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Naturally, we here at Egypt Oil and Gas strove to bring our readers the latest news, and facts revolving around Egypt's petroleum industry. For this month, EOG hosted a three-day convention titled: The Future of Egypt's Brownfield Development. Our main feature is dedicated to the Roundtable event coverage, which highlights the exchange of ideas and information amongst the public and private sector seeking to facilitate the development of brownfields in Egypt. The need for brownfield development is becoming increasingly urgent considering that Egypt has become a net importer of oil and gas. Despite the political turmoil that Egypt has or continues to undergo, we hope to better strengthen our petroleum sector.

I would like to thank our event sponsors Apache, Halliburton, TransGlobe Energy, Chevron, Enap Sipetrol, Pico Energy, Baker

Hughes, IPR, Kuwait Energy, RWE, and Rada. Also, I would like to extend my thanks to the Technical Steering Committee for putting forth the time and effort to oversee the roundtable event.

Lastly, with Ramadan just around the corner, Egypt Oil and Gas is currently preparing its 8th annual Ramadan Petroleum Soccer Tournament. We would very much appreciate any feedback or insight into the planning of future events or editorial content.

Please don't hesitate to contact our team at MMarei@egyptoil-gas.com

Editor in Chief **Mai Marei**



Publisher

Mohamed Fouad

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Contact Information:

Tel: +202 25164776

+202 25172052

Fax: +202 25172053

E-mail: info@egyptoil-gas.com

www.egyptoil-gas.com

facebook.com/EgyptOilandGas

twitter.com/EgyptOilandGas

Editor in Chief

Mai Marei

Managing Editor

Lily Leach

Senior Staff Writer

Laura Raus

Chief Reporter

Wael El-Serag

Contributors

Tom Rollins

Communication Liaison

Lubna El-Elaimy

Marketing Manager

Ayman Rady

Business Development Officers

Ayman Hussien

Hicham Saeed

Project Development Consultant

Arwa Atef

Art Director

Omar Ghazal

Cartoonist

Mai Gamal

Managing Director Assistant

Basma Naguib

IT Specialist

Sameh Fattouh

Production Advisor

Mohamed Tantawy

Administration & Legal Advisor

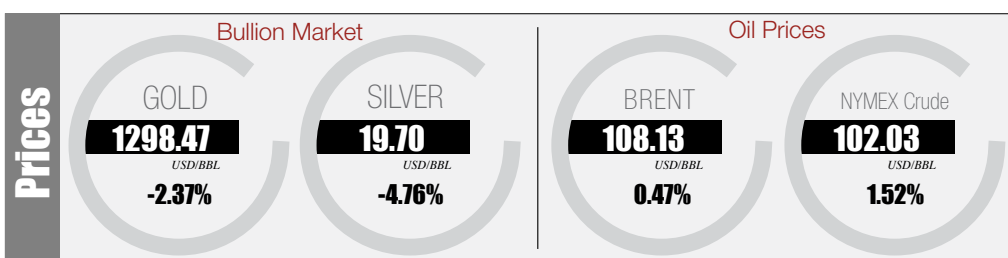
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Foreign Companies in Egypt Call on Government to Increase Prices of Natural Gas

A number of foreign companies operating in the Egyptian petroleum sector called on the government to increase the prices of the produced natural gas, especially since the natural gas currently available exists in places that are hard to reach, in deep water regions, which require huge investments to extract, reported Al Youm Al Sabee. Jeroen Regtien, Chairman of Shell Egypt, said that it is necessary that the Egyptian government provide incentives to its partners to encourage increasing production through increasing the price of natural gas to \$6 for every

British Thermal Unit (BTU), instead of the current price of \$2.65. Another source at a major petroleum company said that the Egyptian government must settle the rest of its debts to its foreign partners, provide a number of incentives for production, pointing out that the government is pushing for an increase in production without considering the burdens the companies must endure such as the low prices of gas in the agreements. For this reason, investors are cautious when pumping additional funds into the petroleum sector.

Expert in Ministry of Petroleum Criticizes Government Decision to Maintain Price of Octane 80 Gasoline, While Increasing Prices of Other Varieties

A source at the Ministry of Petroleum criticized the government's decision to cancel octane 90 gasoline whereas the price of the octane 80 variety was not changed. As a result, consumers started buying octane 80 instead of octane 92. The government had hoped that consumers would start using octane 92 gasoline, however, that did not happen. The source told Al Youm Al Sabee that the government needs to revise

the current system otherwise once the price of octane 92 gasoline is increased, even more people will start using octane 80 gasoline. He also mentioned that after increasing the price of octane 95 gasoline from EGP 2.75 to EGP 5.75 per liter, consumption fell from 55,000 tons annually during 2011-2012 to 20,000 tons annually during 2013-2014.

Government Signs Contracts for 12 Shipments of Gas to Arrive in August

A source in the government told Al Youm Al Sabee, that EGAS has succeeded in reaching an agreement to import 12 shipments of LNG, the first shipment of which is scheduled to arrive in August 2014 after the arrival of the ship that is supposed to convert the imported liquefied gas back into its natural gaseous state. Gazprom will deliver seven and EDF five shipments, each carrying 170,000 cubic metres of LNG, reports Daily News Egypt. The source told Al Youm Al Sabee that six ship-

ments will arrive during the months of August and September.



Minister of Petroleum: \$700 Million in Aid from Gulf Countries as Petroleum Products

Eng. Sherif Ismail, Minister of Petroleum, said that Egypt receives petroleum products as aid from Gulf countries valued at approximately

\$700 million per month. The main countries providing this aid are Saudi Arabia, Kuwait, and the United Arab Emirates, reported MENA.

Ahmed El-Wakil: Prices Will Be Untouched After Gas Prices Increase for Shops

Head of the Federation of Egyptian Chambers of Commerce (FEDCOC) Ahmed el-Wakil said that the government's move to save on subsidies and to direct them towards those who need them most is a good decision and acceptable by businessmen. He said that the government's decision to increase the gas prices for commercial establishments will not result in an increase in the prices of goods. He told Al

Youm Al Sabee that the government decided to exempt bakeries from the decision to increase gas prices in order to avoid any negative effects on normal consumers. According to el-Wakil, the only sector that will be affected will be the restaurant sector, which will be able to absorb the increase without increasing the prices of their goods and services.

Minister of Petroleum: Egypt Pays \$1 billion of its Debts to Foreign Companies

Eng. Sherif Ismail, Minister of Petroleum, said that Egypt will pay \$1 billion of its debts to foreign petroleum companies within the next two months. Ismail said that Egypt paid \$1 billion last year to the foreign petroleum companies as part of a scheme to revive confidence in the Egyptian economy after years of unrest. In addition, Egypt will pay another \$3 billion in monthly

installments until the year 2017 as an incentive to petroleum companies to continue their exploration and drilling activities. However, Daily News Egypt reported that by the end of April, debts owed to foreign partners by the Egyptian petroleum sector had increased to about \$6 billion, up from \$5.7 billion a month earlier.

BAPETCO (Badr El Din) Field Resumes Production Gradually

Eng. Khaled Abdel Badee, Chairman of EGAS, said that maintenance operations were concluded in the Badr el-Din field and that they lasted 10 days. The field resumed production on April 27th. Abdel Badee said that there were negotiations with the company to complete the maintenance operations in just 10 days to ensure that the maintenance does not affect electricity generation.



Egypt Builds Offshore Oil Platform with Japanese Funding

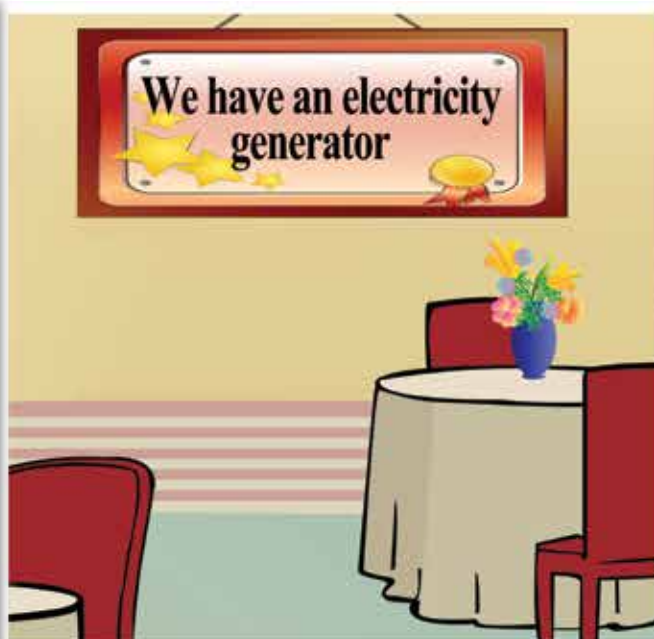
The petroleum sector is currently undertaking a project with investments valued at \$900 million to build and construct a deepwater oil platform in cooperation with EGAS, GANOPE, Toyota Tsusho and Japan Drilling Company, through the Egyptian Company for Offshore Drilling and with new funding from the Bank of Japan, reported Al Youm Al Sabee. A report about the project was sent by head of EGAS, Eng. Khaled Abdel Badee to Eng. Sherif Ismail, Minister of Petroleum and stated that this pro-

ject will enable the petroleum sector to possess its production tools such as the deep water rig to be used in marine exploratory and developmental drilling. Also, the new rig will help in developing the country's reserves and providing new sources of oil and gas while increasing economic revenues. The report also mentioned that a preliminary agreement has been reached to start formulating a draft agreement with the Japanese partner to commence implementing the project.

Moharram Helal: It Is Essential to Implement Gas Coupons Before Winter

Dr. Moharram Helal, CEO of the Egyptian Federation of Societies of Investors, told Al Youm Al Sabee that the gas coupon system must be implemented before next winter so that the budget does not have to bear an extra financial burden. Helal added that LPG prices experience a hike

during the winter months due to increased consumption for heating purposes. A ton of LPG in summer costs around \$500, in contrast, the ton costs \$1,000 during the winter season.



Petroleum Ministry: Increased Fuel Oil Supply to Prevent Power Cuts at Polling Stations

A source at the Ministry of Petroleum told Al Youm Al Sabee that the government planned on increasing the supply of fuel oil to power plants during the two days of the presidential elections, May 26-27 to prevent power cuts from occurring in the polling stations. The source also mentioned that the natural gas supply to power plants is stable at 76 million cubic meters of gas and that this supply will be increased in July when temperatures rise even further.



Egypt negotiates With Four International Companies for the Purchase of Gas

A government source reported that the petroleum sector, represented by EGAS, is negotiating a deal for the purchase of new shipments of LNG, in addition to the 12 shipments it has succeeded in purchasing for reasonable rates. EGAS is continuing its negotiations with a number of international companies to secure the country's needs of natural gas. Eng. Khaled Abdel Badee, Chairman of EGAS, told Al Youm Al Sabee that the current negotiations with international companies are focused on reaching a deal for better prices. The same government source said that it is necessary to reach the agreements for the purchase of natural gas to secure the coming period, especially since the current shortage is expected to continue for five years until natural gas production resumes at its normal levels and after the completion of the North Alexandria project and a number of other new projects.



EGAS: We Will Spare No Effort to Supply Power Plants With Energy Needs

Eng. Khaled Abdel Badee, Chairman of EGAS, said that the petroleum sector will not spare any effort in order to supply power plants with their needs of fuel for electricity generation. Abdel Badee told Al Youm Al Sabee that electrical power plants consume 78 million cubic meters of gas per day, in

addition to 25,000 tons of fuel oil, as well as 2,000 tons of diesel on a daily basis. Abdel Badee asserted that the petroleum sector is doing its utmost to supply the necessary amounts of fuel to electrical power plants.

Sino Tharwa Drilling Company Expands Drilling Operations

The petroleum sector is currently finalizing the process for the purchase of five onshore drilling rigs with investments reaching \$74 million. Three of them are land drilling rigs, while two are well maintenance machines for Sino Tharwa's wells, reported a source at the ministry. The machinery is scheduled to arrive within six months, according to a report received by Engineer Sherif Ismail, Minister of Petroleum, from Eng. Ibrahim Khedr, Chairman of Sino Tharwa. The report indicated that there is an increase in investment opportunities in the petroleum sector locally and internationally and that the com-

pany is aiming to expand its operations in light of the current increase in exploration activities in Egypt after successfully signing 33 new agreements and studying the possibility for new international tenders. This came as an incentive to Sino Tharwa to further develop its capacity by acquiring the new rigs to bring the total number of rigs owned by the company to 23 rigs. The report also mentioned that Sino Tharwa's technical proposal won the tender offered by Sonatrach, Total, and CEPESA in Algeria and it is currently waiting for the results of its financial proposal.

Petroleum Sector Negotiates With Partners to Modify Agreements for Field Development

EGPC is currently negotiating with foreign companies working in the local market to modify plans to develop their fields, a source at EGPC told Al Shorouk Newspaper. This is part of an attempt by the government to improve production levels to help the government face the current energy crisis. EGPC is currently cooperating with EGAS to modify plans for developing Egyptian oil fields to increase local production of crude oil and natural gas to meet local demand. Egypt is currently facing a crisis in natural gas supplies as the country is currently producing 5.3 billion cubic feet of natural gas daily, 400 million cubic meters of which are consumed within the fields

by the extraction machinery. In addition, foreign companies operating in Egypt export around another 400 million cubic feet while the rest goes to the consumption of the local market, according to Eng. Sherif Ismail's statements. The minister of petroleum recently indicated that there is a plan to increase local production of natural gas during this year by 1.8 billion cubic feet. EGAS has also reached an agreement with the Russian company Gazprom to supply seven shipments of LNG starting next August, and with the French company EDF to supply five shipments of natural gas starting next October.

EGAS: We Are Not a Party in Gas Negotiations With Israel

Eng. Khaled Abdel Badee, Chairman of EGAS, denied that the Egyptian side had any knowledge about the signing of a letter of intent between the Spanish company Union Fenosa and the Israeli side to obtain Israeli natural gas and that Egypt is not a party in this agreement. Abdel Badee told Al Youm Al Sabee that the Egyptian side contacted the Spanish company immediately and that Union Fenosa said that the whole matter is only a letter of intent to study the technical possibility of supplying the natural gas and that it does not represent an agreement for the supply of gas. It also mentioned that the letter of intent is valid for a period of three to six months. Abdel Badee mentioned that a meeting will be held during May with the Spanish partners to find out more details about

the matter and that no agreements will be signed unless the concerned Egyptian authorities agree and only in accordance with what is beneficial for Egypt.



EGAS: Electricity Consumption Will Return to Normal Once the Weather Improves

Eng. Khaled Abdel Badee said that electricity consumption reached its highest levels this year in early May due to a heat wave, and that consumption returned to normal levels once the temperature stabilized once again. Abdel Badee told Al Youm Al Sabee that electricity generation is responsible for the highest consumption of fuel this year, as it received 79 million cubic feet of gas, 23,000 tons of fuel oil and 1,000 tons of diesel in just two days. The

chairman of EGAS said that although temperatures rose in early May and had a negative effect on turbines especially in the Western Desert, the petroleum sector compensated for the deficit by reducing supplies of fuel to industries that consume a large amount of fuel such as cement, fertilizers and petrochemicals.

CHOICE Words



The Egyptian army is undertaking major operations in the Sinai so it is not transformed into a base for terrorism that will threaten its neighbors and make Egypt unstable. ... We need American support to fight terrorism.

Abdel Fattah el-Sisi
Egypt's Presidential Candidate



We [Dana Gas] face significant delays in our collections in both Egypt and Iraq. This has impacted our ability to invest in both of those regions.

Patrick Allman-Ward
CEO of Dana Gas



We will be evaluating the situation to see if there is a need to conclude this program of financial support [from IMF] or whether we just confine ourselves to the reforms we conclude.

Hany Kadry Dimian
Egypt's Finance Minister



In its plan for the next fiscal year, EGPC is targeting 690,000 barrels per day of crude oil production compared to the current 680,000 barrels per day.

Tarek el-Molla
Executive Chairman of EGPC



CARTOON



Who will be Egypt's savior?

Gas Explosion Location Difficult to Reach, Homes Unharmed

A source at the Ministry of Petroleum reported that the explosion of the gas pipeline to Jordan at the hands of anonymous perpetrators occurred at a location in the middle of the desert, which is difficult to access, reported Al Youm Al Sabee. The source also mentioned that Al Arish power plant and gas to households have not been affected, but that gas supplies to Jordan have been interrupted. Unidentified perpetrators exploded the gas pipeline using a bomb for the 23rd time since the January 25, 2011 revolution, for the seventh time since June 2013, and the second time in one week in

May 2014.



Chairman of Town Gas Denies Terrorist Bombing of Gas Pipeline

Eng. Mohammed Hassanein Radwan, Chairman of Town Gas, denied rumors that the fire that occurred at one of the gas company's premises, in Moneeb, had resulted from a terrorist bombing. He said that it was due to rising temperatures and the fact that some

residents of the area deposited burning garbage near the control room. Radwan said that the first was put out completely after the gas supplies were cut to the area which serves 3,000 household clients and that losses were kept to a minimum.

Petroleum Ministry: Electricity Deficit Will Be Compensated Through Use of Fuel Oil

Chairman of EGAS, Khaled Abdel Badee, told Al Youm Al Sabee that the government will compensate for the gas shortage by supplying electrical power plants with large amounts of fuel oil, reaching 33,000 tons daily during the summer months until the arrival of the first shipment of import-

ed natural gas in September. Abdel Badee said that fuel consumption for electricity generation is expected to continue increasing gradually during the summer months starting in May until August, and that the petroleum sector is doing its utmost effort to meet the increased needs.

Lafarge Cement Sues Egyptian Government for Raising Gas Prices

Lafarge Cement Company brought a lawsuit against the Egyptian government in the Administrative Court for raising the price of gas from \$4 to \$6 per million BTU. The lawsuit claims that raising the price of gas is unconstitutional and violates the constitutional decrees related to justice and equality. The company indicated that the decision to raise prices was biased against cement companies, in

particular, among all other companies that consume a large amount of fuel and energy. The company accused the Egyptian government of erratic decision making, and in its lawsuit said that the price increase has had a negative effect on the competitive advantage of Egyptian cement companies in the international market.

Cement Prices Rise to EGP 860 Due to Gas Shortage

Cement prices reached record highs in Egypt in early May of EGP 860 per ton in the local market to compensate for the losses incurred by cement companies due to the government's reduction of natural gas supplies. Mahmoud Saadoun, Managing Director of the National Cement Company, said that the reduction in natural gas supplies has resulted in a reduction in cement production by 50%.



Petroleum Companies Announce State of Emergency to Protect Facilities During Elections

Several sources at petroleum companies have stated that emergency plans have been put into effect during the time period for presidential elections scheduled for May 26th due to fears that riots may take place. They have also enlisted the help of the police and armed forces to ensure security. A prominent source in the Ministry of Petroleum said that the current events will not affect production, adding that there are

plans to increase the production of oil and gas to meet the growing demand. He also mentioned that the minister of petroleum has given instructions to increase the amount of petroleum products on the market to avoid any shortages during the elections period, as well as providing electrical power plants with all their fuel needs, reported Al Youm Al Sabee.

Sovereign Bodies Will Submit Their Tax Reports in October and Petroleum Debts Are 20 billion

A prominent source at the Finance Ministry said that the Central Bank of Egypt, EGPC, and the Suez Canal are committed to paying their taxes voluntarily. He said that these sovereign bodies close their budgets at the end of June and submit their tax reports from the end of September to the end of October. It is worth

mentioning that the crisis caused by the administrative seizure imposed on governmental oil companies is still ongoing due to the disagreement between the tax authority and EGPC regarding sales taxes and general taxes that have not yet been paid and valued at between EGP 15 and 20 billion.

Egyptian Petroleum Research Institute: New Project for Fuel From Cooking Oil and Algae

Ahmed el-Sabbagh, Director of the Egyptian Petroleum Research Institute, said during his opening speech at a workshop at the institute, that a new project has been launched under the title "Completing the Project for Production of Biodiesel from Jatropa, Castor Oil and Green Algae." This is part of a strategy to implement scientific research aimed at finding renewable alternative sources of energy to fossil fuels, reported MENA. El-Sabbagh added that

this project is funded internally by the institute to provide a comprehensive study to attempt to change the Egyptian fuel blend. The institute is funding a number of projects to produce bioethanol from agricultural waste and gasoline from plastic waste, and the mixture of ethanol and methanol. He highlighted the importance of increased investment in the energy sector as this is one of the necessities of life.

Misr Petroleum Representative Arrested for Embezzling 75,000 liters

Authorities in el-Beheira Governorate arrested a representative of Misr Petroleum, in Rasheed, for storing gasoline and diesel fuel and selling it in the black market. Investigations showed that he

had illegally stored 47,000 liters of diesel, 28,000 liters of octane 80 gasoline, as well as 83,000 liters of diesel and 14,500 liters of octane 80 gasoline in 2013, Al Dostour Newspaper reported.

Finance Minister: Gulf Petroleum Aid Will Continue Until August

Minister of Finance, Hany Kadry, said that the in-kind aid provided by some Gulf countries in the form of petroleum products will continue until next August, reported MENA. He added that Egypt has not received any financial aid from Gulf countries during this period. He also added at an event

in the London Stock Exchange that the Egyptian government is working in different directions to reduce the shortage in the general budget, which is around 15%, either by reducing it to 10.5% as planned, or to at least maintain its current level.

Report: 78.7 Million Tons Petroleum Production in 2012-2013



The petroleum sector has been successful in meeting the needs of Egyptian citizens and in maintaining production levels of crude oil and natural gas despite the natural reduction in the productivity of wells. Total petroleum production (including crude oil, condensates, and natural gas) reached 78.7 million tons during 2012/2013 of which 33 million tons were crude oil, condensates and LPG, and 45.7 million tons natural gas equivalent, reported MENA. The Petroleum Ministry's report mentioned that the Western Desert is considered the largest area for

the production of crude oil and condensates, yielding 49% of the total production. As for natural gas, the Mediterranean coast and the Nile Delta are the areas of the most production, producing 77% of Egypt's total natural gas production. The report also mentioned that 33 agreements have been signed with international companies for new projects to start exploration in addition to the government's new tenders for the exploration of petroleum. It added that the target is for foreign investments in the sector to reach \$8.3 billion in 2014/2015.

Public Sector Companies Have 7 Billion in Debt to EGAS

A source at the Ministry of Petroleum said that the debts owed by public sector companies to EGAS have reached EGP 7 billion. These companies have been unable to make their payments due to a severe lack of liquidity. The source told Al Youm Al Sabee that among the companies that have not paid their debts are steel factories, el-Qawmia Cement factory, Abu Qir Fertilizer factory, Helwan fertilizer factory, textile factories and others. He added that 80% of the factories that have not paid are public sector factories, while 20% are private sector factories. The source added that the debts owed by various government ministries and organizations to the Ministry of Petroleum have reached EGP 80 billion. The largest portion of this debt belongs to the Ministry of Electricity.



ENAP Sipetrol International Invests \$100 million for New Projects in Egypt



Eng. Sayed Rizk, Managing Director of Sipetrol, said that ENAP, which is the foreign partner in the state-owned Egyptian Petrosahd Company, will undertake new investments in Egypt reaching \$100 million for a number of new projects. Rizk told Al Youm Al Sabee that the company is currently constructing a new pipeline in the Western Desert 90 kilometers in length and costing \$25 million in less than a year. He also added that the company is aiming to dig five new wells in the Western Desert, which will increase production by 5,000-7,000 b/d.

Source: Egypt Importing Gas From Israel Similar to QIZ Agreement

A government source said that any trade agreement that will be signed to import natural gas from Israel will take place between companies and that the governments will not intervene. The source mentioned the QIZ protocol that benefited the Egyptian industry greatly and has increased trade between Egypt and Israel in recent years, reported Al Youm Al Sabee. The source added that it is easier on the economic level for Egypt to import gas from Israel than from Turkey or Europe, and that it is necessary for Israel to enter into agreements to

export gas due to the fact that it possesses immense natural gas resources that cannot be absorbed by the Israeli market. In addition, natural gas prices are expected to be lower than those from other countries, as the Egyptian side expects that it will cost \$6 per million BTU, as opposed to the price of \$16 per million BTU in the 12 LNG shipments already agreed upon. He also mentioned that importing gas from Israel is the cheapest and fastest alternative for Egypt.

Dana Gas in Talks With Egyptian Government to Get \$278 Million of its Remaining Dues



Dana Gas said that its total dues at EGPC are \$278 million after signing the concession agreement for sector 6 in the concession area in the North Arish field. During the first quarter of 2014, Dana Gas received a portion of its dues from the Egyptian government amounting to \$3 million, reported Al Youm Al Sabee. Dana Gas is currently reorganizing its investment portfolio in Egypt as it is attempting to focus

on long-term development in its profits and production volume in its fields in the Delta and Mediterranean. The company has completed wide-scale operations to connect its fields with the existing pipelines. All of its current achievements have contributed to increasing the company's production volume in Egypt to 39,100 barrels of oil equivalent daily, an increase of 17% over its previous levels.

GAPCO: Increased Production of LPG From the Gulf and Shoqeir Factories

GAPCO has succeeded in increasing its production from its Gulf and Shoqeir factories to reach 560 tons of LPG daily, which contribute to meeting local demand. Chairman of the company, Abed Ezz el-Regal, said that the company is

implementing a plan that includes the rehabilitation of its infrastructure such as production platforms and marine pipelines, as well as digging developmental wells.

Foreign Company in Petroleum Sector Requests Changing Equipment Contracts

Eng. Sayed Rezk of ENAP Sipetrol said that brownfields need new technologies and advanced equipment to start producing again. In statements issued to Al Youm Al Sabee, Rezk called on EGPC to change the contracting meth-

ods and instead of requiring "lowest prices" on quotations, to require "highest efficiency." Currently, EGPC requires companies to buy the cheapest machinery, which are often the poorest machines and reduce efficiency.

Foreign Company Calls on Government to Require Companies to Receive their Dues in EGP

Sayed Rezk, Managing Director of ENAP Sipetrol, said that EGPC is now regular in its payments to the company on a weekly basis, and that it pays off a part of it in US dollars and a part in EGP, reported Al Youm Al Sabee. Rezk said that it is necessary for the Egyptian government to require that foreign companies receive their dues from other companies in Egyptian pounds or at least

partially in Egyptian pounds and partially in US dollars, especially since the current agreements with the petroleum services companies require that the companies make their payments in US dollars, but the companies have difficulties in obtaining US dollars. He said that his company has no problems in providing US dollars because it is partly owned by the Chilean government.

Minister of Petroleum: Contract for Ship for Deliquefying Natural Gas Will Help us Provide Electricity Needs

Eng. Sherif Ismail said that signing the first contract for a floating natural gas deliquefying unit in preparation for the first shipment of imported LNG is in line with the efforts being made to increase current levels of natural gas production at present and in the future with the development of new fields. Ismail witnessed the contract which was signed by Eng. Khaled Abdel Badee, Chairman of EGAS, and Sveinung J.S. Støhle, CEO of Norwegian company, Hoegh LNG. Ismail added that the government plans to increase gas production during 2014 at a rate of 1,800 cubic feet daily, of which 1,300 cubic feet daily will be used to compensate for the natural reduction in the production of fields due to their age. The final increase at the end of the year is expected to reach 400-500 million cubic feet daily, reported Al Youm Al Sabee.



Drilling News

BURAPETCO Drills New Well

BURAPETCO, a joint venture between EGPC and TransGlobe, has recently completed drilling a new exploratory oil-producing well in its concession area in the Western Desert. The production rate of BURAPETCO was 94,415 b/d as of April 2014.

BEA NW-1X

The new exploratory well was drilled at a depth of 11,407 feet utilizing the AMAK-1 rig. Investments surrounding the project are estimated to be \$1.715 million.

PETRODARA Drills New Well

PETRODARA, a joint venture between EGPC and TransGlobe, has recently completed drilling a new developmental oil-producing well in its concession area in the Eastern Desert. The production rate of PETRODARA was 307,180 b/d as of April 2014.

ARTA-69

The new developmental well was drilled at a depth of 3,933 feet utilizing the ST-7 rig. Investments surrounding the project are estimated to be \$615,000.



PETROSHAHD Drills New Well

PETROSHAHD, a joint venture between EGPC, Sipetrol, and Kuwait Energy, has recently completed drilling a new exploratory oil-producing well in its concession area in the Western Desert. The production rate of PETROSHAHD was 589,131 b/d as of April 2014.

DIAA-2 ST

The new exploratory well was drilled at a depth of 11,400 feet utilizing the ECDC-7 rig. Investments surrounding the project are estimated to be \$5.419 million.



Khalda Drills New Well

Khalda, a joint venture between EGPC and Apache, has recently completed drilling two new developmental oil-producing wells in its concession area in the Western Desert. The production rate of Khalda was 4,254,561 b/d as of April 2014.

MEGHAR-7

The new developmental well was drilled at a depth of 12,700 feet utilizing the EDC-1 rig. Investments surrounding the project are estimated to be \$2.133 million.

NRQ 255-6H ST

The new developmental well was drilled at a depth of 10,132 feet utilizing the EDC-50 rig. Investments surrounding the project are estimated to be \$3.124 million.

Qarun Drills New Well

Qarun, a joint venture between EGPC and Apache, has recently completed drilling a new developmental oil-producing well in its concession area in the Western Desert. The production rate of Qarun was 1,264,755 b/d as of April 2014.

NEAMA-14H

The new developmental well was drilled at a depth of 11,092 feet utilizing the ECDC-17 rig. Investments surrounding the project are estimated to be \$3.072 million.

BAPETCO Drills Two New Wells

BAPETCO, a joint venture between EGPC and Shell, has recently completed drilling two new developmental oil and gas-producing wells in its concession area in the Western Desert. The production rate of BAPETCO was 966,172 b/d as of April 2014.

OBA D-44

The new developmental gas-producing well was drilled at a depth of 14,009 feet utilizing the EDC-55 rig. Investments surrounding the project are estimated to be \$3.475 million.

NEAG JG-18

The new developmental oil-producing well was drilled at a depth of 10,912 feet utilizing the EDC-72 drill. Investments surrounding the project are estimated to be \$1.177 million.

Agiba Drills Two New Wells

Agiba, a joint venture between EGPC and IEOC, has recently completed drilling two new developmental oil-producing wells in its concession area in the Western Desert. The production rate of Agiba was 1,765,062 b/d as of April 2014.

DORRA-21

The new developmental well was drilled at a depth of 6,315 feet utilizing the PDI-147 rig. Investments surrounding the project are estimated to be \$525,000.

MEL-87

The new developmental well was drilled at a depth of 6,300 feet utilizing the ST-8 rig. Investments surrounding the project are estimated to be \$746,000.

Israeli Gas Field May Supply Facility in Egypt

Houston-based Noble Energy Inc. made a preliminary deal to sell gas to Union Fenosa Gas SA for its LNG facility in Egypt, reported the Times of Israel. This will entail providing up to 2.5 trillion cubic feet of gas over 15 years. It said all parties in the agreement hoped to reach a final agreement within six months. The agreement would then require regulatory approval in Israel and

Egypt. Noble operates the Tamar field with a number of Israeli partners, including Isramco Negev 2, Delek Drilling, Avner Oil Exploration, and Dor Gas Exploration. Israel began extracting gas from the large Tamar field off its Mediterranean coast in 2013. It is expected to begin exporting when a second, larger field Leviathan goes online in 2016.

Egyptian Gas Deal May Spur Israeli Offshore Development

A deal to pump natural gas from Israel's Tamar Gas field to Egypt may spur development of a larger reserve nearby, benefiting partners in both discoveries. Noble Energy of Houston said earlier this month that it signed a non-binding agreement of intent to sell offshore gas from Tamar to Union Fenosa Gas SA's, a liquefied natural gas plant in Egypt, which will export it. Shares in Noble's Israeli partners in Tamar — Delek Drilling LP, Avner Oil Exploration LP, and Isramco Negev 2

LP — rose to record highs after an oversubscribed \$2 billion bond offer to develop the Leviathan field to the north, as reported by Fuel Fix. "This is the first step toward exporting Israeli gas outside the immediate regional markets like Jordan and the Palestinians," Guil Bashan, an analyst at IBI-Israel Brokerage & Investments Ltd., said by phone. "The next step is likely to be the selling of gas from Leviathan to the other LNG plant in Egypt."

Iran Could Send Gas to Europe via Turkey

Iran is ready to export natural gas via a pipeline, or in the form of LNG to European countries, the country's Deputy Oil Minister for International Affairs Ali Majedi said on May 7th, reported Hurriyet Daily News. The most cost effective route will involve sending the gas via the Trans Anadolu Pipeline, which will carry Azerbaijani natural gas to

Europe, Majedi said to the official Iranian news agency IRNA. "The second route is a pipeline which passes through Iraq, Syria, Lebanon, and the Mediterranean Sea," Majedi said, adding, "The third route is an undersea route passing beneath the Mediterranean Sea."

Turkey Starts Sale of Kurdish Oil to Global Markets



Turkish Energy Minister, Taner Yildiz, announced that his country has started selling Kurdish oil stored at the Turkish Mediterranean export hub of Ceyhan to buyers in the global markets. This effectively brings an end to a recent dispute over the issue between Iraq's central and Kurdish administrations, reported Today's Zaman. A crude oil pipeline between Northern Iraq and Turkey was completed late last year, and since then oil has been pumped via the pipeline into storage tanks at Turkey's Mediterrane-

an port of Ceyhan. Exports from Ceyhan, however, were on hold to give diplomacy a chance to solve a dispute between Baghdad and Arbil over the sale of Kurdish oil to international markets. Earlier in February, Iraqi Deputy Prime Minister for energy Hussain al-Shahristani had announced that Iraqi Kurdistan agreed to export crude via the country's main oil marketing body, Iraq's State Oil Marketing Organization (SOMO), potentially removing a major conflict point.

Woodside CEO Justifies Israeli Gas Delay

Woodside CEO Peter Coleman said that the decision to delay the deal regarding Israel's Leviathan gas field was "difficult" but in the best interests of shareholders. In his first public comments since a last-minute withdrawal from a signing ceremony in Jerusalem to consummate the \$2.8 billion deal, Coleman said Woodside's commitment to growth was strong, reported the Herald Sun. "This was a difficult decision and not one that we took lightly," Mr. Coleman told shareholders at the com-

pany's annual meeting in Perth on Wednesday. We do not make investments with the belief that we can work it out later, or that it will be right on the day." Coleman said discussions were continuing with the joint venture partners and Israeli government, and said that Woodside had not yet paid any funds. Woodside and the Israeli government are understood to be squaring off over tax arrangements around Leviathan, which is one of the largest offshore gas finds of the past decade.

Basra-Aqaba Oil Pipeline Gains

Approval of Iraq Parliament

Iraq's parliament agreed on a project to build an \$18 billion pipeline to export crude oil from Basra to Jordan's port city of Aqaba, said Adnan el-Janabi, chairman of its energy committee, reported Zawya. "We are very supportive of this strategic project with Jordan, which will greatly help Iraq increase its oil exports across the world," Janabi told The Jordan Times on the sidelines of the Iraq Future Energy Forum, attended by representatives from several international

companies in the field of oil and gas. The 1,680-kilometer double pipeline will pump one million barrels of oil a day from Basra on the Gulf to the Aqaba Port, and around 258 million cubic feet of gas. The Basra-Aqaba oil pipeline, which is expected to be operational in 2017, will provide Jordan with 150,000 barrels of oil per day, while the rest will be exported through Aqaba, generating an estimated \$3 billion a year in revenues for the Kingdom.

43 Killed in Libya Clashes

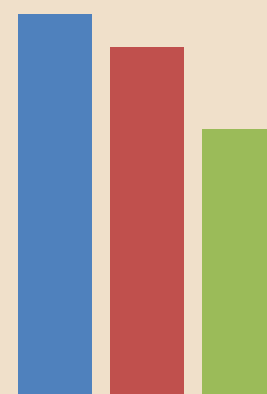
Forty-three people were killed in recent clashes between two militias and army troops loyal to a rogue general in Libya. The country's authorities called the military offensive a "coup" and closed Benghazi's airport, reported RT.com. Military aircraft and helicopters fighting for General Khalifa Haftar were involved in the clashes and were spotted flying over Benghazi, Libyan security officials said, as quoted by AP. The death toll from the clashes in the eastern Libyan city have risen to 43 from from the initially reported 19, a

health ministry official said on Saturday, as cited by Reuters. Over 100 people were wounded. A little over one year ago, Libya lost \$1 billion due to disrupted oil production. Violent incidents involving rival armed groups fighting over who gets to guard Libyan oil and gas facilities have become more frequent in post-Gaddafi Libya. Heavily armed militias have seized oil facilities, and local tribes have demanded revenue or jobs while blockading oil fields and sea terminals.

Mediterranean STATISTICS

Production (barrel)

Oil		
April-12	April-13	April-14
N/A	N/A	N/A
Equivalent Gas		
April-12	April-13	April-14
23226786	21262500	16416607
Condensate		
April-12	April-13	April-14
1297643	1258924	901130
Liquefied Gas		
April-12	April-13	April-14
420964	343015	336466



■ April-12 ■ April-13 ■ April-14

Mediterranean Rig Count April 2014

Total	Percentage of Total Rigs
6	5%

Petrofac
Awarded
\$970
Million
Algerian Natural
Gas Project

Petrofac has been awarded by Groupement Reggane a contract valued at more than \$970 million for gathering, treatment, and export of natural gas of the Reggane North Development Project (Reggane), located in the Reggane basin of the Algerian Sahara desert 1,500 km south-west of Algiers. The partnership comprises Algerian state-owned company Sonatrach (40%), Spain's Repsol (29.25%), Germany's RWE Dea AG (19.5%) and Edison of Italy (11.25%). Petrofac will

be undertaking the engineering, procurement, construction, commissioning, and start-up of the gas treatment plant, the gathering system and export pipeline. The Reggane project will bring on stream 26 wells from four fields in the Reggane basin (Reggane, Kahlouche, Kahlouche South, and Azrafil South East), all part of permissions granted for blocks 351c and 352c.

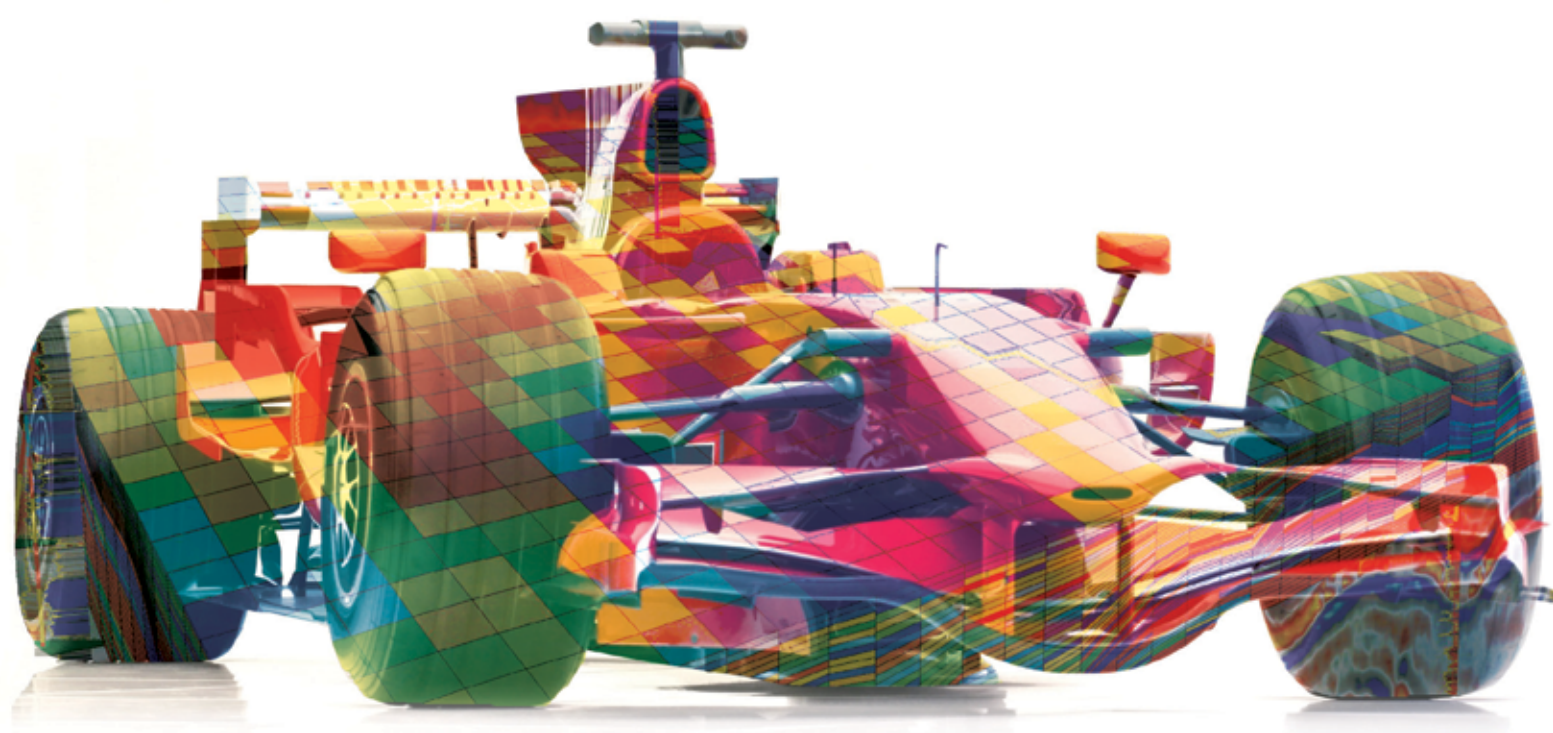
Algeria's Sonatrach Recalls Workers From Libya

Reuters reported that the Algerian state energy firm Sonatrach has ordered its workers back from Libya over security concerns in the neighboring country, a source at the company said. Around 50 Sonatrach employees were working in Libya, and all will be out within two days, the source said. Algeria sent a special forces team into Tripoli to evacuate its ambassador and embassy staff following threats, according to Zawya. Algeria has also imposed restrictions on border crossings,

allowing only Algerian citizens to cross from Libya and only Libyan citizens into Libya, a security source said.



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Map Shows Where New Mexico Oil, Gas Spills Occur

In the US, a new website is being used to map the location of oil- and gas-related spills in New Mexico, indicating an increased number of spills in recent years. The Center for Western Priorities built the online map using data gathered over many years by the Energy, Minerals and Natural Resources Department's Oil Conservation Division, AP reported. The organization, which is based in Denver,

Colorado, monitors spills caused by crude oil, drilling fluids and methane releases, among others, and then shows their locations on the map. The data show that spills occur almost twice a day in New Mexico, and that the number of spills increased from 470 spills reported in southeastern New Mexico in 2008 to more than 600 in 2013.

Western Sanctions Target Russian Energy Sector

The leaders of G7 major economies have agreed to intensify sanctions against Russia over the Ukraine crisis. With a US official warning, possible punitive measures could be imposed, the Guardian reported. In a statement, the British Prime Minister, David Cameron, the US President, Barack Obama, the French Prime Minister, François Hollande, the German Chancellor, Angela Merkel, and counterparts from Italy, Japan, and Canada expressed "deep concern at the continued efforts by separatists backed by Russia to destabilize eastern Ukraine." The new sanctions will target individuals or companies influential in specific sectors of the Russian economy such as energy and banking. The announcement of new sanctions follows the capture of European military observers in Slavyansk by pro-Russian separatists.



New Oil and Gas Reserves Found in Kazakhstan

New oil and natural gas reserves have been discovered in Rozhkovskoye field in Kazakhstan, the country's national oil and gas company KazMunaiGas announced. "Positive test results from the new deposit increase the prospects of growing the field's reserves," the company said. Exploration in the field has been underway since 2008, KazMun-

aiGas said, adding that the studies on the newly discovered reserves would be completed by the end of the year, reported the World Bulletin. According to the U.S. Energy Information Administration, Kazakhstan holds 2% of the world's oil, with 30 billion barrels. The proven natural gas reserves in the country are 2.5 trillion cubic meters.

Pakistan Oil and Gas Reserves Depleting by 3% Daily

Pakistan's reserves of gas and oil are declining by 2-3 percent every day. This is considered an alarming development, though the incumbent government has increased its focus on indigenous exploration and resource production, reported the News International website. OGDCL Managing Director, Riaz Khan, made this announcement in mid-May in a meeting of the subcommittee of the Senate

Committee on Petroleum and Natural Resources. Pakistani Minister of Petroleum and Natural Resources, Shahid Khaqan Abbasi, mentioned that the government of Pakistan is very much clear on Iran's-Pakistan gas pipeline as Pakistan wants to complete the project. However, the US and EU sanctions are obstacles in the way of the project's completion.

Indonesia's Pertamina Will Increase Oil Output With Acquisitions

Indonesia's state energy firm, PT Pertamina, is planning to buy mostly overseas oil and gas assets to help raise its output nearly five-fold to 2.2 million b/d by 2025, Reuters reported. Although Southeast Asia's largest economy was once self-sufficient in oil and gas production and is a former member of OPEC, it has been struggling for years to attract enough investment to halt declining domestic output, which has dropped to about half of its 1995 peak of 1.6 million b/d. Pertamina issued a statements in which it said that it plans to acquire mainly oil and gas blocks that are producing or at the development stage, as well as assets that have significant oil reserves. Pertamina said 70% of its oil and gas acquisitions would be of overseas assets, which were expected to pro-

vide 600,000 b/d of the total output target. Pertamina did not specify countries where it is planning to look for assets, how much it planned to spend, or how it would raise the money.



Oil Rig Causes Anti-Chinese Riots in Vietnam

There are strong anti-Chinese moods in Vietnam after China on May 1st set an oil rig in the waters that are claimed by the both countries. That caused two weeks of anti-Chinese riots in Vietnam, in which at least four people were killed and more than 100 injured, writes the New York Times. Besides, Chinese and Vietnamese boats have rammed each other in the area around the oil rig. Due to the tensions, China has evacuated several thousand workers from Vietnam. It accuses Vietnam of sabotage and interfering with the operations of the \$1 billion rig operated by the China National Offshore Oil Corporation in the South China Sea. According to the company, the rig has by now finished its first phase of operation and would stay in the area until

mid-August.



IEA: Electricity to Rival Oil as Dominant Energy Carrier

Electricity's share of total energy demand has about doubled over the last 40 years and it is increasingly rivaling oil as the dominant energy carrier according to a report by the International Energy Agency (IEA). "Electricity is going to play a defining role in the first half of this century as the energy carrier that increasingly powers economic growth and development. While this offers many opportunities, it does not solve all our problems; indeed, it creates many new challenges," said IEA Executive Director Maria van der Hoeven who

launched the report during the Fifth Clean Energy Ministerial meeting in Seoul that took place on May 12th-13th, according to the Daily Fusion. "We must get it right, but we're on the wrong path at the moment," Hoeven added. "Growing use of coal globally is overshadowing progress in renewable energy deployment, and the emissions intensity of the electricity system has not changed in 20 years despite some progress in some regions. A radical change of course at the global level is long overdue."

Indonesian Oil and Gas Search on Hold

Indonesia's declining oil and gas production is facing more challenges as several exploration projects have been on hold pending the appointment of a new administration, the Jakarta Post reported. Financial issues also appear to be another challenge, as most companies cannot afford to carry out exploration in remote areas. Figures from oil and gas regulator, SKK Migas, showed that 26 oil and gas exploration wells were drilled in the first quarter of 2014, in addition to six coal-bed methane (CBM) wells. The regulator had planned to see 206 wells drilled this year. According to the Jakarta Post, the figures also showed that the realization of explora-

tion-well drilling was less than 60% in the last few years, creating worries about the ability of the country to meet its energy demand in the future.



Japan JX to Develop Malaysian Gas Field

JX Nippon Oil & Gas Exploration Corp. announced its decision to develop the Layang gas field off the coast of the Malaysian state of Sarawak on Borneo Island for an undisclosed sum, aiming to start production in April-June 2016, Reuters reports. Layang field will have a floating production, storage and offloading system (FPSO) installed, the company said in a statement. Production is set to start at 100 million cubic feet per day of gas (17,000 b/d of oil equivalent) and about 7,000 b/d of condensate and crude. Natural gas will be sold as LNG after being fed to the operating

liquefaction facility in Sarawak that JX invests in via a roughly 200-kilometer undersea pipeline. JX Nippon Oil & Gas Exploration holds a 78.7% stake in the Japanese venture that holds a 75% stake in SK10 block, while the remaining 25% is owned by Malaysia's Petronas Carigali. Other shareholders in the Japanese venture are Inpex Corp, with a stake of 15% and Mitsubishi Corp, with a stake of 6.3%.

OGDCL Spuds 14 New Wells in Nine Months

The Nation reported that Pakistani Oil and Gas Development Company Limited (OGDCL) is making efforts to meet the country's growing energy needs, spudding 14 new wells in the first nine months of fiscal year 2014. These wells include six exploratory or appraisal wells and eight development wells, which would go a long way in enhancing overall production of the company, official sources stated. Similarly, the company's exploratory efforts to locate new hydrocarbon reserves yielded two new oil and gas discoveries, namely Saand-1 and Maru East-1, both located in the Sindh province. The source told OGDCL that the average net crude oil production of the company is 40,838 b/d, net gas production 1,153 million cubic feet per day, net LPG production 159,000 tons per day, and net

sulphur production of 92,000 tons per day was achieved during the period under review.



Western Australia Oil and Gas Delegation Visits UAE

Arabian Oil and Gas reported that an oil and gas delegation from Western Australia visited the UAE to further strengthen bilateral relations with the country. The Western Australian branch of American Chamber of Commerce, headed by Penelope Williams, brought a 36-member delegation to the UAE to strengthen the growing trade relationship with Western Australia. The delegation was led by Pankaj Savara, commissioner of Western Australian Trade Office (WATO) in Dubai. The delegation met with Abu Dhabi National Oil Company (ADNOC) and the Abu Dhabi Chamber during their vis-

it. By 2017 Australia is expected to produce 87 Metric tons of LNG, ranking it above Qatar as the world's leading LNG exporter. Trade between Western Australia and UAE reached \$920 million in 2013. Currently 57.1% of the trade between Australia and UAE is carried out with Western Australia. Last year, a high-level business delegation was led by the UAE Minister of Economy, Sultan Bin Saeed el-Mansouri, to Western Australia to explore ways of strengthening economic and trade relations with the state, reported Arabian Oil and Gas.

Nanotechnology Achievements Displayed in 19th Int'l Oil, Gas, Refining, Petrochemical Exhibit in Iran

Fars News Agency reported that six companies active in the field of nanotechnology displayed the latest applicable achievements of this technology at the 19th International Oil, Gas, Refining and Petrochemical Exhibition on 6-9 of May 2014. As the second oil producer among the Organization of Petroleum Exporting Countries (OPEC), the Islamic Republic of Iran possesses 11% of all petroleum reservoirs all over the world and 18% of the natural gas, and it annually hosts an international exhibition on oil, gas, refineries, and petrochemicals. Among the participant companies active in the field of manufacturing devices and

nanomaterials, were Plasma Fanavar Amin Company that presents PACVD device, Payam Avaram Nanofanavari Fardanegar Company that presents nanocavitation device, Yar Nikan Saleh Company with ARC deposition device, Nanofanavaran Khavar with industrial nano filters, Advanced Devices Engineering Company (ADECO) that was representative of some of equipment manufacturing companies and presented GCxGC, ultrasonic device, and BET, and Nano Meqyas Fanavaran Company that presented industrial electrospinning device used in petroleum industries.

Aramco Downstream Investments Over \$100 Billion

State-owned Saudi Aramco, one of the largest companies of the world's largest oil exporter in Saudi Arabia, announced that its downstream investments would exceed \$100 billion over the next decade, as global demand for oil rises by 25% in the next 25 years, reported Gulf Oil and Gas. "Globally, these investments will exceed \$100 billion over the next decade alone and that is premised on our belief in the long term sustainability of oil demand," Khalid al-Falih, the company's chief executive said at a petrochemicals conference in Bahrain. "As a result of both global demographic growth and rising standards of living in the developing world we see global demand for oil growing by a quarter over the next 25 years," he said. Falih said Aramco's refining capacity would be between 8 million to 10 million b/d in the coming years, a figure exceeding the goal cited by

Aramco in 2012 of 8 million b/d. "In the years to come Saudi Aramco will have 8 to 10 million b/d of participate refining capacity primarily in the high demand growth markets of the Far East and of course here at home in the Middle East that will make us one of the largest downstream players on the planet by volume," Falih said.



Frontier Resources Completes Seismic Interpretation of Block 38

Frontier, an AIM traded international oil and gas exploration company with assets in Oman, Zambia, and Namibia, announced an operational update on its activities in the Sultanate of Oman which was published in Gulf Oil and Gas. Frontier's 100% owned Block 38 is located in the Rub Al Khali Basin in southwest Oman and covers a surface area of approximately 17,425 square kilometers. An Exploration and Production Sharing Agreement (EPSA) was signed on November 25th 2012. Frontier is the operator. The Company has now completed the initial interpretation of available legacy 2D seismic data, both original and those data re-processed during 2013 by BGP in Houston. These reprocessed data have enabled Frontier to identify geologic horizons previously unseen on the original seismic. Frontier also announced that it has identified a number of potentially attractive exploration targets. These targets include formations within Precambrian-Cambrian units, many of which contain hydrocarbons at

the analog Khazzan-Makarem Field in central Oman currently under development by BP as presented at the Gas Arabia Summit in December 2011.



Unconventional News

Cuadrilla to Submit Plans for Preston Shale Gas Exploration Site

Cuadrilla Resources will submit an application for planning to Lancashire County Council in the UK to drill, hydraulically fracture, and test the flow of gas from a maximum of four exploration wells at its proposed exploration site at Preston New Road. Once Lancashire County Council has approved the planning application for Preston New Road, it is expected a decision regarding the application will be reached within a 16-week period. Gulf Oil and Gas reported that plans will also be submitted to install a network of seismic monitoring stations within a 4km radius of the proposed exploration site. As part of the process, planning and environmental consultants at Arup have produced a detailed Environmental Impact Assessment (EIA) that will accompany the planning application.



Armada Funding Agreement with Gulfstar

Armada Oil Inc., an oil and gas exploration and production company, has entered into an agreement with Gulfstar Resources, LLC (Gulfstar), a private energy investment group, for a third tranche of capital associated with its recent asset reallocation transaction, the company announced in a press release published in Gulf Oil and Gas. Total committed net funding for this tranche is approximately \$2,040,000, and upon full fund-

ing (scheduled to close on or before June 15th), Gulfstar will have acquired an additional 12.6% of TNR Holdings, LLC (TNRH). At that point, the company's ownership interest in TNRH will be approximately 27%, and will have accomplished its stated goal of the reallocation of the bulk of its assets to the mid-continent region while maintaining significant net production in South Louisiana.

Shale Gas May Provide New Opportunities in Algeria

Algeria is the third largest natural gas producer in the Arab world, after Qatar and Saudi Arabia, and the leading exporter in Africa. It is also a significant oil producer. However, in recent years both oil and gas production have slowed with oil production falling to its lowest level since 2003 in January 2013, and gas output dropping by 7.6% between 2005 and 2013, according to Gulf Oil and Gas. In an attempt to address this declining production and provide a much needed boost to the economy, Algeria is taking key steps to develop its 707 trillion cubic feet of technically recoverable shale gas reserves. On 20th February 2013, Algeria enacted Law no. 13-01 amending and supple-

menting Law no. 05-07 of 28 April 2005 relating to hydrocarbons (HL), to specifically cover the exploration and production of unconventional hydrocarbons. Algeria thus became the only country to have legislated specifically for unconventional hydrocarbon developments in Africa, giving it a major advantage compared to other shale rich countries in the continent. Keen to maintain Algeria's advantages, on January 21st the National Agency for the Development of Hydrocarbon Resources (ALNAFT) launched its fourth licensing round, which is its first to offer concessions over unconventional prospects. Bids must be submitted to ALNAFT on 5th September 2014.

New Estimates of US Shale Deposits

This June, the US Energy Information Administration (EIA) will publish a new estimate of shale deposits in the US set to correct misconceptions and rumors due to over-inflated estimates of unconventional oil reserves. According to the Guardian, EIA officials told the Los Angeles Times that prior estimates of recoverable oil in the Monterey shale reserves in California were overestimated to be about 15.4 billion barrels. The revised estimate,

they said, will reduce this estimated amount by 96% to only about 600 million barrels of oil. The Monterey formation, previously believed to contain more than double the amount of oil estimated at the Bakken shale in North Dakota, and five times larger than the Eagle Ford shale in South Texas, was expected to create up to 2.8 million new jobs by 2020 and boost government tax revenues by \$24.6 billion a year.

Russia Targets Shale Oil Boom

Russia wants a boom in unconventional oil output by the start of the next decade, and is prepared to look east for technology if its ambitions are hindered by Western sanctions over the Ukraine crisis, Russian oil executives told Reuters. Russia is now pumping around 10.5 million barrels of oil per day, with the bulk of production coming from depleted western Siberian deposits, highlighting an urgent need to look for new oil resources, Reuters reported. Western sanctions and the current political turmoil in Russia may threaten Russia's prospects in the unconventional oil industry. According to the US Energy Information Administration, it is estimated that Russian recoverable shale oil resources are currently at 75 billion barrels, more than the 58 billion barrels held by the US, the current leader in shale oil production.



The High Cost of Subsidies

Estimates show that fossil fuel subsidies are costing governments in emerging markets more than \$500 billion every year and are a major contributor to climate change, according to the International Energy Agency (IEA) and International Monetary Fund (IMF). The largest amounts of subsidies are concentrated in the Middle East, North Africa, Asia and parts of Latin America, according to the IEA's Fossil Fuel Subsidy Database and as reported in Downstream Today. Energy-exporting countries accounted for 75% of all subsidies on fuel consumption

in 2012, according to the IEA and OPEC, members account for more than half the world's subsidies. Subsidies account for 82% of the cost of electricity and fuel in Venezuela, 80% in Libya, 79% in Saudi Arabia, 74% in Iran, and 56% in Iraq and Algeria. In contrast, the average subsidy rate is just 18% in India and 3% in China. In cash terms the world's biggest subsidies are in Iran, Saudi Arabia and Russia, all of which are major oil producers. Subsidies cost these three countries a combined total of \$180 billion per year in 2012.

Mexico Pemex Ships Crude

Mexico's Pemex has begun shipping light Isthmus crude to a variety of West Coast refineries this year, according to US and Reuters data and as reported in Downstream Today, resuming its sales after a pause of six years. The state-run oil company, which exported only about 100,000 b/d of Isthmus last year, shipped about 340,000 barrels of the crude to Valero Energy Corp in Benicia, California, in January and February, according to US government data. It also shipped an addi-

tional 350,000 barrels (48,000 tons) to Tesoro Corp in San Francisco in March, according to Eikon's trade flow database based on PIERS data. Pemex then exported another 150,000 barrels to Shell Trading in Anacortes, Washington, in May from the Salina Cruz terminal. Isthmus is typically shipped to Gulf Coast and East Coast ports including Beaumont and Corpus Christi, Texas, Philadelphia, Pennsylvania.

Russia and China Reach a Gas Deal



Russia's and China on May 23rd signed a deal on natural gas sales after a decade of negotiations. The 30-year agreement foresees Russia selling China 3.8 billion cubic feet of gas per day starting from 2018 through a pipeline from eastern Siberia, reports Bloomberg. According to Bank of America, the deal was probably reached at a price of \$10.50 to \$11 per million BTU. China is forecasted to become the world's biggest gas user by 2035. Accordingly, the deal "establishes possibly the most important gas benchmark in decades,"

said Francisco Blanch, the bank's global head of commodities research. Currently China's economy relies heavily on domestic coal and imported oil, informs Downstream Today. Bringing oil and gas via pipelines from Russia will cut the amount of hydrocarbons that arrive to China via vulnerable transit routes such as the Malacca Strait. The agreement with Russia will also give China more leverage to strike advantageous deals in negotiations with other gas suppliers such as Australia and with oil exporters in the Persian Gulf.

Explosion Near Nigeria Refinery

A group of vandals caused an explosion at a jetty near Nigeria's 210,000 b/d capacity refinery in the southern oil hub of Port Harcourt, on May 19th. Ralph Ugwu, a spokesman for Nigerian National Petroleum Corp (NNPC), said the blast on Sunday did not damage refinery installations and had no impact on operations, reported Downstream Today. "The explosion has nothing to do with the NNPC or the refinery but with some people who came to steal crude," Ugwu said. A local government official said at least seven people died in the blast. NNPC and the police said they could not confirm whether there were casualties. Nigeria is battling worsening oil theft from small-time vandals whose activities often force major pipelines to close and industrial-scale theft.



Greenpeace: Nearly 100% Renewable Energy Is Possible

A new report from Greenpeace and the Global Wind Energy Council stated that the US could switch to nearly 100% renewable energy and phase out coal and nuclear power, by the year 2050, reported Alternet. The report, "Energy [R]evolution – A Sustainable USA Energy Outlook," provides a plan for changing US electricity, transportation, and heating systems to reduce carbon emissions that heat up the climate. The Greenpeace Wind Energy council plan

would lead to about 1.5 million energy-related jobs by the year 2030. Also, by gradually eliminating coal and oil, fuel cost savings in the scenario described would reach \$6.1 trillion, or \$153 billion per year, and overall costs would be about 50% lower than the government outlook, the report calculates. According to the report, US would be able to reduce carbon pollution 39% below 2005 levels by 2025, and 60% below 2005 levels by 2030, the groups estimate.

Renewable Energy Cooperation between Egypt and Scotland

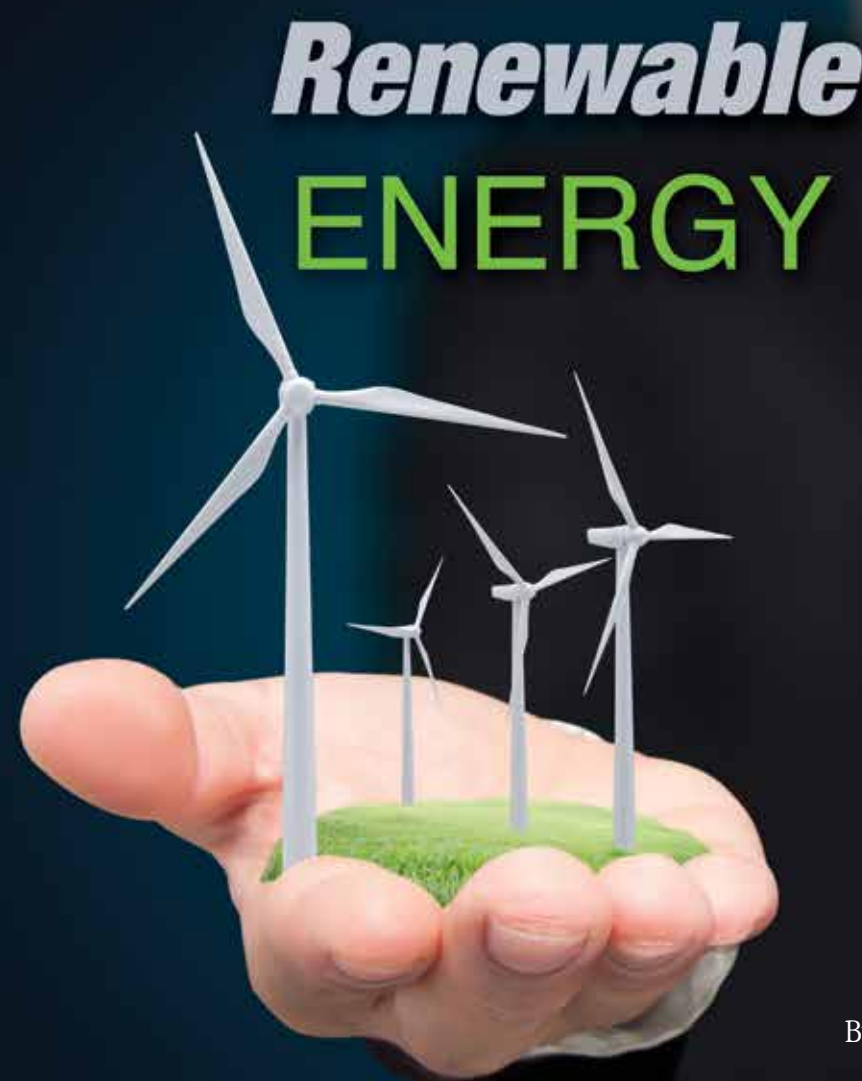
An economic delegation from the Scottish Development International Institution is currently visiting Egypt, and according to Egypt's State Information Service (SIS), an agreement has been signed with the organization of African oil producing countries to increase skills of workers in the fields of petroleum and energy. Head of the delegation, Dr. Abdel-Hady Fawzy, Chief Executive Officer of the Scottish Development International Institution, said that Egypt is a strate-

gic partner for the UK in the Middle East and North Africa. He added that there are several opportunities of cooperation between Egypt and Scotland, not only on the Egyptian market but also on other African markets. Fawzy pointed out that the coming period will witness great cooperation between Egypt and Scotland in the fields of petroleum and renewable energy, where Scotland enjoys a vast experience.

Egypt Announces \$1 Billion Investment in Solar Energy

The Egyptian government has announced plans to invest up to \$1 billion to develop several major solar energy projects, reported Egypt's State Information Service (SIS). Local and Administrative Development Minister Adel Labib announced that the country will implement a large-scale project during the coming phase for producing solar energy at a total cost of \$1 billion. The min-

ister's remark came during the inauguration of a conference organized by Alexandria's Chamber of Commerce in late April. The country is in need of establishing development projects to offer more job opportunities for youths, Labib said, adding that Egypt has natural mineral resources that have not been tapped yet.



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SUEZ CANAL

Corridor Megaproject to Be Launched Soon

Early next year, Egypt's government aims to present a plan to investors for broadening the Suez Canal and transforming its banks into a logistic and industrial hub, which could create thousands of jobs. Egypt Oil & Gas Newspaper asked experts to comment on the plan's chances for success amid security threats and growing competition to the canal.

By Laura Raus

Over half a billion tons of goods pass the Suez Canal every year. This artificial 193-kilometer waterway has become vital for international trade, notably transport of oil and its derivatives, as it enables ships to travel between Europe and Asia without navigating around Africa. It is equally vital for Egypt's government, being its main revenue source alongside oil, tourism, and remittances according to ANSAMED.

Since its opening in 1869, the canal has been developed in several stages to accommodate larger vessels. For example, its water depth and width have more than doubled, reaching 24 meters and over 200 meters respectively by the end of the latest development stage in 2010, informs the Suez Canal Authority (SCA), owned by Egypt's government.

All Egyptians Potential Shareholders

The government plans to broaden and deepen the canal further, construct dry docks for building and repairing ships on its banks, and to "transform the waterway from merely a corridor for tariffs to a logistics area providing transportation, loading, unloading, storage, lodging, and marketing services to all ships passing through, thus raising canal revenues by billions of dollars, especially in foreign currency," spokesperson for the SCA Omar Fouad told Daily News Egypt. An economic zone will be established northwest of the Gulf of Suez to host a wide variety of industries, and fish farming will be set up along a 100-kilometer area east of the canal. The project is expected to make wide use of Egypt's abundant renewable energy resources.

During the 2012 presidential election, the Suez Canal area development was already a major feature in the campaigns of the most prominent candidates. When Mohamed Morsi became the president, he made it a key component of his "renaissance project" for the revival of Egypt's economy. Even following Morsi's ouster, the Suez Canal Corridor project remains alive, although its implementation will undoubtedly be somewhat different than it had been under his rule.

According to Washington Post, Morsi's administration appeared poised to negotiate with Qatar over the development of the canal zone. Meanwhile, many of the 14 Egyptian-foreign joint ventures eligible to bid to become the developers of the project's master plan now have previously contracted for Saudi Arabia and UAE—allies of the current administration. Gulf Business reports that the bidders include Australia's WorleyParsons, the American McKinsey & Co, and Japan's Oriental Consultants. They also include the Arab Contractors owned by Egypt's government and the Maritime Research and Consultation Center, a non-profit organization whose board of directors is chaired by the minister of transport.

After the winning consortium is announced in June, it will present a plan for the development to the government within six months, said Mahmoud Rizq, Director of the Department of Planning at the SCA. In January 2015, the government will present the plan to local and international financial institutions and companies at a conference that aims to attract funding for the project. The SCA plans to establish a company

for the development of the canal, which will acquire funding through a stock market IPO, which all Egyptians can contribute to.

The government has already allocated EGP 2 billion to finance preliminary studies, infrastructure, and the development of the master plan. The World Bank has agreed to contribute with technical expertise. According to Egypt's Prime Minister Ibrahim Mehleb, the bank's participation "contributes to the selection of global offices with the utmost transparency and professionalism, and projects with enough details to implement them in the shortest possible time, which serves to provide thousands of jobs for young people and the development of the economy."

Alternatives Emerging to the Canal

At the same time, there are some alternative Asia-Europe transport routes emerging – rail links developed by Israel and Russia, and waterways in the Arctic Ocean – threatening to take some traffic away from the Suez Canal. All these routes enable quicker shipping of goods compared to the canal.

Israel announced in March that with the help of the Chinese money, it would within one year start constructing a \$2 billion, 300 kilometer rail freight link nicknamed Red-Med that would connect its Mediterranean and Red Sea ports. The construction is expected to take five years, reports Deutsche Welle. "The Israeli rail line is an alternative to the Suez for certain roll-on, roll-off cargo traffic," said Dr. Paul Sullivan, Professor of Economics at the US National Defense University, explaining that the Red-Med would require extra movements for cargo at two ports: off-loading from the ships and on-loading to the rail cars on one end, and the opposite at the other. Some shippers may also avoid it because of bad relations with Israel. Besides, Israel has security issues that shippers will need to consider, added Sullivan. He pointed out that the rail link would be under Israel's law, whereas the Suez Canal is under the protection of an international treaty – the 1888 Constantinople Convention, which states that the canal may be freely used "in time of war as in time of peace ... without distinction of flag." According to University of Oxford expert Justin Dargin, the rail link would face the risks of military conflict "from either fallout from the Arab Spring or an outbreak of violence between the Israelis and Palestinians." On the other hand, due to such issues, Israel is very security conscious and taking strong measures to protect its infrastructure. Therefore, Jason Kuehn, Vice President at the consulting company Oliver Wyman, believes that Israel is likely to promote the rail link as a safer route compared to the Suez Canal.

Russia is investing billions of dollars in the modernization and expansion of its Trans-Siberian Railway network, which enables about three times quicker transport between Asia and Europe compared to the Suez Canal. Russia said in 2012 at a meeting of Asia-Pacific Economic Cooperation forum (APEC) that about a tenth of transit traffic between APEC and the EU could be redirected across its territory as an alternative to the Suez Canal, reports RBTH. However, as of 2013, less than 1% of all Asian freight went to Europe via Russia. To make the Trans-Siberian Railway more attractive, its infra-



structure needs to be improved and Russia's slow customs procedures quickened — and Moscow is working in this direction. Last year it opened new rail links between China and Germany, China and Poland, as well as between Russia and North Korea, reports Bloomberg. Now Russia is courting North Korea to expand the railway network across its territory to South Korea. According to Kuehn, the Trans-Siberian Railway, as well as the Trans-Asian Railway network developed under the auspices of the United Nations, are likely to attract more expensive goods and time-sensitive freight. For example, bulk fabrics tend to move by vessel, whereas finished fashion garments move by rail since it is faster. According to Kuehn, the commodities that have low value relative to their volume such as crude oil or coal are transported by vessel whenever possible.

Russia is also investing huge sums in the infrastructure of its Northern Sea Route, which is becoming increasingly attractive for transit due to the effects of climate change on its waters. 2007 was the first summer when both the Northern Sea Route and Canada's Northwest

Passage were simultaneously ice-free, informs gCaptain. By now, the annual navigation season of the Northern Sea Route already reaches four months according to Platts, and 72 ships used the route last year. However, the use of the Northern Sea Route is still relatively risky and costly because it is uncertain when the route becomes operational and free of ice each year, and even during warm months, ships often need ice-breaking escorts to pass some parts of the route, writes the Wall Street Journal. "In the long term, if the Arctic melts further and the times of the year it is open to shipping increases, its competition with the canal will increase, but it would be more via the Canadian routes than the Russian ones," said Sullivan. According to Dargin, "The Northern Sea Route's success will be crucially focused first and foremost upon oil and gas shipments from Arctic energy deposits." He added that, "The Northern Sea Route could also be subject to disruption as various countries that border the region jostle for access to its potentially rich reserves of oil and natural gas. ... Unless there is a negotiated settlement to the various claims, it is likely that

Arctic trade lanes would be vulnerable to outbreaks of military action."

Experts say that the Suez Canal will most likely remain the cheapest way to transport goods between Europe and Asia in the foreseeable future and alternate routes will not threaten its shipping volumes significantly. "I think that the alternatives that are currently emerging are a long way from representing a cost-effective substitute for container shipments through the Canal, which still handles roughly 8% of total global trade," said Robert Tashima, Regional Editor at the business intelligence provider Oxford Business Group. "While the Suez Canal will

benefits," he said about the Suez Canal Corridor project. "Not only will it permit producers to participate in the processing of raw goods coming from Asia, but it will allow them to work on production of semi-finished goods as well in a cost-effective and timely manner – as opposed to sending them on to more expensive facilities in Europe to be fully processed." He added that "it will also provide domestic manufacturers in Egypt with access to key export infrastructure – something that has been of immense benefit in other markets, such as Morocco, where the Tanger-Med [port] complex helped to jumpstart a multi-billion network of automotive and

experts suggested, adding that the best thing that could happen to the canal would be privatization since as long as it is run by civil servants, it "is always likely to be a politically driven operation" and run ineffectively.

Some experts have also suggested that the project would increase the already high leverage of Egypt's army over the country's economy. The Suez Canal is partly a military zone and Vice Admiral Mohab Mamish who became the chairman of SCA in August 2012, is a former member of the military council that temporarily governed Egypt after the ousting of Hosni Mubarak. However, Sullivan thinks that, "The

cerns, say experts. The increase of insurgency in the Sinai that followed Morsi's ouster has elevated these concerns. According to security sources, unidentified groups have threatened the SCA that they would target the waterway. In August 2013, rockets were fired at a container ship passing the canal. On May 14th this year, Egypt's army announced that it had seized 15 tons of a material used for making explosives in the al-Qantara town straddling the canal.

If militant or pirate attacks on the ships transiting the canal increase considerably, then the insurance coverage for vessels in transit is likely to be withdrawn, which can affect the traffic volumes of the Suez Canal dramatically, said the experts of Channoil Consulting Limited. "If there are any major attacks on shipping in the canal, or near to the canal on either side of it, then this could serious harm traffic and income into the canal," cautioned Sullivan. "Since the revenue from the canal is vital for Egypt's fiscal solvency, any impact on ships transiting through the canal could have disastrous impacts for a country still struggling with balance of payments issues," noted Dargin.

He thinks that Egypt's government needs to take more steps to protect the ships passing the canal. According to Sullivan, "The best defense is intelligence on groups that may be thinking along these ways. Some reside not far from the canal. Others are in Gaza. Some may be from very far away and are either nut-jobs or groups or persons with grudges against either Egypt, the Egyptian government, or even some of the shippers and traders."

"It is likely that at least in the midterm, there will be more attacks conducted in the area as militants carry out revenge attacks for arrests of their compatriots," said Dargin. Yet, he believes that, "As the Egyptian government is serious about stamping out any and all militancy in the region, it is likely to assert its control over strategic zones to minimize any insurgent activity against international shipping."

However, Dargin and other experts stress that it is not just what happens in the immediate Suez Canal region that counts. "The security along the Red Sea, the Gulf of Aden, the coast of Somalia, Kenya, etc is also vital for Suez traffic," said Sullivan. "The security threats linked to piracy [in the horn of Africa] have increased insurance fees and other security related costs for cargo vessels that add upwards of \$100,000 per shipment," noted Dargin. Kuehn on the other hand said that the Suez Canal and its surroundings have had quite a lot of security problems in the past, but "as soon as the situation stabilizes again, you see the trade coming back to the canal since it is by far the cheapest route between Asia and Europe."

Future Likely Bright for the Canal

Whereas alternative transport routes may attract some cargo away from the Suez Canal, the transport of other cargo, especially LNG, may still increase, said Sullivan. He added that besides the alternative routes and security issues, the cargo volumes of the canal depend on the economic situation of the countries that send goods through it. Accordingly, Justin believes that since the global economy is regaining its health, the trade between Asia, Europe, and the US will increase and transit through the Suez Canal is likely to rise over the next few years. "However, while the long-term viability of the Suez Canal cannot be questioned, given that alternative trade routes will open over the next few years, we could see some of the market share from global shipping taken away, even while absolute number are elevated," he added. The Suez Canal Corridor project will hopefully help guarantee that hundreds of billions of tons of cargo will continue to be transported each year via this waterway that is vital for Egypt's economy.

Suez Canal in numbers

	2013	Change compared to 2012
Total Cargo (1,000 tons)	754,461	2.1%
Crude Oil	75,250	9.3%
Oil Products	78,238	3.8%
LNG	24,789	-20.8%
Container Cargo	406,049	2.0%
Ores and Metals	35,525	6.2%
Cereals	34,104	23.6%
Other Goods	100,506	-3.8%
No of vessels	16,596	-3.6%
Tolls (million \$)	5,111	-0.4%

Source: Suez Canal Authority

definitely face competitive threats in the future with the opening up of these new projects, the Suez Canal will always be a vitally important trading nexus," assured Dargin. According to Sullivan, the most likely replacement to the Suez Canal for some cargo would in fact be shipping completely around Africa. "The Cape route would be a popular destination in times of low bunker prices and high surplus capacity," noted Dargin.

Chances for Success

Dargin believes that since alternatives are emerging and Suez's longtime competitor — the Panama Canal — is in the midst of expanding its infrastructure, it is exactly the right moment to invest in the development of this waterway so that it remains attractive. "Traffic [on the Suez Canal] in 2013 declined slightly, by about 3% in terms of ship transits, but without regular improvements, that could drop further," cautioned Tashima.

"Allowing for greater supplementary industrial activity in the [canal] area will bring a number of

aerospace producers. Needless to say, this would also create a host of positive externalities, particularly in terms of job creation." Dargin thinks that, "Without a doubt, the [Suez Canal Corridor] plans call for an integrated development scheme to attract investment funds from Arab, principally Gulf, and other international investors. This integrated investment scheme will have many knock-on effects through the local economy. Everything from construction, local hotels, small stores and even financial services could benefit from the influx of investment funds."

Some are more cautious about the success of the project. "If it were possible to envisage an Egypt that was stable, democratic and thriving economically, then the project would be able to attract foreign inward investment. However that is a 'big if'," said experts of the Channoil Consulting Limited, a company providing commercial and technical expertise in mid- and downstream oil and gas industry. They expressed doubts if the project will ever be realized. "Or if it were, it would be a huge 'white elephant'," the

Egyptian army's leverage over the Egyptian economy is exaggerated in the press and by many academics and others who have a grudge against the Egyptian military – and against militaries in general." He added, "If the army can help the Suez develop and Egypt develop then so much the better. Few others seem to want to invest in Egypt. What should Egypt do, wait for the Chinese to take over the Canal zone?" Dargin noted that Egypt's military will probably play a large role in the Suez Canal Corridor project and its position within national economy would be made surer by the influx of investment funds that this project is likely to attract. "Yet, at the same time, even though it is often accused of corruption, the military is probably the only viable institution in Egypt that would be able to ensure the stability and viability over all aspects of the project," he added.

Security Is the Key Concern

As of now and in the foreseeable future, the only factor that could significantly threaten the traffic volumes of the Suez Canal is security con-

Egypt's Oil Spill Preparedness

In June 2010, the largest oil spill in Egyptian history occurred, polluting approximately 160 km of North Red Sea coastline. Known as the Jebel al-Zayt oil spill, the disaster mobilized a rapid clean-up campaign, informs University of Oxford energy expert Justin Dargin, which cleared approximately 90% of the resort-populated beaches within five days. The swiftness of response was seen as a success, however, the environmental disaster highlights the elevated risks surrounding the transport and exploration of oil in Egypt's waters, which accordingly demands a higher level of preparedness and prevention. Egypt Oil & Gas Newspaper looks at the systems in place to protect Egypt's waters in the Red Sea, the Mediterranean, and the Nile.

By Lily Leach

The Egyptian coast extends more than 3,000 kms along the Mediterranean and Red Sea with an Exclusive Economic Zone (EEZ) spanning 82 nautical miles in the Mediterranean Sea and 65 nautical miles in the Red Sea. The burgeoning economic development Egypt has experienced over the past few decades has seen the expansion of marine oil exploration projects and the growth of coastal tourist resorts such as Sharm el-Sheikh and Hurghada. This development, along with the strained capacity of the Suez Canal ports permeated by approximately 18,000 vessels annually — the majority of which are oil tankers or carrying other hazardous chemicals — is leaving Egypt's waters at greater risk than ever before. According to Dargin, "there is a significant disparity between the growth of oil related infrastructure and the ability of the government to adequately respond to chemical and oil spills that could occur in some of the most ecologically sensitive areas." The expert added that one of the main challenges Egypt faces related to oil spill preparedness "is how to protect the Red Sea and Mediterranean coasts that are home to numerous animal and plant species that are not found elsewhere."

Environmental Legislation and International Accords

Egypt's main legislation regulating marine shipping and oil exploration is its environmental law; Law Number 4 was established in 1994 and includes some restrictions to reduce oil spills risks and other pollutants from ships and oil exploration, prohibiting national and foreign vessels from discharging oil and other pollutants into the EEZ of Egypt.

The stakeholders of Egypt's environmental law are the Egyptian Environmental Affairs Agency (EEAA), the Egyptian Marine Safety Agency, the Suez Canal Authority (SCA), the Port Authorities in Egypt, the General Egyptian Organization for the Protection of the Coast, the Egyptian General Petroleum Corporation (EGPC), the General Department of Surface Water Police, the Tourism Development Authority, and other agencies designated by a Prime Ministerial Decree. Oil spill preparedness, prevention, and response are a joint venture of the stakeholders.

"We have a good relationship with all stakeholders under the umbrella of EEAA, related to [Egypt's environmental law] and the oil spill contingency plan. All stakeholders have responsibilities to prevent and reduce oil spills," said Captain Mahmoud Ismail, Operations Manager for oil spill response centers (OSRCs) in Petrosafe — a subsidiary of EGPC, its only 100% subsidiary specializing in health safety and environment services (HSE) — citing cooperation with the Egyptian Authority for Maritime Safety, who monitors shore reception facilities and all shipping vessels entering Egyptian ports, as a positive example of effective communication and regulation.

However, according to a representative from the International Environmental & Marine Services (IEMS), "One of the challenge points [for Egypt's oil spill preparedness] is the cooperation between the stakeholders of the National OSCP with the response companies, as they should build an memorandum of understanding (MOU) with responders available within Egypt and add all MOUs to the plan as an annex." A report by Hazem M. Bashat of the EEAA recognized that "Challenges to take forward necessary action at all response levels to ensure efficiency of application of the NOSCP are enormous."

Egypt has also signed most of the International Maritime Organization (IMO) Conventions including MARPOL 73 and 78 (pollution prevention), and OPRC 90 (pollution response), in addition to various regional and sub-regional agreements.

Despite the fact that Egypt has signed several of these accords, Dargin believes there are still major issues hampering sincere alignment with global best practices. "[Egypt] is hobbled by a heavy-handed bureaucracy, corruption and lack of financial resources," he says, while acknowledging that "Egypt does attempt to adhere to international standards, and has come a long way in doing so, but there are still severe shortcomings. Egypt compares favourably with other African oil producing countries that are much more recent oil producers and have more endemic management and economic problems. However, it is important to remember that even in the best prepared countries, such as the US, a major spill is not a simple affair to manage."

Contingency Plans

Egypt initiated a national oil spill contingency plan (NOSCP) in 1989 — standard for oil-producing nations — to cover various oil spill scenarios and how to identify, analyze, assess, and act on them.

Every oil company also has their own local contingency plan, which is activated in the event of a low-scale oil spill known as a "Tier

One," while medium-level oils spills — Tier Two — fall under a regional OSCP. All Egyptian ports also have contingency plans. In the event of a Tier Three oil spill, or an environmental crisis, the NOSCP is used. Petrosafe responds in the event of a Tier Two and Three. Should a Tier Three occur, it is the responsibility of the EEAA to coordinate the response, and help could also come from neighbouring countries. A Tier Three oil spill has yet to occur in Egypt.

"While Egypt does have a National Oil Spill Contingency Plan (NOSCP) it is not anywhere able to effectively manage the sheer scale of drilling activities and tanker transit. This is especially poignant as these activities often take place near the environmentally sensitive coastal areas. As a result, Egypt is quite unbalanced between its exposure to spills and its preparedness. The NOSCP is not effectively integrated and lacks a strong tier response system," says Dargin.

"During the last ten years, Petrosafe faced more than 50 oil disasters in Egypt. Our lesson was to upgrade our capabilities — we have plans to upgrade pollution equipment. Preventative maintenance is our duty and our daily routine," said Ismail.

In the event of an oil spill, Petrosafe (which has an Emergency Operations Room ready 24/7) designates one of the centers to deal with it. Surveyors are sent to the affected areas, and according to the survey, Petrosafe initiates a clean-up plan that the EEAA then ratifies. Afterwards, there is an investigation to find out which company caused the spill and this company has to pay the costs related to the spill post-facto. Since the exact composition of oil depends on the formation it has been derived from, it is not that difficult to prove which company caused the spill — EGPC has a footprint for every sample of oil. Oil spills originating from a ship results in the arrest of the vessel, which is not permitted to leave Egypt before a promise to pay expenses has been established.

However, the Egyptian government enraged environmental groups when the government claimed they were unable to determine the source of the Jebel al-Zayt oil spill, which is still unknown. The Ministry of Petroleum suggested that the leak could have originated from a passing tanker in the Gulf of Suez, sabotaged rig equipment, or rocks erupting from one of the islands, reported Bloomberg. The accusations of a cover-up point to a lack of transparency in the industry, which some experts consider as Egypt's major shortcoming related to oil spill preparedness. IEMS cautions that lack of transparency discourages private investment, which is "compounded by the fact that the entire oil and gas preparedness regime is fragmented and often led by the potential polluters," adding that "This is a national issue and independent private sector impartial response companies should be consulted."

That Egypt's coastal regions nervously share two of its largest industries — tourism and oil exploration — with one threatening disastrous effects over the other, could explain the government's particular lack of transparency on this issue, according to Dargin. "Egypt, because it depends so much on tourism revenue, has a desire to cover-up any spills that occur so that its tourism industry is not impacted. This is a weakness and challenge that must be overcome," he said.

Oil Spill Response Centers

The oil spill response centers (OSRCs) across Egypt, located along the Red Sea and the Nile, were established to house and maintain preventative and response equipment. In 1989, EGPC built the first OSRCs, initially operated by the regional petroleum companies, and are now all operated by Petrosafe.

EGPC owns six oil spill response centers in different regions of Egypt, four marine centers and two along the Nile. The four main bases are located in Hurghada, Ras Gharib, Suez, and Alexandria.

The latest center on the Nile opened just at the beginning of this year. The seventh center is being established at el-Thor in Sinai. EGPC is responsible for any oil spill that may occur, and instructs oil companies to fight oil spills. EGPC conducts quarterly audits for the centers.

There are approximately 150 employees to cover all of the centers, each base staffed by a team of 16 persons per shift, compiled of engineers, technicians, and logicians, 80% of which have over ten years experience in oil spill preparedness, and are continuously receiving training, informed Eng. Emad Abdel Razek Hassan, Assistant Chairman for Operations at Petrosafe. Dargin considers Egypt's "extremely educated engineering labor force" one of its main strengths in oil spill preparedness.

The cabinet assigned the Ministry of Petroleum to establish the new centers on the Nile in an attempt to meet the growing risk for leaks, as the Nile is also used for transportation. The Chairman and Man-



aging Director of Petrosafe Magdy Fahmy Moustafa cited EGPC's and Petrosafe's efforts to protect the Nile as the most important issue for oil spill preparedness for Egypt.

The high risk related to an increase in shipping vessels has motivated a surge in equipment purchases within the last two years, included under EGPC's budget. "EGPC has three budgets to upgrade the centers. The first part of the budget has arrived and the second phase is tendering," informed Hassan.

In addition to OSRCs, there is emergency mutual aid for marine pollution located in Hurghada to coordinate with other Arab countries in the Red Sea to face marine casualties, and the Arab Academy for Science and Technology and Maritime Transport under the Arab Union in Alexandria.

Conclusion

Four times a year there are oil spill emergency exercises taking place, attended by EGPC, IOCs and Egypt's marine force. "Saudi Aramco in 2011 staged a major exercise Ra Atum VII to test the response to a major incident in Egypt involving Saudi Aramco. A considerable amount of money was invested into the exercise with Saudi Aramco and most, if not all, Egyptian oil and gas companies attended the event. Lessons learned were developed and shared with both government and industry, illustrating the strengths and weaknesses of oil spill response in Egypt; however, there has been no action taken on the lessons learned to date," informs IEMS.

The next exercise hosted by Petrosafe is to take place in Ras Shokeir this June, which will simulate a certain volume and area of contamination, and measure the response and reaction from every company at the drill. Invited to the exercise is the EEAA, Petrosafe, the Arab Academy, and neighbouring companies in the area such as BP and Shell, with GUPCO acting as the main host, informs Hassan.

These oil spill simulations, Dargin believes, "along with the several international accords on marine protection and oil spills that Egypt has signed, have granted Egypt somewhat of a proactive stance just in case a major spill does occur." IEMS also acknowledges that "The Egyptian ranking in regards to compliance with international standards has improved; however, awareness, compliance, and investment must be reflective of the growing risks Egypt is facing due to heightened exploration and aging oil fields together with the aging pipeline/storage infrastructures."



Agreement Reached on Forming a **Brownfields Committee**

By Laura Raus - Lily Leach - Mai Marei

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Last month, Egypt Oil & Gas organized The Future of Egypt's Brownfield Development Roundtable as a part of a three-day convention that also featured an exhibition introducing the latest brownfield technologies and a workshop to facilitate exchange of experiences and discussion between the top players in the petroleum industry, drawing from domestic and foreign experts representing the private as well as the public sector. The roundtable gathered figures such as Former Minister of Petroleum Eng. Abdallah Ghorab, CEO of EGPC Eng. Tarek El Molla, President of Romania National Agency for Mineral Resources Gheorghe Dutu, and CEO of Cheiron Petroleum Service, Dr. Hani El Sharkawi, at the Intercontinental Hotel at City Stars in Cairo. As a result of the roundtable discussions, an agreement was reached between the government and attending companies to form a committee for discussing how to advance brownfields development in Egypt.

Brownfields to help solve energy shortages

Eng. Mohamad Fouad, President of Egypt Oil & Gas, introduced the discussion by saying, "In our globalized world, we don't lack innovation, we don't lack creation, but at times we do lack communication. We are here to bring you this communication."

Fouad pointed out that this is the 7th roundtable event of Egypt Oil & Gas aiming "to provide an environment that brings government officials and industry executives together in order to hold a constructive dialogue." There was general consensus between the participants of the event that the industry needs more communication, co-operation, exchange of experiences and information in order to progress with the development of brownfields in Egypt.

Ghorab initiated the conversation on a positive note, acknowledging the potential of Egypt's reserves. "All the statistics say that Egypt produces from 35 to maximum 40% of the original oil in place. ... Egypt produced 8 billion barrels of oil. If we are talking about 40% maximum, this means we have 20 billion barrels of oil in place. ... If you produce 1% more, this means 200 million barrels. I think the potential is there." Molla, however, went on to point out the challenges faced by the industry stating in his opening remarks that the "easy oil era is over". He introduced a five-fold strategy for closing the gap between energy supply and demand in Egypt, which includes brownfields development. The five key points of the strategy are as follows:

- Encouraging exploration in frontier areas and new areas such as the Gulf of Aqaba and the Red Sea
- Increasing production and reserves from mature reservoirs
- Producing from unconventional resources, notably shale oil and shale gas

- Producing energy from non-fossil fuel sources, working towards electricity generation from geothermal wells
- Dealing with current challenges to increase production such as the development leases approval process, military approvals, gas prices, security issues, concession agreement extension policies, and joint venture policies in procurement and contracting.

Molla also acknowledged the need to improve payment of overdues, "to ensure good operations and investments at normal levels." He went on to admit that new investment terms may be needed in order to succeed with brownfields development in Egypt. "We realize that enhanced oil recovery projects require significant investment and probably different duration terms in typical concession agreements," Molla assured. "We are open to modify our typical production sharing agreements to encourage successful enhanced oil recovery projects."

The Challenge of Defining Brownfields

Several participants pointed out the need to clearly define the term "brownfield". "We don't have a clear definition for brownfield. We are talking about brownfields without a definition," stated Dr. Moharem Elgamal, Technical Advisor to the President of Kuwait Energy Egypt. Dr. J. Samuel Amacanqui, Development Manager SUCO-RWE Dea North Africa, posed a question whether marginal fields were brownfields, as a "marginal field" refers to an oil field that may not produce enough net income to make it worth developing. Eng. Diaa Kassem, General Manager Follow-up of Reservoir Behavior at EGPC, said in the workshop that "Brownfield is almost a new expression in the oil industry and it has been used alternatively with the expression 'old field' and 'mature field.'" According to him, "brownfield in specific means the old field that has more than one cycle of development and production decline."

Mr. Brian Twaddle, Country Manager at Transglobe Energy, said that the term "brownfield" has many definitions. He brought several examples of what constitutes the brownfields sector in Egypt:

- Mature fields (existing development leases) where recovery factors can be increased significantly beyond the original field development plan
- Mature fields where the economics of intensive investment requires development lease extensions and possible modification of commercial terms
- Under-capitalized assets operated by state institutions (GPC fields, development leases handed to EGPC after expiry etc.)
- Infrastructure: aging export systems, processing systems and shipping systems. Not covered by existing production sharing agreement model.



We are open to modify our typical production sharing agreements to encourage successful enhanced oil recovery projects.

Eng. Tarek El Molla
CEO, EGPC



Petroleum represents 10% of economics and 90% [of] politics. I wish that this percentage would be turned the other way round.

Mr. Gheorghe Dutu
President, Romania National Agency for Mineral Resources



It would be good to get a clear message [from the government] that the IOCs are welcomed to invest in brownfields.

Mr. Thomas Maher
Vice President, Apache



We are taking decisions very slowly, and please let me say frankly, if we are not going to speed up the process, whether its EGPC or EGAS or the ministry, we will lose a lot of investment and we will lose a lot of credibility.

Eng. Hesham Ismail
Vice President North Africa, Halliburton



Probably bigger than the wording that sets the contract somewhere gathering dust in the shelf is what is in people's heads and how people behave.

Mr. Brian Twaddle
Country Manager, Transglobe Energy



Back in the 80's, we used to say if the barrel becomes to 30 dollars, this will allow more tertiary recovery to happen. Now we are at 100 dollars, I think this is proper time to ... produce more.

Eng. Abdallah Ghorab
Former Minister of Petroleum



There are a lot companies working in the Gulf of Suez to enhance oil recovery.

Dr. Ahmed Abdel Fatah
Vice Chairman, EGPC



We cannot also review the fiscal terms for each field without having a detailed technical study in order to calculate what we will spend versus how much we will gain out of this field.

Geol. Mostafa El Bahr
Chairman, Agiba Petroleum



Will be very, very helpful, very effective, if EGPC and the authorities look at other countries, what they are doing in terms of attracting investors in the field.

Dr. Hany El Sharkawi
CEO, Cheiron Petroleum Services



Future added reserves will come from difficult oil, difficult oil to find and difficult oil to produce.

Dr. M. K. Dabbous
President and CEO, IPR Group of Companies



The Prevalence and Potential of Brownfields

Speaking to the main issue that inspired the brownfield convention, Eng. Kamel El Sawi, President of Kuwait Energy, stated "There is an absence of new discoveries all over the world since about more than ten years back. ... This brings a very big importance for the development of brownfields." He added that "Since 2008 when the oil price reached \$147, most of the companies all over the world started thinking in a different way, to develop the mature brownfields." Kassem added the statistics that "approximately 60% of the world's oil production is delivered mature fields in the state of decline. Oil production from brownfields in Egypt is close to about 77%."

Dr. Darius Shahsavari, Vice President Technical Services at IPR Group of Companies, pointed out that "As Mark Moody-Stuart, the former Chairman of Shell, himself an exploration geologist, said, most of their reserves were added by engineers who develop the fields, including brownfields and so-called depleted fields" rather than by exploration.

In his workshop presentation, Jim Gillett, Senior Advisor, Business Development, at Gaffney, Cline & Associates, pointed out that brownfields are worth to be exploited because many new discoveries exist in extreme conditions such as deep water, sour formation, high pressure and temperature, and shale.

Elgamal argued that brownfield terms can in fact be considered less risky than exploration terms because in case of brownfields, it is already known that hydrocarbons are there, the only issue is to get them off the ground economically. According to Shahsavari, "One of the biggest advantages of brownfields ... is the extensive database and existence of infrastructure." Fouad made a related comment in the opening remarks, pointing out that "While a new discovery may take from five to six years and onwards to develop into production, new projects on existing fields will yield value creation opportunities in short to medium term."

Technology Is There, Economics a Hindrance

In his workshop presentation, Kassem offered some examples of enhanced oil recovery projects in Egypt: Gupco's bright water pilot in Morgan Field and a low sal study, Agiba's pilot project on polymer flooding, Petrobel's pilot project on bright water, Shell's study on low sal, Petrodara's study on polymer flooding, Khalda's CO2 and miscible flooding study, Badr Eldeen's study on CO2 and miscible flooding, and GPC having started steam flooding in Asran fields, which yielded an increase in oil production rate from 200 to 7,000 b/d. Sawi informed that, "We have a very good experience in Egypt as Kuwait Energy with the development of one mature oil field in Gulf of Suez with GPC" with the production being raised from 1,500 to more than 7,000 barrels by now.

Egypt indeed has some brownfields development and enhanced oil recovery initiatives, but as the participants of the roundtable agreed, much more are needed. However, brownfields development entails a lot of challenges,

several of which were outlined by Gillett in his workshop presentation:

- Poor quality or missing data
- Stranded or bypassed hydrocarbons
- Remaining oil not addressed by the current development
- Aging wells, facilities and infrastructure
- Legacy technologies
- Technical problems, such as with produced water management
- Economic barriers
- Historical environmental damage
- Logistics, especially offshore
- Conflicting objectives between IOCs and NOCs
- License terms not applicable to the field in today's conditions

Several participants said that technologies to develop brownfields are there and the main hindrance to their development is economics. "In my view, it's not a technical issue in most cases, it's an economics issue," stated Gillett. Mr. Thomas Maher, Vice President of Apache, also recognized that the technologies exist, but there are challenges on a fiscal basis concerning cost recovery. "It would be good to get a clear message [from the government] that the IOCs are welcomed to invest in brownfields," he added.

It was stressed that as Egypt is in competition with other oil-producing countries, the need to act quickly is imminent. Eng. Tawfik Diab, Managing Director at PICO International Petroleum, pointed out that the lack of funds being invested in Egypt is favoring projects elsewhere. "Once they are invested elsewhere, they are not invested this year alone, they are invested this year and the years to come," he cautioned, adding that by the time an agreement on a model has been reached and there will be a tender, "we will not get the focused, mature oil players that will really add a lot of value. So I think the key point here is that time is really of essence." On the same note, Eng. Hesham Ismail, Vice President North Africa at Halliburton, said "if we are not going to speed up the process, whether it's EGPC or EGAS or the ministry, we will lose a lot of investment and we will lose a lot of credibility. ... There are terms and conditions that need to be amended, there are prices that need to be revisited, and if we are not doing this now, we are losing the money, we are losing the cash that should be in the country now, should have been in the country now."

Molla confirmed Ismail's point, agreeing that the decision-making process needs to be accelerated. Mr. Jerome Jammal, Vice President at Baker Hughes, stressed an obligation to future generations of Egypt to move faster with brownfields development for the sake of economic development. Ismail stated, "Discussions on developing mature fields have been going on for quite some time and I believe the main step to be taken now, and I mean now, should be a serious will to start and EGPC to develop a plan with the operators... We need to see EGPC putting a model in place."



Challenges With the Current Fiscal Regime

Many participants said that the current fiscal model is not suitable for brownfields. "The current concession agreement will never be able to survive in case of developing a brownfield" said Mr. Ahmed Moaaz, Country Manager of Sea Dragon.

"As we get into mature brownfields, we want to look at new technologies. Investing in new technologies is a different risk profile than was perhaps perceived in initial concession agreement, which is hard for EGPC to manage," noted Twaddle. "I'm sure all the IOCs, investors here have regular discussions about whether something will or will not be recoverable as we start to look at new ideas and that's managed in a very ad hoc way at the moment," he added. "I'd try to pin that down to something a bit more structured that allows new technologies to be more freely implemented."

As fields tend to enter the brownfield phase close to the end of development leases, Twaddle highlighted problems with cost recovery during the last few years of a concession agreement. Ghorab made a comment along similar lines, saying that "Sometimes the current agreements allow companies to go for unconventional work, the problem may come if you have a cost recovery constraint or you have not enough years left for the agreement to recover the contractor's money, then will negatively impact the economics." Sharkawi pointed out, "When these concessions were introduced 20-30 years ago, they did not imagine there would be a second recovery coming and tertiary recovery coming, so they were always limited in terms of 20 years, 25 years and so on, now we realize that fields could produce for another 50 years if we use the right technology."

According to Twaddle, there is a problem with the current production sharing agreement because the parties are very focused on cost recovery. "There's a breakdown in trust between the regulator side that thinks the contractor side doesn't care about cost, and the contractor side that thinks the regulator doesn't understand why the cost is required," he noted. "We have to refocus that to look at volume rather than cost, and make sure that we're making decisions based on volume, based on economics." Fouad also pointed out the pervasiveness of mistrust between operator and regulator. "In the past couple of years, we've organized several of these roundtables and one common issue that I have realized at these roundtables is that there is always a barrier between the IOC or the investor and EGPC in the mindset," he said, highlighting the conflict of interest in which "EGPC still looks to the contractor as looking towards his personal interest and EGPC is always trying to protect the government's interest."

Shawkat introduced the position commonly held by the roundtable participants, that there is a need to attract the "small players" — especially service providers — when it comes to easing terms. "The bid rounds for the exploration go for big acreages that [are] really lucrative to IOCs while the brownfields are not that lucrative to the international companies, whereas small players can really have interest in [them], but the current regulations will not allow them to participate in this campaign," he explained. Twaddle on his part pointed out that "the technologies and technical expertise that sits within service companies

[could] be better exploited and better utilized. That allows operators and service companies to work as a different sort of partnership than we currently do."

"We are ready to adopt any possible, let us say, change or amendment to our agreements in order to accommodate whatever we can reach," responded Molla to calls for a change in terms. Fatah, also representing EGPC, solicited proposals, saying that EGPC would be willing to study them if they are deemed to achieve economic value, "in order to ... achieve success ... for our partner and for Egypt".

Adjusting the Regime for Brownfields

"The concession agreement is prepared before the exploration start, so when you include a mechanism or different fiscal regime to develop the brownfield later on, this will complicate the agreement too much," said Geol. Mostafa El Bahr, Chairman of Agiba Petroleum, recognizing the difficulty involved in establishing the point when to incorporate brownfield terms into agreements. "I think we need to include this while we are signing the development lease because in this case you will be in a better position to identify more or less how much oil you have, how much of this will be recovered and the recovery factor and what do you need to spend to recover this oil," he suggested. Bahr also pointed out the need to set a clear border between the greenfield and brownfield phase in order not to mix their recovery schemes. "Let's say after the production you still have some reserve that needs additional investment. This could be the border, the additional reserve, which is not included in the booked value of the oil in place," he proposed, adding that there could be a need to study each case separately, and define the fiscal terms accordingly.

Elgamal had another idea for accommodating the current regime to brownfields development. "By the end of the terms, we can offer [the operator] he can invest so and so under certain conditions and change the production sharing agreement into a service agreement," he explained, adding that "service agreement doesn't prevent you from booking reserves."

Shawkat on the other hand proposed to "have another agreement which is talking about the leases that are dropped from the international companies or dropped from the national companies like GPC." In this regard, he pointed out the example of GPC area A developed in co-operation with Kuwait Energy that turned out to be a big success.

"Regarding the agreement, I think we have three cases," shared Eng. Mohamed Baydoon, Chairman of SUCO, his ideas. "The agreement which about to be expired an in this case we can actually ask investors before renewal to prepare a study to chose unconventional methods to increase the production and the recoverable oil and then if they can show us an unconventional method before we renew it [the agreement], then we can have a new agreement about conditioning in the new, incremental oil." As for the current agreements, he suggested that the investor could be given some flexibility to amend terms in case it can show that it is possible to increase oil recovery with advanced technologies. As for the third case, new agreements, "we actually should include a statement indicating that it can be revisited in case unconventional work is required, which leads to increasing the oil and



There's an obligation to our kids, to the people of this land ... for us to move at much faster velocity. Technology is there.

Mr. Jerome Jammal
Vice President, Baker Hughes



Let's be more specific, which terms we are meaning and which terms deserve to be re-phrased and re-discussed?

Eng. Abed Ezz El-Regal
Chairman, GUPCO



There's a breakdown in trust between the regulator side that thinks the contractor side doesn't care about cost and the contractor side that think the regulator doesn't understand why the cost is required.

Eng. Mohamed Baydoon
Chairman, SUCO



What I am looking for now, with the support of EGPC and at the same time with the support of service companies to have a mutual agreement to apply the performance-based contracts.

Eng. Sayed Rezk
General Manager, Enap Sipetrol



Approximately 60% of the world's oil production is delivered mature fields in the state of decline. Oil production from brownfields in Egypt is close to about 77%.

Eng. Diaa Kassem
General Manager Follow-up of Reservoir Behavior, EGPC



Funds that are not invested today in Egypt are invested elsewhere and once they are invested elsewhere, they are not invested this year alone, they are invested this year and the years to come.

Eng. Tawfik Diab
Managing Director, PICO
International Petroleum



If the government is willing to devise a new vehicle, new mechanism whereby brownfields have a different service agreement than the conventional service agreement we have, I think that will give room for further development in brownfields.

Mr. Ahmed Moaaz
Country Manager and Director,
Sea Dragon



What we are suggesting is that we add to or the amend current country regulations to attract small players, especially service providers.

Eng. Mahmoud Shawkat
Business Development
Manager, Baker Hughes



There's an absence of new discoveries all over the world since about more than ten years back. ... This brings a very big importance for the development of brownfields.

Eng. Kamel El Sawi
President of Kuwait Energy



It's always a difficult political issue for any government, and EGPC is no different I'm sure, to change terms that have been in place for a long time...

Mr. Jim Gillett
Senior Advisor, Business
Development; Gaffney, Cline &
Associates



gas production," Baydoon elaborated, explaining that this creates some flexibility, whereas currently agreements are very rigid.

Agreements Rigid or People Inflexible?

However, in Twaddle's opinion, "probably bigger than the wording that sets the contract somewhere gathering dust in the shelf is what is in people's heads and how people behave – regulator side, contractor side, because there is ... a lot of flexibility actually available in contract now." According to him, it is probably possible to develop brownfields within the current concession agreement, "but people are a little bit wary or frightened to do it, are ivory linear in their application of tendering and contracting process."

The latter can derive from the fact that people working in Egypt's public sector are afraid to take risks. Elgamal admitted that when he was working for a national company in Egypt, he was afraid to make decisions, thinking he could be blamed of wasting money. "Imagine you spend \$100 million in one project and at the end it didn't work. Who is going to be accountable? I'm investor and I know exactly what I am doing, I'm willing to take the risk, but here nobody will take the risk working for the government," he stated, adding that overall laws need to be changed in Egypt to encourage some risk taking, as the latter is an inevitable part of brownfields development.

Twaddle's argument that the existing agreements actually are flexible was supported by an example by Eng. Nabil Salah Gaber, Engineering General Manager of GUPCO. "4-5 years ago there was a concession renewal between BP and EGPC and there was a debate in terms of value or the number for the reserves," he recalled. The parties reached an agreement that BP would drill a certain number of wells in certain areas in order to confirm this value and then booking for the reserves could be made. "So I think the agreement itself is flexible," concluded Gaber.

Fatah said that recently in a few occasions, such as the successful Kuwait Energy case, EGPC has made a new bid round at the end of development lease in case the operator does not make an offer that is deemed reasonable, whereas in the past the lease would have been renewed so it remained to the same company. He mentioned EGPC is considering wider use of this practice and also suggested that companies themselves could offer terms and conditions instead of EGPC stating them. "Actually GPC used to make bid round related to this area with brownfields, and this one model came according to the competition between the companies that offer the terms and conditions regarding the economics and production," he said, speaking about the Kuwait energy success story. "So it should be through a normal bid round, but this bid round, it is open without specific terms and conditions, it is open for everyone."

Drawing from past experience with the UK and several East Asian and Latin American countries, Gillett said "It's always a difficult political issue for any government, and EGPC is no different I'm sure, to change terms that have been in place for a long time. ... I've lost track how many governments we worked with in the past who are wrestling with a similar issue." Mr. Gheorghe Dutu, President of Romania National Agency for Mineral Resources, noted that, "Petroleum represents 10% of economics and 90% [of] politics," adding, "I wish that this percentage would be turned the other way round." It could be less difficult

to ease the terms of agreements in case people realized more the importance of the petroleum industry for Egypt. Along those lines, Eng. Shamel M. Fahim, Director of Marketing Sales and Engineering at Baker Hughes, stressed the need to advertise the value of oil industry to Egypt and its importance as an employer.

Lessons to Learn From Other Countries

"It will be very, very helpful, very effective if EGPC and the authorities look at other countries, what they are doing in terms of attracting investors in the field," stressed Sharkhawi. Several other participants said as well that Egypt should look at the models that exist in other countries. Some of them could be applied in Egypt after making certain changes according to the country's unique circumstances and needs. The most commonly cited successful model was that of Mexico, whereas Malaysia, Columbia, Indonesia, Argentina, Ecuador and Romania were also mentioned.

Diab impressed upon the discussion that the world has surpassed Egypt, that the global conversation has moved beyond the service agreement to booking reserves. "Countries like Mexico," he said emphatically, "are changing 50-year-old constitutions to allow foreign investors to book reserves today, and they are producing 2.5 million barrel of oil, this is the attention that this topic is taking worldwide." Hesham A. Ibrahim, Marketing Director of PICO Energy, spoke about Mexico as well, in reference to an integrated drilling well tender that his company took part in, which could be used as a good example. There was no registration needed to participate in the tender, Ibrahim said, which made it easier to participate. Besides, profit margin and other terms and conditions were not negotiated in said tender, which made the process quicker – simply, the one who offers the best price will be the winner.

Amacanqui also highlighted the North Sea area, where "companies allocate 5% of the total investment for application of new technologies right from the beginning."

Integration of Service Companies and Other Remarks

Eng. Sayed Rezk, General Manager of ENAP Sipetrol, advocated for the application of performance-based contracts for service companies, with the support of EGPC. "In Sipetrol," he said, "we have already applied performance-based contract." Fatah of EGPC agreed that service companies are indeed very important, and just selecting the lowest price may not be the best option. When evaluating service contracts in the tender, after evaluation by the partner and joint venture, he suggested that a couple of companies with high technical quality could be selected, and from them the company offering the lower price would win the tender. However, a few participants pointed out that it is not currently the case, and the support from EGPC is required to establish this practice.

"Service companies are not in alignment with the joint venture companies," stated Geol. Magdy Wedad, Managing Director of PICO Energy. Joint venture companies should take quality a bit more into account, while on the



other hand service companies should be willing to take more risks, he said, suggesting the heart of the issue are legal challenges. "If the government is willing to devise as new vehicle, new mechanism whereby brownfields have a different service agreement than the conventional service agreement we have, I think that will give room for further development in brownfields," offered Moaaz.

Twaddle brought up the issue of establishing adequate brownfield infrastructure, another pressing concern for the development of mature fields, as much of the existing technology and equipment is very old. "The production sharing agreements as they exist don't allow easily investors to upgrade infrastructure, to contribute to infrastructure," he said, adding that the "economics of all brown-field opportunities across different parts of the country can carry the cost of operating infrastructure, but it's not possible for any individual party." Rezk suggested that the structure of joint venture companies should be changed in order to improve the availability of infrastructure.

"Data for all the concessions [could] be available at no cost to everybody," proposed Mr. Hisham Refaat, Business Development Manager of Waqud, another measure for encouraging brownfields development in Egypt, citing the benefits of more industry professionals looking at concession data, which would increase the probability of good ideas coming to light. "Selling the data is peanuts in overall terms for EGPC, but it's a lot of money for small players if it's available for free," he argued.

Forming the Committee

"I don't think that today we will be able to find a solution, but we can agree about forming this committee," initiated Baydoon, soliciting ideas for who would take responsibility for the formation of the brownfield development committee. Many participants agreed. "We need to form a committee as soon as possible," Jammal said, adding "because the last thing you want is to do ... is to have same forum next year and we are talking about the same thing."

Molla supported the idea of forming the committee, citing success with similar committees that have been established, one to cover gas prices and another for unconventional oil exploration. It was proposed by several participants that the committee would include representatives from the government — the Ministry of Petroleum, EGPC, EGAS, GANOPE — as well as IOCs and service providers.

"I would like to ... see a committee that has a very strong legal advisor representing the government and its laws that can put all the ideas in here and phrase it," said Wedad. "And I don't think we can go too far without it." Molla on his part suggested that "The committee should include different disciplines, from each speciality — economics and legal, plus the technical members." Fouad said that it should be EGPC's responsibility to lead in forming the committee and bring everyone to the discussion table.

Conclusion

Ismail congratulated the efforts of EGPC following last year's roundtable on unconventional, and the initiation of projects inspired by the roundtable. "EGPC led by Eng. Tarek and Dr. Ahmed did an excellent job. A tremendous effort has been done on starting this project on unconventional, shale gas," he said, adding, "If we continue the same effort done on unconventional, we will get there in the mature fields." Meanwhile Fatah encouraged the participants to keep in contact and present their proposals and ideas to EGPC for consideration. Amacanqui expressed confidence that looking down the road, Egypt's petroleum sector could still see a lot of success. "I spent ten years in South America, ten years in the Middle East, and here I have been since the last four years. I am still impressed by the things I see," he said. "So in a few years, if put right model [in place], Egypt can become a hub in the Middle East."



The role of service companies ... has always been marginal while I think they have a great role to play introducing new technologies that will help you deal with your brownfields.

Geol. Magdy Wedad
Managing Director, PICO Energy



We need to advertise just what oil industry does for Egypt ... that we are a part of the fundamental fabric of Egypt.

Eng. Shamel M. Fahim
Director of Marketing, Sales and Engineering, Baker Hughes



Sometimes the infrastructure [for brownfields] is there, but sometimes it needs to be rebuilt or replaced because it is quite old.

Eng. Mike Mason
Egypt Region Operations Manager, Apache



I recommend this committee to ... raise its progress in a monthly report to the oil and gas chairman.

Geol. Hassan Hataba
General Manager — Egypt, Circle Oil



We need to change even the entire law of the country, not only the law of EGPC or the [Petroleum] Ministry.

Dr. Moharem Elgamal
Technical Advisor to KEE President, Kuwait Energy Egypt



One of the biggest advantages of brownfields ... is the extensive database and existence of infrastructure.

Dr. Darius Shahsavari
Vice President Technical Services, IPR Group of Companies



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From June 30th to the Ballot Box:

What's Next for Egypt?

Shortly after this article goes to press, Abdel Fattah el-Sisi will most likely have already won Egypt's presidential elections in the first round.

Tom Rollins is a freelance journalist based in Cairo. He tweets at @TomWRollins

June 30th might seem like a long way off now – a lot has happened, after all. And yet, events over the past 12 months – fraught political polarization, violence, terrorism, repression and so-called “democratic transition, as well as the words and actions of June 30th's most recognizable force, Sisi himself – could give us some clues as to where Egypt might be headed in the crucial months after the election.

June 30th: One Year On

In the run-up to June 30th, the Tamarod (“rebel”) campaign led a call for early presidential elections (and ultimately the removal of Mohamed Morsi and the Muslim Brotherhood); a call enthusiastically taken up by activists, trade unions, liberal political parties and ordinary Egyptians around the country. When Mohamed Morsi refused to stand down according to a 48-hour ultimatum issued by the armed forces, Sisi appeared on television flanked by political and religious figures (including Coptic Pope Tawadros II, Al-Azhar Grand Sheikh Ahmed al-Tayeb and prominent liberal Mohamed ElBaradei) to announce the Islamist president's removal.

“The armed forces hail the honest and dedicated elements of the forces, the police, and the judiciary for their great national role and their continued sacrifices to maintain the safety and security of Egypt and its great people,” Sisi said in the July 3rd speech. A warning – that authorities would “stand firmly and decisively against any forms of painlessness in fulfillment of our historic and national responsibilities” – arguably presaged the next wave of violence: lethal street clashes, the August 14th dispersals and a growing security crack-down, starting with the Muslim Brotherhood.

The debate about whether Sisi presided over a revolutionary “expression of the people's will” or a military takeover of a fledgling democracy continues. So too in the geo-political landscape, which has notably shifted against the Brotherhood and states or groups supporting it (including Qatar and Hamas in the Gaza Strip). June 30th is, as yet, an unresolved phenomenon. For his supporters, Sisi is everything from the “savior of Egypt” to a decisive, principled leader who will pull the country out of years of unrest and economic malaise. His detractors are more likely to call him a putschist or a military strongman who violently deposed Egypt's first democratically elected president.

Some analysts would argue the first year since June 30th could presage what we can expect from a Sisi presidency in the future. However, there are plenty of problems facing the incumbent that should not be ignored.

Economic Challenges

There is widespread agreement that the economy (aside from Sisi's other watchword, security) will likely become the most crucial area in Egypt's post-election period. Impartial analysts and opposition voices both agree that mismanagement of the economy, or a perceived failure to solve the country's many problems, could become a vital fault-line for those looking to challenge Sisi's regime in the future.

So far, Sisi has offered little detail about his economic program.

“Egyptians were aspiring to a more stable life than the reality we are living in,” the former field marshal told Reuters in his first interview with English-language media in the run-up to the elections. He pointed to changes to minimum/maximum wages, job creation and a possibly measured redistribution (or removal) of subsidies as future policies. Arab and foreign investment would also be a priority, a view backed up by the key role Gulf investment and aid has already played in Egypt's post-Morsi period – with an expected \$3 billion in free fuel coming from Saudi Arabia by August, according to Tarek el-Molla, head of the Egyptian General Petroleum Corporation (EGPC).

“Egypt needs your help in this phase,” Sisi added later in the Reuters interview, addressing the West and friendly states, “so that it gets out of the circle of poverty it is suffering from.”



At other times Sisi has hinted Egypt may be about to witness a period of biting austerity. In one of the leaked recordings released in months past, Sisi talks – as if to the Egyptian people – about future economic possibilities: “If I make you walk on foot, can you stand it? If I make you wake up at 5am every day, can you stand it? Can you stand it if I take away subsidies in one go?” Annual talks with the International Monetary Fund (IMF) are set to begin not long after the elections, according to Finance Ministry officials, which could also dictate how well ordinary Egyptians fare in the immediate future.

That may depend on how willing Sisi is to engage in “structural readjustment” policies for an expected \$4.8 billion loan. As a leader with a strong sense of history (and his own place in it), Sisi will no doubt be aware of the 1977 Bread Riots (under Anwar Sadat) and of course the January 25th revolution (against Mubarak), both fractious events that broke out in part as a result of IMF-inspired economic policies, which have dictated Egypt's economic orthodoxy for decades.

The army will no doubt play a key role in this process. Hazem el-Beblawy's interim cabinet allotted some \$1 billion to the army in direct order contracts (i.e. ones without public tender) for construction and development projects. Sisi reportedly told a group of young businessmen in mid-May: “If you want to build, ask the army.”

Freedom Under Threat?

Throughout the months of unrest following June 30th, the Egyptian authorities have routinely defended the actions of the army, police and judiciary within a narrative of protecting state sovereignty from terrorism. Like Sisi said on July 3rd, their “continued sacrifices to maintain the safety and security of Egypt and its great people.”

Not everyone sees it the same way. January 25th activist groups including the Revolutionary Socialists, both wings of the much-maligned April 6 Movement and the Revolutionary Road coalition have launched the anti-Sisi “Dedak” (Against You) campaign.

International human rights groups have routinely criticized the Egyptian authorities since July (and indeed, before) for violations of citizens' freedoms. Landmark cases include mass death sentences of several hundred men reported to be Muslim Brotherhood members or supporters, said to be some of the largest mass sentences in modern history. The ongoing trial of the so-called “Marriot Cell,” a group of foreign and Egyptian Al-Jazeera journalists arrested in December, has also become a real international headache, with some ministers admitting the case was a mistake.

Therefore a big challenge facing Sisi for the future will be this international perception of Egypt as a country in regression. Having not addressed torture, police brutality or state-level repression in any of his recent speeches and interviews – despite a wealth of eyewitness and testimonial evidence that this are often routine practices in Egyptian prisons – it would be reasonable to assume change may not be forthcoming from Sisi himself.

Industrial Unrest: A Real Threat?

Some might welcome the apparent downturn in industrial unrest, particularly in comparison to the wave of hundreds of strikes and workers' protest that followed January's revolutionary anniversary. However, there are some suggestions that this may be a temporary respite. Textile workers in Mahalla, who led a weeks-long strike against a public holding company administration they see as corrupt, inefficient and nepotistic, said they would wait until after the presidential elections to resume making their demands.

While government officials, among them Prime Minister Ibrahim Mehlebe, have repeatedly appealed to workers' “patriotism” in holding off on industrial action during the transitional period, nationalist-patriarchal narratives arguably have less sway over people struggling to make ends meet. Like with other sub-groups in Egyptian society, the presidential elections may not be as simple as a glorious, democratic and corrective victory over the Brotherhood that middle or upper-class Egyptians like to present it as.

The response should be cautious. Repression and immovability in negotiations could enflame the labour movement, something that everyone who remembers April 6, 2008 will want to avoid.

Security

The word that has accompanied every twist and turn of Egypt's turbulent year in transition: security.

A low-level Islamist insurgency that existed before the revolution, primarily in areas of North Sinai, has grown and grown; spreading to Sharqiya, once-popular tourist sites like Taba and the other Red Sea resorts, Gharbiya and into the heart of Cairo itself.

Numerous reports suggest young men sympathetic towards the Muslim Brotherhood may also be turning to violent methods to resist what they call Sisi's military coup, which arguably explains some of the more amateur, homegrown style attacks in recent months. “The traditional leaders want peaceful action,” one Brotherhood youth leader said in a recent Reuters interview. “What did that get us?”

Like anywhere in the Middle East these days, terrorism is a genuine threat to Egypt. Jihadist groups like Ansar Bayt al-Maqdis and Ajnad Misr (which ABM referred to as its “brothers”) have displayed a real capability to undermine Egypt's security apparatus, as evidenced by the January 24th bombing of the security directorate building in downtown Cairo.

Amid the cheering crowds of Egypt's presidential election, Sisi looked assured. However the coming weeks and months will prove critical. A recent Pew research poll found that 71% of Egyptians were “dissatisfied” with the direction the country is taking (compared to 24 percent who said they were satisfied), a dissatisfaction “back to pre-revolution [2010] levels.” If Sisi wants to genuinely combat that, and tackle the myriad problems in Egypt's economy, security strategy and human rights landscape, the much-loved field marshal has a hard job ahead of him.

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Fugro SAE Implements ROV and Subsea Engineering Control Deepworks Training Simulator Module for Egyptian Candidates



FCV3000 ROV operator console

Deepwater and ultra-deepwater operations are now a core part of the business for many installation contractors. They rely heavily on Remotely Operated Vehicles (ROVs), lifting equipment and running tools for the deployment, maintenance and repair of deepwater production infrastructure. Additionally, umbilical, riser and flowline installations at depths up to 9,000 feet present huge technical and logistical challenges.

Strict offshore oil and gas industry regulations govern the increasingly complex and costly designs necessary to exploit new deepwater fields and to extend the lives of existing

ones. Traditional full-scale Site Integration Testing (SIT) is becoming less palatable due to high mobilization costs, short project design cycles and restricted weather windows. Instead, the industry is learning that investment in simulators to conduct virtual SITs provides significant and tangible gains before implementation. This is possible because the well-proven physics modeling enables complex solutions to be tested in a virtual world first, thus substantially reducing the need for testing in the real world. This means deployment outcomes can be predicted earlier and offshore implementation requires less contingency, which

leads to more cost effective use of vessels.

The leading European producer of ROV simulators is Fugro Subsea Services Limited, whose Robotic Technologies division produces DeepWorks: an overall solution for subsea simulation with a range of products for ROV training, engineering, and live operations visualization.

The DeepWorks ROV pilot training simulator introduces true physics-based simulation to subsea scenarios so that remotely operated vehicles and other moveable subsea assets respond to driven force demands, environmental forces, and impact forces and friction just like in real life. Accurately modeled thrusters, manipulators and winches, operated through real control interfaces offers pilots the same interactive experience as if they were actually navigating the ROV, deploying a manipulator tool or installing a subsea umbilical for real.

For engineering design validation, access studies and clash checks, DeepWorks Engineer provides a powerful desktop simulation suite that enables engineers to model the true hydrodynamic responses of submerged equipment to user-defined force inputs or environmental conditions. Using the user-friendly drag and drop interface, engineers can configure their own scenarios from a comprehensive library of pre-defined components like vessels, pipes, cables and ROVs and customize their physical properties to tailor these configurations to their

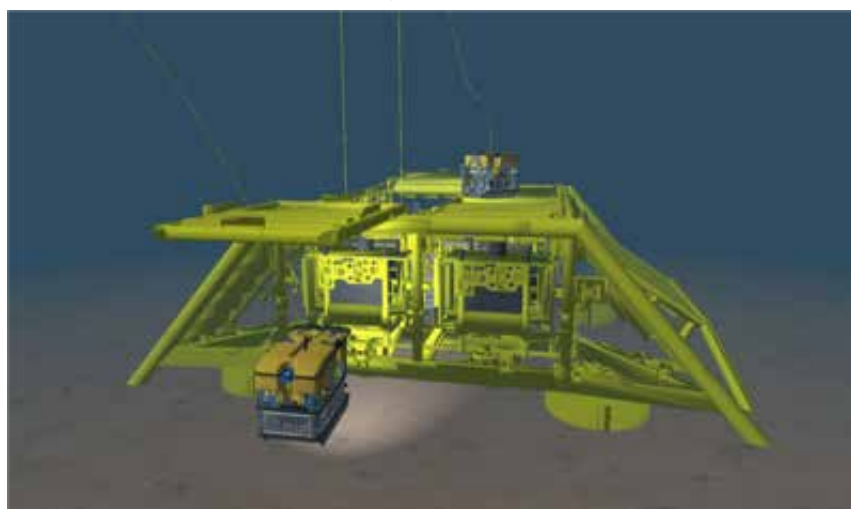
specific project needs. External 3D CAD drawings can be easily prepared and imported into the customer's own model library within DeepWorks.

By adding a real-time module to DeepWorks Engineer, live monitoring of the topside and subsea operations is possible. Real-time data collected from subsea sensors and from ship systems is used to generate a live visualization. Full distribution to monitors around the vessel enables all the people involved (pilots, crane operators, surveyors, superintendents and deck handling teams) to see subsea operations as they unfold. This makes operations co-ordination much easier to manage and leads to more efficient and safer work practices. DeepWorks Engineer Live accepts inputs from Fugro Starfix, and NMEA Standard inputs such as GPS, Gyro and USBL data. Additionally, the software can combine real sensor data such as vessel position with predicted data such as cable position in the water-column. This kind of augmented reality means it is no longer necessary to rely solely on having an eyeball ROV in the water in close proximity during a lay-down or pull-in operation.

"Sea trials are among the most expensive aspects of subsea field solutions, and here simulation can play an important part in keeping costs down by reducing the amount of live testing that is needed," said Dr Jason Tisdall, Robotic Technologies Business Line Manager.

"Our customers frequently come up with new installation or intervention requirements, sometimes at very short notice," continued Dr. Tisdall. "Successful product development requires a stable but flexible platform and the ability to adapt quickly to changing needs. DeepWorks has been developed on the latest C#.NET platform, and uses state-of-the-art automated workflow tools to enable new features to be incorporated quickly whilst ensuring quality through tight build and release control. In a recent example a client required a new input device to drive the simulation of multiple lift lines and umbilicals simultaneously. Fugro were able to release a copy of the software in four days, with the final release code being delivered following testing."

DeepWorks has established itself as a leader in the simulation field primarily because it is easy to use and because it is underpinned by trusted physics. Engineers perform their work efficiently finding quick and trustable solutions using the intuitive Windows-style drag and drop interface to build scenarios and the drop-down menus to change property values. The absence of scripts and programming enables high utilization and widespread use with minimal training. Uniquely, among subsea simulator providers, the intellectual property in the DeepWorks physics-engine is owned in-house. Not being reliant on third parties makes DeepWorks quicker and easier to adapt to satisfy specific customer needs.



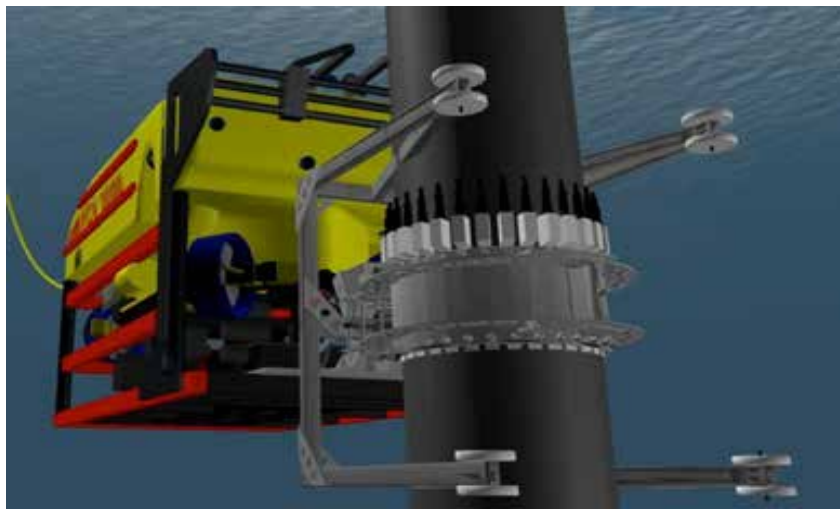
Two ROVs working in tandem on template installation



FCV3000 ROV performing tooling intervention from a flying lead on a subsea production system



Simulation of an FCV3000 ROV performing a complex intervention procedure



Simulation of an FCV3000 ROV carrying out NDT inspection of jacket tubulars



Summary:

Simulation and control technologies now give operators an unprecedented insight and ability to intervene directly in the design, development, deployment, operation and maintenance of subsea and seabed equipment, minimising risk and speeding up the production process.

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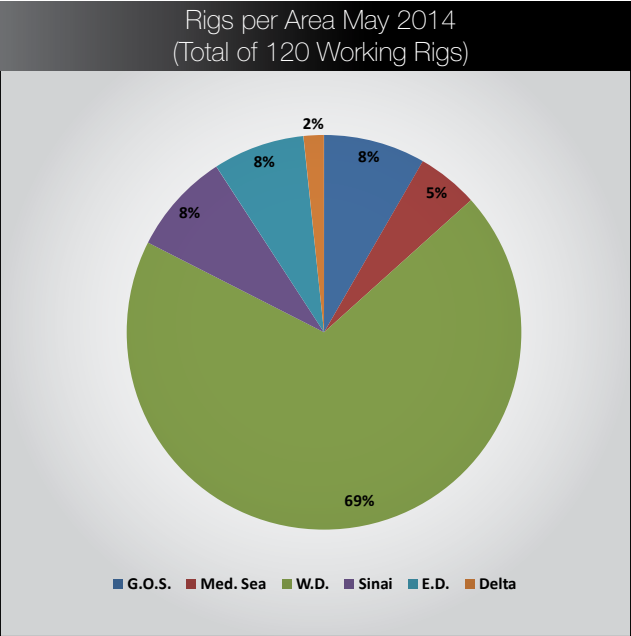
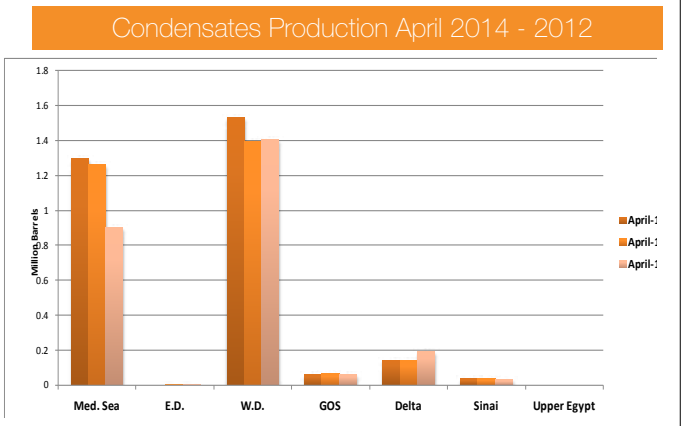
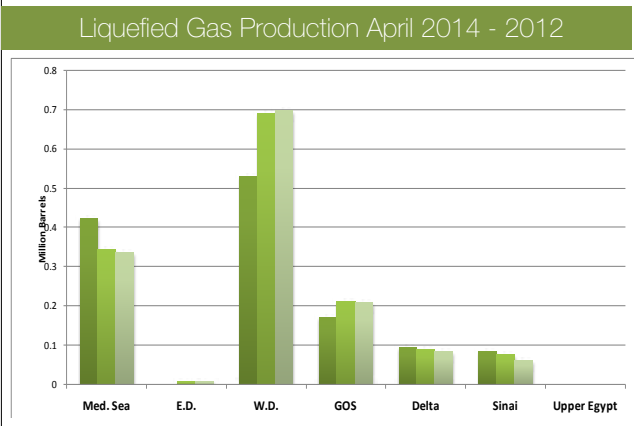
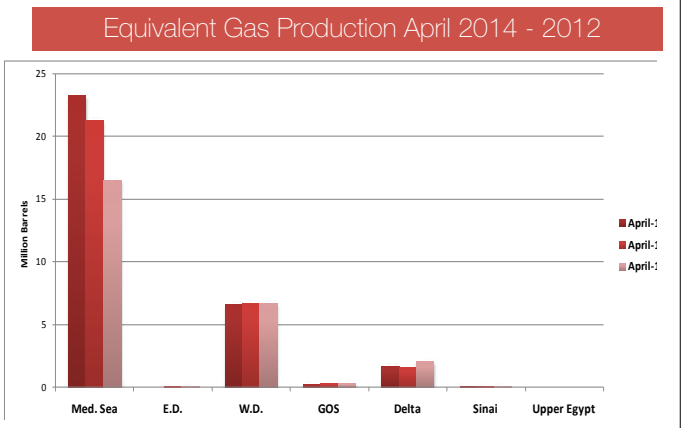
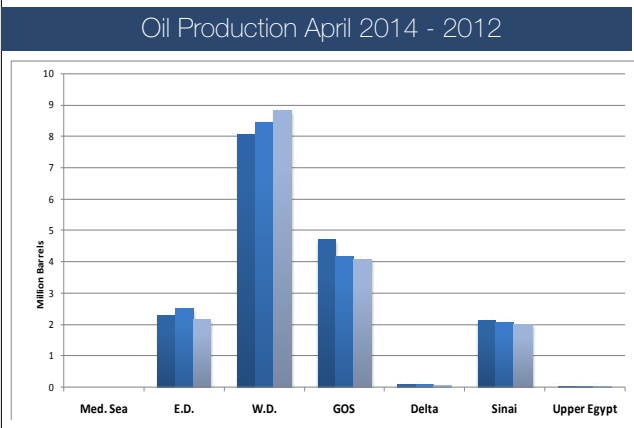
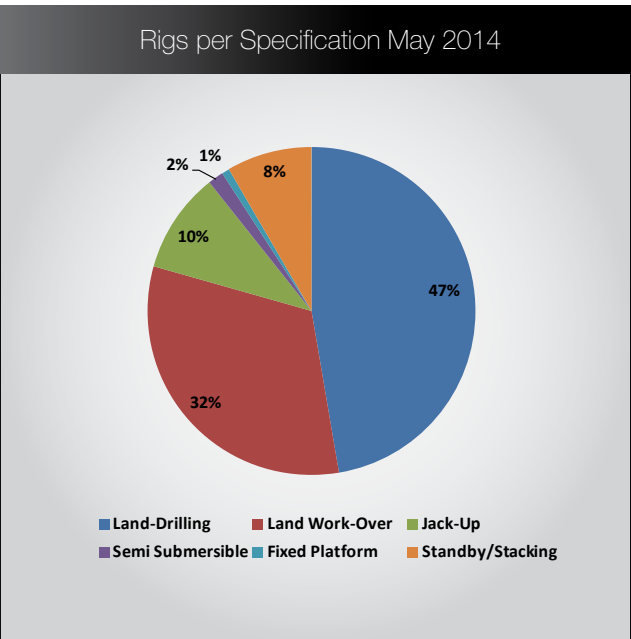
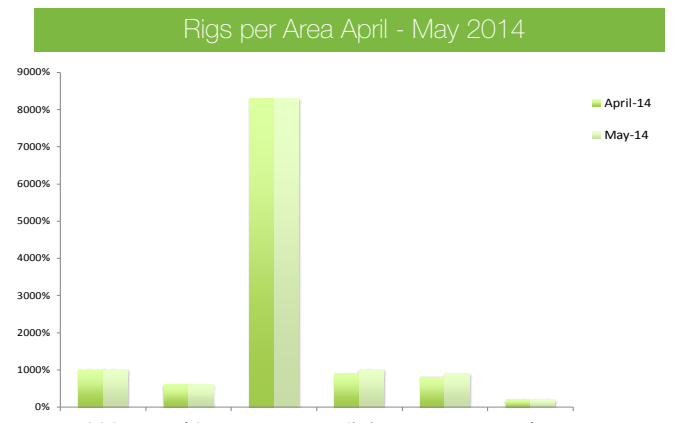
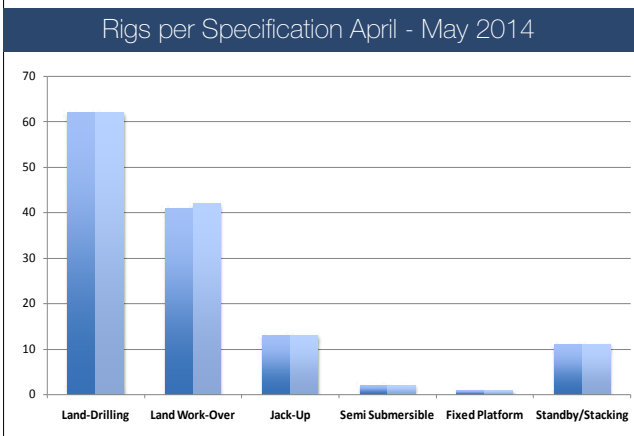
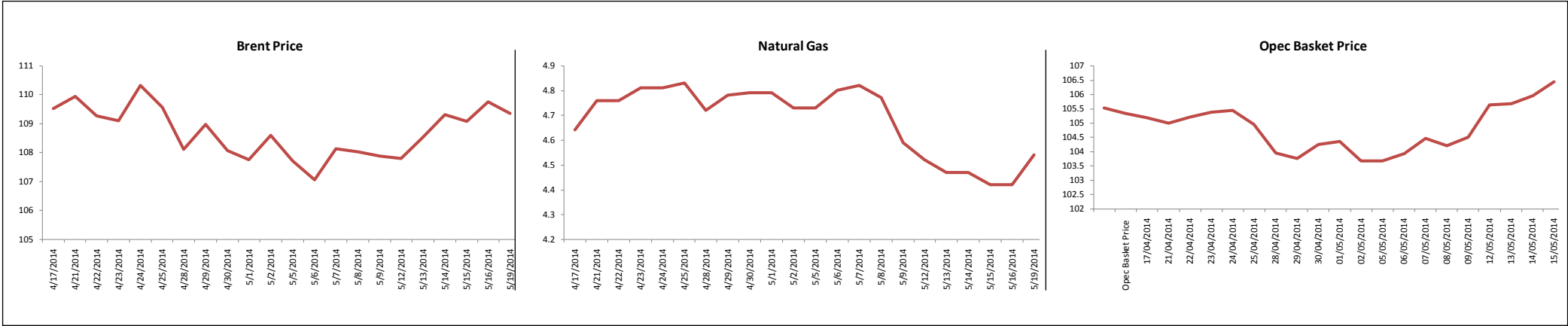




Egypt Rig Count per Area –May 2014

Area	Total	Percentage of Total Rigs
Gulf of Suez	10	8 %
Mediterranean Sea	6	5 %
Western Desert	83	69%
Sinai	10	8%
Eastern Desert	9	8 %
Delta	2	2%
Total	120	100%

	Oil			Equivalent Gas			Condensate			Liquefied Gas		
	Barrel			Barrel			Barrel			Barrel		
	April-12	April-13	April-14	April-12	April-13	April-14	April-12	April-13	April-14	April-12	April-13	April-14
Med. Sea				23226786	21262500	16416607	1297643	1258924	901130	420964	343015	336466
E.D.	2280680	2509309	2170694		40179	52857		2928	2952		8453	8509
W.D.	8079341	8463147	8806682	6598393	6607679	6612321	1530220	1392188	1406313	528195	689021	699385
GOS	4692007	4151427	4074191	166786	323750	338214	59792	65568	60777	171590	211043	208048
Delta	89432	72218	53139	1651071	1570893	2043571	142110	137590	191035	95075	87949	84622
Sinai	2137205	2055845	2010990	357	1607	1429	34778	32746	28428	83903	74655	61481
Upper Egypt	15696	13497	10473									
Total	17294361	17265443	17126169	31643393	29806608	25464999	3064543	2889944	2590635	1299727	1414136	1398511





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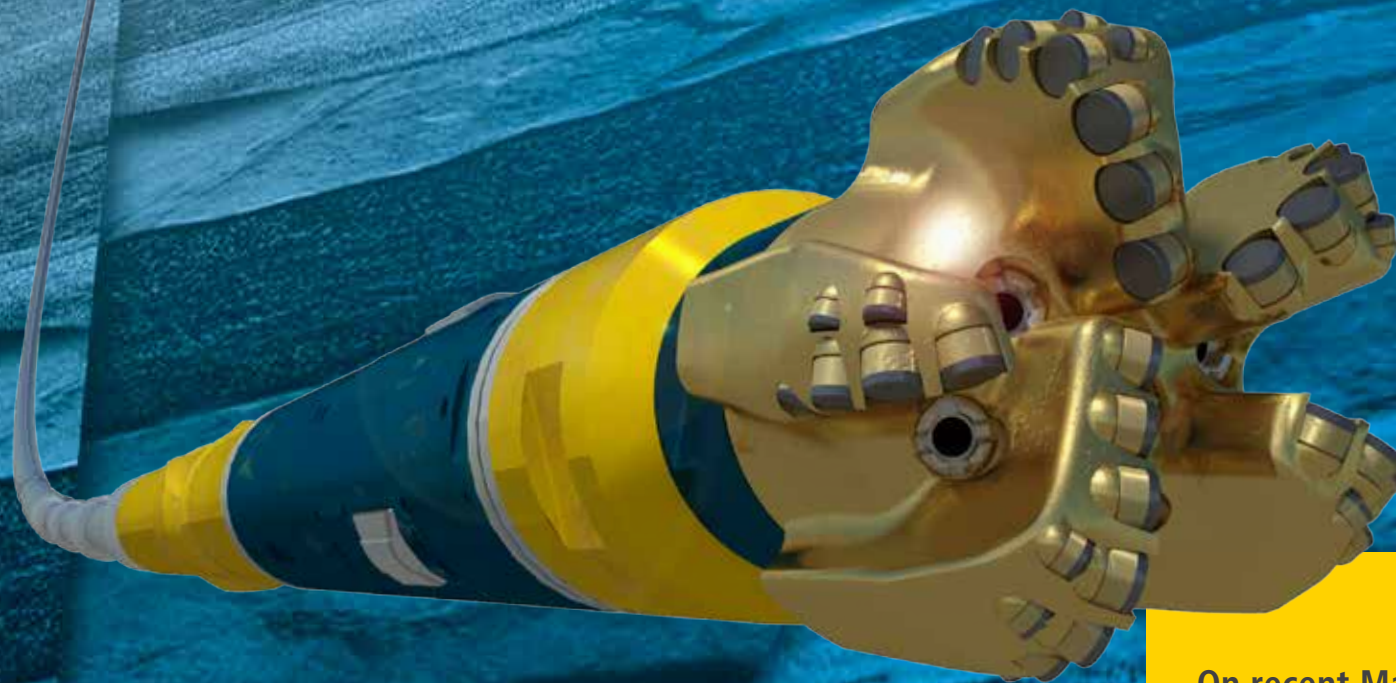
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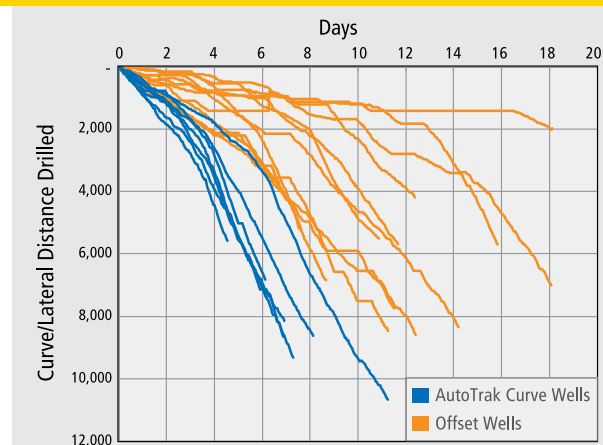
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