI CRUDE

Egypt received 2 million barrels of Iraqi crude oil at the beginning of April as part of the recently renewed agreement between the two countries, boosting the total of imported Iraqi crude to 4 million barrels. Middle East Oil Refinery (MIDOR) will receive the Iraqi crude as the company decided to refine the amounts of crude on its own. Earlier

in 2019, Egypt renewed the agreement with Iraq for the third consecutive time to import a total of 12 million barrels of Iraqi crude over six months. Alexandria Mineral Oils Company (AMOC) has announced that the refined products received from the first and second contracted were sufficient due to their low solvency ratio.

MEDGIO AIDS GAS TRADING HUB PLANS: EL MOLLA

Cooperation between the East Mediterranean Gas Transmission Network Operators (MEDGIO) members is set to enable the sustainable development strategy by securing energy demands with renewable energy, Minister of Petroleum, Tarek El Molla, said. El Molla's words came during his speech in a

MEDGIO meeting. The East Mediterranean region will become a natural gas hub in the upcoming years due to new gas discoveries, El Molla pointed out. Egypt recognizes the importance of natural gas in meeting energy demands as it represents 75% of Egypt's hydrocarbon reserves, El Molla explained.

PETROGAS PUMPS 350,000 TONS OF BUTANE MONTHLY

Petrogas Company pumps around 350,000 tons of butane per month into the Egyptian local market. The company is committed to cover the local market's butane demands all year round, with the support of local refineries and 150,000 warehouses in the company's premises that work on filling butane cylinders. Petrogas is expanding its storage warehouses near manufacturing areas

in different cities and governorates, as the sector tries to cover its increasing local demands, boost production and decrease imports. The Egyptian oil and gas sector fills between 1 million and 1.1 million butane cylinders every day in the local market, especially in winter when butane consumption increases.

EGYPT DECREASES GAS EXPORTS TO JORDAN

The Egyptian Ministry of Petroleum decreased its natural gas exports to Jordan to around 300 million standard cubic feet per day (mmscf/d), compared to 350 mmscf/d in March. Jordan dropped the amounts of natural gas it needed to between 290 mmscf/d and 300 mmscf/d, which led to a decrease in Egypt's gas exports. The contract

between both countries is flexible, as the exported amounts change according to the available Egyptian natural gas after meeting local demands and the Jordanian needs. Egypt had recently resumed exporting natural gas to Jordan with interchangeable amounts in order to cover the demands of its power plants.

FUEL SUBSIDY BILL DROPS BY 19.1% IN FY 2018/19

Egypt's fuel subsidy bill dropped by 19.1% to reach EGP 89.075 million in fiscal year (FY) 2018/19, compared to EGP 110.148 million in FY 2017/18, according to Egypt's latest financial statement. The estimates are based on an average Brent price of \$67 per barrel. The budget plan for FY 2018/19

aims to connect 1.3 million households to the national natural gas grid, which will decrease the fuel subsidies directed to butane cylinders. Meanwhile, electricity subsidies decreased by 46.7%, recording EGP 16 million during FY 2018/19, down from EGP 30 million in FY 2017/18.

EGYPT STARTS HEDGING MECHANISM IN FY 2018/19

The Egyptian government is taking a hedging mechanism against oil and food commodities price fluctuations in fiscal year (FY) 2018/19. The government started the hedging program to secure the budget against the rising global oil prices and to prevent negative impacts on the subsidies bill and the deficit. The statement noted that global estimates see oil prices stabilizing between \$65 and

\$70 per barrel during 2019, according to the traded futures and the forecasts of the International Monetary Fund (IMF). Oil prices increased by 30% during Q1 2019 to reach \$68 per barrel as the Organization of the Petroleum Exporting Countries (OPEC) and other major producers committed to production cuts to avoid a supply glut.

EGAS, NOMP INK AGREEMENT FOR SMART METERS

The Egyptian Natural Gas Holding Company (EGAS) signed an agreement with the National Organization for Military Production (NOMP) for the production of smart prepaid gas meters. Minister of Petroleum and Mineral Resources, Tarek El Molla, and the Minister of Military Production, Mohamed El Assar, witnessed the signing of the agreement. El Maasara Company for Engineering Industries will

cooperate with EGAS to develop and produce smart prepaid gas meters in accordance with the global modern standards. Meanwhile, the Ministry of Military Production will manufacture the meters and provide the needed technical support during the operation phase, as well as extensive training programs for EGAS' staff, exchanging technical knowledge and expertise.

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ZOHR CONDENSATES PRODUCTION INCREASES BY 14.29%

Condensate production from Zohr field increased by 14.29% due to the increase in the field's natural gas output, reaching around 4,000 tons per day, compared to 3,500 tons per day in 2018. The field's sulfur production doubled

to reach 50 tons per day, compared to 25 tons in 2018. According to President Abdel Fattah El Sisi, the value of Zohr's sulfur sales will be spent on corporate social responsibility (CSR) work in Port Said as long as the field is producing.

NORTH SINAI ADOPTS NEW PETROLEUM PLAN

North Sinai's Directorate of Supply and Internal Trading have applied a new plan to monitor the movement of petroleum products, deliver it to citizens, and prevent it from reaching terrorist groups. The plan will be carried out after the quantities of petroleum products sold for each citizen through

fuel stations are specified. The new plan will enable private vehicles to receive 30 liters of gasoline per day, while huge vehicles will take 150 liters per week. Meanwhile, minibuses will be entitled to receive 40 liters of gasoline per week. North Sinai has six filling stations.

METHANEX EGYPT SELLS 500,000 TONS OF METHANOL

Methanex Egypt sold 500,000 tons of methanol locally since it has started operating in Egypt. Minister of Petroleum, Tarek El Molla, met with Methanex Egypt CEO and Managing Director, Mohamed Shindy; Methanex Corporation's Senior Vice President for Corporate Resources, Brad Boyd; and Egyptian Petrochemicals Holding Company (ECHEM)'s Chairman, Saad

Helal. The meeting discussed ways of increasing methane production and the company's production capacity as methane is an integral product in different industries like plastic and formaldehyde. Methanex is the only factory in Egypt with a production capacity of 1.3 million tons per year of methanol, Shindy stated.

ICT BECOMES INTEGRAL TO THE PETROLEUM INDUSTRY

Information and communications technology (ICT) should be leveraged as an integral part of any industrial progress, Minister of Petroleum, Tarek El Molla stated. The minister's comments came during the 22nd round of Cairo ICT exhibition and PAFIX, where he praised the inclusion of recent technologies

in the oil and gas industry. El Molla expressed that he is looking forward to a distinctive round of the Cairo ICT Exhibition in December 2019. The conference was attended by several leading figures including the Minister of Supply, Minister of Finance, and Minister of Social Solidarity.

NATURAL DECLINE OF BURULLUS, RASHEED FIELDS TO REACH 10 MMSCF

The production of Burullus and Rasheed natural gas fields is to decline to 10 million standard cubic feet (mmscf) monthly, as estimated by the Egyptian Natural Gas Holding Company (EGAS), due to delays in fields' development plans. Despite the high natural decline rate, 9B phase will make up for the

decline as it gets connected to Burullus field before the end of fiscal year (FY) 2018/19. Royal Dutch Shell plans to link 100 mmscf/d from the first phase of 9B to Burullus during H1 2019 in order to boost production rates and compensate for the natural decline rate.

QARUN PETROLEUM COMPANY INCREASES OIL OUTPUT

Qarun Petroleum Company increased its production capacity of crude oil and condensates to around 28,000 barrels per day (b/d), said Ashraf Abdel Gawad, head of the company. Qarun plans to boost its output to over 45,000 b/d by the end of 2020 as it explores, develops, and operates new concessions in the Western and Eastern Deserts, Abdel Gawad noted. The company is currently working with Apache in the latter's

exploration and production (E&P) concessions, Abdel Gawad pointed out, saying that Qarun's total investments reached up to \$200 million in fiscal year (FY) 2018/19.

PETROLEUM SECTOR, FINANCIAL INSTITUTIONS DISCUSS ENERGY EFFICIENCY AT EPEEC 2019

The Second Egyptian Petroleum Sector Energy Efficiency Conference (EPEEC 2019) kicked off on Monday, April 22, with the presence of El Molla at the Sky Executive Resort in New Cairo, under the theme "from Success to Sustainability." The two-day event gathers industry leaders, energy and technology experts, alongside representatives of

financing institutions and multinational corporations. "We aim to build strong and long-term relationships in the field of energy efficiency through EPEEC, where national oil companies (NOCs) and international oil companies (IOCs) can meet with financing institutions to cooperate in achieving our sustainability goals," the minister stated.

EGYPT TO LINK NEW ADMINISTRATIVE CAPITAL TO NATURAL GAS GRID

The Egyptian Ministry of Petroleum signed an agreement with the Administrative Capital for Urban Development (ACUD) in order to link the governmental district in the New Administrative Capital to the natural gas grid. The EGP 31.5 million agreement comes as a part of the country's preparation to transfer ministries and governmental entities to the New

Administrative Capital by mid-2020, said Khaled El Hosseini, ACUD's spokesman. During the first phase of the project, Egypt will connect gas to government buildings and major state institutions across 153 feddans. The agreement's signing was attended by Minister of Petroleum Tarek El Molla; ACUD's Chairperson, Ahmed Zaki Abdeen; and the Cairo Gas Company's Chairperson, Mohamed Hassan.

EGYPT TO INCREASE NATURAL GAS PRODUCTION BY 11.8%

Egypt aims to increase local natural gas output by 11.8% before the end of 2019. Current production levels are around 6.8 billion cubic feet per day (bcf/d) of natural gas, with the target to reach 7.6 bcf/d by the end of 2019 and 8 bcf/d by H1 2020. The targeted increase in Egypt's

natural gas production is set to boost the country's natural gas export levels in the upcoming period. Local production increase is linked to the development of new natural gas projects in the Mediterranean Sea, including Zohr gas field, the source pointed out.

EGYPT BUILDS \$2.3 B REFINING PROJECTS IN ASSIUT

Egypt is establishing two refining projects in Assiut, the biggest of their kind in Upper Egypt, with a total investment of \$2.3 billion, Minister of Petroleum and Mineral Resources, Tarek El Molla said. The projects will contribute to achieving self-sufficiency of petroleum products in Upper Egypt, El Molla noted. Increasing

refining capacities is among the ministry's top priorities, in light of the petroleum sector's Modernization Project goals to develop the refining industry, boost production capacities through new projects to meet the local demand, and support Egypt's national vision to become a leading regional energy hub.

ASORC ESTABLISHES \$450 M HIGH-OCTANE GASOLINE PROJECT

Assiut Oil Refining Company (ASORC) is establishing a high-octane gasoline complex with investments worth \$450 million, said Mahmoud El Shaboury, head of ASORC. The project will have a 660,000 tons annual production capacity, Al Shaboury noted. The complex is 40% complete with finalized basic engineering designs of the project.

The detailed designs and procurement and installation of the operations area, facilities and services are being implemented by Petrojet and the Engineering for the Petroleum & Process Industries (ENPPI) in cooperation with global companies. This comes as El Molla visited the project's location.

ANOPC ESTABLISHES \$1.9 B REFINING PROJECT

Egypt is establishing a \$1.9 billion refining project that will utilize the latest refining technologies to transfer low-value Mazut into higher value petroleum products like diesel, butane, and high-octane gasoline, according to Mohamed Badr, head of Assiut National Oil Processing Company (ANOPC). The project will receive 2.5 million tons of Mazut a year

from ASORC to produce 1.6 million tons of diesel, 402,000 tons of high-octane gasoline, 101,000 tons of butane, and 330,000 tons of sulfur. The project will contribute to achieving self-sufficiency of petroleum products in Upper Egypt and decreasing import bills, Badr noted during a visit by El Molla to the project.

INTRO GROUP APPOINTS NEW MANAGING DIRECTOR

Intro Group, the parent company of the National Petroleum Company (NPC), and ADES Investments, announced the appointment of Mohamed Elakhdar as the new Managing Director. Elakhdar was the former Managing Director of Beltone Investment Banking, where his work included the initial public offering (IPO) of Ibn Sina Pharma, Sarwa Capital and MM Group; the private placement of Ibn Sina Pharma to the European Bank for

Reconstruction and Development (EBRD); and Zahran Group and Groupe Seb's merger transaction. Elakhdar is a veteran of Bechtel and Parsons Corporation. He holds a masters of science (Msc.) in finance from George Washington University School of Business and a bachelor of science (BSc.) in construction engineering from the American University in Cairo (AUC).

CONSUKORRA TO PROVIDE SMART SOLUTIONS TO REFINERIES

Consukorra is arranging EGP 1.9 worth partnerships to provide smart energy solutions to refineries, petrochemical projects, and glass manufacturing projects, said Mohamed Medhat, the company's Energy Solutions Division Manager. Negotiations are ongoing with 17 other firms, Medhat said on the sidelines of a conference held by the

Consukorra, refusing to include any further details about the firms. The company is also seeking to implement a waste-to-energy project in seven governorates, in cooperation with the National Organization for Military Production (NOMP) and the Arab Academy for Science, Technology and Maritime Transport.

WEATHERFORD INAUGURATES NEW KATTAMEYA FACILITY

Weatherford has inaugurated its new facility and office space in Cairo in a ceremony that took place today and gathered the company's top management and industry leaders. The new facility is part of a transformation process by Weatherford, which saw seven different company locations in Cairo being consolidated into a single purpose-built facility. The cost-effective initiative is estimated to save

approximately \$1.5 million per year. The inauguration ceremony was attended by Mark McCollum, Weatherford President and CEO; Eng. Mohamed Moanes, the Egyptian Ministry of Petroleum's First Undersecretary for Gas Affairs; Eng. Abed Ezz El Regal, CEO of the Egyptian General Petroleum Corporation (EGPC); Eng. Osama El Bakly, CEO of the Egyptian Natural Gas Holding Company (EGAS).

WINTERSHALL DEA: NEW LEADING OIL, GAS EUROPEAN CHAMPION

Wintershall Holding GmbH and DEA Deutsche Erdoel AG have completed their merger. Wintershall DEA is now the leading independent oil and gas company in Europe. "We are a European champion and are making an important contribution to Europe's energy security," said Mario Mehren, Chairman of the Board of Executive Directors and CEO of Wintershall DEA. Following the approvals

granted by all relevant authorities, shareholders BASF and LetterOne successfully completed the merger on May 1st, 2019. The merger was agreed in September 2018. In 2018, Pro-forma hydrocarbon production of Wintershall and DEA together was 215 million boe, equivalent to around 590,000 barrels of oil equivalent per day (boe/d).

QALAA HOLDINGS' REVENUES TO EXCEED EGP 90 B IN 2020

Qalaa Holdings' revenues are expected to exceed EGP 90 billion in 2020, the company's Chairman, Ahmed Heikal stated. The company will gain between EGP 50-55 billion from the Egyptian Refining Company (ERC), which is set to start operating in Q3 2019, Heikal noted. ERC's annual output is estimated to be 2.4 million tons of diesel, Heikal said. ERC had supplied 100,000 tons of low-sulfur

petroleum products from its operational trials, Qalaa Holdings Company previously announced. The operational trials of the catalytic reforming unit (CCR) and the vacuum distillation unit (VDU) in ERC have been a success and the company began delivering petroleum products such as diesel; naphtha, and high-octane gasoline that met global standards.

SHELL REVIEWS SCHNEIDER ELECTRIC TECHNOLOGIES

A delegation from Royal Dutch Shell visited Schneider Electric's factory in Badr City to review its energy management technologies. Senior members of Manufacturing and Business Excellence took a tour at Schneider's factory to review the system responsible for reducing energy loss as well as optimizing the quality; health; safety and environment (QHSE). Officials at

Shell reviewed the performance systems in Schneider Electric. The visit reflects Schneider's transparency in exchanging its knowledge and best practices with its strategic global clients that are confident with Schneider's technologies and hope to achieve mutual success, said Walid Sheta, Schneider Electric's regional cluster head of North East Africa and Levant.

ENI SUPPORTS CHILDREN BURNS MEDICAL SERVICES IN EGYPT

Eni signed a memorandum of understanding (MoU) with the Egyptian Ministry of Health and Population as a part of the company's corporate social responsibility (CSR) to support Egypt in treating burns, especially injured children. The MoU includes establishing a pediatric intensive care unit (PICU) for children, developing employees' experiences

in health and operational support, supporting the development of a medical referral system and the management of children emergency services network, and spreading awareness on how to avoid burns. The Egyptian Ministry of Health chose El Haram Hospital to be the institution benefiting from the MoU project.

TAO FIELD TO OPERATE IN JUNE

Egypt Kuwait Holding (EKH) Company announced that Tao field, in the offshore North Sinai, is expected to begin operating in June 2019. The company forecasts that the full impact of the drilling campaign is to hit their income statement during H1 2020. EKH is further working on a development

plan for the deep layers in its fields and is considering a post-valuation partial exit. The company is allocating proceeds for drilling an exploratory well. Meanwhile, the company is advancing in a detailed production plan for the shallow layers in its fields, including the Kamose field.

SHELL HOLDS FAREWELL IFTAR FOR HANTER

Royal Dutch Shell held a farewell iftar for Gasser Hanter, the company's former Country Chairperson, in recognition of his 26-year journey. The iftar was attended by Minister of Petroleum, Tarek El Molla, and many senior officials to acknowledge his efforts and achievements. Hanter achieved many milestones alongside

numerous employees, strengthening the company's leadership and position in the oil and gas sector in the region. He stated his gratitude for the iftar, thanking his colleagues who had worked with him both in Egypt and abroad. Hanter wished Khaled Kacem the best of luck in his new position.

ADES INTERNATIONAL REVENUES FROM EGYPT REACH \$87.2 M BY END OF 2018

ADES International Company announced that its revenues from Egypt reached \$87.2 million at the end of 2018, recording 42.4% of the company's total revenues. The company also announced that its overdue receivables recorded \$152 million. ADES plans to expand its Egyptian offshore drilling in coordination with Vantage Drilling Company, in which ADES owns 49% of stakes, and which

is set to provide the needed assets while ADES provides the experienced workforce. The company created a joint venture with Vantage to proceed drilling work in Egypt through its contract with Dana Gas in March.

SAUDI ARABIA



Saudi Aramco plans to purchase Royal Dutch Shell's stake in the Saudi Aramco Shell Refinery (SASREF). A deal has been reportedly reached between the Saudi oil giant and Shell, which owns 50% of the refining complex. However, both companies are yet to comment. SASREF, a joint venture (JV) between the two companies, has a production capacity of 305,000 barrels per day (b/d) of crude oil.

Saudi Arabia's oil exports have declined in February 2019 for the third consecutive month, according to the Joint Organizations Data Initiative's (JODI) data. The level of Saudi crude oil exports has declined by around 432,000 b/d, reaching 8.44 million b/d in February, down from 8.87 million b/d a month before. Additionally, crude exports declined to 6.98 million b/d, yet petroleum product exports reached 1.46 million b/d. Meanwhile, crude inventories increased to 204.57 million b/d in February, up from 200.83 million b/d in January.

Saudi Arabia and Nigeria plan to draft a memorandum of understanding (MoU) for an oil and gas partnership. Despite being a top crude oil producer, Nigeria imports the majority of its fuel needs due to its decaying refineries. Therefore, the partnership with the kingdom will help construct new refineries and liquefied natural gas (LNG) facilities in Nigeria. The draft of the MoU between the two countries will be ready at the beginning of May.

OPEC



Gazprom Neft, a subsidiary of the Russian giant Gazprom, expects the oil output cuts that are led by the Organization of Petroleum Exporting Countries (OPEC) and its allies may end in H1 2019. Russia is yet to take a final decision on extending the current supply deal, according to Russian Energy Minister, Alexander Novak. On the other hand, UAE's Energy Minister Suhail Al-Mazroui previously said that Russia cannot increase oil output unless the country coordinates with other major producers. An OPEC summit was scheduled to take place on April 17, however, it was announced in March that the meeting will be delayed to June to allow for more time to decide on the future of the deal.

The Gulf members of the OPEC plan to meet the oil market demand in case of a supply shortage. The Gulf members' decision came after the US announced to end waivers on Iranian oil importers, which resulted in increasing oil prices. Meanwhile, the eight countries that were given the waivers, including China and India, expected that those exemptions may be renewed. The Gulf oil producers aim to achieve market stability, but any decision to increase output has to be measured depending on demand.

OPEC is forecasting increased global oil demand during 2019. OPEC maintained its estimates for the growth in demand in 2019 steadily at 1.21 million barrels per day (b/d), but expects supply growth to slow in non-OPEC countries, including US shale producers, creating tighter market conditions. On the other hand, OPEC's oil supply declined in April despite oil prices rising to more than \$75 a barrel.

UAE



The Abu Dhabi National Oil Company (ADNOC) has agreed with the Abu Dhabi Retirement Pensions and Benefits Fund (ADRPBF) on a follow-on pipeline infrastructure investment agreement. ADRPBF plans to invest around \$300 million, followed by BlackRock and KKR that signed a \$4 billion agreement in February, in the midstream pipeline assets. Under the agreement, ADRPBF will own a 3% stake in the newly formed entity, ADNOC Oil Pipelines with BlackRock and KKR together represent 40% and ADNOC the remaining 57%. The transaction is expected to close in Q4 2019.

Eni has signed an exploration and production sharing agreement (EPSA) for Block A offshore the United Arab Emirates (UAE). Under the agreement, Eni will be the operator with a 90% interest, while Ras Al Khaimah's National Oil Company RAK GAS will be a partner with the remaining 10% stake. Block A covers an area of 2,412 km² offshore the emirate, with water depths ranging from 10 to 90 meters. Signing the agreement represents another step for Eni to expand its presence in the Middle East.

Arabian Drilling Company (ADC), a drilling subsidiary of Saudi Arabia's Industrialization and Energy Services Company (TAQA), plans to acquire Schlumberger's Middle East onshore drilling rigs business in Kuwait, Oman, Iraq, and Pakistan. The acquisition deal is worth \$415 million. Moreover, it is supposed to be closed in H2 2019 and is subject to regulatory approvals. Under this acquisition deal, ADC will now operate a fleet of 58 onshore rigs and 9 offshore rigs across the MENA region. The deal creates economies of scale and cost synergies, making ADC a regional leader, encompassing a diversified, multi-country and multi-client offering.

ADNOC launched, as part of Abu Dhabi's block licensing strategy and on behalf of the Supreme Petroleum Council (SPC), the second bid round for five new oil and gas blocks. The five new blocks open for bidding are Offshore Block 3, Offshore Block 4, Offshore Block 5, Onshore Block 5 and Onshore Block 2, with the latter offering two separate licensing opportunities for conventional and unconventional oil and gas, respectively. The winning bidders will enter agreements that will grant them exploration rights and the opportunity to develop any discoveries under terms that will be determined in the bid package.

The UAE's Brooge Petroleum and Gas Investment Company (BPGIC) plans to construct an oil refinery in Fujairah. The refinery is set to produce bunker fuel with a production capacity of 250,000 barrels per day (b/d). The first phase is expected to be completed by Q1 2020. The facility will be the first of its kind in the Middle East and North Africa to comply with the new regulations of the International Maritime Organization (IMO) 2020 by capping sulfur content in shipping fuels.



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EGYPT'S CRUDE OIL EXPORTS OVER THE LAST FIVE YEARS: THE ENGINE OF EGYPT'S TRADE BALANCE

BY AMINA HUSSEIN, REHAM GAMAL, TASNEEM MADI



Egypt is one of the significant hydrocarbon producers in the African continent. Thanks to its geographical position and infrastructure, the country acts as a leading transit route for oil shipped from the Persian Gulf to Europe and to the United States of America (USA).

In general, the Egyptian petroleum sector is one of the main contributors in the national economy, with exports contributing the lion's share to Egypt's trade balance.

From fiscal year (FY) 2013/14 to FY 2017/18, crude oil exports significantly contributed to the petroleum exports. It recorded \$25,875 million, representing about 61% of the petroleum exports.

CRUDE OIL PRODUCTION

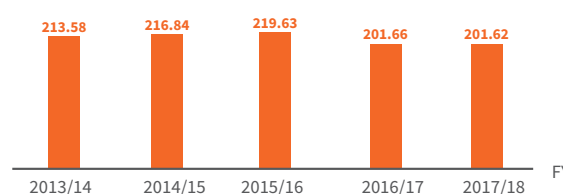
Egypt is one of the promising crude oil exporters. It is ranked as the eighth oil producer among other Organization of Arab Petroleum Exporting Countries (OAPEC) between the years of 2010 and 2016. One of Egypt's main challenges is to compensate the increasing domestic oil demand amid falling production. The first crude oil discovery in 1868 in Gemsa led to a series of discoveries after that. From the time of the Gemsa discovery, 23 fields in this region were discovered; producing 270 thousand tons (mt).

More than half of Egypt's crude oil production comes from the Western Desert and the remainder comes from the Gulf of Suez, the Eastern Desert, Sinai, the Mediterranean Sea, the Nile Delta, and Upper Egypt, according to the Egyptian General Petroleum Corporation (EGPC). The Western Desert in particular has been the country's key oil-producing area since 2000. On the other hand, the Gulf of Suez

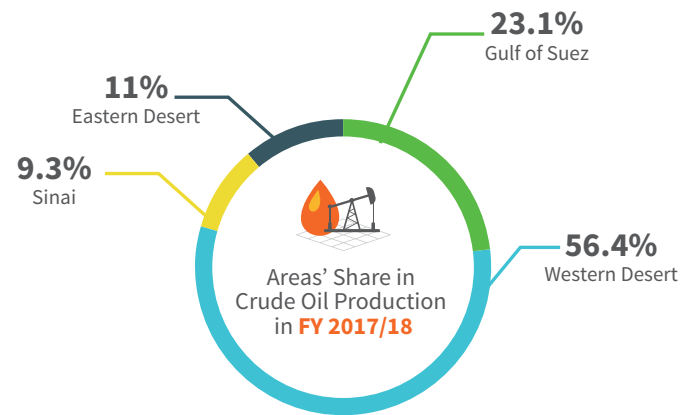
has been providing crude oil production in Egypt since the 1960s; however, most of its fields are now mature.

Over the period from FY 2013/14 to FY 2015/16, crude oil production witnessed an increasing trend, where the production increased from 213.58 million barrel (mb) reaching 219.63 mb. A severe decrease in the production then took place in FY 2016/17 by 8%, recording 201.66 mb, followed by another slight decrease in FY 2017/18. The decline in the production was due to a group of factors: the decrease of atmospheric pressure, the increase of sand movement, and the increase of water produced from wells. During the past five years crude oil production reached its peak in FY 2015/16 hitting 219.63 mb, while declining to reach its lowest in FY 2017/18 where it recorded around 201.62 mb, as per EGPC's figures.

 Crude oil Production in FY2013/14- FY 2017/18 (mb)



Desert which produced 22.1 mb and finally Sinai that contributed with only 18.7 mb, according to EGPC.



Egypt has maintained a sustained level of exploration activity, several crude oil and natural gas discoveries have been taking place each year. Since the 1990s, the Egyptian government has taken several initiatives to increase exploration and production (E&P) activities by international oil companies (IOCs). Hence, these activities will increase the crude oil production. For instance, Egypt has signed about 83 crude oil and natural gas exploration deals with IOCs between November 2013 and December 2017, at a cost of \$ 15.5 billion, according to the Ministry of Petroleum and Mineral Resources (MoP). Moreover, Egypt achieved about 150 new crude oil and natural gas discoveries between FY 2013/14 and FY 2015/16, including 99 crude oil discoveries, according to the Central Agency for Public Mobilization and Statistics (CAPMAS).



83 oil and gas exploration deals were signed between **November 2013** and **December 2017**, at a cost of **\$15.5 billion**



From **FY 2013/14 - FY 2015/16**, **150** new crude oil and gas discoveries took place including **99** crude oil discoveries

As an overall, the MoP achieved around 800 new crude oil and natural gas discoveries starting from FY 2001/02 - FY 2015/16. During 2018, 51 crude oil discoveries were announced, of which, 43 were in the Western Desert, two in the Gulf of Suez and the rest six discoveries in the Eastern Desert.

CRUDE OIL EXPORTS

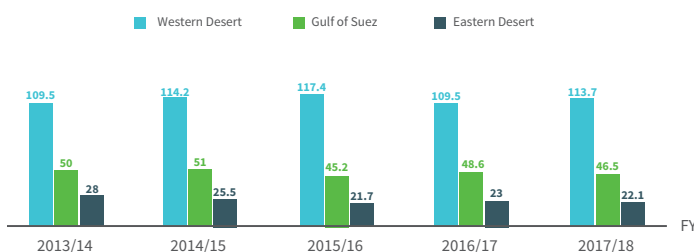
Over the period from FY 2013/14- FY 2017/18, the Egyptian production of crude oil witnessed a decreasing trend. Crude Oil exports witnessed a decreasing trend as well from FY 2013/14 to FY 2015/16, however, it was followed by an increasing trend starting from FY 2016/17, affected by the surge in world prices of crude oil and petroleum products in addition to the increase in the exported quantities of petroleum products.

Despite having the highest production level of crude oil in FY 2015/16, yet, the exports spotted its highest level in FY 2013/14 as explained by the Central Bank of Egypt (CBE).

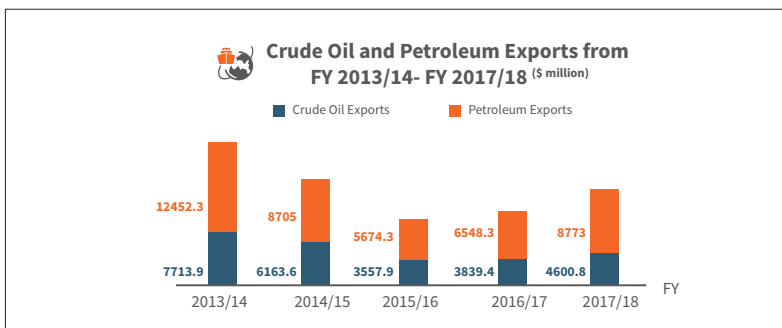


Over the comparison period, the Western Desert, the Gulf of Suez and the Eastern Desert represented the largest production areas of crude oil, respectively. The Western Desert added the highest production level of crude oil in FY 2015/16 at an amount of 117.4 mb. The Gulf of Suez reached its highest level of production at 51 mb in FY 2014/15. Finally, the Eastern Desert contributed by its highest production of crude oil in FY 2013/14 with 28 mb, according to EGPC figures.

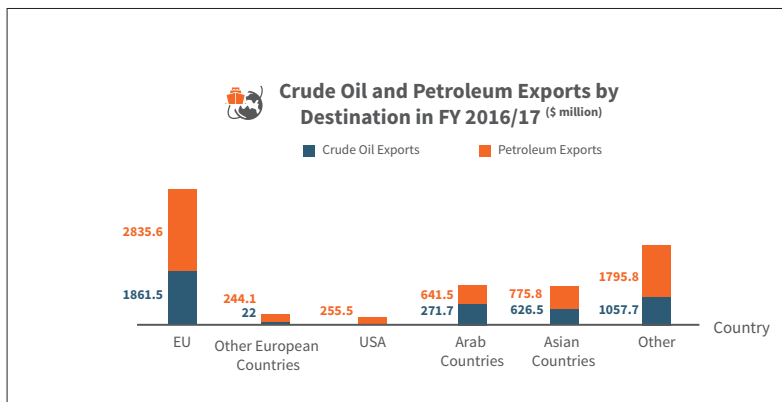
Crude Oil Main Production Areas (mb)



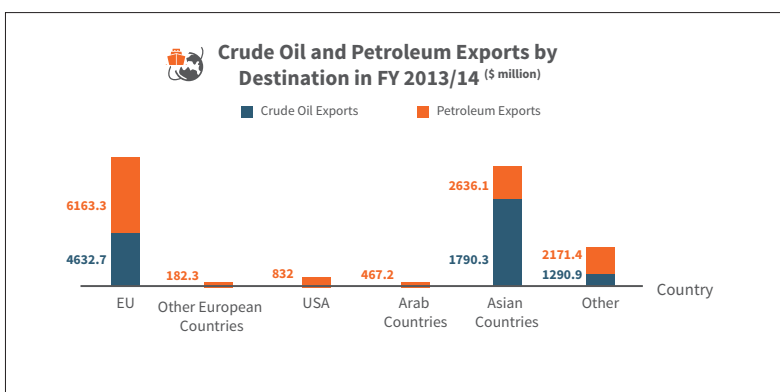
In FY 2017/18, Egypt's production of crude oil recorded a total of 201.62 mb with a monthly average of 16.8 mb. It is worth noting that the Western Desert added a significant amount of 113.7 mb of crude oil representing 56.4% of the total production. The Gulf of Suez came next adding 46.5 mb followed by the Eastern



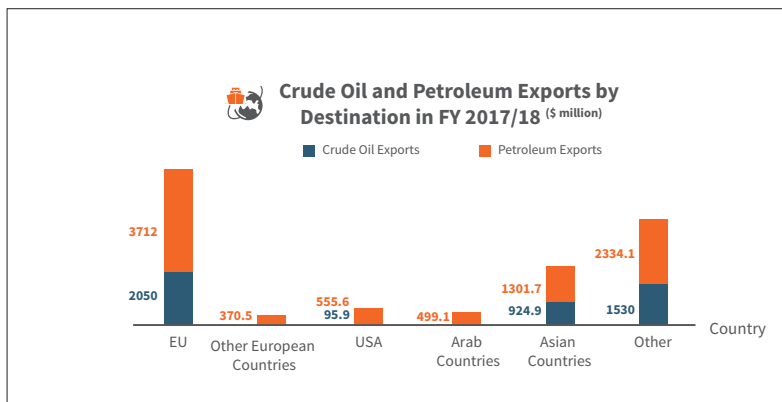
In FY 2013/14, crude oil exports recorded \$7713.9 million. The European Union (EU) was the largest crude oil importer with a share of 60% of Egypt's total crude oil exported. Asian Countries then came in the second place representing about 23%. It is worth noting that crude oil exports as a share of petroleum exports accounted for 61.9%. Besides, the petroleum exports as a share of Egypt's total exports represented 47.7%, according to CBE.



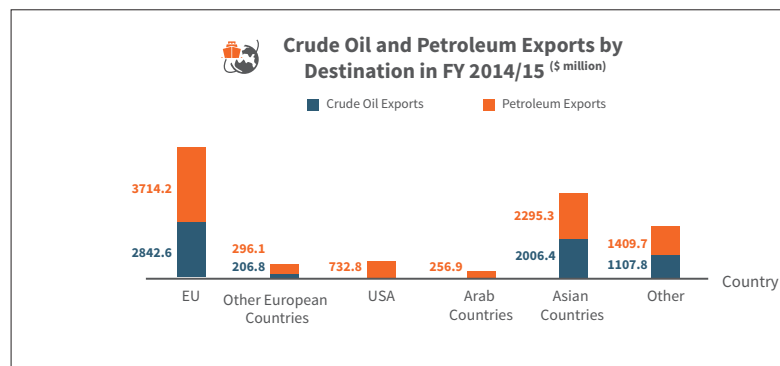
In FY 2017/18, crude oil exports resumed rising to reach \$4600.8 million, at an increasing rate of 20%. The EU got 45% of the total crude oil exported by Egypt, almost the half crude oil exported. The crude oil exports as a share of petroleum exports witnessed a further decline reaching 52.4%. Further, the petroleum exports as a share of total exports of Egypt marked a slight increase to reach about 34% this year, according to CBE.



In FY 2014/15, crude oil exports decreased by 20% reaching \$6163.6 million. The EU imported the largest portion of crude oil with 46%, followed by Asian Countries with about 33%. The crude oil exports as a share of petroleum exports slightly increased to represent 70.8%. Moreover, the petroleum exports as a share of total exports of Egypt significantly decreased accounting for 39.5%, according to CBE.

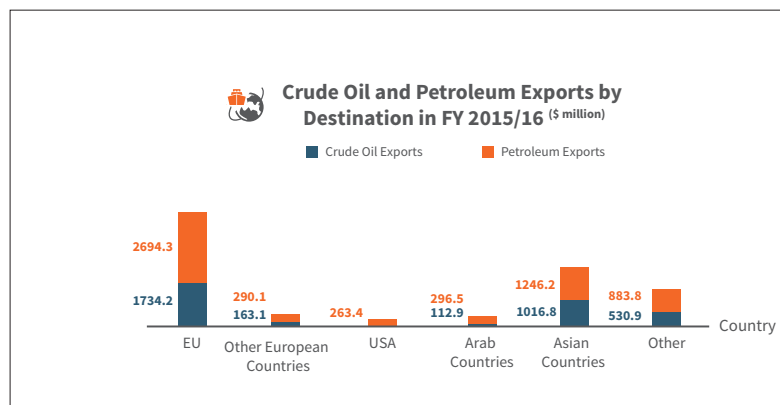


It is worth mentioning that the EU was the major crude oil importer from Egypt over the past five years. This can be explained by the EU –Egypt Association agreement that has been in force since 2004. The agreement established a free-trade area, between the two parties, with the elimination of tariffs on the industrial products. Hence, the EU became a pioneer trading partner. On the other hand, USA has not been importing crude oil since FY 2013/14. In May 2017, in the light of Trade and Investment Framework Agreement (TIFA), the two parties aimed to further expand their trade by opening markets and enforcing trade rules. Accordingly, during FY 2017/18; USA imported Egyptian crude oil at a cost of \$95.9 million, stated by CBE.



In FY 2015/16, crude oil exports witnessed a significant decrease at a rate of 42%, dropping from \$6163.6 million to reach \$3557.9 million. For the third consecutive year, the EU got the largest share of the Egyptian crude oil exports representing 49% and again followed by Asian Countries with a 29% share. The crude oil exports as a share of petroleum exports decreased standing for 62.7%. Furthermore, the petroleum exports as a share of total exports of Egypt witnessed a further decrease to represent 30.3%.

On average, the Egyptian petroleum sector produces around 210.7 mb of crude oil, correspondingly, it exports crude oil amounts equivalent to \$8430.6 million. In order to convert Egypt into a regional energy hub, the ministry is making several efforts to increase the production as a mean to enhance its position as an exporting country. As part of these efforts, the government reduced the arrears to IOCs to \$1.2 billion in 2018 and started working on a new agreements model to encourage upstream investments. Moreover, the ministry started to expand the exploration and production activities in new territorial regions through launching a bid round in the Red Sea.





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MAXIMIZING EGYPT'S LOCAL ASSETS: INTERVIEW WITH COLBY FUSER

HALLIBURTON VICE PRESIDENT, EGYPT AND LIBYA



HALLIBURTON RECENTLY SIGNED AN AGREEMENT WITH THE MINISTRY OF PETROLEUM TO COOPERATE IN THE DEVELOPMENT OF YOUNG CALIBERS AND MIDDLE-LEVEL MANAGERS WITHIN THE SECTOR. HOW DOES HALLIBURTON VIEW THIS INVESTMENT IN FUTURE GENERATIONS?

Investing in the training of young caliber future managers, as well as mid-level managers, is crucial to ongoing success in the Egypt petroleum sector. At Halliburton, we find that giving our employees the tools they need for success benefits both employees and our company. The collaboration established with the Ministry of Petroleum will allow us to share in this development. Halliburton takes great pride in the planning and development of our employees' careers, and as the business in the Egypt petroleum sector grows, we see immense value in the overall strength of this future generation.

HALLIBURTON IS PROMISING TO PROVIDE ON-THE-JOB TRAINING FOR EGYPTIAN PROFESSIONALS, HOW WILL THAT HELP BOOST THEIR EXPERIENCE AND CAREER DEVELOPMENT?

In the petroleum sector, there are many different skillsets that come together to provide collaboration and engineered solutions that ultimately deliver optimal asset value of the reservoir. At the core of Halliburton's identity, execution is one of the critical parts of our

commitment to our customers. Not every one of our 60,000 employees are at the wellhead executing, but all employees understand the value of what takes place on the job site and that they play a role in enabling safe and quality service deliverability. The on-the-job training that we will provide to these future leaders of Egypt's Petroleum sector will enable them to make better and more collaborative decisions when shaping the future of Egypt.

IN YOUR OPINION, HOW WILL THE MODERNIZATION PROJECT RESHAPE THE OIL AND GAS INDUSTRY IN EGYPT?

Human capital development is key to the continual cycle of our business. The investment and development of a diverse workforce provide us with the best talent for our ongoing success in our organizations and locations. I see the Modernization Project as a baseline and the right step toward achieving this sustainability.

AS THE EGYPTIAN PETROLEUM SECTOR IS RAPIDLY DEVELOPING, WHAT ARE HALLIBURTON'S TOP PRIORITIES IN EGYPT AS IT TURNS INTO A REGIONAL ENERGY HUB?

At this point, our biggest priorities are to train the local workforce through on-site training and provide an opportunity for many of the participants to gain experience outside of Egypt and eventually utilize this experience in Egypt when local activity ramps up. Additionally, the country's vast reservoirs, across both

deepwater and mature fields, provide Halliburton with an exciting playing field where we can develop and optimize technology to maximize the country's local assets.

WHAT IS YOUR CURRENT POSITION IN MATURE AND BROWNFIELD DEVELOPMENT IN EGYPT?

We see mature fields as an area for robust technology implementation and optimization. Halliburton works globally across many mature and brownfields where we have improved the recovery factor through collaboration and engineered solutions with our customers. Our recent acquisition of Summit ESP, a leading provider of electrical submersible pump technology, strengthens our artificial lift capabilities, when combined with our Multi-Chem product service line, and helps us deliver improved solutions to help our customers' mature and brownfield development. We see the advancements in well intervention also playing into Halliburton's strength by combining our production solutions line of SPECTRUM® services which combines intervention and diagnostic services to help monitor and optimize job performance in real-time with greater efficiency, increased reliability, and higher investment returns. When coupled with our Wireline and Perforating technologies, we see further improvement in the recovery of mature and brownfields such as the Electromagnetic Pipe Xaminer® V (EPX™ V) service. EPX™ V provides intervention capabilities to help improve well surveillance with metal-loss quantification

of up to five downhole tubulars, which is critical in mature fields.

HALLIBURTON AIMS TO INCREASE RETURNS TO INVESTORS AND SHAREHOLDERS. WHERE DOES EGYPT STAND IN YOUR PLANS TO EXPAND YOUR ACTIVITIES AND INCREASE THE EFFICIENCY OF YOUR OPERATIONS?

Halliburton is celebrating its 100th anniversary this year, and we have been present in Egypt for 50 out of those 100 years. Egypt is an important part of our portfolio and we are encouraged by the prospects for oil and gas services and the fiscal improvements in the economy at large. We remain committed to making a positive contribution to the growth of hydrocarbon resources in Egypt, and we have to do that thoughtfully by continuing to drive efficiencies with the right levels of investment, so we can also balance our shareholder expectations. Over the past five years, Halliburton has delivered on our commitment to the Egyptian market by having access to assets and continuing to bring in technology and process improvements to improve the overall cost per barrel of oil equivalent (BOE). With our market commitment to improve asset velocity and cash flows, our collaboration with customers becomes more important to ensure all parts of the value stream are optimal. In the current market, where assets are becoming tighter and the cost of doing business is increasing, we need to remain focused on efficiency, cost controls and to recover discounts that were not offset by these optimization measures.

WILL HALLIBURTON INTRODUCE NEW TECHNOLOGIES AND TECHNIQUES TO THE EGYPTIAN MARKET IN THE COMING PERIOD?

Absolutely. At Halliburton, we collaborate and engineer solutions to maximize asset value for our customers. This means we work closely with the customer to identify an engineered solution to their challenges which allows us to deliver a much more sustainable and reliable service.

We are excited about the vast technology offerings we are deploying in Egypt that truly set Halliburton apart from our competitors. Technology such as:

- The iCruise™ rotary steerable system is the most intelligent drilling tool on the market. It combines smart technology – advanced electronics, sophisticated algorithms, multiple sensors, and high-speed processors – with some of the highest mechanical specifications on the market.
- Our EarthStar™ ultra-deep resistivity service is a new logging-while-drilling sensor that delivers the unique ability to map reservoir and fluid boundaries more than 200 feet from the wellbore – over twice the depth of current industry offerings. It gives operators a much clearer view of their reservoir, helping to precisely geosteer their wells and achieve higher production
- Baroid has revolutionized the market with its N-FLOW™ filter cake breaker for Western Desert and Mediterranean wells to improve reservoir production.
- Halliburton drill bits and services unit has deployed the latest technologies in drill bits through Cerebro™ Electronic Data Capture System which gives reliable, high-data-rate measurements of inclination, vibration, rotation, and the earth's magnetic field movement around the bit. Technology such as the GeoTech™ premium cutters, Shyfter™ Depth of cut controller elements and Stega™ Efficient backup layout are applied for optimizing drill bit performance through increasing bit life and improved rate of penetration (ROP) in different drilling applications in Egypt.
- LockCem™ Cement System is creating cement integrity during the life of the well through combining resin technology with conventional methods.
- Halliburton continues to maximize the asset value by AccessFrac® Solution package that ensures each perforated zone receives the right treatment and connects all the potential areas that may be ignored. Halliburton continues to be a leader in the analysis and execution of

re-fracturing wells in a mature field that helps bring the production back to an economical level.

• In an industry where time is money, the ability to optimize well interventions and make decisions quickly is invaluable. Our RELAY™ system, digital SL conveyance system with a wide range of real-time capabilities, is an intelligent conveyance system for well intervention operations— enables immediate decision-making.

We are proud that many of these engineered solutions have reached many readers through the Egypt Oil & Gas newspaper over the past few years.

THIS YEAR, HALLIBURTON IS CELEBRATING ITS 100TH ANNIVERSARY. HOW IS THE COMPANY COMBINING LEGACY OPERATIONS WITH MODERN 4.0 INDUSTRY TECHNOLOGIES TO COPE WITH THE MARKET CHANGES?

Our company started with a single product in a single location and today is a global company operating in more than 80 countries and providing a wide range of products and services. Reaching our 100th anniversary is a testament to our employees, past and present, and our rich history of growth, innovation and unparalleled customer service. Since the beginning, our company has been at the forefront of being a technology innovator – from our first application of hydraulic fracturing technology to our automated technology today. Our products and services help make more productive wells and improving overall efficiencies. Our focus is on improving production gaps and reservoir engineering workflows via the deployment of the DecisionSpace® platform and Voice of the Oilfield™ solution.

The digital contributions of each product line are advancing at a rapid pace, and we realize the strength of connectivity at the customer interface. Well Construction 4.0 is our digital approach to automated well construction that helps reduce planning time, increase efficiency, and improve decision making. We can now leverage a single, integrated and open platform to deliver solutions that increase collaboration and connectivity across drilling activities, including field development planning, well design process, and well execution. This approach allows us to collaborate with operators on a more advanced level and design tailored solutions.

WITH 60,000 EMPLOYEES OF 140 NATIONALITIES IN MORE THAN 80 COUNTRIES, WHAT ARE THE MOST IMPORTANT POLICIES THAT HELP KEEP YOUR WORKFORCE MOTIVATED AND ENSURE A FAIR AND BALANCED WORK ENVIRONMENT?

Halliburton is an equal opportunity employer and our Code of Business Conduct (COBC) forms the foundation for our employees to be treated fairly. The Halliburton COBC gives employees the responsibility to report anything that is not in line with Halliburton's values. This is a great motivation for employees to feel empowered and to be part of a 100-year-old organization.

EGYPT OIL & GAS IS CELEBRATING ITS 150TH ISSUE THIS MONTH, IS THERE SOMETHING YOU WOULD LOVE TO SAY ON THIS OCCASION?

Congratulations to Egypt Oil & Gas on this important publishing milestone. Your 150th issue is a significant achievement and a true testament to the outstanding news you produce for our industry. Keep up the good work, Mohamed Fouad, and the entire EOG team!

🗣️ *EGYPT IS AN IMPORTANT PART OF OUR PORTFOLIO AND WE ARE ENCOURAGED BY THE PROSPECTS FOR OIL AND GAS SERVICES AND THE FISCAL IMPROVEMENTS IN THE ECONOMY AT LARGE.* 🗣️

🗣️ *I SEE THE MODERNIZATION PROJECT AS THE BASELINE AND THE RIGHT STEP TO ACHIEVE SUSTAINABILITY IN THE EGYPTIAN PETROLEUM SECTOR.* 🗣️

🗣️ *OUR BIGGEST PRIORITIES NOW ARE TO TRAIN THE LOCAL WORKFORCE THROUGH ON-SITE TRAINING AND PROVIDE AN OPPORTUNITY FOR MANY PARTICIPANTS TO GAIN EXPERIENCE [ABROAD] AND EVENTUALLY UTILIZE IT HERE IN EGYPT WHEN LOCAL ACTIVITY RAMPS UP.* 🗣️





A CATALYST TO THE MODERNIZATION OF JVS

BY MAI EL GHANDOUR

Joint ventures (JVs) can often be a conundrum, with complicated structures and shared management teams. As a volatile market, the oil and gas industry would not appear to sit well with the given structure, posing some threats to JV ideals. According to a two-year study entitled 'Effective Mergers and Acquisitions' by UK-based Roffey Park Institute, strategic alliances between businesses are hard to manage and have a high risk of failure. However, with key human resource (HR) managers, more companies opt for collaboration to modernize their business landscapes.

The study further suggests that if companies invest in fostering personal relationships between their staff before joining forces, this shall directly contribute to the success of the entity as a whole.

One of the report's authors, Linda Holbeche, a thought and practice leader in the fields of leadership and HR management, explained that in order for people to get to work, HR managers should make a conscious decision and a huge amount of effort to build trust between different groups of people,

to consolidate the common systems used and to be prepared to take risks, adding that the more information is shared, the higher the level of trust.

TACKLING HR PRACTICES

In 2016, Ernst & Young's People Advisory Services conducted a people strategy survey to assess current HR practices in 38 petroleum companies, covering a range of upstream, downstream, and services sectors. The results revealed five major trends impacting talent retention and HR management in the oil and gas industry. The first trend positioned talent management as an imperative in a sustained downturn. The second trend suggested that adding flexible benefits can improve employee engagement. The third established how HR technology can help drive efficiencies with a lower cost of implementation, quicker deployments and improved reporting. The fourth necessitates updating and streamlining global mobility programs to minimize risks and reduce costs. And finally, the fifth showed how many companies are implementing changes to their organizational design

to seek efficiencies and shape a nimbler, more agile organization for the future.

AN HR PARADIGM WITHIN JVS

With JVs in Egypt, regulation gives control over resources to state entities, in addition to the authority to monitor international oil companies (IOCs) to ensure proper value sharing and utilization of those resources.

IOC conglomerate BP has established a successful track record of JVs during their time in Egypt, all the while capitalizing on the human element. JVs such as the Gulf of Suez Petroleum Company (GUPCO), the Pharaonic Petroleum Company (PhPC), and Lightsources BP have all been setting up their systems and procedures to support staff in critical tasks and minimize human error. Culturally speaking, BP optimizes the work environment to shape how leaders think, constituting the culture of the organization.

Wintershall Dea is a more recent JV example that employed the HR management of two different

entities. The merger was completed on May 1, bringing together two of the largest independent European exploration and production (E&P) companies, sharing their vast oil and gas portfolios. Mario Mehren, Chairman and CEO of Wintershall Dea emphasized that both companies fit together not only in terms of portfolio, but also in terms of values and team spirit. Based on these shared values, the newly established JV strengthens and develops their calibers.

According to the Oil and Gas Law Review published by Christopher B. Strong, a legal researcher, the Egyptian General Petroleum Cooperation (EGPC) operates as a holding company to 12 public sector companies and around 58 JVs with foreign partners that include several major IOCs. The EGPC manages its E&P operations through these JVs.

The EGPC has taken strides in the development of HR skills in different areas of the oil and gas sector through its implementation of training programs and HR activities. The company's efficient approach to work aims to build the next generation of innovators and creative thinkers.

STRIVING FOR JV EXCELLENCE

Badr Petroleum Company (BAPETCO), a JV between the EGPC and Royal Dutch Shell, was the first JV in Egypt to interweave modernization to all its core values. BAPETCO was an excellent choice due to the company's huge number of employees that are always willing to expand and advance forward. Moreover, with all of its social investment and development programs that are mainly focused on human capital development and capability building, Shell was apt to take on the project.

In order to exemplify the importance of investing in human resources, Dina Fouda, Transformation and Value Capture GM at Shell, mentioned how the motivation of employees has impacted the Modernization Project itself. "We have a team of over 30 people from BAPETCO who are working on implementing this change within the company and we are getting great value from the passion and the willingness of the team working on the program," she said.

Osama Mobarez, undersecretary of the Technical Office at the Ministry of Petroleum, sees Bapetco as a role model for the modernization of JVs as it was necessary to implement the Modernization Project in both holding companies and their affiliates.

Alaa ElBatal, Vice Chairman for Exploration at EGPC, agreed with Mobarez. He had previously advised all JVs to follow BAPETCO's model as it paves the way for the future of JVs in Egypt.

The ministry's Modernization Project aims to revamp the organizational structure of the sector, including EGPC and state holding companies. This is in addition to improving the governance of the sector.

On May 21st, Shell and EGPC signed a human capital performance efficiency agreement to modernize BAPETCO. The agreement was signed by Abed Ezz El Regal, head of EGPC; and Khaled Kacem, Shell's Country Chairman and Managing Director in Egypt, in the attendance of Minister of Petroleum, Tarek El Molla.

The agreement is an embodiment of the ministry's modernization integrated project, which includes a pillar just for the development of human resources. The agreement also entails eight initiatives related to performance evaluation, employees' creativity

encouragement, performance appreciation, discovering and developing talents, continuous evaluation, digitalized human resources management; and developing employee promotion policies, stated Salah Abdel Kerim, BAPETCO's Head. BAPETCO has already implemented many of the steps recommended by the ministry's program. The pillars for the modernization of JVs are three: governance; human capital development; and key processes like procurement and tendering.

El Molla said during the signing of the agreement that human capital is the cornerstone of the project and the main developer to prepare the young generation to lead the oil and gas sector in the future.

Mark Konecki, Region Operations Director at Apache, stated during Egypt Oil & Gas' Upstream Operational Excellence convention last December that JVs should heavily invest in their human resources. "When [Apache] advances people through our organization, we advance them because of their competencies and because of their performance, and not just because of how long they have been in a particular job," he noted.

Konecki also stressed that Egypt must work on retaining its skilled employees who often go to other countries in order to have better opportunities. "We have many talented individuals here in Egypt and we need to nurture those talented people," he added.

To Mobarez, personnel are at the core of any reforms made to the sector. "We are talking about a transformation that is going to have a long journey, so we need the collaboration of all stakeholders," he said.

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A FUTURE OF EXCELLENCE

KARIM BADAWI, EGYPT & EAST MEDITERRANEAN MANAGING DIRECTOR, SCHLUMBERGER

YOU HAVE WORKED IN EGYPT, INDONESIA, SCOTLAND, FRANCE, RUSSIA AND THE UNITED STATES, WITH PEOPLE FROM AROUND THE GLOBE, WHAT WOULD YOU SAY WERE THE COMMON TRAITS OF MANAGERS WHO INFLUENCED YOU THE MOST?

Schlumberger is a multinational and multicultural company with people representing more than 140 nationalities. Throughout my career, I have learned from each culture and been influenced by managers who have exceptional qualities. These qualities include inclusiveness, openness, strong leadership in HSE and service quality, as well as the ability to mentor others and enable customer success through collaboration.

WHAT ARE THE BIGGEST CHALLENGES THE SECTOR IS CURRENTLY FACING, ESPECIALLY ON THE HUMAN RESOURCES FRONT? AND HOW CAN THESE CHALLENGES BE ADDRESSED?

The success of the sector depends on people who not only have the right combination of skills and professionalism but also a positive mindset. All these elements are essential for working in the dynamic oil and gas sector, which faces many challenges and evolutions in supply and demand, evolving technology progress and digitalization.

It is very important for each company to realize that value can only be created through people and to invest in relevant training and development programs within their companies. This can be done by collaborating with various industry stakeholders to identify the relevant needs of the market and ensure the industry attracts, develops and retains the best talent to accelerate the development of the country's oil and gas potential.

WHAT DOES SCHLUMBERGER BRING TO THE PROFESSIONAL DEVELOPMENT OF THE SECTOR, AS THE COMPANY HAS BEEN NOTICEABLY ACTIVE IN ORGANIZING TRAINING PROGRAMS IN COOPERATION WITH THE MINISTRY OF PETROLEUM, INCLUDING THE MIDDLE MANAGEMENT PROGRAM AS PART OF THE MODERNIZATION PROJECT?

One of Schlumberger's core values is people. Our company culture supports training and developing people so they can identify customer needs and leverage state-of-the-art technology that delivers jobs with exceptional performance and a focus on safety.

Schlumberger is a key partner of the oil and gas sector in Egypt. In December 2018, we signed a memorandum of understanding (MoU) on capacity building with the Ministry of Petroleum. This agreement aligns our efforts with the Modernization Project led by Minister



of Petroleum and Mineral Resources H.E. Eng Tarek El Molla, which aims to make the oil and gas sector the leading sector in the country. Under the MoU, Schlumberger will provide training opportunities for undergraduates students in collaboration with the Society of Petroleum Engineers (SPE), graduate students not yet employed in the industry, and new recruited population in the oil and gas sector joint ventures (JVs), in addition to the middle management group.

We are extremely proud of all our ongoing engagements and especially with the middle management program where we are proving a customized training covering soft skills, change management, strategic planning, as well as functional innovative approach in HR, supply chain, legal, ethics and compliance. Also, the training gives a very important focus on HSE, leveraging our best practices from across the world to foster a mindset of teamwork and collaboration for all participants.

We have been extremely pleased with the feedback of the participants, instructors and ministry team from the program and we are currently planning to extend a tailored program to the technical population selected by the ministry as part of the Modernization Project.

HOW DO YOU KEEP YOUR OWN WORKFORCE CONTINUOUSLY DEVELOPING AND GAINING NEW SKILLS?

As previously mentioned, people is one of our core values and investing in training and development has always been key in Schlumberger. We leverage our global footprint and diverse services and product portfolio to enable our employees to always gain new skills. They are developed and trained within their current product line or functions while also benefiting from various geographical exposure. This enables them to gain experience by being exposed to different customers and working environments as well as various technologies. There is also a cross-functional transfer development to further enable additional skills and foster an environment of knowledge transfer and sharing to always continue to improve. Another key element in the training and development is leveraging the latest technology innovations to provide a cutting-edge technologies environment with new learning practices across our learning centers and online trainings as well as on the job exposure.

SCHLUMBERGER IS ALSO SPONSORING A NUMBER OF PROGRAMS FOR UNIVERSITY STUDENTS. IN YOUR OPINION, WHAT WILL THE NEW GENERATION OF OIL AND GAS PROFESSIONALS BRING TO THE INDUSTRY?

Yes, Schlumberger Egypt is working closely with the SPE chapters in various universities in Egypt and providing a first of kind customized program aligning the universities petroleum engineering curriculums, providing the students with tailored exposure to the latest technologies and strong HSE culture in our state-of-the-art operational base in 6th of October City. So far, the program has included students from several universities, including Cairo University, Future University, Al-Azhar University, American University in Cairo and Suez University. Students are set up in multi-university teams to ensure they gain teamwork and collaboration skills and balanced diversity exposure. We are extremely happy with the program based on the feedback from students and professors. It will accelerate their onboarding into the real oil and gas workforce, enabling them to succeed in their careers and become the leaders of the future.

YOU HAVE EXPRESSED MANY TIMES THAT DIVERSITY IS AN IMPORTANT VALUE FOR SCHLUMBERGER, WHAT HAVE BEEN THE EFFORTS THE COMPANY HAS EXERTED TO ENSURE EQUALITY AND DIVERSITY WITHIN ITS WORKFORCE?

Diversity is indeed very important and is a cornerstone of success. Diversity can be looked at from a culture diversity and gender diversity perspective. Both are equally important as they ensure we capitalize on the best of the pool of talent to always outperform as a company and as an industry overall. As a company, Schlumberger's recruitment policy has been centered around recruiting where we are operating, developing our people locally and globally as well as providing opportunity for growth in the company solely based on merit and performance. Gender diversity has also been a key focus to ensure leveraging the full pool of talent from universities; there is a lot of drive to ensure we have significant balance between male and female employees across the organization.

SCHLUMBERGER HAS REACHED MANY MILESTONES DURING ITS 80 YEARS IN EGYPT. WHERE DO YOU SEE THE POSITIONING ITSELF IN THE EGYPTIAN MARKET OVER THE LONG-TERM?

In 2018, Schlumberger marked its 80th year in Egypt. We celebrated this milestone in December with the official inauguration of our Egypt Center of Efficiency Operations base in 6th of October City. At this event we were honored with the participation of H.E Eng. Tarek El Molla, all the oil and gas sector leadership, and Schlumberger CEO Paal Kibsgaard. We are very proud of our partnership with our clients in delivering key mega projects across many years in Egypt and in continuously bringing new technology to the Egypt oil and gas sector. We are also very proud of our involvement and partnership with various stakeholders in making the Zohr gas field success

story a reality, where Schlumberger technologies and solutions have been instrumental in making the discovery and accelerating the time from discovery to first gas. Schlumberger is very pleased of its success with the Atoll field development in record time. This demonstrated the unique capabilities of the Egypt oil and gas sector as well as a strong teamwork and collaborative spirit that allowed us and our clients to deliver world-class records and new industry benchmarks.

Also, very important is our engagement in exploration and development all across Egypt from the Mediterranean, the Western Desert, the Nile delta, to the Gulf of Suez.

Schlumberger has developed a leading position in the multiclient seismic acquisition in the Red Sea and the Gulf of Suez and being enablers for new licensing rounds to attract further investments into Egypt.

The future of the industry is digital and we are very honored to be part of the Egypt oil and gas digital transformation, supporting the Modernization Project in attracting new investment.

YOU JOINED THE EOG TECHNICAL COMMITTEE IN SEPTEMBER 2018. COULD YOU SHARE YOUR IMPRESSIONS ABOUT THE COMMITTEE AND ITS ACTIVITIES, ESPECIALLY AS IT GATHERS SOME OF THE BIGGEST NAMES IN THE INDUSTRY IN EGYPT?

I am very impressed by the committee charter, work and vision to help improve the sector by providing innovative ideas and forums to exchange know-how and to lead joint initiatives beneficial for the sector in collaboration with Egyptian General Petroleum Corporation (EGPC), Egyptian Natural Gas Holding Company (EGAS), GANOPE and the ministry stakeholders.

THIS IS THE 150TH ISSUE OF EGYPT OIL & GAS, IS THERE SOMETHING YOU WANT TO SAY ON THIS OCCASION?

A big congratulation for this major milestone! Even prior to coming to Egypt, I have been following the EOG news on various channels to keep up to date with the industry progress and news. Since my arrival to Egypt, me and my team have further benefited from the quality of information. Congratulations and keep up the great work!

IT IS VERY IMPORTANT FOR EACH COMPANY TO REALIZE THAT VALUE CAN ONLY BE CREATED THROUGH PEOPLE TO INVEST IN RELEVANT TRAINING AND DEVELOPMENT PROGRAMS, COLLABORATE WITH THE INDUSTRY STAKEHOLDERS, IDENTIFY THE RELEVANT NEEDS OF THE MARKET AND ENSURE THE INDUSTRY ATTRACTS THE BEST OF TALENT.

SCHLUMBERGER IS A KEY PARTNER TO THE EGYPTIAN OIL AND GAS SECTOR. WE ARE EXTREMELY PROUD OF OUR ENGAGEMENT WITH THE MODERNIZATION PROJECT AND ESPECIALLY THE MIDDLE MANAGEMENT PROGRAM, LED BY THE MINISTER OF PETROLEUM, H.E. ENG. TAREK EL MOLLA.

I AM VERY IMPRESSED AND PROUD OF THE EOG TECHNICAL COMMITTEE VISION TO LEVERAGE THE COLLABORATIVE EXPERIENCE AND TEAMWORK OF ITS MEMBERS TO HELP IMPROVE THE PETROLEUM SECTOR BY PROVIDING INNOVATIVE IDEAS AND FORUMS TO EXCHANGE EXPERTISE.



MIDDLE MANAGEMENT SUCCESS IN THE MAKING



“Egypt’s Oil and Gas Modernization Project” is vastly becoming a common phrase widely spread within the sector. It was the turning point, which allowed the sector to work on its challenges and achieve major successes witnessed during the past couple of years. Taking a closer look at this project, we can assure that everyone is working hard to achieve the project’s vision and create a huge transformation to the whole sector along its full value chain.

The oil and gas sector believes that one of the most important assets for its development and sustainability is its human resources. Accordingly, special attention was given to their development and enhancement of their skills. A specific program was in place with the aim of establishing an efficient and comprehensive talent management system for all sector employees starting from youth until they reach top management positions.

H.E. Eng. Tarek El Molla, Minister of Petroleum and Mineral Resources, was particularly interested in the development of the sector’s youth as they are the guarantee for a fruitful future and encouraged the creation of a catered program to suit their needs and thus “The Middle Management Development Program” was in place.

The first step was to identify these top youth calibers through a set of assessments and interviews and then the program itself began. It is designed to provide the trainees with an overview of the latest technologies, knowledge, skills, and business systems that should help them become the sector’s well-equipped future leaders. The program is a broad spectrum to guarantee the enhancement of both the technical and managerial skills.

This development program was to succeed only with the cooperation and support of our international partners. In December, 2018, Schlumberger Egypt, one of our prominent partners, was the first to engage in such an initiative. It signed a memorandum of

💡 I HAVE ALWAYS BELIEVED THAT YOUTH ARE THE FUTURE OF ANY INDUSTRY. I AM VERY OPTIMISTIC FOR THE FUTURE OF OUR SECTOR IN EGYPT. I AM SURE THAT THANKS TO OUR HIGHLY QUALIFIED HUMAN CAPITAL COUPLED WITH THE CURRENT ENHANCEMENTS IN PERFORMANCE AND ATTRACTIVE INVESTMENT ENVIRONMENT, WE WILL BE ABLE TO ACHIEVE SIGNIFICANT RESULTS AND CONTRIBUTE TO EGYPT’S PROSPERITY. 💡

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

understanding (MoU) with Egypt Ministry of Petroleum and Mineral resources during the celebration of the 80th anniversary for Schlumberger in Egypt.

The MoU was designed for capacity building and support of Egyptian talents under three categories: Undergraduate students, fresh graduates and new hires of the Ministry of Petroleum Middle Management.

The program is for four weeks, the first of which is dedicated to soft skills where the trainees start with change management course followed by introduction to governance, strategic planning and project management. The following two weeks are purely technical courses where the trainees get an overview of the oil life cycle

with insights of the execution of mega projects that took place in Egypt. Finally, the last week gives an overview of all support functions such as human resources, supply chain, service quality, finance, and information technology. The program will not stop after these four weeks as there will be a set of workshops with the trainees to make sure they get all the knowledge they need to always be ready for future challenges.

Now, we are honored to celebrate the graduation of three out of the five groups of Middle Management trainees. This is just the start for these promising sector youth and further development opportunities will follow to ensure that they are armed with the knowledge and skill needed to excel and guarantee a prosperous future for the sector and our beloved Egypt.



“SCHLUMBERGER STRONGLY BELIEVES IN PEOPLE BEING AT THE CORE OF ITS SUCCESS. WE ARE EXTREMELY HONORED IN THE TRUST OF THE MINISTRY IN OUR CONTRIBUTION TO THE DEVELOPMENT OF THE FUTURE LEADERSHIP OF THE OIL AND GAS SECTOR. BY SHARING OUR BEST PRACTICES IN HSE, EXCELLENCE IN PEOPLE DEVELOPMENT, STRATEGIC PLANNING, EXCELLENCE IN EXECUTION, CHANGE MANAGEMENT AND TEAM ENGAGEMENT, WE WILL HELP TO UNLOCK THE FULL POTENTIAL OF MANY TALENTS TO DELIVER H.E. ENG. TAREK EL MOLLA'S MODERNIZATION PROGRAM AND MAKE THE OIL AND GAS SECTOR THE LEADING SECTOR IN EGYPT.”

KARIM BADAWI
SCHLUMBERGER EGYPT MANAGING DIRECTOR



“I AM HONORED TO BE ONE OF THE LEAD INSTRUCTORS IN THIS PROGRAM. MY INTERACTIONS WITH THE TRAINEES WERE VERY REWARDING. THE TRAINEES SHOWED AN OUTSTANDING BUSINESS MINDSET, COUPLED WITH AN AMAZING HSE COMMITMENT WHICH GIVES ME CONFIDENCE THAT THE SECTOR HAVE A STRONG TALENT PIPELINE, THAT IS WELL POSED TO FACE THE FUTURE CHALLENGES OF THE OIL AND GAS SECTOR IN EGYPT.”

AHMED MURAD
TRAINING PROGRAM LEAD INSTRUCTOR



“AFTER MEETING WITH THE TRAINEES, EACH FOR ONE MONTH, I REALLY FEEL PROUD TO WORK FOR A SECTOR WITH SUCH BRILLIANT COLLEAGUES, EVERYONE WAS UNIQUE IN HIS/HER OWN WAY, THE TRAINING EXPERIENCE WAS A PUSH TO WORK HARDER – NOW BY EVIDENCE I CAN TELL THAT THE BEST INVESTMENTS ARE THOSE MADE IN PEOPLE.”

HEBA EL KARRAR
THE TRAINING PROGRAM MANAGER



“THIS TRAINING WAS AN EYE OPENER. GREAT EFFORTS FROM ALL PROFESSIONAL INSTRUCTORS AND THE COOPERATION FROM ALL SCHLUMBERGER'S COORDINATORS WAS REALLY APPRECIATED. AS PART OF THE FIRST BATCH, THE WHOLE TEAM AND I CAN'T THANK THEM ENOUGH FOR ALL THEIR EFFORT AND FAST RESPONSE AND THEIR CONTINUOUS IMPROVEMENTS THAT WERE CLEARLY FELT IN THE FOLLOWING BATCHES AS WELL.”

SARA GABER
PHPC



“THE MIDDLE MANAGEMENT PROGRAM WAS A GREAT CHANCE TO GIVE BACK TO MY COUNTRY AND SHARE 20 YEARS OF INTERNATIONAL PROJECT MANAGEMENT EXPERIENCE. THE STRENGTH OF THE PARTICIPANTS' PROFILE AND THEIR ENGAGEMENT STIMULATED FRUITFUL DISCUSSIONS ON RESOLVING REAL LIFE PROJECT CHALLENGES. THIS IS ONLY THE START FOR ALL OF US WORKING TOGETHER TO MODERNIZE THE ENERGY SECTOR AND BUILD A BETTER FUTURE FOR EGYPT.”

KAMEL EL KHOLY
SCHLUMBERGER INTEGRATION PROGRAM MANAGER



“THE JOURNEY IS THE TREASURE” IS THE MOTTO FOR OUR BATCH DURING OUR TRAINING AT SCHLUMBERGER FOR A WHOLE MONTH FULL OF LESSONS LEARNED, MOTIVATION AND OVERVIEW OF THE OIL CYCLE FROM EXPLORATION TO PRODUCTION. I WOULD LIKE TO THANK H.E. ENG. TAREK EL MOLLA FOR AVAILING SUCH CHANCE FOR MY COLLEAGUES AND ME FROM DIFFERENT COMPANIES WORKING TOGETHER FOR A MUTUAL GOAL, WHICH IS A BETTER SECTOR. WE JUST FINISHED THE FIRST STEP AND READY FOR MORE ASSIGNMENTS TO REACH OUR ULTIMATE GOAL.”

MOHAMED ISMAIL
SINAI GAS



“BEING PART OF THE MIDDLE MANAGEMENT PROGRAM, IS REALLY INSPIRING AND MOTIVATING FOR MY COMING CAREER IN THE EGYPTIAN OIL AND GAS SECTOR. WE ARE LUCKY AND BLESSED TO HAVE THE FULL SUPPORT OF H.E. ENG. TAREK EL MOLLA, MINISTER OF PETROLEUM AND MINERAL RESOURCES, IN EVERY SINGLE STEP OF THIS EXCITING JOURNEY. THE JOURNEY INCLUDES SEVERAL STAGES OF DEVELOPMENT IN NUMEROUS ASPECTS TO HAVE THE FULL AWARENESS OF THE SECTOR ACTIVITIES ALLOWING US TO BE DECISION MAKERS AND FUTURE LEADERS.”

ABEER EL SHERBINY
ECHEM

EXPERTS HAVE THEIR SAY THE NOT TO DO LIST FOR YOUNG MANAGERS

BY MOSLEM ALI



AMIRA EL MAZNI
FORMER VICE CHAIRMAN FOR REGULATORY AFFAIRS - EGAS

STOP LEARNING!

Learning does not come only from courses and work experience. Surround yourself with people who inspire you, challenge you, make you better, and are always willing to achieve results and successes. Listen to others, open your mind to diverse perspectives, ideas, and possible solutions to current or future challenges. If you can, pick yourself mentors throughout your professional career, to ensure your constant learning process.

BE A MANAGER NOT A LEADER

Rather than telling people what to do, give them the resources, support, and guidance they need, and allow them an opportunity to grow. Trust them to do their job. Find the potential in your people, help them develop their strengths, and give them opportunities to grow. Leaders do not create more followers, but rather more leaders. Walk the talk and lead by personal example of integrity and hard work.

SPEND TIME WITH PEOPLE WHO STRESS YOU OUT

Be with those who bring out the best in you, and give you positive energy. You need to work hard and smart, be persistent, diligent, dedicated, humble, and honest. Forget the mistakes and remember only the lessons. Even if you fail, for failure is part of success.

ALLOW OFFICE POLITICS TO THRIVE

Office politics make the best people the first to quit. Politics can intoxicate the work environment, ruin the teams' spirit, lead to unfairness and favoritism. Do not be the bad boss that people leave. Leaders should value hard work and commitment.

CONFINE YOURSELF TO YOUR COMFORT ZONE

Business is forever changing, and the oil and gas sector is no exception, with digitalization, energy transition, and modernization. So be receptive to change, for change is the only constant in life. Comfort is the enemy of achievement.



HODA MANSOUR
MANAGING DIRECTOR - SAP EGYPT

COMPROMISE DURING THE HIRING PROCESS

You are as strong as your team, hence the importance of the hiring process. Hiring requires significant investments in terms of time, due diligence, assessment of cultural fitness with the rest of the team, and the validation of the candidate skillset. Your personal success would depend on the success of your team.

CREATE AN ENVIRONMENT OF FEAR

As a leader, you always need to find ways to motivate and inspire your team members based on their respective interests. You need to create an environment of trust, creativity, openness, and positive energy. Avoid an environment of uncertainty or fear. One person with negative energy could have a multiplier effect on the rest of the team.

MICROMANAGE

Micromanagement can completely kill creativity. Give your team enough space to create their own ideas and plans, and guide them when they need help. It is good to fail sometimes. This is how all of us learn. However, when you fail, you must rise again and learn from the failure.

TAKE CREDIT FOR OTHERS' WORK

Your success is that of each and every member of your team. Give credit to those who deserve it and always celebrate the success of your team. Never take credit for the work of someone else.

HIDE BEHIND OTHER MANAGERS IN TOUGH TIMES

There will be times when tough decisions have to be made. If you are convinced with your decisions, then you should stand by them. If you are not, then say so and never hide behind other senior managers as it will eventually kill your credibility and power within the organization.

People aspire for professional growth as a sign of success and a witness for competence. Promotions are often viewed as the standard milestones of career progress. Nonetheless, being a manager poses a huge challenge, as you shift from being responsible only for your own work to that of an entire team. The responsibility extends to keeping your team motivated and fulfilled, while maintaining order and ensuring effectiveness.

As part of Egypt Oil & Gas contentions support to young professionals in the petroleum sector, we asked some of the market's brightest minds to share their advice on the most common mistakes to avoid as a rising leader.



MOHAMED FATHY TASH
ENERGY CONSERVATION ASSISTANT MANAGER - GASCO

BE A CLASSIC MANAGER

Many managers fall in the trap of seeking authority as a first priority. Authority is sometimes necessary to maintain adherence to the system, but it is not the only factor that can keep the system alive and active. Long-term relationships and rather focusing on empowering team members can have astonishing results.

BE A BAD LISTENER

Listening does not mean staying quiet while the other one is speaking, but genuine listening means encouraging the other to speak freely and express different opinions other than your own. This could help you learn. The only way for boosting talent is lifelong learning, and developing a positive culture based on shared values.

HAVE AN UNCLEAR VISION

Beware and avoid having an unclear message with no clear purpose, and no clear goal. This could hinder the team's motivation and negatively affect the performance and business result. Most importantly, focus on a message of inclusion rather than exclusion.

DO NOT RECOGNIZE TEAM EFFORTS

Even the smallest effort exerted by team members must be appreciated, as appreciating these small efforts today could lead to big achievements tomorrow. The managers must determine the appropriate rewards to recognize the efforts of their teams. Failure to identify a suitable reward could negatively impact the attitude of team members.

DO NOT BALANCE BETWEEN SUPERVISION AND AUTONOMY

The two are essential for success, without supervision, chaos is the most probable result, without autonomy, there is no space for innovation. The balance could be achieved when the manager focuses on the big picture, coordinate efforts, and communication, while leaving space for the team members to manage the details.



MOHAMED EL HABBAL
ASSET INTEGRITY MANAGEMENT PROGRAM MANAGER - ENPPI

MISTAKE AUTHORITY WITH INFLUENCE

Many new managers try to show their team that "I am the Boss," and this could even lead them to take wrong decisions, without thorough understanding and consideration, just to prove that they are confident. Make sure to build solid relationships with your business partners and peers.

DO NOT UNDERSTAND YOUR COMPANY'S VISION

It is dangerous not to fully grasp the business objectives of your company, the targets of your department, and how do they align together. Take your time to understand, analyze and make the right decision at the right time.

DO NOT BUILD TRUST AND TRANSPARENCY

Managers should listen carefully to their subordinates, and build a supportive environment within their teams. This is achieved by carefully to their say and building strong relationships with them. Trust is also never built when there is an unfair distribution of incentives, whether they are tangible or intangible. A manager is trusted when they master their tools and gain the appropriate level of self-confidence.

FAIL TO BE THE MANAGER YOU WISHED TO HAVE

New managers should learn from the mistakes of their own managers to develop and build on their experience. They can think how they hoped their managers who led the teams they were part of at the beginning of your career would act to have a clue of what could be an effective managerial style.

DO NOT WALK THE TALK

Some managers do not trust their subordinates and this leads to them resorting to micromanagement, killing motivation and dedication. Although managers should lead by example, sometimes a distortion in vision and objectives sends confusing messages.



HRM PRACTICES AND JOB PERFORMANCE: Key to Define the Structure of the Egyptian Petroleum JVs

PREPARED BY REHAM GAMAL

Human resource management (HRM) practices are one of the main key elements that define a strong organizational framework for any entity. They represent the policies, procedures, and systems that influence employees' behavior, attitudes, and performance. Several conducted studies have generally found a positive relationship between HRM practices and organizations' performance. However, there are key contributors in between that should be taken into consideration.

One of these studies is "Testing the Impact of the Human Resource Management Practices on Job Performance: An Empirical Study in the Egyptian Joint Venture Petroleum Companies", published in International Journal of Business and Social Science, Vol. 3 No. 9; on May 2012, by Nermine Magdy Atteya, a full-time faculty staff member at State University of New York At Oswego Department of Marketing and Management School of Business Administration Oswego, New York 13126, USA

The report is concerned with enhancing the understanding of the link between HRM practices and job performance by testing mediating variables; supervisors' job satisfaction, organizational commitment, quitting intention, negative word of mouth and organizational citizenship behavior. Testing the correlation between these mediating variables will highly explain the relationship between HRM practices and job performance.

HUMAN RESOURCE MANAGEMENT PRACTICES AND JOB PERFORMANCE

In this study, HRM practices were tested from job satisfaction, recruitment, and selection perspectives.

This criteria enables the organizations to choose the best candidates in line with their aims and goals as well as properly respond to market opportunities and threats.

Training programs show a critical role in an organization's success. Providing employees with a suitable training program gives them the necessary knowledge and skills to work effectively. Additionally, employees need to be rewarded as an incentive to perform at the required levels. Motivated employees greatly contribute to the growth of the organization. The HR departments in the Egyptian petroleum sector see training and development efforts as one of their priorities, according to the report.

Furthermore, performance evaluation process shows the effectiveness of HR policies in any organization. Feedback on performance improves communication between supervisors and employees. Besides, they increase loyalty and trust employees have towards their organization. In Egypt, the rate of providing feedbacks is low. When feedback is given, it is mostly a negative one.

JOB SATISFACTION AND QUITTING INTENTION AND NEGATIVE WORD OF MOUTH

Satisfied employees with their jobs are those who find desired outcomes. From the business side, managers believe that happy and satisfied employees are more productive. On the other hand, unsatisfied employees are more likely intending to quit and even talk negatively about their organization.

JOB SATISFACTION, ORGANIZATIONAL COMMITMENT AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR

Organizational commitment is a significant sign of organizational citizenship behavior (OCB). Committed employees would like to play more proactive roles in addition to behaving in a beneficial ways for the sake of their organization. In other words, OCB that represents the involvement of employees or reflects their sacrifice for the organization is supposed to be affected by commitment.

Furthermore, OCB can't be directly recognized by the organization but rather it is reflected in the level of

the employee's performance. There are three types of OCB: obedience, loyalty, and participation.

METHODOLOGY AND RESULTS

In light of the previous studies, this paper creates a model to test the effect of HRM (independent factor) on job performance (dependent factor) through the mediating variables defined before.

The analysis focused on joint ventures petroleum companies aiming to specifically improve the HRM practices for the gas drilling and production teams' supervisors. Hence, personal interviews were held with these supervisors to see their opinions about HRM practices within their organizations. Some of them expressed their annoyance from the feelings of unfairness and nepotism, especially in recruitment and selection process as well as training and development.

The interviews included a population of 4412 supervisors and section head in the joint venture petroleum companies in Egypt. A random sample of 600 supervisors was chosen, representing 17% of the population. The data collected were revised and analyzed using the SPSS statistical software package. The response rate reached about 90%.

It is worth mentioning that respondents differ in their characteristics, 66.1% of which are in their 30s, 20.2% are in their 20s, and the remaining minority are older.

Furthermore, 52.2% of the respondents possess 11 to 20 years of experience in the same organization, while

about 32% possess from 6 to 10 years. In addition, 57.9% of respondents got a B.Sc. in Mechanical Engineering, while 18.7% got a B.Sc. in Petroleum Engineering, other 10.7% got a B.A. in Commerce, and 2.2% got an MBA.

A designed correlation matrix found a significant correlation among the determined variables. The matrix proved a significant positive correlation between HRM practices and job satisfaction, organizational commitment and job performance. Besides, it confirmed a negative correlation between HRM practices, job satisfaction, organizational commitment, OCB, job performance, quitting intention and negative word of mouth.

By applying ANOVA test, it is worth mentioning that the test showed that HRM practices explained 41% of the total variation of job satisfaction. Hence, the test provided statistical evidence that the more fair and impartial a company's HRM practices are, the higher the job satisfaction rate, and accordingly the higher the job performance.

Egypt's oil and gas sector is commonly believed to give great attention to developing, investing, and retaining its human resources. The sector adopts strategies to implement HRM practices objectively. However, managers in joint ventures companies either working in drilling, exploration, refinery or production, have to effectively control these practices. In addition, these practices have to be in line with the global changes where professional system needs to be followed by the organizations.

Finally, the policies and practices should be implemented ethically and without discrimination.

RECOMMENDATIONS AND IMPLICATIONS

The paper gives some important recommendations to managers in the industry. Improving HRM practices is the key element for improving the supervisory level of performance. Accordingly, petroleum organizations need to develop professional HRM system and practices. For instance, they have to provide equal supervisory opportunities; educational and training programs; promotions; compensation packages and performance appraisal.

Despite providing less job opportunities in the petroleum industry in comparison to other industries in Egypt, employees may quit their jobs or use negative words of mouth if their job satisfaction is not met. With this regard, the organization should set a system that measure job satisfaction regularly, every six or 12 months. This system will help solving any problem through professional methods and techniques as well.

On the other hand, awareness sessions, workshops and group discussions held by some professionals within the sector will greatly enhance OCB of the employees.

Additionally, providing performance appraisal feedback plays an essential role. They help supervisors to determine the performance strengths and weakness to design the proper improvement plans.



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SUPPORTING OIL AND GAS WORKFORCE TO THE BRIDGE SKILLS GAP

BY DINA EL-BEHIRY



Currently, a wave of advanced technologies has dominated the oil and gas sector around the world, primarily to address the surging global demand through enhancing hydrocarbon recovery.

Human capital remains to be the pivotal tool in achieving the industry's goals. Therefore, enriching the sector by investments will help generate many jobs, according to a paper published by International Labor Office at Geneva, entitled 'Current and future skills, human resources development and safety training for contractors in the oil and gas industry.'

According to the paper, the sector faces a skill shortage, including technical, soft, and managerial skills. This is in addition to a severe lack in technical professions, such as petrochemical engineers, petroleum engineers and geologists. Having such a shortage imposes acute obstacle for international oil companies (IOCs), national oil companies (NOCs), and governments. "I think we are facing this situation because companies have felt pressured, for a variety of reasons, to take a short-term approach in hiring experienced personnel rather than hiring new graduates who require trainings and months of-on-the-job experience," Colby Fuser, Halliburton Vice President Egypt and Libya said.

Moreover, in some cases, the sector faces that shortage because of the demographic challenge through having many experienced aged workers and fewer young skilled workers entering the industry, which increases the percentage of the aging workforce in the sector and creates a skills gap. "I believe an aging workforce is not specific to any one market or region, it is a global issue," Fuser added. That is why, the sector has to adapt coherent human resources development policies to attract the talents needed to be part of the industry and operate current investments.

SKILLS SHORTAGE AND AGING WORKFORCE

Globally, skills shortage is the era's dilemma for the oil and gas sector. It occurs through two ways; either a reduction in production caused by a shortage of workers supply or a reduction in productivity because of an aging workforce or having less experienced workers.

It could also occur because "local employees do not return to Egypt due to salary requirements. Generationally, new skilled workers demand quick movement through positions. Therefore, it is crucial we invest in training for our new employees as well as take the time to map out careers for each individual worker and reward them along the way," Fuser explained.

According to the paper, nearly four out of five oil and gas companies reported that technical skills were the main shortage. Furthermore, data from 37 international exploration and production (E&P) companies, covering 40% of the world's oil and gas production, showed that there could be a global shortage of more than 3,200 petrochemical professionals and petroleum engineers (PTPs) in the E&P sector in 2015.

The demographic challenge represents a core reason for deepening the skills shortage problem. The paper cited Schlumberger Business Consulting study which estimated that the E&P sector suffers from a net loss of around 5,500 experienced PTPs aged over 35 years as the proportion of these

experienced workers will decrease from 60% in 2011 to 52% of total PTPs in 2015.

In addition, a survey on skills in the North Sea led by the Offshore Petroleum Industry Training Organization (OPITO) and the Engineering Construction Industry Training Board (ECITB) revealed the existence of skills shortage in operators and contractors, especially as "the need for contractors is expected to grow in the coming years, with short-term growth most likely in companies employing fewer than 500 people and medium-term growth in those employing more than 500 people," according to the paper. Moreover, OPITO and ECITB research showed that over 50% of oil and gas companies consider the skills shortage their number one challenge.

The paper cited another study conducted by Boston Consulting Group which revealed that by 2050 the global population aged 60 or more will exceed the population segment aged 15 or less, therefore, the majority of the countries worldwide will suffer from the skills shortage dilemma. In addition, the paper stated that more than half of oilfield professionals will reach retirement age in the next decade. In Saudi Arabia, more than 60% of engineers will have less than 10 years of experience in the next few years based on the Cambridge Energy Research Associates (CERA) study.

It is worth mentioning that the US Bureau of Labor Statistics (BLS) predicted that by 2022 more than one-quarter of US labor force will be aged 55 or more, according to a research report by the Society for Human Resource Management (SHRM),

entitled 'Preparing for an Aging Workforce Oil, Gas and Mining Industry.' Furthermore, based on the BLS, many sectors including the oil and gas one will witness a boom in the employment opportunities with an average of around 1.4% each year during the period from 2012 to 2022.

SUPPORTING YOUNG PROFESSIONALS IS THE WAY OUT

It has been proven that to overcome the oil and gas sector's concern of having the larger segment of aged workers, the sector has to support young professionals who recently started working in the industry without previous experience.

Supporting them can be through "the accessibility of data and speed of knowledge transfer between the various generations within our workforce, and I feel that the industry in Egypt is taking smart steps to address this challenge through the Modernization Project," Fuser said, mentioning that "at Halliburton, we continue to diversify our talents with multiple generations and genders to support the changing environment." Therefore, supporting young professionals will always represent the sector's way out.

Moreover, generating job opportunities for the young professionals has become a necessity to enable them to enter the sector. According to the paper, a study by Wood Mackenzie showed that by 2020, the oil and gas industry will create more than 1.4 million job opportunities in the US and by 2035, the shale gas industry will generate over 1.6 million job opportunities, comprising more than 360,000 direct jobs, over 547,000 indirect jobs, and over 752,000 induced jobs.

In addition, another method can be used to support young professionals in gaining experience is to encourage governments, IOCs, and NOCs to rely heavily on the local workforce where they are operating, especially under the expansion plans to new and more remote areas. Therefore, it will be better for companies to build local workforce that they can rely on and depend less on expatriate services which can help form a base of experienced young workers.

On the other hand, the oil and gas sector has to increase the awareness of the changing demographic of the workers. It was found by SHRM report that 17% of the human resources (HR) professionals did not know that the share of aged workers will form around 26% of the total workforce by 2022. Moreover, 43% of HR professionals considered the possible loss of talents due to the aging workforce is a problem for the industry in the next six to ten years.

From an organizational point of view, the organizations have to be aware of that change as well. According to SHRM report, 31% showed that their organizations were preparing for that increase in the proportion of older workers in the labor force by examining their internal policies to address this change, yet almost 17% reported that their organizations will resist with no necessary changes in their policies and practices.

In Egypt, under the umbrella of the Modernization Project, "I do not believe we have a skills shortage in our industry. Egypt is a hub for talent where our employees are highly sought because of their knowledge and skill level. The experience they gain by working with the customers in Egypt prepares them for challenges across our industry," Fuser pointed out. The Egyptian Ministry of Petroleum has established a single database that connects all employees in the oil and gas sector to the ministry. The database will provide a clear vision that supports decision making to identify the strengths and weaknesses and to recognize opportunities and risks to prepare efficient plans for all companies and boost their performance accordingly.

Consequently, to avoid the skills shortage concern and achieve the desired growth, the oil and gas sector needs to improve the human resources development policies in a way that will provide the young professionals with the needed support to shape the future of the sector successfully. These policies will combine different strategies and training programs that will enhance the collaboration between industry employers, workers, organizations, and other stakeholders to create a skilled workforce base for strong, sustainable, and balanced sector.

BRIGHTER FUTURE:

"It is going to be a collaborative effort to improve workforce diversity across our industry and for the global workforce as a whole but I believe, together, we will succeed," Fuser stressed. To this end, governments, IOCs, and NOCs need to cooperate to create a global training strategy for young professionals. This strategy "must include respect for rights at work, non-discrimination, equal opportunities and treatment for women and men

(including youth), good governance, transparency and accountability," the paper stated. The successful collaboration and commitment between the sector's entities will guarantee the implementation of such a strategy.

"I believe investing in training for our new employees is crucial as well providing a clear direction on the opportunities available. Compensating employees with rewards throughout their career is also very important," Fuser said.

Fuser pointed out to Halliburton's initiatives to help bridge the skills gap, "one initiative that has worked well is our formal mentoring program where our product service lines pair an experienced employee with one who may have just joined the workforce. The results we are seeing in the transfer of knowledge is amazing and ultimately crucial to our company's success. We believe greater diversity improves the quality of our Company and products we deliver to the customer."

Understanding the generation that the sector is dealing with is important, therefore, enhanced and coherent recruitment policies are crucial to attract young workers. Equality perceptions is one of the main attracting points to the young. A climate of diversity needs to be established, by promoting equal policies for both women and men, equal pay for work of equal value, equal opportunities and equal treatment for promotion, and non-discrimination. In addition, social dialogue is a vital factor in reinforcing continuous improvement in putting into practice the regulations agreed by authorities. Furthermore, ensuring providing young professionals with safe work environment conditions will promote the work agenda of the industry.

EOG LAUNCHES YOUNG PROFESSIONALS DAY

Egypt Oil & Gas is one of the supporting entities to young professionals in the oil and gas sector. During the Upstream Operational Excellence Convention, its third and final day in December, 2018 was fully dedicated to the oil and gas young professionals.

There were many discussions about developing young professionals and the new strategies needed to improve their skills and career paths as they represent the success key for having a brighter future in the oil and gas sector. On this matter, Sameh Sabry, Senior Vice President, Managing Director Wintershall Dea stressed that young professionals should have more than just technical skills as one of the most important soft skills in his opinion is communication to be able to express yourself in a structuring and convincing way.

Moreover, The Ministry of Petroleum and Mineral Resources pays a great attention to the young professionals under the Modernization Project as one of the most important pillars is the HR pillar, according to Maha Attia, Vice Head of the Technical Office at the Ministry of Petroleum. The Modernization Project tackles HR in three different ways; first, through the institutionalization of human capital; second, through HR development; and third, through improving HR systems.

For the HR institutionalization, the program has started developing a data bank that includes all employees in the sector which will allow to have a better view of human resources and will ease having the right people in the right place. Furthermore, in order to build a sustainable growth for the sector, HR development must focus on youth as in the Modernization Project itself about 60% of the teams are youth.

BUILDING DIGITAL CAPACITIES: SKILLS OF THE FUTURE IN THE AUTOMATION ERA

BY **MOSLEM ALI**

A joint survey of digital trends in the oil and gas industry by Accenture and Microsoft in 2017 showed that 73% of upstream companies expect to see most of their fields to become fully automated in three to five years. On the other hand, the 2019 Global Energy Talent Index (GETI) highlighted a preference for retaining existing employees as opposed to Artificial Intelligence (AI) adoption, with 61% of the industry executives surveyed choosing the former.

A research note by MarketsandMarkets, titled "AI in the Oil & Gas market," expects AI investments in the industry to reach \$2.85 billion by 2022.

Hassan Diaa, Data and Infrastructure Team Lead at Schlumberger Egypt, believes that the market turbulences oil and gas companies endured over the past years have pushed them to seek methods that provide further efficiency and effectiveness. To Diaa, this translates to rising local demand for digital solutions.

The question here remains, how will AI adoption goals impact the sector's existing employees and future hiring trends?

EXPLAINING THE RISING ROLE OF AUTOMATION

Several studies have highlighted the growing benefits and impact of technology, one example is a 2017 report by McKinsey Global Institute, titled 'How technology is Reshaping Supply and Demand for Natural Resources.' The report showed that a given company could achieve as much as \$1 billion in cost savings or production increases by deploying technologies that exist today. In addition, adoption of Internet of Things (IoT) sensors could reduce maintenance costs by up to 25%, cut unplanned outages by up to 50%, and extend the lives of machines by years.

The report further estimates that IoT applications that exist today or could be increasingly used within 10 years could have a total economic impact of \$3.9 trillion to \$11.1 trillion per year in 2025.

AUTOMATION VS. WORKFORCE

Despite the growth of automation in the industry, Hoda Mansour, the Managing Director of SAP Egypt, believes that automation will not replace jobs. "If anything, it will free up staff from repetitive and dangerous tasks in the field," she said. "Automation can also create new opportunities for staff with creative skills to develop algorithms, make sense of analytics, and guide automation and digital transformation roadmaps. Our SAP Performance Benchmarking shows that more connected oil and gas workers could lead to 15% more productivity by 2023."

Similarly suggesting a relatively positive impact on labor demand in the industry, an article by the World Economic Forum, published last September, suggests that automation will create as many jobs as it replaces.

On the other hand, other studies are highlighting the growing risk of job-replacement. A 2016 report by Oxford, titled "Technology at Work V2.0" showed that

some countries have as much as 85% of jobs at risk due to automation.

Another study by PricewaterhouseCoopers (PwC) forecasted that by mid-2030s, up to 30% of jobs could be automatable, indicating that women could be at greater risk of automation than men due to their higher representation in clerical and other administrative functions. Additionally, a study by the McKinsey Global Institute expects that up to 800 million workers around the globe could lose their jobs to automation by 2030.

DEVELOPING PROFESSIONAL TALENTS

For Egypt's emerging industry workforce, Mansour stresses the need to gain skills in data science, coding, software engineering, cloud architecture, cybersecurity, AI, robotics, and web applications. "My advice to the younger generation of petroleum engineers is to not stick with the academic fields of study and to start looking into computer science and digital skills."

Diaa agrees, "Legacy reservoir or production engineering jobs will be from the past and the future is for the multi-skilled engineers, the main skills like programming and data analytics will be essential for any job in the future."

Likewise, an article published by the Harvard Business Review, titled "How the Natural Resources Business Is Turning into a Technology Industry," showed that demand for new job classes such as data scientists, statisticians, and machine-learning specialists is already rising; and within 10 years, oil and gas companies could employ more PhD-level data scientists than geologists.

The oil and gas industry is expected to see further diversity within its workforce, which could help attract more talent and boost the employees' professional skills. "Not all oil and gas professionals have to come from traditional engineering and energy backgrounds. In fact, Egypt's oil and gas firms should diversify their hires – by technology skills, educational background, and gender – in order to deliver the biggest benefit," Mansour added.



ATTRACTING AND RETAINING YOUNG PROFESSIONALS

Other than the uncertainty in future job demand, the oil and gas industry may face a supply issue in the coming years as well. A 2019 survey by the Abu Dhabi National Oil Company (ADNOC) showed that young talents in science, technology, engineering, and mathematics (STEM) aren't showing a strong interest in joining the industry, with 77% of respondents stating a preference in the technology industry.

However, those showing preference to the industry indicated the elevated status of the sector's career, the economic impact the industry has, as well as other factors such as high salaries and a work-life balance. Furthermore, the report noted that respondents from emerging markets had the highest percentage of positive industry outlook.

Agreeing with the findings is Mechanical Engineering graduate, Norhan Elmansoury, who is currently an Operations Business Analyst at Total Egypt. She primarily chose to work in the oil and gas industry as it allowed for an exposure opportunity to many leading national and international companies. However, Elmansoury did not pursue a more technical specialization due to the limited options for growth within technical departments.

Meanwhile, Hesham Katamesh, a Senior Technical Professional at a major services company believes that his degree in mechatronics, robotics, and automation engineering will allow him to grow with the industry amidst the ongoing automation process. Katamesh says that his academic background is helping him develop and navigate through different roles in operations and technology, as his company is increasingly applying automated solutions, especially robot arms and systems.

Consequently, not only do young professionals need to be proficient with digital skills and solutions to build strong careers in the oil and gas industry, but the sector has to expand in adapting these innovative technologies to attract and retain more young talent and develop their digital skills to solve the major challenges it is facing.

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EGYPTIAN YOUTH STAND OUT IN THE 2019 AAPG AWARDS

BY **MOSLEM ALI**

The American Association of Petroleum Geologists (AAPG), along with the Society for Sedimentary Geology (SEPM), the Austin Geological Society, and the South Texas Geological Society hosted the AAPG 2019 Annual Convention and Exhibition (ACE) in San Antonio, Texas on May 19-22. The event gathered around 7,500 professionals from more than 72 countries and witnessed the celebration of the Imperial Barrel Awards (IBA), an international annual prospective basin evaluation competition for geoscience graduate students.

Egypt Oil & Gas interviewed the team representing Ain Shams University that returned from the US with the Technical Innovation Excellence Award, and the President of the Suez University team, which won the award for Outstanding AAPG Student Chapter for the second year in a row.

AIN SHAMS BRINGS HOME THE INNOVATION AWARD

Ain Shams University (ASU) was representing Egypt and Africa, as they won the Technical Innovation Excellence Award. The ASU team members, namely Ahmed Ibrahim, David Boles, Mohammed Ramadan, and Omar Hossam, are a group of graduated geoscientists specialized in the field of petroleum geophysics that were chosen by a university competition and then won the continental semi-finals to represent Africa in the global finals. In the continental competition, the University of Lagos came in second place, and Alexandria University won the third place.

Competing in the 2019 IBA, the ASU team was challenged with limited seismic data and well logs obtained from the Alaska North Slope in the United States. They successfully carried out the needed basin evaluation and presented their recommendations by identifying the drilling prospects in the area. Their work was based on the petrophysical analysis of the well logs, as well as their exceptional work in preparing relevant rock physics analysis, seismic data processing (post-stack data enhancement) and interpretation, and structural modelling.

PRIDE AND MOTIVATION

"We always heard about the IBA competition. We knew that Cairo University reached the finals in 2011 and the members of that team got great career paths," said David Boles, explaining the team motives to apply for the award.

Last year, Ain Shams reached the second place in the Africa Region semi-finals. "We accepted that challenge and worked from day one to be winners in 2019. We wanted to reach a more advanced level of knowledge, gain experience and prove our abilities," said Mohammed Ramadan.

"It was an awesome feeling to hear the name of our university up on the stage, and it felt like that more than eight weeks of hard work finally paid off. I could not even catch my breath, and everyone was happy and grateful," Boles added.



UNIQUE EXPERIENCE

The event was a great opportunity for the team to explore career opportunities in the oil and gas sector. "We were also motivated by the award itself. Winners always get the chance to receive a scholarship or a job opportunity. Being a finalist also means that you will have an opportunity to deliver a presentation in front of a panel of experts and specialists from all over the world," explained Ahmed Ibrahim.

Omar Hossam then explained that they were happy to witness presentations by other teams from around the globe. "Everyone deserved a trophy for their efforts and creativity. The evaluation must have been tough, but technically, we were the best in assessing the very limited dataset that we were given compared to other teams."

MENTORS

The team also wanted to acknowledge the efforts of their mentors. "Our academic supervisors were Dr. Ali Halim, Geologist Team Lead at Apex International Energy, and Ali Mahmoud Mahdi, Teaching Assistant in Ain Shams University," Boles added. "We also had a great industry advisor, Mohamed Hussein Saleh, Geologist at BP. We would like to thank him a lot for his continuous support and great advice," said Hossam.

BEST STUDENT CHAPTER: SUEZ UNIVERSITY

The AAPG Suez University Student Chapter (SUSC) did not attend the event, and the Africa region representatives received it on their behalf. Nevertheless, it remains a remarkable achievement that they won the award for the second consecutive year.

"We were very happy for Suez University and proud that an Egyptian student chapter is on top. Our congratulations to them" Hossam stated.

Mohamed Zaki, AAPG SUSC President, said that their vision is to be a role model for all the student chapters in Egypt and all over the world through dedication and hard work.

"Now, our target is to develop and expand our vision to be a technical portal for university students. We are willing to achieve this by increasing our knowledge, sharing our experience, and developing the members' professional and innovative skills," Zaki added.

The SUSC activities are not limited to the university, as the student chapter has extended its activities to include high school students, charity organizations, as well as initiatives and regular events to develop the undergraduates' soft skills and professional capacities.



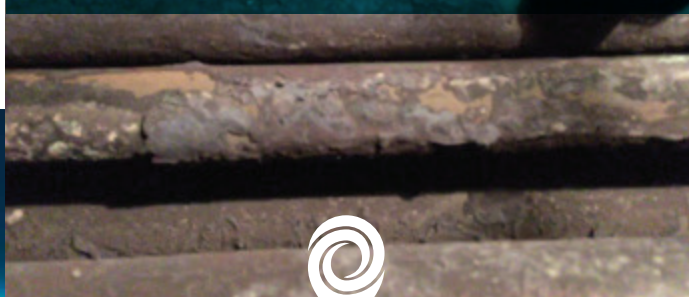
Therma Chem is a globally operating Scottish company specialised in the production and application of a unique chemical technology product, FS12. Used for online fireside cleaning of boilers and process heaters within power plants and refineries, FS12 improves efficiency, increases capacity, reduces emissions and allows for a high return-on-investment.

50 T/HR HEAVY FUEL OIL FIRED BOILER

Cairo Oil Refining Company (CORC) have three heavy fuel oil fired boilers responsible for generating steam for the site

The boilers all experience varying degrees of slagging and fouling associated with HFO firing

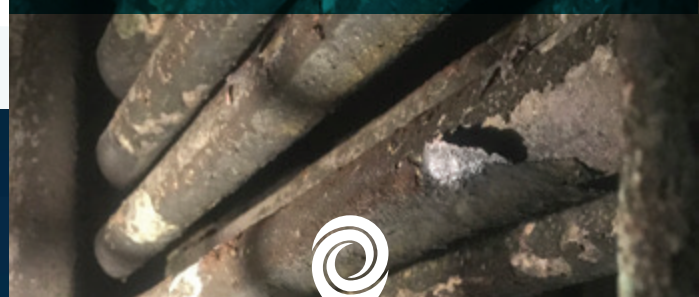
Heavy deposits on tubes before Therma-Chem treatment



BOILER 2 ISSUES

In the furnace water wall tubes and the superheaters there were hard scale deposits with evidence of Vanadium Pentoxide present. At the back end of the unit it was common for H₂SO₄ to develop around shutdowns.

Aged deposits breaking up on the Superheater after 45 days



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With nine of our offshore-support vessels operating in the Egyptian Mediterranean Sea during the Q2 2019, Vroon Offshore Services (VOS) is the largest vessel operator active in the country.

VOS started supporting the Egyptian offshore market back in 2007. At that time, VOS Sympathy, a 78m SSV (subsea-support vessel), was fixed to Saipem, executing subsea-support activities for the Sequoia Project in the Mediterranean. Since then, Egypt has become our main target market and the center of our offshore operations in the area.

Today, we are extremely proud to report that VOS has accumulated 5,800 vessel-employed days in Egypt, equivalent to 16 years of continuous activity. Over the past years, we have safely and efficiently worked side-by-side with 16 different clients, both national and international oil companies, operating under many different charter parties.

The services provided by VOS' 18 vessels deployed since 2007 have been extremely diverse: straight supply duties, anchor-handling duties, towing duties, accommodation duties, logistics support, standby and search and rescue duties, subsea-survey support, all to the full satisfaction of our esteemed Charterers. Whatever type of operation is required, the VOS vessels have always been there to meet and deliver!

The extraordinary success of VOS in Egypt has been possible thanks to the outstanding support of our trustworthy Egyptian partner, Messrs Pan Marine Petroleum Services (Pan Marine). Pan Marine not only ensures our full compliance with Egyptian contractual regulations, but also delivers all local content necessary to provide a top-class service to our end clients (i.e local crew and spares, provision supplies, port-agency services). Such continuous and close teamwork has allowed VOS to become the first OSV operator in Egypt Mediterranean, in terms of number of vessels employed, with the certainty that many more fixtures are just around the corner.

Looking at the current scope of works performed by the VOS fleet offshore Egypt, a major part is focused on the development of the giant Zohr gas-field and related activities. Here, VOS has proven its second-to-none operational flexibility, reliability, and competence. Currently, the 80m DP2 KCM-design platform-supply vessels (PSV), VOS Prime and VOS Prince, are providing accommodation and passenger-transfer duties a few miles offshore Port Said, assisting a construction-support barge. The two SPS-classed units host around 45 charterer's personnel in double cabins and facilitate day/night transfers on to the barge via a dedicated boat landing, purpose-built for this project. A few miles to the North, sister vessel, VOS Principle, is busy supplying structures to offshore installations, working 24/7 in DP-mode.

Moving to the anchor-handling units, DP2 6,500-BHP AHTS vessels VOS Chablis and VOS Champagne, together with their smaller DP1 5,150-BHP sisters, VOS Thalassa, VOS Tethys, VOS Athos and VOS Hestia, are all committed to performing towing and supply duties to various construction assets deployed in the Zohr Campaign. The unique advantage of our anchor handlers, which makes them perfect for Egyptian operations, is their shallow draft. This enables them to enter the port of El Maadya where most of the offshore-construction material is fabricated.

We believe that the gateway to success is our focus on long-term relations. VOS is an international owner. After permanently operating in Egypt over the last eight years, we intend to remain in the country for the years to come. In contrast to other international owners who mobilise assets to Egypt from time to time, VOS is here to stay and actively contribute to the long-term growth of the Egyptian offshore industry.

VOS would like to thank all Egyptian customers, suppliers, crews and contractors who have had dealings with our vessels. We will keep working day and night, in close cooperation with Pan Marine, to deliver what we promise and meet the high expectations of this growing market.





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SAHARA CHEMICAL SOLUTIONS - SCS

SPE Paper for Evaluation of a New Treatment to Remove Calcium Sulfate Scale: Lab Studies and Field Application (SPE-195313-MS)



BY AHMED FARID IBRAHIM AND HISHAM NASR-EL-DIN, TEXAS A&M UNIVERSITY; MOHAMED ABD EL-BAQI AND AHMED ABDELHAY, SAPESCO; HOSSAM FAROUK, AHMED AREF, AHMED REDA, MOHAMED RAFAAT, AND MOHAMED GAMAL, ZEITCO

In the last SPE conference, that was held in California in USA during May 2019, **SAHARA Chemical Solutions - SCS** published the latest research results for removing hard scale through lab studies in USA and field applications in Egypt.

Scale deposition has been a significant problem facing the oil and gas industry. It has an adverse impact on production and injection operations. The precipitation of scale in the near-wellbore area diminishes the productivity of the production wells and loss of the injectivity of water injection wells.

Launching from the idea of service integration as a major line of way of thinking, and matching with **SAHARA** capabilities as a regional leader with over 30 years of experience in providing the oil & gas industry with a wide range of field services using state of the art techniques, **SCS** provides full scale chemical flooding EOR solutions including laboratory testing, site implementation and produced fluid treatment.

This paper presents a new innovative solution to remove the hard types of salt scales.

Core flood experiments were conducted under the supervision of Texas A&M University (the most famous university specialized in this field worldwide) by using the new scale remover to stimulate dolomite cores with anhydrite (calcium sulfate) content of 30 wt.% at 250°F. Other experiments were conducted with the Bandera sandstone cores in USA. Calcium sulfate was precipitated inside the pores and then the chemical was used to treat the cores to remove this damage.

CT scan was used to detect the dissolution and the deposition of scale inside the cores. The chemical was applied on several oil wells from the Nukhul sandstone formation in Egypt.

The first core flood results showed increasing the permeability of the dolomite core to 4 times its initial value. The second core flood experiments showed the ability of the dissolving agent to remove the precipitated scale completely (final permeability = initial permeability) with no effect on clays.

In the field case, the treatment was conducted and placed using a coiled tubing without using additional additives such as corrosion inhibitors, intensifiers, and iron control agents. The success of this treatment was realized by increasing the well production 4 times its initial oil production per day.

Field data and lab results highlighted that the de-scaling solution is an effective fluid for the hardest types of conventional and unconventional inorganic scale.

This SPE paper is one of **SCS'** steps on the road of innovation to provide unique chemical solutions to the world in the field of removing hard scale in oil & gas fields.



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SHELL, REVOLTA SIGN PROTOCOL IN HISTORICAL SURROUNDING

In a historical environment at Mohamed Ali Palace, Royal Dutch Shell celebrated signing a two-year partnership cooperation protocol with Revolta Egypt on May 19th. The partnership aims to promote clean and renewable energy.

The signed protocol is set to encourage the usage of electronic vehicles (EVs) as Shell provides over 100 charging points in its shops. The protocol was signed by Mr. Saher Hashem, General Manager of Shell lubricants Egypt; and Mr. Mohamed Badawi, CEO of Revolta Egypt.

The historical signing was attended by Eng. Abed Ezz El Regal, head of the Egyptian General Petroleum Cooperation (EGPC); and General. Mohsen Elmahlawy, General Manager of Al Watanya for petroleum services; along with several senior officials from both companies, as well as many prominent figures and influential community members.

Royal Dutch Shell Global is eager to provide alternative energy that is clean and comes from renewable resources. The company seeks to decrease carbon emissions by less than 50% by 2050, said Eng. Khaled Kacem, Country Chairman and Managing Director of Shell Egypt.

"Investments in the new energies business sector in Shell has reached USD 2 billion annually, to find alternatives for renewable clean energy," Kacem stated, adding that Shell will thus become the preferred partner, locally and globally, in the field of clean energy transition.

Royal Dutch Shell is collaborating with key industry leaders in clean energy and it is developing the EVs charging systems management in order to provide EVs with more energy efficiency.

Hesham expressed the company's pleasure in partnering with Revolta Egypt to have one of the first EVs charging networks in Egypt. "This partnership reflects our confidence in the strength and prosperity of the Egyptian economy," Hesham said, adding that Shell has been developing best practices in environmental protection in the North African country, and that "Shell is keen to create and develop electric vehicles charging infrastructure through several acquisitions of electric vehicle charging companies and battery."



Meanwhile, Badawi expressed his company's pride in signing the cooperation protocol with Shell. "In Revolta Egypt, we aim to be a key player in Egypt's energy transition process, and this will only be through collaborations with success partners such as Shell, who aspire to achieve the same goals," Badawi noted.

"The world is moving towards clean energy, the electric vehicles sector will witness rapid and unprecedented growth in Egypt if it has the necessary facilities and opportunities as observed globally," Badawi stated, explaining that Revolta plans to have 345 stations by 2020, through covering almost 90% of Egypt's cities and roads in order to serve around 10,000 EVs daily. Over 100 stations will be established in cooperation with Shell.

Revolta completed 130 EVs charging points, of which around seven to eight points are located in the outlets of Shell.

The cooperation protocol comes in light of Egypt's vision 2030 to have diversity in its energy sources in order to achieve sustainability and to ensure renewable energy is accessible for all citizens.

SHELL BIDS HANTER FAREWELL IN IFTAR

In an Iftar party, Royal Dutch Shell bid farewell to Eng. Gasser Hanter, Vice President, the Country Chairman & Managing Director. The event is in recognition of his 26-years journey with the company. The party was attended by H.E Minister of Petroleum and Mineral Resources, Eng. Tarek El Molla, as well as many prominent senior officials in the Egyptian oil and gas sector.

The Iftar was festive, during which Hanter expressed his gratitude for the notable recognition and wished his successor, Eng. Khaled Kacem, all the luck in his new position. Hanter further expressed his pride in working with Shell as he got to work with top industry experts and he enjoyed the astonishing work environment there.

After an exhilarating journey in the Middle East and Europe, Hanter ended his career at the position of country chair in Egypt, which was a source of his gratitude and pleasure during the event as he conveyed.

Hanter has become an expert and a pioneer figure in the oil and gas industry after spending 26 years at Shell Global. He began his career with Shell in Egypt in 1993. The successful expert assumed many powerful positions across the oil and gas value chain, whether upstream, midstream or downstream in Egypt and other countries.

During his oil and gas journey, he has perceived many key leadership roles including being a Managing Director for Fayoum Gas Company, which is a gas distribution company in Egypt; getting appointed as Managing Director of Shell CNG Egypt; being a Gas Manager for Egypt and Syria, as well as serving on the boards of several joint ventures of Royal Dutch Shell.

Moreover, Hanter was appointed as Country Chair for Shell in Iraq, in 2008, and moved to be Managing Director of Basrah Gas Company after the company started its activities in 2013.

Before getting appointed as Vice President, Country Chairman & Managing Director of Shell Egypt on December 1, 2016, he had been working as the Vice President Government Relations for the Middle East & North Africa (MENA) region at Royal Dutch Shell Headquarters.



Egypt holds an amazing potential and a very promising market that has a lot of investment opportunities, Hanter stated as he reflected on working with the Egyptian government with the contribution of all partners in order to continue developing the country's oil and gas sector and to be able to cover domestic as well as global market energy needs.

Meanwhile, Kacem wished Hanter the best of luck, highlighting the remarkable milestones Shell reached during his time at Shell Egypt, which participated in the development of the North African country's oil and gas sector and affected the history of Shell Global.

Hanter has had quite an impressive journey that is empowering and encouraging people in the oil and gas sector to walk in his steps. He positively contributed to the success of Royal Dutch Shell as well as the oil and gas sector, which made it bittersweet to say goodbye to him and to wish him all the luck in his life.

SHELL ORGANIZES “IMAGINE THE FUTURE” COMPETITION

BY DINA EL-BEHIRY

With an eye on the future of energy, Royal Dutch Shell organized a competition titled “Imagine the Future,” in partnership with the American University in Cairo (AUC) and Nahdet Al-Mahrousa. The event was held on the 30th of May in Sofitel Cairo Nile El Gezira Hotel. The event is part of a global competition by Shell International and applied locally by Shell Egypt.

The purpose of the competition is to encourage students to reach new innovative heights, approaching the future of the energy sector from a more creative angle. Contestants competed by proposing eco-friendly energy ideas and projects that can be adopted in Egyptian cities by 2050.

Having participants work on solutions suitable for Egypt 30 years from now requires not only innovativeness but also projection and long-term planning. To complete the challenge students need to propose scenarios as to how the resources, consumption habits, and economic situation will change, proposing economic solutions that cater to the forecasted future reality.

This is the second year for the global competition. Last year, seven students from AUC participated in the inaugural edition of the Shell World Festival “Making the Future” in Singapore, after passing the second and final stage of the competition at the local level and achieved the second place.

“With the world’s population growing, living standards are changing, and to ensure that everyone has cleaner energy, our evolving world needs multitude-based energy ideas,” Sherine Nehad, Communication Manager at Shell Egypt, said at the event’s inaugural speech, adding that “collectively, we have the will and ingenuity to develop these ideas and we do that from Shell standpoint.”

Nehad stressed the need for collaborating to bring the vision of youth to life, “Shell is encouraging the flow and adoption of right ideas by funding and supporting others in their endeavors.”

Nehad pointed out that Royal Dutch Shell has organized this competition in line with the United Nations (UN) sustainability goal number seven, entitled “affordable and cleaner energy.” Moreover, it is in alignment with Egypt’s 2030 vision to support the current youth to diversify the energy resources.

The competition included 36 teams; of which five teams made it to the final round. The five teams were the American University in Cairo team (AUC 5), the American University in Cairo team (AUC 8), Suez University team (Suez 3), Zewail University team (ZU 2), and Ain Shams University team (AS 6). Each team presented two mutually exclusive scenarios that provide a plausible future for the country. “At the end of the event, the winning team will have the remarkable opportunity of presenting Egypt in the Global Finals in Singapore in July,” Nehad noted.

The teams presented their scenarios in front of a panel of judges, including Ahmed Kouhouk; first undersecretary, Ministry of Finance; Moataz Darwish, Deputy Chairman at Shell Egypt; Khaled Ismail, Chairman of HIM Angels



company; Ashish Khanna, Program Leader Sustainable Development and infrastructure at the World Bank; and Mostafa Ghaly, Consultant at the Ministry of Investment.

AS 6 team was the first to begin the competition. They presented two mutually exclusive scenarios, both focused on Damietta, as the most destructive uncertainties, global warming and the world’s globalization. The first proposed future reality suggested a global unified approach to addressing global warming, while the second reality suggested that each country addresses global warming on a more local level.

AUC 5 team followed. They proposed scenarios that focused on the new administrative capital as one of the main hubs for the Egyptian culture by 2050. Their two scenarios depended on answering two questions; how will the government intervene and what is the available level of technology.

The competition went on by presenting the third scenarios of ZU 2 team which were about two parallel universes; Orchestra and Jazz. In 2051, globalization and technological monopoly are the main uncertainties for Egypt and especially for Port Said, as one of the largest logistics hubs. The Orchestra world is characterized by high nationalism and high technological monopoly, yet, the Jazz world has high privatization and low technological monopoly.

Furthermore, the competition presented the fourth scenarios of AUC 8 team. They presented a conference in Aswan to help parents plan their kids’ future until 2050. A wave of entrepreneurship will be created allowing youth to join it to innovate and meet their needs, creating an interdependent world called ‘Finding Boury’ which will lead to diversity in different fields.

The competition continued presenting the last scenarios by Suez 3 team. The team applied their scenarios in Suez. The team’s scenarios tackled the environment and health issues especially in Suez and how they will look in the future as today’s air pollution rates have reached around 40% and are expected to hit around 60% by 2050; in addition to wasted resources. Therefore, preserving resources is crucial to achieving sustainable development in the future through the government and the private sector.

Before announcing the winners, Shell Egypt awarded their partners, Nahdet El Mahrousa and AUC along with the jury members.

At the end of the competition, all the winning teams were awarded certificates and financial prizes. First-place was awarded to ZU 2 team and they were qualified to attend the Global Finals in Singapore. As 6 team took second place, while the remaining three teams, AUC 5, AUC 8, and Suez 3 won the third- place.

EVENT COVERAGE

EMARAT MISR WINS FIRST PLACE AT EGYPT OIL & GAS RAMADAN SOCCER TOURNAMENT



First Place: Emarat Misr



Second Place: Halliburton



Third Place: Wintershall Dea

Egypt Oil & Gas kicked off its 13th edition of the Ramadan Petroleum Soccer Tournament on May 12 which continued for six days to May 17 at Cairo's Manaret El Farouk School.

The tournament included 11 oil and gas companies, namely; Baker Hughes, a GE company; Dara, Emarat Misr, Environmental Solutions, Halliburton, Petronas, Petrosahd, Sahara Integrated, Schlumberger, West Bakr, and Wintershall Dea.

Egypt Oil & Gas organizes the soccer tournament mainly to keep its tradition of endorsing social values and charity.

After six-day competition, the tournament ended with Emarat Misr winning the first place's cup, while Halliburton and Wintershall Dea won the second and third places respectively.

TOURNAMENT AWARDS

Best Player	MOHAMED ESSAM - EMARAT MISR
Scorer Award	ESLAM HASSAN - HALLIBURTON
Best Goal Keeper Award	ABD EL RAHMAN MOHAMED - HALLIBURTON
Best Coach Award	MOHAMED EZZAT - WINTERSHALL DEA
Best Referee Award	MOHAMED ADEL
Best Team Spirit Award	WEST BAKR
Most Entertaining Team Award	EMARAT MISR
Fair Play Award	BHGE
Best Audience Award	EMARAT MISR



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THE PARADIGM IMPACT OF GREAT IDEAS ON EXPLORATION

In the upstream world of exploration, it is important to update our ideas and concepts over time. Creative thinking is the most important element in an exploration program especially when applying for an acreage previously relinquished by others. Creativity can be enhanced through visual thinking. It is the ability to look at the same data that everyone else has but to see something different and to build a new conceptual geo-model, not applied before. It involves looking at data from many different perspectives thinking outside 'the box' and introducing something different from other's approaches.

When you look at the geological and geophysical data, especially if they are old in the archive and have been abandoned by individuals for decades; this is the real challenge facing exploration. However, you have to scrutinize it, because it will always give you new secrets and facts. For instance, this is what Geologist Abdul Majeed Moustafa has done since nearly 43 years. Many of us may not know about this genius geologist whose name has been strongly engraved among all the references, researches and books that published on the Gulf of Suez. When he took a deep look at the regional maps of gravity and magnetic covering the Gulf of Suez, he integrated them with maps of surface geology. He noticed that the



Gulf of Suez is divided into three sectors in terms of strata dip direction. These sectors have opposite dip directions of strata and faulted blocks, and are connected to each other through major accommodation zones.

Prior to this theory, there was an inherited paradigm about the Gulf of Suez that prevailed for years. It was believed that the dip of the strata in the Gulf of Suez is in a direction towards the rift axis. After Moustafa's new idea was published in a research paper at the fifth conference of the Egyptian General Petroleum Corporation for Petroleum Exploration in 1976, great paradigm shift in exploration and search for oil in the Gulf of Suez was

occurred. This contributed to the designs of seismic surveys according to the new model of strata dip direction introduced by Moustafa. Today all geoscientists that are working in the Gulf of Suez province can predict simply the migration pathways of hydrocarbons according to this model. It contributed to the ease of targeting oil reservoirs in the pre-Miocene levels as well.

AHMED MOSTAFA
Exploration Section Head
Ganope

HOW CAN WE DEVELOP THE EGYPTIAN PETROLEUM SECTOR AND MAXIMIZE ITS ECONOMIC RETURN?

The oil and gas industry is one of the most important pillars of the economy in Egypt. Since the State is developing a comprehensive vision for Egypt until 2030, the petroleum sector was at the forefront of the sectors that developed a clear strategy for development, which included a number of different pillars.

I do not find myself in need of reviewing the features and pillars of development in the oil sector, as it was announced before. But I will present some important factors that will affect the development process in the oil sector.

Conscious and prudent leadership with strong will and vision is one of the most important factors that shape the way and outlines the change and development needed to meet challenges and keep abreast of global developments.

The second factor influencing the process of modernization and development is working to introduce the latest technology in the world and reach the maximum technical limit in order to achieve the highest possible return in a standard time.

Additionally, the interest in scientific research and the promotion of new innovations by providing the necessary care for young inventors and working on the application of new ideas and inventions in a practical way allows



to make maximum use of the mental output of human resources in the petroleum sector.

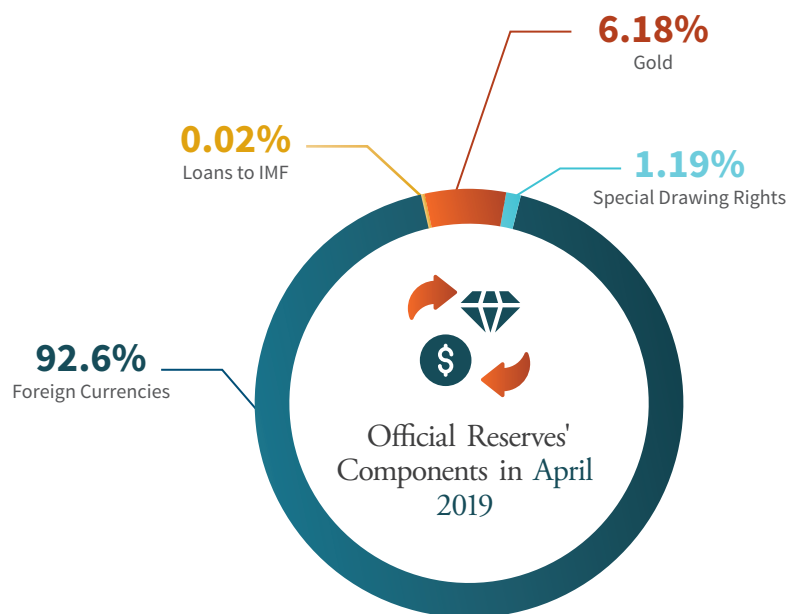
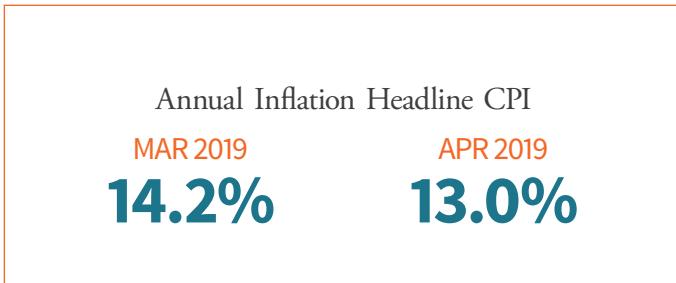
The fourth factor that affects the process of development is the design of organizations that absorb the energies of young people, which sets new standards for managerial development and selection of talented leaders. These organizations are also working to maximize the use of human resources to achieve tremendous achievements.

I have full confidence in the Minister of Petroleum and Mineral Resources, H.E. Eng. Tarek El-Molla, who has a clear vision for the future of the oil and gas industry in Egypt. He also has specific goals that he strives to achieve

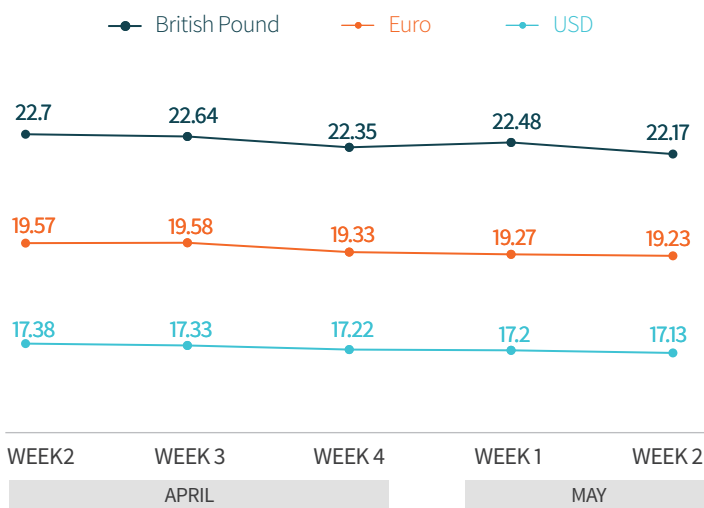
through an ambitious program to develop the petroleum sector in general and the human resources in particular.

I am looking forward to seeing the results of these efforts of the work team responsible for the Petroleum Sector Development Program under the leadership of the Petroleum Minister in the near future, which will contribute to maximizing the economic return of petroleum and gas sector and improve the overall national economy.

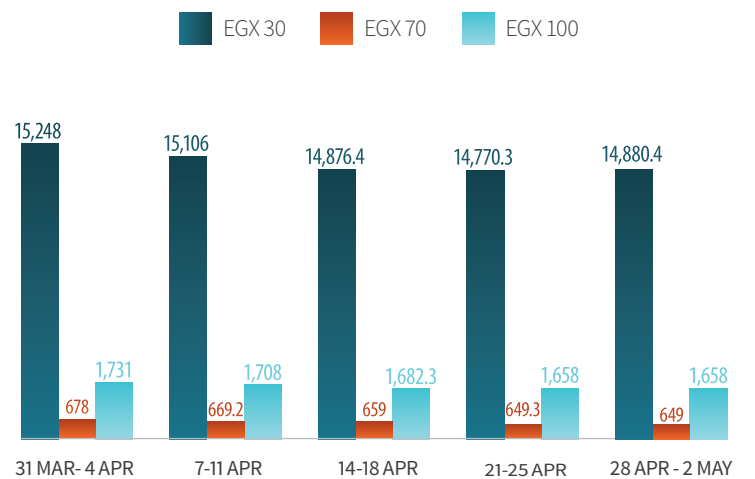
MOHSEN AHMED FARHAN
Drilling Department Head
General Petroleum Company (GPC)



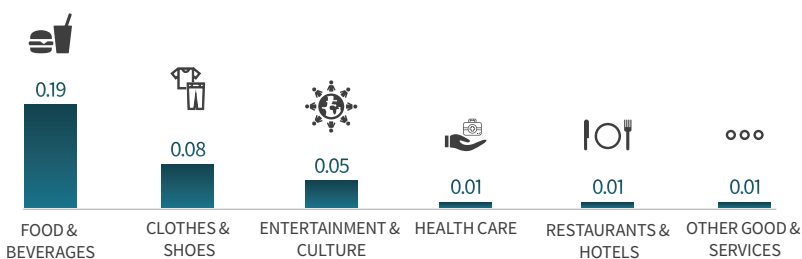
Exchange Rates



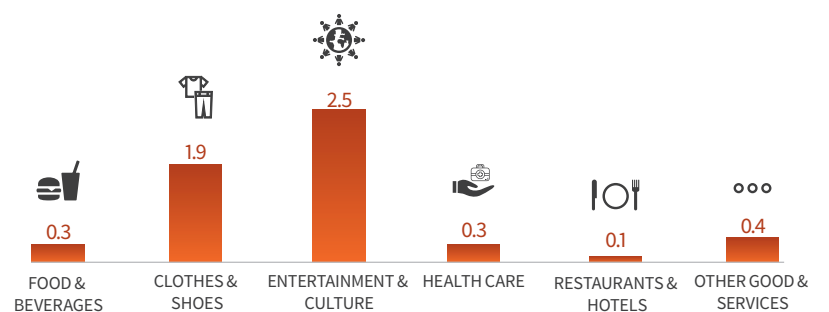
Capital Market Indicators



Sectors' Share in the Increase in Annual Inflation Headline CPI in April 2019 (points)

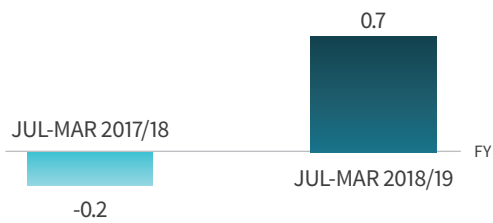


The Change in Sectors' Annual Inflation Headline CPI in April 2019 (%)

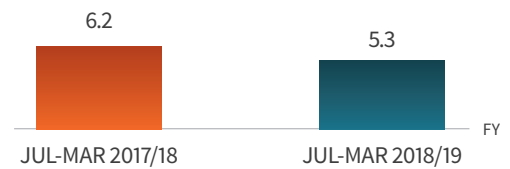


Sources of Raw Data: CBE, CAPMAS, The Egyptian Exchange.

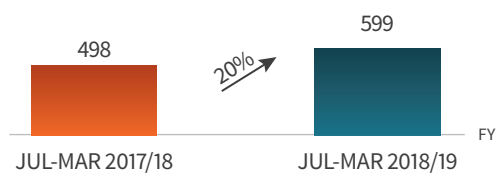
Budget Primary Surplus (% of GDP) (YoY)



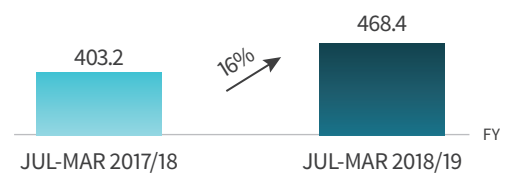
Total Budget Deficit (% of GDP) (YoY)



Total Public Revenues (EGP billion) (YoY)



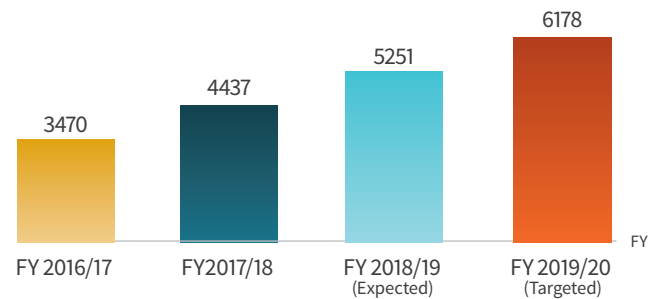
Tax Revenues (EGP billion) (YoY)



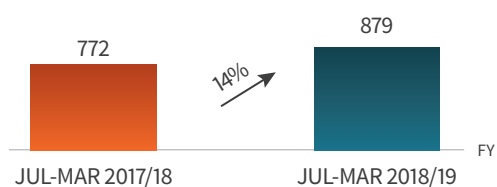
Government Investments (EGP billion) (YoY)



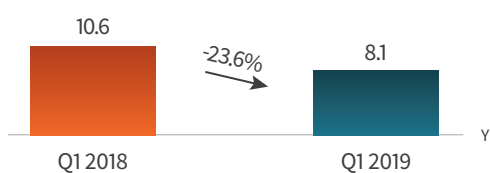
GDP Estimation (EGP billion)



Government Expenditure (EGP billion) (YoY)



Unemployment Rate (%) (YoY)



Source of Raw Data: Ministry of Finance, CAPMAS



FY 2019/2020 investment plan includes pumping **\$500 million** in natural gas exploration and gas delivery to **one million** residential units.



Seven petroleum development projects were implemented during **H1 2018/19** with total cost of **EGP 219 billion**



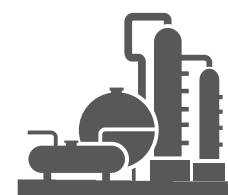
Qarun Petroleum Company **increased** the crude oil and condensates production capacity to **28,000 b/d** aiming to boost it to **45,000 b/d** by **2020**.



The **MoP** signed an **EGP 31.5 million** agreement with the Administrative Capital for Urban Development to link it to the natural gas grid.

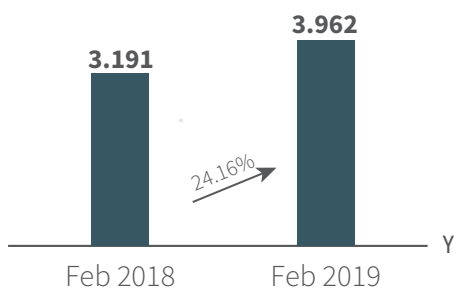


Egypt acquires around **50%** of the petrochemical investment in the **MENA region**.



Egypt is establishing **two** refining projects in Assiut with a total investment of **\$2.3 billion**.

Natural Gas Output (mt) (YoY)

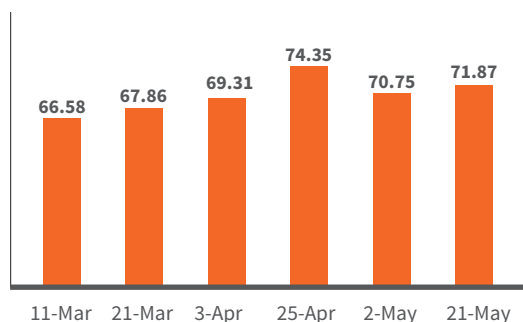


Egypt is expected to export **12 mt** of natural gas worth **\$ 2 billion** in **FY 2019/20**, compared to **4 mt** worth a total **\$589 million** during **FY 2018/19**.

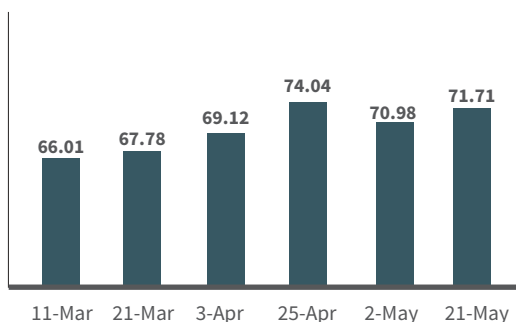


During the past few years, the **MoP** launched two mega projects exceeding **\$750 million** investments to add the Red Sea and Upper Egypt to the exploration map.

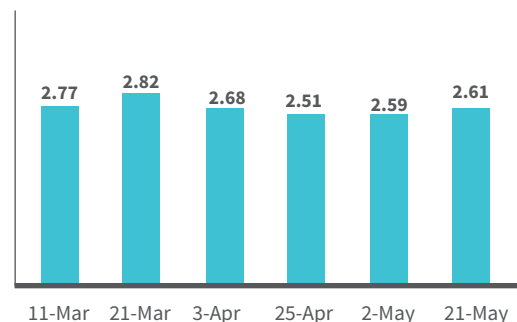
BRENT PRICES



OPEC BASKET PRICES



NATURAL GAS PRICES





HELD UNDER THE PATRONAGE OF HIS EXCELLENCY ABDEL FATTAH EL SISI PRESIDENT OF THE ARAB REPUBLIC OF EGYPT تحت رعاية فخامة الرئيس عبد الفتاح السيسي رئيس جمهورية مصر العربية



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			Digitalisation of Oil and Gas (DIGI)

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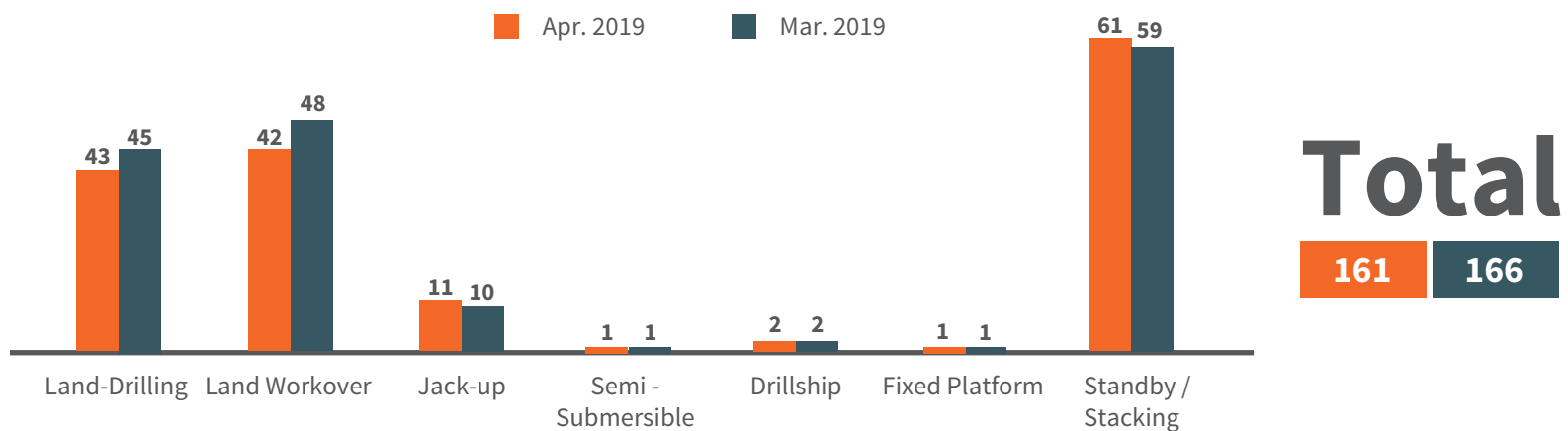
**Deadline for abstract submissions
Thursday 27 June 2019**

EGYPS 2019 TECHNICAL CONFERENCE AT A GLANCE

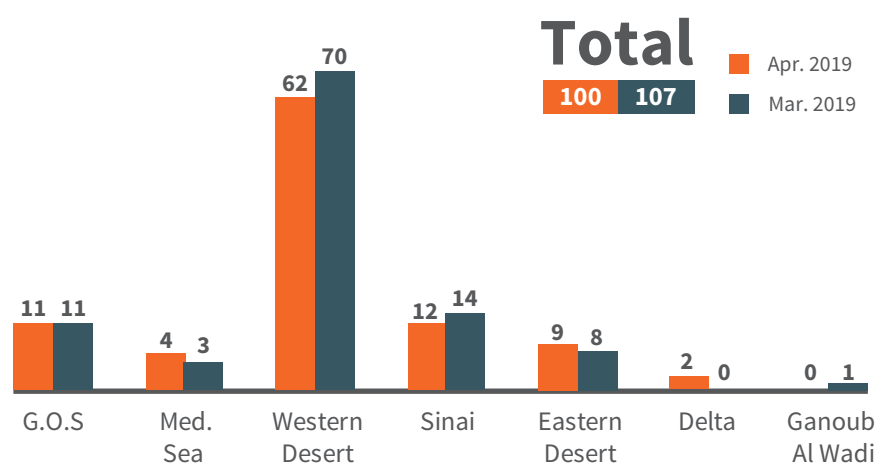
710 ABSTRACTS RECEIVED	84 COMMITTEE MEMBERS	33 TECHNICAL SESSIONS	32 TECHNICAL POSTERS	ACROSS 11 CATEGORIES	132 TECHNICAL SPEAKERS	FROM 45 COUNTRIES
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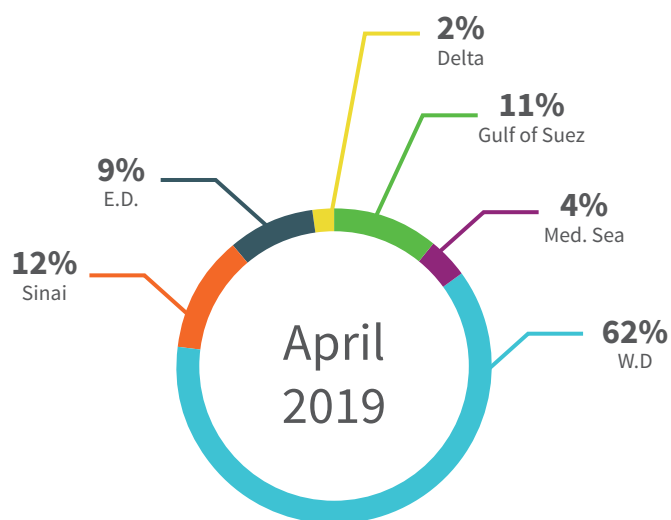
EGYPT RIG COUNT PER TYPE Apr. 2019



EGYPT RIG COUNT PER AREA Apr. 2019



Distribution of Rigs



The difference between the total of rigs per area and per type is due to the Stand By / Stacking number.

Egypt Production Apr. 2019

Total

558,648	B/D
6,5933	BCF/D
6433	MCF/D
83,597	B/D

	CRUDE OIL	GAS	SOLD GAS	CONDENSATES
MEDITERRANEAN SEA	482	3.9235	3828	28,486
EASTERN DESERT	65,188	0.0114	11	80
WESTERN DESERT	314,716	1.2233	1194	40,196
GULF OF SUEZ	127,947	0.0820	80	1,791
DELTA	142	1.3529	1320	12,530
SINAI	50,006	0	0	514
UPPER EGYPT	167	0	0	0

Numbers are calculated per day on average.

Drilling Update Apr. 2019

REGION	COMPANY	WELL	WELL TYPE	RIG	DEPTH	WELL INVESTMENTS
EASTERN DESERT	WEST BAKR	K-8 ST-1	W.Inj	EDC-66	6,037	1.020 M\$
Western Desert	IEOC	BASMA-1X	EXP	EDC-53	15,000	5.100 M\$
	AGIBA	MELEIHA-71	Development	EDC-64	5,499	800,100 \$
	BAPETCO	BED 18-L	Development	EDC-52	11,368	2.200 M\$
	PETROSHAHD	AL ZAHRAA-5	Development	ST-11	10,683	1.800 M\$
	KHALDA	TUT - 126	Development	EDC-57	12,855	2.107 M\$
		MENES - 9	Development	EDC-11	12,100	1.281 M\$
	APACHE	WKAL-EBN-N-X	EXP	EDC-54	15,130	2.400 M\$
	BAPETCO	OBA D-BK	Development	EDC-48	13,849	2.700 M\$
PETROSANNAN	AES-E1 4/2	EXP	ST-8	11,484	2.100 M\$	



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