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EGYPT OIL&GAS NEWSPAPER

EGYPT'S LEADING OIL AND GAS MONTHLY PUBLICATION - May 2015 - 32 PAGES - ISSUE 101

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EDITOR'S Note

This month Egypt Oil & Gas is focusing on optimization; a timely topic as this newspaper gears up to host one of the largest oil industry conventions in Egypt. The convention, to be held from May 10-13th, will feature roundtables, workshops, training courses, and exhibitions. To prepare our readers for the event, we have articles this month focusing on optimization from different perspectives; including from service companies, large international firms, and an overview of the entire industry.

This month our newspaper also gives special attention to the deal that everyone is talking about; the BP-DEA investment in the North Alexandria and West Nile Delta concessions. With $12 billion pledged to the projects, we would be remiss to not cover the topic in-depth for our readers. This newspaper is excited to see the concessions finalized and coming together.

We also have features covering the current political crisis in Yemen, especially as the conflict relates to Egypt and the security of Red Sea shipping, as well as an overview of the current state of affairs of E&P in Egypt by Dr. Shawki Abdeen. Above all, Egypt Oil & Gas is committed to bringing you the more relevant, up-to-date information about the sector; both in Egypt and the rest of the Middle East. We hope you enjoy this issue and find it informative and helpful.

Thank you for your readership,

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Oil Subsidies Fall 30% in the First Half of Fiscal Year to Reach EGP 44.7bn

According to a statement by the Ministry of Finance, Egypt's fuel subsidy bill for the first half of the 2014/2015 fiscal year fell to EGP 44.7bn, compared to EGP 64.5bn from the previous year, reported Reuters. The 30% fall was a result of the fuel subsidy cut last summer, that raised prices of gasoline, diesel, and natural gas by as much as 78%. The subsidy cut was mainly aimed to reduce the soaring budget deficit which amounted to an estimated 14% of Egypt's GDP for the current fiscal year. The Egyptian government has been working on completely eliminating energy subsidies within five years. Fitch Ratings said in July of last year that the oil price hike was an "important step" to reduce subsidies and will contribute to reducing Egypt's substantial fiscal deficit, a key rating weakness.

EGPC Put in Charge of Future LNG Imports

The Egyptian General Petroleum Company (EGPC) has been assigned the role of importing all LNG necessary for electricity production during fiscal year 2015-2016, said Petroleum Minister Sherif Ismail, according to Daily News Egypt. These imports will be specially allocated in EGPC's budget. The company's chairman, Tarek El-Molla promised that the funds for imports will not be diverted from the Ministry of Finance budget. Egypt initiated a public tender for LNG imports in October of last year in a bid to close the gap between production and domestic demand for natural gas. Several companies have contracted with the Egyptian government to provide LNG shipments, including Trafigura, Gazprom, and others.

Petroleum Ministry: Natural Gas National Grid Expanding and Upgrading to Meet Rising Summer Demands

Sherif Ismail, Minister of Petroleum and Mineral Resources, headed the proceedings of the General Assembly of the Egyptian Company for Natural Gas (GASCO), held to endorse GASCO production results for 2014, a press release stated. Ismail highlighted the growing commitment of the ministry to the execution of new projects for the further development of the natural gas national grid, the main artery that feeds the needs of the entire country. Karem Mahmoud, head of GASCO, explained that about 48 bcm of gas has been pumped through the national grid to the various consuming sectors of the domestic market. At the forefront was the electricity sector with 60%, followed by transportation and distribution companies with 20%, 10% for the manufacturing sector, and 10% for petroleum and petrochemical manufacturing. He added that new power lines in Banha and Edco-El-Maadiya have been completed as part of the emergency plan for the summer of 2015. He also said that the first pipeline—6 km long—to receive imported LNG has been completed and is being operated in Ain Sukhna. He explained that the current length of the grid was 7200 km across the country, operating at a capacity of 210 mcm/d of gas, with plans commencing to expand its carry capacity. He added that the national natural gas grid was being upgraded too with the SCADA control system, with preparations being made to run a sub-network control center in the Aswan governorate.

Apache Makes Two New Oilfield Finds, Plans Investments of $35m

In a press release the Apache Corporation announced the discovery of two new oil fields in Egypt's Western Desert: The Berenice and Ptah fields located in the Faghur Basin in the Khalda Offset Concession. Production from the two fields is planned to reach 17,500 b/d by mid-year, reported Rigzone. Oil and gas discoveries had already been made at the nearby Shu-1X, Apries-1X, Bat-1X, and Geb-1X wells, while Ptah was the largest new field. Apache has three rigs in these two fields to drill development wells and has invested $14 million in this area. The company has also stated it plans to invest another $35 million to handle the forecasted production increase. All the oil produced is shipped by pipeline to the nearby Khalda-operated processing facilities, with further appraisal drilling and AEB-3D/-3E production testing in store. Expected costs for the completed-wells are estimated at $3.7m for Shiffah and $2.5m for the AEB-3D/-3E wells.

Egypt LNG Imports Begin as Floating Terminal Arrives

While previously an exporter of LNG, Egypt will now begin importing LNG to help ease its energy shortage, reported Reuters. This step has been made possible via the Hoegh Gallant floating storage and regasification unit (FSRU) from Norway that arrived recently in Egypt, docking at the Ain Sukhna port in the Gulf of Suez and carrying an initial cargo of 160,000 cm of LNG. Hoegh signed a five-year contract with Egypt worth $40 million last November; additionally the country has since agreed to a number of other LNG import deals. EGAS has agreed to import 33 LNG cargoes from Trafigura, 9 cargoes from Vitol, 7 cargoes from Noble, and 6 cargoes from Algeria's Sonatrach to be delivered in this year and next.

Public Petroleum Companies to be Listed on Stock Exchange to Finance Expansion

Four new public companies will be listed on the Egyptian stock market, Minister of Investment Ashraf Salman told Daily News Egypt. "The petroleum sector is currently expanding, so it needs the proper financing in order to be able to implement these expansions," he explained, without revealing any names. A separate source revealed that three of the companies are Middle East Oil Refinery (MIDOR), the Egyptian company for refrigeration by natural gas (Gas Cool), and the joint stock petroleum marketing company, Nile Petroleum. Investment banks will be delegated to handle the initial public offerings (IPOs) of the first two companies, he said, adding that these two companies should receive their IPOs in the first quarter of 2016. Previously Misr Oil Processing and Fertilizers Company (MOPCO) had filed to be officially listed with the Egyptian exchange, making it the first public company to list on the capital market in several years.

Tarek El-Molla: $3bn IDB Loan to EGPC Still Being Finalized

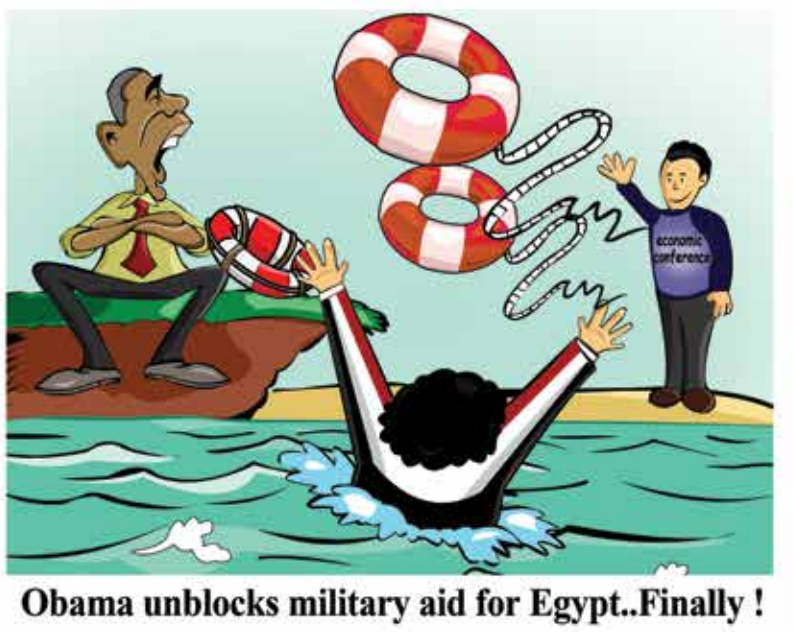
The procedures for the planned $3bn loan from the Islamic Development Bank (IDB) should be completed by June, said EGPC Chairman Tarek El-Molla. The money will go to the EGPC so that it can pay for imported shipments of fuel products needed for the country during the upcoming period, reported Daily New Egypt. The Minister of International Cooperation, Naglaa Al-Ahwany, signed the agreement during the March economic summit with the IDB Director Ahmed Mohamed Ali. The agreement also stipulates the building of a new $457m terminal as well as a $250m electricity interconnection project between Egypt and Saudi Arabia that will transfer 3,000 watts of electricity on a daily basis.

Details of Summer Electricity Plan Discussed by Egyptian Government

Methods to reduce summer electricity blackouts was the topic of discussion during a meeting held by Egyptian President Abdel Fattah El-Sisi along with Prime Minister Ibrahim Mehleb, Minister of Electricity Mohamed Shaker, and Minister of Petroleum Sherif Ismail, reported Daily News Egypt. The president requested that the ministers make the best use of existing electricity capacity through periodic maintenance of power stations, buying the fuel needed for the stations, and the construction of new ones, in line with the contracts signed during the March economic summit. According to an anonymous government official quoted by the Al-Borsa newspaper, the plan outlined by the Ministers of Electricity and Petroleum includes pumping 3.25 bcf of natural gas and 40,000 tons of fuel oil daily, while the Ministry of Electricity will add 2100MW to the national grid by the end of May.

Egypt to Receive $500m Loan from World Bank to Expand Natural Gas Grid

Egyptian President Abdel-Fattah El-Sisi approved a $500m loan agreement with the World Bank to fund the expansion of the national natural gas grid, where 1.5m households will be added to the grid, reported Ahram Online. An estimated 75% of Egyptian households rely on subsidized, traditional gas cylinders which officially cost EGP 8, but due to black markets are often sold for much higher prices. By connecting new households to the country's natural gas grid system Egypt aims to save $301.5m annually in fuel subsidies.



Obama unblocks military aid for Egypt..Finally !

EGAS Chairman Visits Cyprus to Exchange Information for Planned Gas Pipeline

Daily News Egypt reported that EGAS Chairman Khaled Abdel Badie visited Cyprus to begin the process of exchanging information over technical and economic studies for the planned 400km marine pipeline that will import gas from Cyprus' Aphrodite field. He will also continue negotiations with Cypriot Hydrocarbon while there. Petroleum Minister Sherif Ismail, who previously signed a Memorandum of Understanding (MOU) with Cyprus, revealed that the cost of pipeline construction will be carried by both the suppliers–Cyprus and Noble Energy–and the importers, Egypt, BG, and Unión Fenosa. The planned pipeline will facilitate the operation of the Idku and Damietta factories as well as fuelling the country's gas needs. The gas is expected to reach Egypt by 2017.

Sherif Ismail: New Oil and Gas Investment Projects Total $47bn

According to a press statement by the cabinet, Egyptian Petroleum and Mineral Resources Minister Sherif Ismail said that the energy sector is estimated to receive investments worth $47bn over the next five years, reported NVO News. These remarks were made during the inauguration of phase 9-A of the mega project development off the deep water oil fields of the West Delta in the Mediterranean Sea. This project itself is worth $6.1bn and will produce 400 mcf of natural gas and 2,500 b/d of condensates, Ismail said, adding that 13 natural gas exploration projects had already been implemented in 2014 totaling $3.5bn. These projects supply 1.3 bcf of natural gas and 12,800 b/d of condensates. More projects are in store, the minister said, explaining that boosting production will help Egypt pay off its debt to foreign companies, a priority for the current government.

Amid Energy Crisis, Government to Review Licenses for Steel and Cement Industries

The Ministry of Industry and Foreign Trade, headed by Mounir Fakhry Abdel Nour, announced that it is working on new regulations for the issuance of operating licenses for the steel and cement industries, reported Daily News Egypt. The report states that the cabinet will discuss the move. According to Mohamed Hanafy, head of the Chamber of Metallurgical Industries, most of Egypt's steel factories are operating almost 50% below their full capacity due to the inadequate energy supply. "The Ministry of Industry and Foreign Trade should have postponed studying issuing new licenses for steel and cement manufacturers until the energy issue has been solved," he said. He added that already existing steel factories were covering market needs but energy demands will increase once the New Capital and other development projects begin.

PetroSilah set to Establish Egypt's First Mobile Oil Refinery

PetroSilah Petroleum Chairman Taher Abdel Rahim announced that his company plans to establish the country's first mobile oil refinery, reported Amwal Al-Ghad. Production capacity is planned at 10,000 b/d, with an investments estimated around $5m. The station is to be installed in Petrosilah's concession areas to refine crude oil, he said. Petrosilah is a joint venture between Egypt's EGPC and American oil company Merlon International.

Dana Gas Egypt Hosts Industry Meetings in April

In April, Dana Gas—one of the biggest sponsors of the American Chamber of Commerce—invited the DGE management team for a series of meetings and events at the Conrad Hotel. These events included; Ashraf Salman, Minister of Investment, for an address entitled, "Investing in Egypt: From Vision to Action," as well as an event by Dr. Galal Said, the Governor of Cairo, for a speech entitled, "Rebuilding Cairo." Another event was also held and hosted by DGE at the Four Seasons Nile Plaza Hotel featuring Stephen Beecroft, Ambassador of the United States to Egypt, as the speaker.

Petrojet Awarded $185 Million for First Ever Iraqi Engineering Contract

According to Amwal Al-Ghad, Egypt's Petrojet has been awarded a $185m-contract to build the first gas-processing plant for Iraq's Siba oilfield, which is operated by Kuwait Energy. Petrojet director Mohamed Shimy explained that this engineering, procurement, and construction (EPC) contract would upgrade the oil field's production to about 110 mcf/d. The project will extend over 18 months and have a planned investment worth around $350m. Petrojet has already been awarded $47m in six major contracts in Iraq over the past two years, reported Amwal Al-Ghad. For his part, the Kuwait Energy chairman, Dr Manssour Aboukhamseen, said the Iraqi Oil Ministry welcomes the presence of the Egyptian oil companies in the Iraqi market as they promote growth and long-term stability in three-way regional cooperation between Iraq, Kuwait, and Egypt.

Steel and Fertilizer Plants Idle Due to Natural Gas Shortage

Heavy manufacturing industries such as fertilizer producers and reinforced steel factories have been forced to idle their plants in recent weeks as they do not have enough natural gas to continue operating, reported Egypt Independent. Supplies of natural gas from state-run company EGAS have dwindled as the company attempts to meet rising demand for electricity production. The chairman of EGAS—Khaled Abdel Badie—said that the recent drop in available supplies is due to the increase in allotment for electricity generation from 78 mcm/d to 82 mcm/d. The government of Egypt has struggled to cope with rising demand for natural gas from its domestic population even as production for the resource has fallen. Recent agreements for LNG imports are expected to assist in meeting requirements, but these deliveries will take place over a number of years and are not expected to solve the immediate crisis.

CHOICE Words

We are looking forward to activities in Egypt ramping up and seeing that in terms of increased production before the end of the year."

Patrick Allman-Ward
CEO of Dana Gas

"This is the time for investing in energy...It is not simply a question of responding to an energy crisis. The government is extending its arms to the private sector and is actively seeking its involvement."

Rana Alaa
Technical Director of Solariz Egypt

"The government is keen to provide and develop financial services and tools in order to meet the needs of mega projects."

Ibrahim Mehleb
Prime Minister

EGYPT

Company Arab Contractors to Coordinate with Russia for Planned Dabaa Nuclear Power Plant

Arab Contractors Chairman Mohsen Salah announced that his company will be in charge of cooperating with a Russian firm helping to build Egypt's nuclear power plant in Dabaa, reported Amwal Al-Ghad. Arab Contractors was commissioned by the Egyptian government to compete and carry out the nuclear project, he explained, adding that the preliminary contract was signed following the Egypt Economic Development Conference (EEDC) held in Sharm El-Sheikh in March. The company's duties will include building the fundamental construction works and concrete infrastructure of the power plant. Investments are expected to cost or exceed $8bn. Salah went on to say that Arab Contractors were looking for foreign partners for more national projects and that his company was also thinking of taking part in new thermal power stations projects.

Energy Prices Remain Steady in July

The decline of international oil prices led Petroleum Minister Sherif Ismail to postpone the spike in energy prices that was scheduled for July. The ministry plans to discontinue all subsidies within five years. The decline of crude oil prices has lessened the budget allocated to energy subsidies from EGP 100bn to EGP 70bn. Furthermore, Egypt plans to free the gas sector from the state's grip in the upcoming months. The move will allow the private sector to import gas to meet demand. "Consequently, any company founded for that purpose will have the right to use the government's gas network, harbors, all of the infrastructure, in return for a tariff that will be agreed on," Al Masry Al Youm reported Ismail saying.

Solar Energy to Irrigate 220,000 Acres in Kom Ombo

The Egyptian-Emirates Group signed a Memorandum of Understanding (MOU) with the Egyptian Minister of Agriculture during the Egyptian Economic Development Conference (EEDC) to develop a plan for the reclamation of 220,000 acres in Kom Ombo, Aswan using solar energy. Hosny Al-Ayouty, an agricultural counselor for the group, explained that solar energy will replace traditional fossil fuel to extract water from wells and irrigate the land. This will be a step that will develop the area agriculturally and commercially. The project will also include the establishment of a green city as well as housing and services projects.

ADNOC to Make Monthly Deliveries to Egypt Worth $400m

Egypt will receive monthly deliveries of $400m worth of petroleum products from state-run Abu Dhabi National Oil Company (ADNOC) until the end of October, a source at EGPC informed Reuters. "It is expected that the first shipments will arrive a week from now," the source said, adding that Egypt will receive the products on credit. There are still negotiations ongoing over the interest rate for payment because ADNOC wanted a 3% rate, the source stated. The Egyptian government had previously said that EGPC will buy 65% of its oil product import needs from ADNOC in 2015. This agreement covers gasoline, diesel, heavy fuel, and LPG.

Court of Cassation to Appeal Sameh Fahmi Acquittal Over Israel Gas Charge

According to Aswat Masreya, Egypt's top prosecutor will appeal a court ruling acquitting former Petroleum Minister Sameh Fahmy of the charge of exporting gas to Israel at below market prices. The Court of Cassation has the power to cancel acquittals and order a retrial if need be. The Cairo Criminal Court acquitted the former minister and five other defendants in the case in February of 2015. Previously Fahmy had been sentenced to 15 years in prison for his role in the case alongside fugitive businessman Hussein Salem in June of 2012.

Egypt Selects 115 Bidders for Renewable Energy Projects

In the Egyptian government's effort to steer the country towards a more renewable-focused energy path, the government announced during the Egypt Economic Development Conference (EEDC) in Sharm El-Sheikh several major renewable energy projects, for which they received hundreds of bidders. An official at the Ministry of Investment told Al-Masry Al-Youm in a statement that the government has selected 115 companies to adopt the country's renewable projects. The names of the companies will be announced once the presidency approves them. The new projects are expected to add nearly 2,000 MW to the national power grid and is expected to help handle potential outages during the next two summer seasons. According to the source, 100 companies will work on solar energy production, while the remaining 15 will implement projects for wind-powered electricity.

DRILLING

AGIBA Drills New Wells

AGIBA, a joint venture company between EGPC and IEOC, has completed digging two new oil-development wells in its concession area in the Western Desert. The production rate of AGIBA was 2,027,019 barrels of oil as of March 2015.

EMRY DEEP-16 (ST)
The new well was drilled at a depth of 10,470ft. utilizing the PDI-147 rig. Investments surrounding the project are estimated to be $3 million.

MEL-89
The new well was drilled at a depth of 6,300ft. utilizing the PDI-147 rig. Investments surrounding the project are estimated to be $1 million.

TRANSGLOBE Drills New Well

TRANSGLOBE has completed digging a new oil-exploration well in its concession area in the Eastern Desert during the 2014/2015 fiscal year.

NWG-1AX
The new well was drilled at a depth of 4,400ft. utilizing the EDC-67 rig. Investments surrounding the project are estimated to be $800,000.

PETROSILAH Drills New Well

PETROSILAH, a joint venture between EGPC and MERLON, has recently completed drilling a new oil-developmental well in their concession area in the Western Desert. The production rate of PETROSILAH was 202,403 barrels of oil as of March 2015.

N.SILAH DI-3
The new well was drilled at the depth of 8,260ft. utilizing the TANMIA-1 rig. Investments surrounding the project are estimated at $1.247 million.

QARUN Drills New Wells

QARUN, a joint venture company between EGPC and Apache, has completed digging two new oil-development wells in its concession area in the Western Desert. The production rate of QARUN was 1,239,831 barrels of oil as of March 2015.

EBAH C-22
The new well was drilled at a depth of 6,100ft. utilizing the EDC-17 rig. Investments surrounding the project are estimated to be $1.180 million.

NEAMA-17
The new well was drilled at a depth of 8,800ft. utilizing the EDC-49 rig. Investments surrounding the project are estimated to be $1 million.

KHALDA Drills New Wells

KHALDA, a joint venture company between EGPC and Apache, has completed digging a new oil-exploration well and two new oil-development wells in its concession area in the Western Desert. The production rate of KHALDA was 4,644,568 barrels of oil as of March 2015.

AG-130X
The new exploration well was drilled at a depth of 12,800ft. utilizing the ST-10 rig. Investments surrounding the project are estimated to be $2.543 million.

PHIOPS-8(ST)
The new development well was drilled at a depth of 14,510ft. utilizing the ST-5 rig. Investments surrounding the project are estimated to be $3.003 million.

SIWA 3 R4
The new development well was drilled at a depth of 14,900ft. utilizing the EDC-59 rig. Investments surrounding the project are estimated to be $3.248million.

WEST BAKR Drills New Well

WEST BAKR, a joint venture between EGPC and TRANSGLOBE, has recently completed drilling a new oil-exploration well in their concession area in the Eastern Desert.

HN-3X
The new well was drilled at the depth of 6,890ft. utilizing the EDC-62 rig. Investments surrounding the project are estimated at $1.153 million.

PETROBEL Drills New Well

PETROBEL, a joint venture between EGPC and Eni, has recently completed drilling a new oil-development well in their concession area in Sinai. The production rate of PETROBEL was 3,250,117 barrels of oil as of March 2015.

ARM-21
The new well was drilled at the depth of 12,156ft. utilizing the ST-1 rig. Investments surrounding the project are estimated at $3.630 million.

NORPETCO Drills New Well

NORPETCO, a joint venture between EGPC and Sahari oil company, has recently completed drilling a new oil-development well in their concession area in the Western Desert. The production rate of NORPETCO was 280,141 barrels of oil as of March 2015.

N.SILAH D2-2
The new well was drilled at the depth of 8,210ft. utilizing the TANMIA-1 rig. Investments surrounding the project are estimated at $2.023 million.

BAPETCO Drills New Wells

BAPETCO, a joint venture company between EGPC and Shell, has completed digging two new oil-development wells in its concession area in the Western Desert. The production rate of BAPETCO was 1,377,360 barrels of oil as of March 2015.

BED 16-7
The new well was drilled at a depth of 14,564ft. utilizing the EDC-52 rig. Investments surrounding the project are estimated to be $5.619 million.

OBA D-AX (ST)
The new well was drilled at a depth of 13,566ft. utilizing the EDC-55 rig. Investments surrounding the project are estimated to be $3.743 million.

Surface Gas Venting Problem at Albanian Oil Well

Bankers Petroleum said that the venting release problem at its Albanian well in the Patos-Marinza oilfield is now under control, reported Reuters. Fountains of sweet gas, mud, and sand vented out, but no one was reported injured. At least 60 families were evacuated from the town of Fier, southern Albania, at the first signs of escaping gas. Muddy water was also filmed on television coming out of the ground in the streets and the yards of houses. "This is not hydrocarbon gas, it is surface gas, harmless, sweet, and non-poisonous," a Bankers spokesman told Reuters. Bankers—a Canadian company—previously had to drill down to 1,300 meters to reach oil layers in Patos-Marinza. This drill, however, had only reached 500 meters when the venting occurred. Albanian Energy Minister Damian Gjiknuri also visited the site, asking that, "residents return to their homes as soon as possible, and that the company would cover the costs of any damage that might emerge from the evaluation on the ground," said an energy ministry spokesman.

1.87bcm of Israeli Natural Gas to go to Jordanian Private Clients

Israel signed a $500m deal to supply private Jordanian company Arab Potash and its affiliate, Jordan Bromine, with natural gas from Israel's Tamar gas field over the next 15 years, reported Al-Bawaba. Prime Minister Benjamin Netanyahu and Energy and Water Minister Silvan Shalom authorized the sale, which supplies 1.87bcm of natural gas over this period to the two Jordanian clients. "Despite the difficulties in recent months, this initial deal will solidify Israel's status as an international energy supplier," Shalom said in a statement. Previously Israel's anti-trust authority had tried to break up the partnership (between US-based Noble Energy and Israel's Delek Group) responsible for the Leviathan and Tamar gas sites in the Mediterranean Sea over monopoly concerns. Protests broke out on the Jordanian side for plans to export Israeli gas to Jordan, scuttling older agreements. In 2013 Israel made the decision to export about 40% of its offshore gas.

Algeria and Angola Leading OPEC Initiative to Cut Production, Stabilize Oil Prices

The African Petroleum Producers Association is starting an initiative, led by Angola and Algeria, to seek collaboration with OPEC and other oil producing nations to reduce output and stabilize oil prices, reported Bloomberg. This was announced at the end of an APPA meeting held in the Ivory Coast city of Abidjan. Mashallah Zwai, oil minister for the Tripoli-based Islamist government in Libya, said that Africa accounts for about 8% of global oil production. APPA represents oil and gas producers from Algeria to South Africa. OPEC only has four African producers; Algeria, Libya, Nigeria, and Angola.

Morocco Hoping for Energy Investment by UAE

According to The National, Morocco is continuing in its efforts to move into renewable and alternative energy sources with the help of the UAE. Morocco is hoping to expand its $10Bn power sector to garner $20Bn of new investments by 2020, said Said Mouline, the chief executive of the National Agency for the Development of Renewable Energy and Energy Efficiency. Investment from the GCC already accounts for 80% of Morocco's power sector, he added. The plan would also reduce Morocco's energy imports with the help of coal and gas-fired plants, as well as wind and solar, doubling the country's power generation capacity to 14GW. "We are trying to remove any barriers for renewable energy, both for the private and public sectors. We are encouraging companies to install their own renewable energy [to meet their demand]," Mouline went on to say. Previously a Moroccan delegation spent three days in Dubai to meet potential investors during the annual investment meeting held there in March.

Malta-Italy Electricity Interconnector to be Followed by Other Joint Mediterranean Energy Projects

Malta and Italy's Prime Ministers, Joseph Muscat and Matteo Renzi, officially inaugurated a 200MW electrical power interconnector linking Malta to the European energy grid via Sicily. Muscat explained this was only the first step in Malta's energy plans, reported the Malta Independent. The government intends to transform Malta into an energy hub by building more energy interconnectors in the future. Studies were already in place to build a gas pipeline linking Malta to Italy, the Maltese prime minister said. Malta would also seek to develop similar connections with its southern neighbors but only after political stability was regained in North Africa, transforming the Mediterranean from a "sea of tragedy" to a "sea of opportunity and hope," he added. With the 120km-long connection, Malta can both purchase electricity from Europe as well as sell any excess capacity it has. The interconnector project had originally been agreed on by the previous Italian government headed by Prime Minister Lawrence Gonzi, who was also invited to the inauguration, but had experienced several bureaucratic snags on both sides.

Italy's Enel Green Shifting Focus to Southeast Asia

"About a year ago we sent our business development teams working in Africa to Asia, which is richer and more developed but with a far larger consumer base," Francesco Venturini, head of Italy's Enel Green Power told Reuters. This was to announce Enel's new investment strategy as clean energy becomes more and more popular with utilities worldwide. Previously Enel had channeled close to 80% of its spending into North and South America, but the company was setting its sights now on the emerging markets first in Africa and now in Asia. The company is particularly interested in India, Thailand, Malaysia, Indonesia, and the Philippines, recently signing a deal with Japan's Marubeni Corporation to assess green energy opportunities in Asia and the Pacific. The company currently works in South Africa, Egypt, Kenya, Morocco, and Namibia. China, however, is essentially a closed market, Venturini added.

Eni to Reformat Troublesome Italian Subsidiary Embroiled in Algerian Scandal

Italian energy giant Eni plans to sell more of its holdings in subsidiary Saipem in an effort to reduce the EUR 4.4Bn ($4.7Bn) debt burden posed by the company, reported Reuters. Previously Eni had suspended the Saipem sale process after the subsidiary lost EUR 10Bn of its market value, in part because of a corruption probe in Algeria. Nonetheless, sources told Reuters that Eni was still committed to re-launch Saipem first before reducing its share in. Eni has already announced its candidate to be the new Saipem CEO, Stefano Cao, formerly an executive both with Eni and Saipem. In the meantime, US investment company Dodge & Cox has increased its stake in Italy's Saipem, making it the oil contractor's second-largest shareholder. Eni owns 43% of Saipem's stock. No reasons for the American purchase were given.

Libyan Factions Urged to Agree to Ceasefire as ISIS attacks Embassies and Oilfields

Morocco has hosted several rounds of a UN-backed dialogue between representatives of Libya's two rival governments, along with separate talks in Algeria, reported Al-Jazeera America. Another topic of discussion in Algeria is the Islamic State and its attacks on embassies and oil fields in Libya and its kidnapping of foreign workers there. Both the United States and European Union are urging that Libya's rival factions agree to an unconditional ceasefire at the talks. "We strongly urge all participants to the dialogue to negotiate in good faith and use this opportunity to finalize agreements on the formation of a national unity government," said the foreign ministers of France, Germany, Italy, Spain, Britain, and the US in a joint statement. The EU is particularly fearful of the multiple threats posed by Libya for security, humanitarian relief, and refugees. Previously the Islamic State violently took control of the Al-Ghani oil field, killing eight guards in the process. Even more recent examples of violence include attacks on the Moroccan and South Korean embassies.

Gulfsands Executive Reshuffle Prompted by Syrian Operation and Debt

Gulfsands Petroleum has said it has removed Mahdi Sajjad as chief executive and appointed Alastair Beardsall as executive chairman of the company with immediate effect, reported Reuters. Waterford Finance and Investment, which owns about 26.5% of Gulfsands, had called for the removal of Sajjad, accusing him of failing to build a viable business outside of Syria. The company has also urged the removal of Commercial Director Kenneth Judge. Gulfsands operates in Syria, Morocco, Tunisia, and Colombia. The company said that Sajjad would remain as a Gulfsands director. In the meantime, former chairman Andrew West has agreed to remain as a non-executive director. Gulfsands had previously announced that it was unable to pay its debt and has held talks with its major shareholders to secure immediate working capital.

Tunisia to Import Crude with $300 Million in Loans from Islamic Bank

A bill was passed during a plenary session of the Tunisian parliament for a $150 million guarantee on the $300 million agreement signed between Tunisia and the International Islamic Trade Finance Corporation (ITFC), reported Zawya. This is a "Mourabaha" agreement between ITFC, a member of the Islamic Development Bank (IDB) group, and the Tunisian Company for Refining Industries (STIR). STIR imports of crude oil and oil products will be funded through this loan with two consecutive installments of $150 million each, over the course of a year. The money is to be paid back six months after its release at an annual fixed interest rate of 3.25%.

itfc
International Islamic Trade Finance Corporation

Oil Industry Hopeful That Nigerian Election Will Offer Renewed Stability

The Nigerian oil industry has welcomed the results of the presidential election that has brought former military ruler Muhammadu Buhari to power. Oil officials are hopeful that Buhari´s victory will restart idle oil projects and subdue the violence of the militant group MEND towards the oil industry. "The election was fairly peaceful and the results declared without any rancor has helped to clear the uncertainty that trailed the election and will restore investors' confidence in Nigeria," Platts reported Mayowa Afe, managing director of Danvic Petroleum International Corp, saying. Though there were sporadic reports of initial violence, MEND militants approved the outcome by recognizing the legitimacy of Buhari as president. Western oil companies are hopeful the new administration will tackle crude oil theft and bring on a change of direction within the Nigerian National Petroleum Corp. "I can tell you that the NNPC was headed in wrong direction, but I think with the emergence of a new government, that will be reversed," an NNPC source told Platts.

Statoil Makes 1-1.8 tcf Gas Find Off Tanzania Coast

Statoil announced that its Mdalasini-1 exploration well had resulted in a new natural gas discovery offshore Tanzania, reported Penn Energy. The discovery will add 1-1.8 tcf of natural gas to Statoil's operation there. The total volumes for Block 2 now stand at approximately 22 tcf. Previously Statoil had made seven discoveries in Block 2 with its partner ExxonMobil. Statoil operates the Block 2 license on behalf of Tanzania Petroleum Development Corporation (TPDC) with a 65% working interest. The remaining 35% belongs to both ExxonMobil Exploration and Production Tanzania Limited. The Statoil working interest in the Mdalasini-1 well, however, is 100%.

Russian Energy Minister: Ukraine to Triple Natural Gas Imports from Russia

Ukraine is expected to triple its natural gas imports from Russia this month, announced Russian Energy Minister Alexander Novak. Reuters reported that Ukrainian state-run company Naftogaz reached an agreement with their Russian counterpart Gazprom for 1 bcm of gas over the month of April. This equates to about 33 mcm of gas per day—roughly triple the amount received per day in March. The deal has pricing set at $248 per tcm for the three month period of April to June, and will allow some relief from extended negotiations over gas pricing. Russia and Ukraine have recently sparred in court over payments Ukraine stated it paid to Russian owned Gazprom for gas not received. Ukraine is still studying the possibility of reversing the flow of pipelines that once provided gas to Europe and to bring gas back to its domestic market. The country is struggling to secure long term gas supplies as its consumption will rise dramatically in fall and winter.

Major Players Show Interest in Mexico's Bidding Rounds

Major international oil companies including Exxon Mobil, Chevron, Shell, Ecopetrol, and BG are seeking to strike concessions in the initial phase of a bidding round in the Gulf of Mexico, reported The Wall Street Journal. The blocks will be assigned by mid-2015 and come as an anticipated opening to private investment following the end of Petroleos Mexicanos, PEMEX, 76-year government monopoly on exploration and production. The fall of oil prices has not dampened interest in the shallow-water phase of the Gulf of Mexico due to the modest production costs involved at less than $20 a barrel. In addition to the seven companies that have been authorized already, another 30 companies have shown interest. Another bidding phase which will take place at the end of the year will represent the most unexplored deep water blocks in the Gulf of Mexico.

Argentina Threatens Legal Action Over Falkland Island Drilling Activity

Argentina recently announced it would pursue legal action to stop oil and natural gas exploitation off the coast of the Falkland Islands, reported The Independent. The island chain's ownership has been disputed by Argentina and the United Kingdom for decades. In 1982 a brief war was fought between the two nations over sovereignty, with the UK prevailing. This announcement comes on the heels of London-based oil companies stating there are even greater reserves to be exploited in the area than what they are currently extracting from. The Argentinian government plans to prosecute by renewing a hydrocarbon law that steeply fines operators failing to report drilling activity directly to Buenos Aires.

Shell Acquires BG in Massive Deal

Royal Dutch Shell announced mid-April its plans to acquire gas giant BG for $70bn, reported Reuters. The deal is a rare and major acquisition in the oil world. Shell's decision was driven by its desire to close the gap with the world's biggest oil company, ExxonMobil. The deal will help Shell boost its proved oil and gas reserves by 25%, also giving it better prospects in new projects, particularly in Australia LNG and Brazil deep water. The company has also announced its plans to focus heavily on those countries, as well as the North Sea.

Ethiopia to Develop Somali Fields with Chinese Help, Export Gas to Djibouti

Ethiopia expects to start producing and exporting natural gas from under-developed reserves in its southeast by 2017, Prime Minister Hailemariam Desalegn told a press conference in the Ethiopian capital. Several firms have already acquired licenses to explore more than 40 blocks throughout Ethiopia over the past four years, reported Reuters. Most of these are in the southeastern Somali Region where the Ogaden National Liberation Front (ONLF) has been fighting a self-declared war of independence. "For the time being, a Chinese firm is carrying out activities on the Calub and Hilala reserves," Hailemariam said. "In the next two years, we plan to start exporting and using the natural gas from these areas." Previously China's GCL-Poly Petroleum Investments had signed a production sharing agreement with Ethiopia's Ministry of Mines to develop both fields. "GCL-Poly Petroleum Investments will fund the pipeline that will transport the Ethiopian gas to Djibouti for a total cost of more than $4 billion, of which $3 billion will be invested in the Djibouti section," said Mohamed Nour, a communications adviser at Djibouti's energy ministry.

Dutch Delegation Visits Dubai, Inspects Clean Coal and Sustainable Projects

Projects

A high-level delegation from the Netherlands Economic Mission to the United Arab Emirates met with the Dubai Electricity and Water Authority (DEWA) CEO Saeed Mohammed Al Tayer, reported Zawya. The delegation was headed by Frank Wouters, and included representatives of Dutch companies RWE, Inter Act, S4 Energy, CJS Trade Solution, and IXUS Hardware. The companies specialize in clean and sustainable energy, waste management, and waste-to-energy. Al Tayer briefed the delegation on DEWA's work, activities, progress, and service development, including such as the Mohammed bin Rashid Al Maktoum Solar Park, the Hassyan clean-coal power plant, and the smart grid project. He said these projects were part of Dubai's integrated energy strategy for 2030 which has set the target for renewable energy at 1% by 2020 and 5% by 2030. DEWA, he explained, has increased this percentage to 7% by 2020 and 15% by 2030 after successfully setting the lowest global price for a solar photovoltaic IPP project, adding that DEWA had outdone the private sector in energy efficiency. The Hassyan clean coal power plant, also based on the IPP model, will be operational by 2020 with a 1,200MW capacity in the first phase, he said. By the end of the meeting the delegation expressed their interest in collaborating with DEWA and exchanging information on clean and alternative energy projects and technologies, according to Zawya. Also in attendance was Ahmed Buti Al Muhairbi, Secretary General of the Dubai Supreme Council of Energy.

Rosneft Drills World's Longest Well with ExxonMobil's Help

Rosneft successfully completed drilling the world's longest well at the Chayvo offshore field using the Orlan drilling platform, reported Oil and Gas Technology. Rosneft is part of the Sakhalin-1 Consortium. The company head, Igor Sechin, went out of his way to thank his consortium partners, chief among them was ExxonMobil because of its proprietary Fast Drill process technology which facilitates bottleneck identification and solution development. With this latest achievement Sakhalin-1 now holds records for nine of the world's ten longest wells.

Jordan Nuclear Power Cooperation Moving Beyond Preparatory Phase

Jordan plans to issue international tenders for its planned nuclear power project, reported The National, citing Russia's Rosatom State Atomic Energy Corporation. The Jordan Atomic Energy Commission had signed an agreement with Rosatom in March to construct two nuclear reactors. Together they will add 2,000 MW of power to Jordan's grid. The plan is for nuclear energy to provide for a third of the country's power needs by 2030. The first reactor unit is set to become operational by 2021, and the second will follow four years later. South Korea's Kepco was awarded a contract to carry out environmental impact assessments for the site last year. According to the World Nuclear Association (WNA) Jordan imports more than 95% of its energy needs, costing the country 20% of its GDP.

GULF

Aramco Credit Facilities Jump from $4 to $10Bn with International Financial Help

Saudi Aramco has signed a new $10bn standby revolving credit facilities agreement, reported Trade Arabia, replacing the original $4bn agreement signed in 2010. The facilities are divided into US dollars and Saudi Riyals (SR), $7bn and SR11.25bn ($3bn) respectively. The dollar component will be provided by financial entities from across the globe like Bank of China Limited (London Branch), Citi, Deutsche Bank, HSBC Bank Middle East, JPMorgan Chase Bank (Riyadh Branch), and The Bank of Tokyo – Mitsubishi UFJ. The Riyal component includes Banque Saudi Fransi, SAMBA Financial Group, and The Saudi British Bank (SABB), Arab National Bank, and Saudi Hollandi Bank, among others. The terms of the new facilities reflect Saudi Aramco's strong credit standing, a company statement said.

UAE's Nuclear Facilities, Safety Plans Gain Approval of IAEA Team

The International Atomic Energy Agency (IAEA) assembled an Emergency Preparedness Review service at the request of the UAE in an effort to establish an effective nuclear emergency management system for its Barakah nuclear power plant in Abu Dhabi's western region, reported Gulf News. Seven (IAEA) experts were dispatched to the UAE for an 11-day review of nuclear safety facilities and emergency plans that they found to be more than satisfactory. The first nuclear fuel is expected to arrive at Barakah in 2016.

Gas Prices for Commercial Consumers to Rise with Bahrain Subsidy Reforms

Bahrain's National Oil and Gas Authority (Noga) announced that from now on companies will pay more for gas, Trade Arabia reported. Companies will now have to buy natural gas at the rate of $2.5 per mmbtu. This will include industrial projects, as well as power and water stations; not individual citizens. "The growing demand for natural gas and limited output of locally-produced gas have prompted the authority to readjust prices," a Noga statement said. This is part of a multi-phased readjustment program where the price of natural gas will increase by 25 cents per mmbtu each year, beginning in April 2015 and increasing to $4 per mmbtu by 2022. Imported gas will also be priced at a higher rate than local production. The decision has been taken previously by Bahrain's Cabinet in mid January to redirect subsidies to ensure that they benefit eligible people alone. The adjustment, however, will not affect the price of liquefied gas.

International Oil Companies Involved in Drafting Iran's New Oil Contract Law

Seyyed Mehdi Hosseini, the team director for Iran's Ministry of Petroleum, announced that a conference will be held in London in September of 2015 to present the new format of oil and gas contracts, reported Press TV. "All major international oil companies will be present in the conference," Hosseini said, adding that this would follow on the success of the P5+1 process over Iran's nuclear deal and the final removal of sanctions. The current buy-back risk service contract format will be modified to create incentives for foreign investors, and international companies have been negotiating over the new format over the past year. "They are waiting for the sanctions against Iran to be removed as soon as possible so that they can return to the country's oil sector projects," Hosseini added. He also said that the government had still not given their final approval but that it would be discussed shortly by the cabinet. According to Press TV, Hosseini was the key engineer for the country's buyback deals. Under the new format, exploration, development, and production will be awarded to contractors as an integrated package, among other changes.

UAE's Upgrading, Expanding of LNG Production and Import Facilities

The UAE is building an LNG import facility at the Fujairah port called EmiratesLNG, with a capacity of 9m tons a year, reported Trade Arabia. The UAE is has taken this move in response to the recent decline in LNG prices as it hopes to expand its import capacity and diversify its sources of gas imports. Gas is used for power generation and to feed the desalination plants at Fujairah. There are also plans in store to upgrade Dubai's floating LNG regasification import facility at the Jebel Ali port, along with plans to add capacity to its Dolphin pipeline which imports gas from Qatar. Dubai is developing its own gas resources in the Shah and Bab Sour gas fields. Officials denied that these movies had anything to do with the decline in oil prices. The Shah project is already operational and is meant to achieve full production in the second quarter of this year.

Dubai Holds Bid Round for Next Phase of Solar Park

the Dubai Electricity and Water Authority (Dewa) is holding bid rounds for the third phase of Mohameed bin Rashid Al Maktoum Solar Park, one of the largest renewable energy projects in the region, reported Trade Arabia. The project follows an Independent Power Producer (IPP) model and stands at the forefront of renewable and clean energy in the region. The utility firm is working to increase the share of renewable energy targets in Dubai's energy mix to 7% by 2020 and 15% by 2030, as well as doubling the capacity of the solar park to 200MW. "We are determined to continue building and developing a greener economy, to achieve the UAE Vision 2021 to achieve a sustainable environment in terms of air quality, conserving water resources, reliance on clean energy, and implementing green development," Trade Arabia reported Saeed Mohammed Al Tayer, Managing Director and Chief Executive of Dewa, saying. The project's first phase began with 13 MW and has increased to 800 MW for its third phase.

UNCONVENTIONAL

Chevron's Exit Stunts Growth of Australia's Shale

Chevron's recent decision to back out of developing a natural gas project in Australia due to the fall in oil prices is delaying the nation's investment in shale. The nearly 50% drop in oil prices since July of last year has added to the high drilling costs and the challenges pertaining to the fields' remote location. "The pace will be considerably slower than anyone would have forecast 18 months to two years ago," Australian Director of Deloitte Geofrrey Cann told Bloomberg. The decline in oil prices has so far prevented a global shale boom similar to that seen in the United States. Major players such as ConocoPhillips, Hess Corp., and Statoil ASA preceded Chevron in backing out of Australia. Despite research claiming that Australia was "primed to become the next big play" in hydraulic fracking, New Standard Energy, has failed to find partners to replace ConocoPhillips and PetroChina, reported Bloomberg. According to the U.S. Energy Information Administration, Australia has the 7th biggest potential shale gas resources and the 6th biggest shale oil resources in the world. Companies will continue to attract funding to shale until the oil prices recover, potentially pushing back the time when Australia will accomplish its shale potential.

UK Concerns Rise Over Proposed Fracking Regulations

Proposed regulations that would allow for the oil and gas industry's own operators to also function as their regulators is raising the ire of local and international groups in the UK, reported the Belfast Telegraph. The UK Onshore Oil and Gas (UKOOG) industry body stated that these regulations would apply to onshore shale oil and gas exploitation—commonly known as fracking—but that those tasked with overseeing environmental requirements would be outside contractors not from the same company. However, well operators would be allowed to use their own staff as long as requirements are met for, "an appropriate level of impartiality and independence from any aspects of the well design/construction/operation," UKOOG said. Critics of the industry are less than convinced the plan will be effective, Greenpeace UK's chief scientist Dr Doug Parr said, "If the shale industry were serious about safety, they would advocate independent monitoring of such a critical and sensitive aspect of their operations."

US Shale Boom Expected to Fall in May

Oil is trading near the highest price this year, reported Bloomberg. US crude production declined by 20,000 b/d to 9.4m b/d, while crude stockpiles expanded at the slowest pace since January, as shown by the EIA. The price of oil has increased 29% since its lowest point of $43.46 a barrel in mid March, hinting at a production slowdown of U.S. shale, which may in turn alleviate the global surplus. According to the EIA's monthly drilling report, shale formations will drop in May. The US—the world's largest oil consumer—is experiencing a considerable growth in supply, with crude inventories expanding by 1.29m b/d to 483.7m b/d in April.

Saudi Arabia's SABIC Signs Deal to Use US Shale Gas at British Plant

Saudi Basic Industries Corporation (SABIC) agreed to use shale gas from the United States at its Teesside petrochemical plant in Britain, acting CEO Yousef Abdullah al-Benyan told Reuters. The project stands as SABIC's first to use shale gas from the US in Britain, said Benyan. The chemical manufacturing company is looking for opportunities abroad due to a shortage of gas supplies at home; hence the move to capitalize on US shale. Among SABIC's future plans is building a plant capable of turning crude oil directly into chemicals without having to refine the oil first. Asked whether other companies will participate in the project, SABIC said the company prefers to carry it by itself.

GCC States Eying Shale Gas Exploration in Low Price Climate

A Standard & Poors report cited by Gulf Times has revealed that Gulf producers are increasing exploring shale opportunities in spite of the price dip. High prices traditionally support shale exploration and production, the report explained, but the fiscal reserves built up by GCC states prior to the fall of oil prices are fueling the new shale investment. They also seek to take advantage of the advances in shale extraction which have made the industry more viable. In January, Saudi Aramco's CEO had openly stated for the first time that his company had devoted $3 billion for shale gas exploration. Aramco was also in talks to secure 40 extra rigs to cover shale gas operations and that Saudi Arabian shale gas reserves are estimated at about 600 tcf.

Despite Falling Crude Prices, Unconventional Oil Still Gaining Market Share

US oil shale producers are gaining market share even as the overall pie keeps shrinking, reported the Economist. Despite predictions that low oil prices would kill many US shale (commonly referred to as fracking) operations, the market-share of the sector has continued to rise, putting the US on track to displace Saudi Arabia as the largest global oil producer. While the number of US drilling rigs has been cut by nearly half since October, American production is still increasing, with March adding another 120,000 b/d. Most analysts attribute this to the falling price of materials such as steel and cement, while coupled with rapidly increasing efficiency in the shale industry. A recent report by the US Energy Information Agency estimates that the country will stop importing energy sometime between 2020 and 2030.

DOWNSTREM

Gazprom Signs Agreement with Petovietnam for Upstream and Downstream Projects

Gazprom and Vietnamese state-owned oil company Petovietnam signed a memorandum to continue collaborating on E&P, production, and development projects on the Pechora Sea shelf, northwest of Russia. The two oil companies will define the oil and gas fields to be developed by the end of October of this year. Once the deals are finalized, a joint venture will be established. Gazprom Neft will also acquire a share in Dung Quat refinery in central Vietnam, as well as a 49% stake in a plant operated and owned by Binh Son Refining and Petrochemical Company. In the Russian Federation, Gazprom´s operations consist of five licenses for blocks on the Arctic shelf and about 70 licenses for exploration and development of onshore fields.

Environmentalists Stop TransCanada's $9.5bn Pipeline

Under pressure from environmentalists, TransCanada Corporation is scrapping plans for a Quebec oil-export terminal due to the dangers it will expose whales in the St. Lawrence River, reported Reuters. This decision will delay the project to at least 2020, two full years behind schedule. The 4,600 km-long Energy East pipeline project has a capacity of 1.1m b/d and is worth $9.5bn. The company added that it was now "evaluating other options" for a terminal in Quebec. Construction was frozen in December of last year after the argument was made that the project would harm beluga whales in the river. "I think we are going to see more municipalities taking a stand on this, more landowners. I think (aboriginal group) opposition along the route is strong and growing," said Andrea Harden-Donahue, energy and climate campaigner at the Council of Canadians. The Provincial Environment Minister David Heurtel told CBC News he is still evaluating the project. TransCanada Corp is the company responsible for the Keystone XL pipeline that has courted controversy in the US.

Emirates' TAQA to Supply Gas to Dutch Consumers Directly

Emirates-based TAQA has completed construction of its Bergermeer gas storage facility in the Netherlands and has already begun injecting gas into the facility, reported Reuters. In a statement, TAQA announced that this was Europe's largest third-party access gas storage site and will double Holland's seasonal gas storage capacity. Preparations are already underway to operate it at full capacity to meet the winter heating season. The site has a capacity of 4.1bcm of gas, enough to supply 2.5m Dutch households for a year. "TAQA will auction capacity for the 2016 storage season in September 2015," the statement said. Construction began in 2012 in cooperation with Dutch state-owned oil and gas company EBN. The facility is made up of a gas treatment facility and a connecting pipeline network, in addition to the depleted Bergermeer gas reservoir.

First Commercially Viable Direct Gas-to-Ethylene Conversion by Siluria Technologies

Siluria Technologies announced the world's first plant in La Porte, Texas, able to directly convert natural gas to ethylene through Oxidative Coupling of Methane (OCM), reported Oil and Gas Technology. OCM is the first commercially viable process to carry this out in large-scale of production and is meant to be a new basis from which to produce transportation fuels. Siluria plans to deploy commercial-scale plants in 2017-18. "This demo plant was brought in on time, under budget, and safely and successfully started up last December," said Ed Dineen, Siluria's CEO. The chemical industry has been trying to convert methane to ethylene using OCM for the past 30 years. The process involved catalyst development and catalyst screening, pioneered by Siluria in cooperation with leading engineering firms such as the The Linde Group. Siluria had previously developed another process package for converting ethylene to liquids (ETL) to produce high-value hydrocarbon liquids, producing gasoline at its pilot facility in Hayward, California since November 2013.

Swiber Affirms its Long-Term Commitment to India with a $133m Contract

Swiber Holdings has won a $133m engineering, procurement, installation, and construction (EPIC) service contract in India, reported Oil and Gas Technology. The project should be completed by the second quarter of 2016 and will involve several components, including surveys, design, engineering, procurement, fabrication, and installation. The commissioning of six pipelines with a total length of 60 km will be connected to existing pipelines, as well as modification and repair of platforms and jackets. CEO and President Francis Wong said, "We are optimistic about prospects in our target markets despite the fall in oil price and the cutbacks in capital expenditure by some of the oil majors. We believe that our strategy of establishing long-term relationships with clients and suppliers has put us in good stead for a time like this." Swiber has a fleet of 13 construction vessels supported by its in-house offshore support vessels and is working on eight other platforms and associated pipelines in the same part of India, and for the same national oil company client. This latest contract ups its order book to $2bn.

GCC Shift to Downstream Expansion, Subsidy Reform

A Standard & Poors report has found that GCC states are shifting their focus towards downstream petroleum projects due to the continued oil price slump, reported Gulf Times. Gulf States are expanding their refinery capacity to develop a downstream industry, possibly up to 7.4m b/d, as well as exporting more value-added products. Current capacity stands at roughly 4.3m b/d. This is in line with their diversification strategy, emphasis on renewables, and the need to meet local rising fuel demands. Fuel subsidies have held the growth of renewables back in the GCC states, stifling demand for wind and solar power. According to the report, Oman, Qatar, and Bahrain have now all raised gas prices for downstream industries.

RENEWABLE ENERGY

Developing Nations Take Lion's Share of Renewables Investment

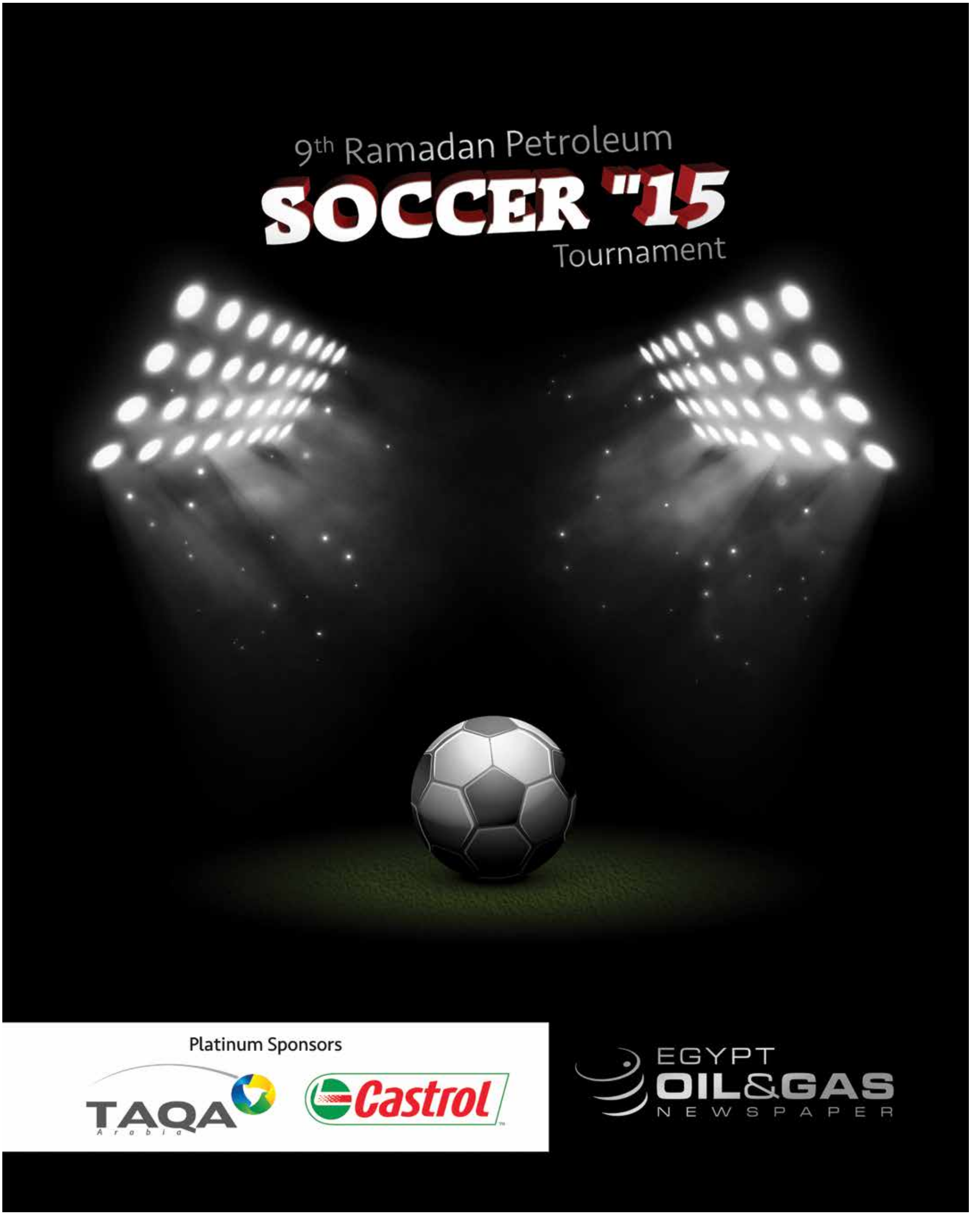
A new report by the United Nations Environment Program found that worldwide investment in renewables have increased by 17% in 2014 to reach $270.2bn, with nearly half of the total investment, $131.3bn, present in developing countries. A significant contribution of this year's total was made by Europe and Japan in solar power, followed by an $83.3bn investment in China. The United States and Japan stood at $38.3bn and $35.7bn respectively. Other developing nation countries such as Kenya, South Africa, and Turkey come next with each country averaging about $1bn. The report was compiled by the Frankfurt School-UNEP Collaborating Centre, with the help of Bloomberg New Energy Finance. Other notable developments in the renewables field were the sharp fall in capital costs in wind and solar PV, as currently every $1bn investment is capable of generating more megawatts that it did in previous years. Wind and solar together received 92% of global investment, while renewables all together represented 9.1% of total world energy generation in 2014, compared to 8.5% in 2013. The report, however, did not account for hydropower projects.

Egyptian Firm SunEnergy Partners with Spain for Renewable Energy Projects

SunEnergy Tech is in talks with a Spanish company specialized in solar energy generation for the purpose of increasing Egypt's competitiveness in the renewable energy market. SunEnergy was founded by Hossam El-Zayat in 2013 and is currently experiencing better prospects now than at its beginning. An upsurge of energy projects, such as the $10bn Siemens Global deal, and the $7bn ACWA Power and Masadaraiming projects have opened up the field for renewable energy to have stake in the country's power generation.

Toyota to Invest $1.5bn in Egyptian Renewable Energy

Toyota is acquiring a stake in Egypt´s renewable energy market and gas exploration in the Mediterranean. Negotiations between Cairo´s ambassador to Japan, Ismail Khairat, and Japanese Prime Minister Shinzo Abe began with the latter´s in visit to Egypt last January. The cabinet's implementing of a tariff to stimulate investment in renewable energy by increasing the price of kilowatt of solar energy to EGP1.04 and kilowatt of wind energy to EGP.85 seeks to attract investment in the field of renewables.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DEFINITIONS AND OPPORTUNITIES:

DRIVING DEVELOPMENT THROUGH OPTIMIZATION

By Emad El-Din Aysha, PhD

Optimization is one of those catchall terms that has taken the business world by storm, not least in the petroleum sector. Even our own newspaper is hosting a convention centered around it. In truth, optimization is an engineering concept straight out of the textbook, amply used by mechanical and electrical engineers to reconcile opposing priorities. In the world of petroleum engineering it is about balancing cost versus quality and getting the best (optimal) technological result within existing financial constraints.

The classic example used, to cite H. Dale Beggs, "Production Optimization Using Nodal Analysis," is optimizing tubing size. If too big not only is tubing expensive but it also gives zero pressure, if too small it is cheap but it also restricts the flow to a mere trickle, forcing companies to spend extra cash trying to stimulate more fluid. Cost cutting, by contrast, means sacrificing quality, a recipe for disaster in such a technically intensive field as petroleum. Leaks, blowouts, explosions, oil spills, etc. are sure to follow. Oil companies optimize when they are hard-pressed for profits.

There could not be better time to hold this convention; if only for the simple fact that optimization thrives specifically in a low price environment. At the same time, optimization does not mean maximization of production; because this can lead to the poisoning of wells (corrosion, pollution, earth stability), leaving nothing but hard oil at the recovery phase that is increasingly expensive to extract.

Two of the key issues to be discussed at our optimization convention are the effect of contractual and commercial terms for this fledging sector, as well as oil recovery. If you leaf through previous issues of Egypt Oil and Gas, you will find the front-page headline "Time for Optimization" in March of 2009. The term pops up again in even older issues, along with oil recovery, but always at the tentative stage of discussion. The task at hand then, is to identify what has been holding optimization and oil recovery back all these years in Egypt; from there outlining just how significant a role these two petroleum initiatives can play in the country's economic future.

Optimization on Hold

Dr. Magdi Nasrallah, founding chair of the Department of Petroleum & Energy Engineering at the American University in Cairo, affords an answer as to why optimization has not already taken root here: "You can only attract foreign investment for optimization if you have a clear vision and reliable and permanent laws that investors can use to assess their prospects. If the exchange rate or taxes or labor laws suddenly change or the government cannot guarantee that it will pay its debts to foreign oil companies, you do not have this kind of clarity. Spending $2bn on R&D can only happen if you have guarantees that the results will be taken up. For optimization to take hold here you need incentives. You also need good, clear documentation. The Egyptian government needs to state explicitly that optimization is a priority in order for research to be geared to it. It cannot just say, generally, that we 'need' research."

These are the usual problems that confront the petroleum sector in Egypt—stifling bureaucracy and an insecure policy environment. It is just that optimization is even more sensitive given how dependent it is on R&D funding. Nonetheless, Dr. Nasrallah was optimistic, "at least optimization is being talked about now and the private sector is providing financing. It is a step in the right direction." He also has observed that the Egyptian government has accumulated enough lessons over debt repayment, cost recovery, and auditing the expenses of international oil companies to handle policy successfully now.

Shawky Abdeen, General Manager at PICO, has also argued that "decreasing the period of cost recovery to be in the same year" (on an annual basis), is a good way to attract investments into both brownfields (exhausted wells and depleted reservoirs) and marginal fields (uneconomical new wells suffering natural low productivity).

From Abdeen's long geological experience in Egypt, he knows that the country's petroleum future at the level of exploration lies specifically in such smaller, lower productivity wells. By Egyptian standards these would be fields considerably smaller in size and productivity than the Morgan/Belaym and even Helal/October fields. Other incentives that can be offered at the tender phase would be to "offer the exploration data free in certain areas of high risk or with minimum cost." Such measures are called for especially in areas like the "Mediterranean in the deep water (1000 m depth), where drilling a well might cost over $300m." Even oil-rich Gulf States are optimizing everything from production to storage to refining—signing brownfield contracts, investing heavily in oil recovery R&D, and shifting gears towards energy efficiency and making their petroleum sectors leaner through small tech startups.

The more optimized a company is beforehand the more resilient it will be to price shocks. This is particularly true when it comes to such a capital and resource intensive an area as oil recovery, which normally thrives on the opposite situation – high oil prices. Indonesia, a country saddled with both brown and marginal fields, has also been laying the regulatory groundwork for optimization for quite some time now. Again, the focus is changing the terms of Production Sharing Agreements (including cost recovery), as well as streamlining the procedures for approving development plans, and investing in the kind of infrastructure needed to attract the right technology and knowledge for the job.

Engineered Side-effects

There is more at stake here than just petroleum production and profits, to cite the research findings of energy-related global management consulting firm Bain & Company: "How national oil companies can fuel economic development" by John McCreery, Jose de Sa and Juan Carlos Gay. Investing in the oil technologies of the future, such as optimization and oil recovery (among others), can upgrade the science and technology base of an entire country thanks to the combined effects of "value-added tech startups" in the oil and gas service sector as well as "supply-chain management." McCreery, head of Bain & Company's Asia Pacific Oil & Gas office, adds that in Egypt's case the "Gulf of Suez and Western Desert are very mature operations" that demand both EOR and optimization to "maintain cost effective operations and push reservoir recoveries."

Optimization experts say that you need a skilled workforce and a lean frame of mind, avoiding wastefulness especially as it pertains to staffing. That does not necessitate automation however. As Dr. Nasrallah explains: "most operators demand manpower to monitor the process. Wireline engineers, for instance, actually have to be dropped into the well with logging equipment. It is not something you can do from your office and expect the results to be reliable. You have to test things onsite, and cannot produce without doing this first." If anything, optimization can actually create jobs. Hamid E. Ali, AUC associate professor and chair of the Department of Public Policy and Administration has stumbled upon similar conclusions in his paper (with Sara Sami), "Inequality, Economic Growth and Natural Resource Rent in the Middle East and North Africa." Across the board it was found that the more value added to the sector, the greater the growth and equality effects. (He was taught on inequality by his intellectual mentor, world famous economist James Galbraith).

Growth, Dr. Ali explains, is impossible without accessible and affordable energy, a problem Egypt is facing increasingly because the energy quota for manufacturing is constantly being decreased in favor of household consumption.

One of the policy errors made repeatedly in contemporary Egyptian history is an overemphasis on capital-intensive, labor-saving technologies, Ali added, and nothing boosts demand like jobs. Egyptians, Dr. Ali says, are constantly spending, and with a significant boost in job creation, this could translate into real economic growth. "With a population of 90 million you have tremendous buying power. The important thing is to retool and retrain the Egyptian labor force and capitalize on the country's strategic location. It is closer to the world's centers of wealth than either Singapore or the UAE. The coastline and Suez Canal need to be developed logistically to connect Egypt's petrochemical industry to the outside world and transform the country into a maritime hub attracting the right kinds of investment," Ali finished.

In a similar vein, McCreery argues that to be genuinely viable, investments need to focus on "leverage points like natural resources or the size of local demand" or transportation costs. All utilize comparative advantage in a more systematic fashion. Government policy can help facilitate this matching process through sponsoring enterprise zones, capability development (R&D financing, oil and gas universities), as well as loans and venture capital for small and medium-sized firms. (Much like the Suez Canal Area Development Project). Such locally grounded oil economies are also much more capable of withstanding employment shocks. When oil multinationals shut down facilities and lay off workers, the same workers are reemployed by domestic firms; or they go into business themselves through start-ups.

So, wherever you look, whomever you ask, you find the same answer. A combination of oil recovery and optimization can solve many of our most persistent problems. The trick is to find the right policy framework to sustain this set of oil industry best practices. In the current price situation, it's quite literally do or die time!

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THE ENERGY CRISIS IN EGYPT AND THE REPERCUSSIONS OF OIL PRICES

By Shawky Abdeen, PICO General Manager

Oil is found mostly in sedimentary rocks (whether sand, shale, clay, or limestone) deposited by rivers and seas in prehistoric times. Besides water, they also carry fine organisms, plants, and organic matter which when buried, eventually becomes petroleum (oil or gas) under specific conditions of temperature and pressure. Oil does occasionally exist in non-sedimentary rocks but this is rare, which is why exploration tends to focus on sedimentary areas.

About 90% of Egypt's territory is covered by such sediment—with the thickness increasing the further north one goes—sometimes becoming more than 10 km thick, as in the North Delta region and under the waters of the Mediterranean. (Deltas are particularly rich in such organic debris). The thicker this sediment, the more likely oil will emerge. In Egypt, the further south one goes the thinner the sedimentary layer becomes, eventually becoming less than one km thick in the south of the country.

Oil exploration in Egypt began nearly 130 years ago. The Egyptian government began exploratory drilling for oil in the Gamasah area in the Gulf of Suez in the 1880s, while production followed in the early 1910s, more than a century ago.

Egypt's petroleum reserves can be divided into several areas, the most important being the Gulf of Suez (onshore and offshore), which has produced more than 10 billion barrels of crude oil and more than 50 billion cubic feet of associated gas.

The Western Desert saw its first oil discoveries in the 1960s with the exploration of the El-Alamein field, quickly followed by more fields and discoveries. Although ten times the area of the Gulf of Suez, the production map of the Western Desert is not nearly as prolific as they belong to completely different basins and reservoirs. (This is a common geological phenomenon, as the Ghawar field in Saudi Arabia, Sirte in Libya, and Kirkuk of Iraq are all very much richer in their reserves than the oilfields in their neighboring areas). With advances in technology, however, prospects are becoming increasingly promising for further discoveries of oil and gas fields.

As for Egypt's third area, this is the onshore North Delta area, a zone where gas was first found in 1967 in the Abu Madi field. Several more gas finds were made successively in the onshore area, and then in the 1980s exploration extended north into the marine area of the delta and the Mediterranean (the so-called economic zone) that has become a promising region for both gas and oil discoveries. This is especially true in the deep-water areas, but development is expected to be very expensive.

Upper Egypt and the Northern Sinai, on and offshore, have yet to experience much active exploration despite encouraging finds in the numerous wells so far drilled. This is due to the rugged nature of the first, and the security and political conditions of the second.

Note that Egyptian law explicitly states that all petroleum produced, as well as all natural mineral wealth, are all the exclusive property of the State. No other bodies or any company or individual has the right to own wells or oilfields, contrary to what some mistakenly think. Instead they only have the right to profit from this natural wealth for a fixed number of years. There are several frameworks for cooperation between oil companies and governments that meet the differing requirements of changing periods in history and the laws of the country in question.

Egypt has generally adopted the Production Sharing Agreement (PSA) framework for oil exploration, whereby oil companies (the partner) take upon themselves the responsibility and risk of exploration, carrying the full financial expense of the endeavor. If results are negative they alone bear all costs, if positive then a joint venture company is established between the existing partner and EGPC, which represents the Egyptian government. This joint company has the exclusive right to production. An agreed portion of production is allocated to recover costs incurred by the partner, in addition to another portion meant to insure a small profit for the partner. All these terms and clauses are defined in the concession agreement, presented to parliament, and approved by the government before they can be executed.

Egypt began implementing this type of agreement in the early 1970s with the Open Door Policy under President Sadat to encourage oil companies to carry out exploratory work. The first Minister of Petroleum, Ahmed Helal, engineered this policy in 1974. The goal set at the time was to reach a million barrels of production a day, an objective Egypt accomplished in less than twenty years. This in turn necessitated a change in the clauses to reduce risk and encourage even more companies to explore and produce. After several years the stipulation concerning gas discovered was changed to receive the same treatment as oil. Previously the partner was not allowed a share of newly discovered gas.

It is common knowledge that oil wealth is non-renewable, so production rates of oil or gas suffer a natural decline over time. The peak period of oil discoveries and highest production were in the mid-eighties during the Mubarak regime. During the 1990s crude production in Egypt began a gradual decline that was only offset by a modest increase in the discovery of gas fields. The Egyptian petroleum sector has been successful in promoting and intensifying the search for gas, opening up new areas to exploration in the North Delta and Mediterranean. In early 2014 Egypt's production reached about 700,000 b/d of oil and about 5.5 bcf/d of gas. The real problem, however, is increased domestic consumption and increased reliance on natural gas instead of fuel oil for electricity. Combined with other factors, Egypt has been rapidly transformed from its original status as an exporter in the 1980s into a net importer of both oil and gas.

Another one of the core reasons behind the current energy crisis the petroleum sector is suffering is the absence of an elected legislature (the People's Assembly) in Egypt for nearly five years, thanks to political unrest. We know that the clauses of any agreement entered into by the petroleum sector are required to be discussed and approved by parliament. Consequently, no new exploration agreements have taken place since 2010. We could say that on average about 20 agreements can be made each year; meaning that we have lost the chance to make 80 possible agreements over the last four years. If we assume further that an agreement succeeds in discovering several fields, the total number of lost opportunities could have contributed to filling any projected deficit as well as compensating for the natural decline in productivity of fields, helping us realize our full economic potential. However, not having a proper parliament has instead led to a dearth in new agreements.

There is also the sector's inability to meet its financial obligations to foreign partners who are—at the end of the day—bearing all expenses. Not being able to recover their costs also explains their reluctance to expand investments and engage in further exploration in promising areas that could meet the production shortfall.

The Egyptian state has remedied this situation finally by endowing the President of Egypt with the powers of the People's Assembly, endorsing these agreements on behalf of the parliament as an economic damage control measure.

From here and in the light of the global deterioration of oil prices, it is clear now that we must: Firstly, reconsider our petroleum policy of past years with an aim to intensify exploration. Secondly, reconsider clauses in our petroleum agreements in order to increase production. Thirdly, give serious consideration towards national rationalization of consumption and work diligently to find new ways to generate alternative energy, the most important being nuclear power and solar energy.

All efforts should be directed immediately to work on:

1. Reconsidering clauses in our petroleum agreements to be more attractive in order to increase exploration and thereby production.

2. Rationalizing consumption.

3. Finding alternative sources of energy.

In order to attract investments in exploration we should be aware that:

(A) The era of giant field discoveries (million barrel reserve fields) such as Al-Morgan or Al- Belaym in the Gulf of Suez or El-Alamein in the Western Desert is gone and past. We are now looking for hard-to-find marginal fields. (Either with tens of thousands or even fewer; fields like October, Helal, and Gabal El-Zeit with only hundreds of barrels).

(B) Exploration costs have increased significantly—especially for gas. Drilling costs per well in the Mediterranean deep-water have exceeded $300 million, which necessitates making clauses in the agreements more attractive for the companies operating in these areas. This includes measures such as increasing their share of profits or decreasing the period for recovering costs and making special allowances for high-risk regions.

4. We must also keep up to speed with the latest advances in exploration and production to be able to benefit from them. The petroleum sector must organize industry roundtables conferences and that have—unfortunately—largely ceased in the last decade. Previously they were held annually to exchange experience and learn the latest methods available, being particularly beneficial for young engineers and for our experts to follow up with the latest technologies.

Finally, we must observe with pride and gratitude the tributes paid to our experts by the state, like those who served their nation by regaining Taba, and those workers, judges, artists, and journalists that Egypt has honored. We must ask, do not petroleum experts deserve their fair share in such honors, figures who have dedicated their work and their lives in the service of their country?

Article and supplementary clarifications translated by Emad El-Din Aysha, PhD.

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OPTIMIZING SERVICES

By Lorena Rios

"Optimization is improving something," explained Miguel Muñoz, a Production Engineer at Apache Egypt, at the start of our interview. The term optimization in its most basic form is, "an act, process, or methodology of making something as fully perfect, functional, or effective as possible, whether it is mathematics, computer science, economics, management science, business development, or the intricate fabric of our lives." While "you can optimize your life by sleeping a little bit more," said Muñoz, in the oil and gas industry "optimization is an integral process that occurs in different technical aspects of all the disciplines and departments within the [oil] company," he continued.

Production optimization at Qarun Petroleum Company (QPC) consists of a group of dedicated engineers who work to improve the production of fluids and maximize the recovery of each well with the help of the latest technologies. Here is how the engineers in the production technology department at Qarun do it:

Qarun´s concessions are located in the Western Desert, a region that accounts for more than 50% of Egypt's oil production. The wells at Qarun are all artificially lifted, with 85% of oil production coming from Electric Submersible Pumps (ESPs). In addition, 80% of fields in Qarun are under water flood recovery, a process where water is injected to support pressure of the reservoir, to extract oil from the reservoir and push it toward the well.

We are trying "to increase the production, the recovery, and the run life of the equipment," said Hassan. "We optimize fractures, our artificial lifts, and our water floods, among many other things," added Muñoz. In the current economic climate, optimization "is about saving cost by improving and increasing the run life of the equipment," Hassan finished.

Optimization for Well Production

"As soon as you drill a well, you fracture to produce better conductivity," said Hassan. Optimization takes place in all levels of production, fracking included. "We apply new technologies to enhance the productivity and get the most out of a fracking technique," said Ahmed. One of these techniques includes shallow fracturing, which consists of uses a propane agent to increase production from the reservoir. Another technique is foam fracking, where nitrogen is pumped into the reservoir to limit damage to the well. This way, "we use the same amount of product and get more oil," Ahmed said. Nitrogen fracking fluids are more suitable for sensitive formations where water-based fluids could cause water saturation around the fracture and clay swelling, ultimately affecting the mass transport of hydrocarbons to the well.

Some of the main challenges facing production optimization in the industry include the quality of the wells— with factors such as the type of rock formations, water-flood direction, and presence of sand—carrying capacities of pipelines, handling capacities at the surface, economization of different levels of production, and safety standards. For this reason, engineers must carry well-by-well reviews. ¨When you are able to increase the normal activity of a well just by monitoring it, that's the meaning of engineering optimization," said Ahmed.

"We have been able to optimize a system itself by using new technologies and identifying when a system is running low in efficiency," Hassan continued, "which we then substitute with a smaller system or a bigger system." Production optimization is a continuous process that requires consistent monitoring of wells. "All the time we optimize our fields; you can say we are doing it every day," Hassan finished.

Technologies

Engineers at Qarun select the proper artificial method for the well based on its history. "Our target is to produce the maximum we can for as long as we can," said Hassan.

There are three types of producing wells in Qarun: Progressive Cavity Pumps (PCPs,1%), sucker rod pumps (34%), and ESP pumps (65%). "We select equipment specific to particular problems," said Ahmed. "If we suffer from high temperature, corrosion, or sand problems, the material of the pump should be able to withstand those extreme conditions."

Qarun´s main providers for ESP pumps are Baker Hughes, Schlumberger and Borets. "Think about a blender," said Muñoz, "optimizing the ESP is about keeping the fluid in the ESP optimized." Engineers at Qarun need to make sure the ESP pump receives enough electricity to keep the fluid levels controlled. ESP pumps work on a given operating range, downhole condition, and operating environment. "If we face a problem that we cannot solve with our current methods or technologies we switch technologies," said Hassan. In response to Muñoz´s colorful depiction of an ESP, Hassan added that the engineers at Qarun are also "in the blender," joking about the job´s demanding nature.

GE is the exclusive supplier of sucker rod pumps for Qarun. According to a study released by the Oil and Gas Journal, "the aim of artificial-lift design is to ensure the most economical means of liquid production within the constraints imposed by the given well and reservoir." For sucker-rod pumping, this means selecting the right size of pumping unit and gear reducer, as well as determining the pumping mode to be used, which includes plunger size, stroke length, and pumping speed. The direct energy costs for sucker-rod pumping are then optimized when engineers select the right pump size, stroke length, and pumping speed for the required liquid production rate.

At Qarun, "We look at each well and the optimization of the production of each well," said Miguel. No optimization is possible unless you have a dedicated group of engineers that are looking at the wells on a daily basis, confirming data and analyzing it to figure out optimization candidates and opportunities, he concluded.

PCP systems, account for 1% of the wells at Qarun, and are the preferred artificial-lift method for wells with high solids, heavy API oil, and high fluid volumes. Weatherford describes the work of PCP systems as the continuous positive-displacement flow that provides the highest volumetric efficiency of any conventional artificial-lift system. Through PCP systems and other methods, such as pumping fluid levels up, fracking, increasing injection rates, and optimizing ESP systems, Qarun has seen great results in only six months, said Muñoz.

PROSPECTS

Low oil prices have led oil companies like Qarun to decrease rig counts and cut significantly on exploration. The need for optimization is more pressing during downturns, since oil companies are forced to keep former production levels with a more limited number of wells.

"Optimization is an integral process," said Muñoz. "You can optimize cost in the financial department, you can optimize treatment with the corrosion groups, with the technical groups, and most importantly, you can optimize production," he added. Through the use of advanced lifting systems such as the ones present at Qarun, engineers are able to reduce the per-barrel production costs and increase or maintain production levels.

Optimization will carry past the low oil price crunch, as oil companies like Qarun increase their recovery rates in a faster and safer manner. "Optimization is overlooked when prices go up,"said Muñoz, "because at a $100 per barrel, everyone goes to the supermarket and buys blenders [ESPs]." Yet, optimization is also a way for oil companies to maximize their costs, and one that holds a large stake in the industry.

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INCENTIVES AND SOLUTIONS:
EGYPT'S OIL RECOVERY PROSPECTS IN A LOW PRICE ENVIRONMENT

By Emad El-Din Aysha, PhD

Oil recovery is a necessity, not a luxury, for an energy-importing nation like Egypt that has a limited number of oil producing wells, most of which are already mature. With a rapidly rising population and a slow pace of exploration there simply is no substitute for Improved and Enhanced Oil Recovery (IOR/EOR). It has been estimated that as much as 60% of a well's original supply stays locked in a reservoir at the end of its 30 to 40 year life-cycle. IOR sets the scene so to speak; beginning at the primary and secondary stages and targeting mobile oil, while EOR comes at the hardest tertiary (third-stage) and involves immobile oil. Cairo University's Mining Studies and Research Center estimates that as much as 3.2Bn barrels of oil remain to be extracted at this final stage.

This is a matter of national security, and not just for Egypt, but for the MENA region as a whole. Note that while EOR goes back as far as the 1950s—following the full conversion of the American economy from coal and steam to oil—millions worth of research funds in the US only first became available during the October War oil shock. America's plan was to ensure that the domestic oil supply could provide for two thirds of demand should another emergency occur. The subsequent oil price slump of the late 1980s and 1990s almost killed off the technology, which is why a global industry only really began to coalesce and gain momentum in 2003-2014, a period of persistently high oil prices. (Higher for many years in fact than in 1973-74). If oil prices today continue to slide, could EOR once again become prohibitively expensive?

Cost Benefits in Disguise

Cost is everyone's fear. From speaking to people in the field, this newspaper has learned that some EOR methods are not taking off as predicted in spite of their proven feasibility. Wherever it is employed, EOR has four basic problems, explains international expert on sustainable production enhancement of oil and gas fields Dr. J. Samuel Armacanqui: the long term nature of EOR projects (stretching from upwards of ten years), the high amount of investment and resources required, the uncertain results to be had, and the very complexity of the processes involved—it covers so many disciplines that it becomes difficult to find the full range of expertise needed for the full lifecycle of a project. These challenges, however, have hidden advantages. Since you are dealing with mature wells, you rarely have to incur any new seismic surveying costs, and since each technique is ideally suited to a different kind of oil with its unique set of geological conditions, each has its own break-even price, leaving you with a price range of $10 to $40 per barrel thanks to the latest technological advances. (Seven years ago the range was $20-$70).

In EOR, there is a new breakthrough almost every day, giving birth to new techniques or refining old ones; chemical, thermal (the most popular in Arab countries), miscible and non-miscible, microbial, CO2 flooding (the most popular technique in America), polymer flooding, etc. The number of chemicals involved has declined, as has the cost. There are also cheaper versions of a specific technique, such as nano- and regular polymer flooding, giving you more options in the shifting sands of the petroleum world. Recovery rates vary widely between these methods, but 10% to 30% of additional recovery is the global EOR average.

The trouble is that it is easier to justify investments in EOR's twin technology, IOR, as IOR involves a set of methods (e.g. water flooding) that come naturally with exploration and production, explains Dr. Magdi Nasrallah, professor and founding chair at AUC's Department of Petroleum and Energy Engineering. Consequently, the risk of a technique failing can be offset by the general performance of an oil company.

EOR, by contrast, is a very specialized industry. The tiniest savings from a specific method can quite literally make or break an investment given how high the overhead is. Therefore, it is not so much low prices as price volatility that poses the challenge. Increasing competition over Egypt's limited number of wells ups costs too.

The Legal Learning Curve

Additional problems crop up in the Egyptian context, to cite Drs. Mahmoud Abu El Ela, Helmy Sayyouh, and El Sayed El-Tayeb of Cairo University, writing in the Oil and Gas Journal on the feasibility of CO2 flooding in Egypt. The infrastructure already in place is corroded and needs to be modified, as it wasn't designed for CO2 use; CO2 source companies need to coordinate with oil producers; underground storage of CO2 poses other legal challenges. This set of problems has yet to be resolved. Dr. Sayyouh actually introduced the concept of EOR to Egypt in 1979, highlighting it as a nationality priority. Egypt only launched its EOR facilities around 2007, illustrating just how late in the game the country is.

Egypt's predicament is very similar to that of Indonesia, an oil-producing nation that had to leave OPEC in 2008 after it became a net importer. By the turn of the new century, close to 80% of Indonesian production had reached the "brownfield" stage (fields that have already passed peak production with pressures naturally declining from that point onwards). Technical solutions were found nonetheless. The Duri field, for instance, has been using steam flooding since 1985, with a pilot scheme dating to 1975. By drilling new development wells and expanding the scope of flooding, the field was producing three times as much as before in 2008. Duri began production in 1954.

Dr. Armacanqui's original experience was in Oman, the "oil recovery champion" of the region. Peak production was reached in 2001 and EOR methods were successfully employed from then on, to the point that IOCs that had previously hesitated over investing in brownfields later returned in full force. In Oman, oil recovery is an openly stated objective, much as power generation from renewables has become in Egypt.

Indonesia has built its own national plan on regulatory reforms such as simplifying the approval process for Plans of Development (POD), Work Program & Budget (WP&B), and Authorization for Expenditure (AFE). They have also increased coordination between different agencies, fast-tracked the issuing of Engineering, Procurement, and Construction (EPC) contracts, and facilitated the re-opening of fields and old wells. They did this by capitalizing on past successes and correctly identifying hurdles holding back further brownfield investments.

In the Egyptian context, these regulatory problems/opportunities come in the form of Production Sharing Agreements (PSAs). To quote EGPC chairman Tarek El-Molla, "We realize that enhanced oil recovery projects require significant investment and probably different duration terms in typical concession agreements... We are open to modifying our typical production sharing agreements to encourage successful enhanced oil recovery projects." Note also that IOCs get paid all their expenses by the end of a contract's duration in the form of cost recovery, which leads to these companies dragging their feet and not making any new investments in the remaining 4 to 5 years, a phenomenon we have documented several times in this paper.

The Egyptian constitution stipulates that the duration of an oil concession contract can last no longer than 30 years, which is precisely when the lifecycle of an oilfield is coming to an end and oil recovery investments should begin. EOR capital costs for large fields are in the $100-$500m range, explains Dr. Armacanqui, and so IOCs shy away from making such commitments as their contracts come to end. El-Molla's latest comments to our paper would indicate this realization is gaining traction at the policy level: "We [The EGPC] recently had a meeting with the executive board where we discussed Brownfields. We think that for some concessions, service agreements would be fast and speedy with bringing these online. We do not have the luxury of time, so this is important to us. Service agreements are what we are looking at for Brownfields, definitely."

Science as a Solution

In the region, the Sultanate of Oman is a good example on how to steer EOR Techniques. It started from the scratch about 10 years ago and it has become a well recognized international hub for EOR Field Applications, delivering significant production increases and in some cases breaking new ground, points out Dr. Armacanqui.

Optimization is another option, to cite Indonesia again, employing cost effective mechanisms with its EOR operations even before the current price crunch. While not identical to oil recovery, optimization is intimately linked to it in practice, even at the IOR stage, and becoming increasingly critical now with the price slump. Oman has also been extending concession agreements for brownfields to attract investors to the sector.

Iran is now busily drawing up a new model for oil and gas contracts—with help from IOCs—to open up the country to Western investment; and oil recovery is in their crosshairs too. The country has been buoying reservoir pressure with their ample gas reserves but, according to Israel, Iran has also been relying on nanotechnology to boost oil recovery. So, even in the absence of international help you can still develop EOR locally. Luckily, "most Egyptian nano-experts working here have been trained locally," says Dr. Ahmed Noah, formerly an AUC Associate Professor of Petroleum Engineering, and a noted nano-researcher himself.

The trouble is integrating these scientific efforts into the oil sector. This is because most of the research conducted at Egyptian universities are "not targeted to certain [oil]fields," says Dr. Adel Ragab, an EOR nano-researcher our paper has cited before. Many techniques work wonderfully in the lab only to fail in the field, Ragab added. Again only a fully worked-out and detailed national plan will accomplish the goal of EOR in Egypt, especially since nanotech applies to every aspect of petroleum, even the maintenance level, according to Dr. Nasrallah. Nano-particles can be injected into a well to tackle the very fine dust that collects in the well bore region from day one, clogging up pipes; a problem that has actually shut down wells in Egypt before.

The same goes for drilling, PTV fluids, and extending the life of drill bits. Sadly oil policy in Egypt has too often been focused on the downstream sector, away from E&P, where R&D funding is a constant priority. For the Egyptian oil and gas sector to remain viable, science and technology policy must change.

Acknowledgments:

Special thanks to Mrs. Lauti Nia Sutedja, Head of Economic Affairs at the Indonesian Embassy, Cairo, Egypt, for forwarding critical data about Indonesia's brownfield, oil recovery and optimization experience.

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YEMEN'S "GATE OF TEARS": **THE STRATEGIC RED SEA STRAIT OF BAB EL**

By Sam Kimball

Bab El Mandeb has long been a historical and civilizational chokepoint where the shortest trade routes between Europe, North Africa, India, and East Asia can be controlled—or stopped. However, recent events in Yemen, with Houthi rebels in control of a number of ports along Yemen's Red Sea coast, and the Arab bombing campaign of Yemen—which Egypt is party to—have made the future of the straights uncertain. According to the U.S. Energy Information Administration, an estimated 3.8 million b/d of crude oil and refined petroleum passed through the Bab El-Mandeb waterway in 2013, making it a critical junction for world trade.

The straights of Bab El-Mandeb officially lie between Yemen and Djibouti, but the area around the straights is made up of Eritrea, Saudi Arabia, and the semi-autonomous republic of Somaliland. This area has long been a crossing point for traders moving between the Mediterranean Sea and Indian Ocean. Pharaonic Egyptian explorers and traders moved between the straights in their quest for incense from the land of Punt. Alexander the Great ordered Greek fleets down the Red Sea through which they reached the Indian Ocean. The Persians, Romans, and Arabs were all present in the straight in antiquity. And ever since the Suez Canal was opened in 1869, and oil—no longer spices—began to flow through the Red Sea, the British, French, Italians, Americans, and Soviets have all fought for its control.

The rapid expansion of Houthi rebel control over large swathes of western Yemen, and their takeover of the Yemeni capital Sana'a in September, has drawn the eye of major regional players with an interest in Yemen's stability and continued access to the Bab El-Mandeb waterway.

Egypt is one of those players. Because it possesses the Suez Canal, prominent politician Amr Moussa was quoted as saying in the state run Al Ahram newspaper that the Egyptian government decided to join the Saudi-led Arab coalition in attacking the Houthis in order to secure access to the Red Sea routes leading to the canal. Beside that reason, Arab Gulf states' heavy financial backing of Egypt since the ouster of Hosni Mubarak means that the country must hold up its end of the bargain in any way possible—in this case, military aid to the anti-Houthi coalition. These countries have largely relied on "stopping Iranian expansionism" to justify the bombing campaign against what is frequently called an "Iranian-backed militia." Yet, while indeed a militia, the background of the Houthis is much more complex than simply an Iranian proxy. So who are the Houthis?

The Houthi movement—named after its founder Hussein Al-Houthi—was founded in 2004 in Yemen's northern Saada province. Saada has historically been an underdeveloped governorate not fully under government control, and an acute lack of civil services, like water and electricity, has compounded the alienation of the Zaidi sect who predominate the local population. The Houthi movement was originally founded to advocate for greater rights for the Zaidis (as they are a minority in the country) and to provide educational and social services in Saada.

Hussein Al-Houthi was killed in 2004 during an attempt by central government security forces to arrest him, and for the next six years the Houthis fought an on-and-off civil war with the government in Sana'a. After his father died in 2005, Al-Houthi's son Abdel-Malek took the reigns of the movement, leading the group in a guerrilla campaign fought in the rugged mountains of Saada. The conflict caused the displacement of hundreds of thousands of civilians, but calmed after a ceasefire in 2010.

Since a Gulf Cooperation Council (GCC) sponsored deal that removed Yemeni President Ali Abdullah Saleh from power, replacing him with his former deputy, Abd Rabbu Mansour Hadi, in early 2012, Yemen has not seen the stability it hoped for. This is due to a number of factors, including a continued Al Qaeda presence in large swathes of the country's south, a collapsing economy, and various political groups frustrated with the lack of results from Yemen's National Dialogue Conference that was initiated in 2013.

Many analysts and Yemen-watchers see in the Houthi's lightning advance the hand of former president Saleh, who has many of his close family members in positions of influence inside the Yemeni military and his party, the General People's Congress. From his house in Sana'a, Saleh—technically retired from politics, and sitting on what some believe to be billions of dollars of wealth—has continued to greet tribal heads and political shakers and movers as though he were still Yemen's top autocrat. Since he was forced to cede the presidency in 2012, Saleh has tried to hold back the hoped-for transition to democracy under his former deputy-turned president Hadi.

When the Houthis overran Sana'a without much resistance in September, it was apparent to many that Saleh had used his influence in the military to open the door for them and clear Hadi from the presidential seat for a possible comeback. "Ali Abdullah Saleh wants to vanquish his opponents to reemerge as the national leader, and the Houthis have been subcontracted as the means for doing that," Saeed al-Airi, a member of the Yemeni Islamist party al-Islah, was quoted as saying in the Washington Post.

The Houthi's success in their recent push to control major urban centers in Yemen is often attributed to the funding, arms, or training their religious co-sectarians in Iran have given them. However, representing the conflict as a mere Sunni-Shiite proxy war between Saudi Arabia and Iran is misleading, and more and more critics have come out explaining that evidence for significant Iranian support for the Houthis is flimsy, if it exists at all.

According to Robert Worth, a researcher at the American think-tank the Wilson Center, much of the perceived Iranian connection to Yemeni affairs originated in 2009, with a media campaign that sought to explain Saudi losses against the upstart movement. Saudi armed forces attacked border regions of northern Yemen controlled by the Houthis in 2009, and their advanced weaponry was beaten back by the humble militia. Iranian media took pains to portray the Houthis at the time as valiant heroes fighting of the oppressive forces of Iran's arch-rival Saudi Arabia. Yet this was a media parade, with no evidence of concrete Iranian support for the Houthis, and even US State Department cables accessed by Wikileaks showed suspicion of the veracity of the claims of Iranian involvement.

In an interview with the news outlet Al Monitor, a former Iranian diplomat noted that Saudi Arabia has intentionally exaggerated Iranian involvement in the Yemen crisis as the country seeks to counter growing Iranian influence on other fronts in the Middle East. Notably, the former diplomat said, "The possibly most painful development for Riyadh is the forthcoming thaw in US-Iran ties, and the potential of losing a long time protector."

As for Egypt's role in the current offensive against the Houthis, David Butter, a researcher at the London-based think tank Chatham House who specializes in Egyptian-Saudi relations, said, "My interpretation is that if you take Saudi's interests out of the equation, would Egyptian military intervention [in the anti-Houthi coalition] be involved? I think not."

Despite the recent claims by some Egyptian public figures that Egypt is involving itself in the anti-Houthi coalition to protect access to the Bab El Mandeb straights, and by extension shipping in the Suez Canal, Butter believes that the Houthi militias pose little actual threat to Red Sea trade.

"Do the Houthis mean to attack Egyptian national interests in the Suez Canal?" Butter thinks otherwise. "If so, they are aware that an international coalition would come down on them in punishment."

Even if Houthi fighters were in total control of the Yemeni side of the Bab El-Mandeb strait, Butter pointed out that the practicality of closing down the waterway completely to shipping is out of reach of the militia.

He alluded to frequent fears expressed in international discourse during times of heightened tension about the possibility of Iran closing the Persian Gulf's Strait of Hormuz to shipping. Despite this, however, Butter noted that "Iran has a much more capable military [than Yemen's Houthis], but still no closure has occurred."

Instead, Butter thinks that Saudi Arabia, which looks upon Yemen as an integral part of its national policy, has found itself less able to control Yemen's internal politics through diplomacy and manipulation of Yemeni tribal figures. He noted that the death of Saudi Arabia's crown Prince Sultan bin Abdulaziz in 2011, who managed the kingdom's Yemen relations for decades and was closely familiar with Yemeni tribal politics, has diminished this control. "Lever pulling behind the scenes [lately] has had no effect," Butter said. "So Saudi Arabia feels it needs to go about this in a more determined manner."

Enlisting Egypt's military, the Arab World's largest armed force, is part of the new Saudi strategy. Yet despite committing naval forces to the blockade of Yemeni ports like Aden on the Arabian Sea and air forces to the bombardment of Houthi positions, Butter says that Egypt will likely be wary of contributing significant numbers of ground forces. The lesson, he says, lies in Egyptian President Gamal Abdel Nasser's military expedition to

Yemen between 1962 and 1967. The expedition sought to export Egypt's republican revolution to Yemen, where military officers battled the ruling Imam of Yemen and his Zaidi supporters in the north, yet quickly found themselves bogged down in a guerrilla war that cost money, lives, and Egyptian prestige. The new Egyptian President Abdel Fattah El-Sisi is well aware of the risks should he send in ground forces too soon.

Yet, Egypt's complicated relationship with its Saudi backer may force its hand. As Operation Decisive Storm drags on, and the Houthis hang on battered, but not defeated, Saudi Arabia may demand that its allies in the coalition commit boots on the ground. Egypt might bend to the kingdom's pressure out of fear of the suspension of the billions of dollars of Saudi aid that has propped up the Egyptian economy over the last four years of turmoil. With the coalition attack on the Houthis demanding ever more force, will cautious involvement on Egypt's part keep it from losing lives and face in the Yemeni quagmire? "In theory, yes," said Butter. "But in practice, extracting forces from Yemen will prove much more tricky."

A 12 BILLION DOLLAR PROMISE

By Nadine Abou el Atta

"BP to Invest $12 Billion in Egypt," this is the headline that has caused a media frenzy to blow like wind passing through every news agency in the region.

BP has claimed the title for the biggest foreign direct investment made in Egypt, and reactions are still flooding in weeks later at extreme ends of the spectrum. After all, besides the headline, little details of the agreement itself were shared publicly.

To better understand the potential impact of this deal on Egypt and its economy, we need to go back to 1992; when BP (then Amaco), acquired the area from the Spanish company, Repsol. Since the acquisition, BP has had a standard Production Sharing Agreement with the EGPC, in which the development of natural gas had no mention.

Negotiations for this agreement have been going on for about 20 years, before Egypt needed natural gas, used it, or had the facilities to export it. Marketing the discovered gas back then was difficult, time-consuming, and expensive. There was simply no interest in natural gas. As local and international markets grew, the Egyptian government recognized the need to develop and produce natural gas. The terms of the agreement have been changed several times over the years; however negotiations allowing Egypt to acquire all the production of the West Nile Delta Development (WND), began in 2008.

Today the WND involves the development of two of Egypt's most significant deep-water concessions, the North Alexandria Concession and the West Mediterranean Concession. $1.82bn of the allotted $12bn had already been spent prior to the investment announcement made during the Egyptian Economic Development Conference (EEDC).

As the operator, BP holds 60% equity in the North Alexandria concession and 80% equity in the West Mediterranean concession; while DEA (formerly named RWE DEA) holds the remaining interest as the partner.

The deal is not only significant for its investment, but also for the estimated production rate of natural gas, which is expected to reach up to 1.2 bcf/d, equivalent to about 25% of Egypt's current gas production levels. However, production is not expected to begin until 2017, peaking by 2019.

Reserves are estimated at 5tcf of natural gas and 55m barrels of condensates. Further phases of exploration activities are expected to boost reserves from the WND, yet not by a significant amount. Experts estimate that further exploration may result in an additional 0.5 to 1tcf.

Details of the Agreement:

The new agreement format significantly amends the commonly employed Production Sharing Agreement (PSA); while the amended commercial terms are somewhat similar to a service agreement, they are different on one key point. The terms of the WND agreement give BP and its partner DEA 100% of the profits, after costs and taxes, where the EGPC will purchase all production at $4.1/m Btu and pump it directly into the national grid.

When asked about the nature of the agreement, Nasser Wali, Deputy CEO Assistant for Agreements stated, "This is not a production sharing agreement and it is not a service agreement. The name that suits the agreement best is 'Development, Production & Exploitation Agreement'. All parties have agreed that this is the most accurate name and by extension, the description that fits the different nature of the agreement."

The new terms provide protection against price fluctuations via a compensation formula. "BP is expected to pay $9bn to produce the stated amount. Through a series of formulas we came

to find that a $4.1/m Btu price is profitable for all parties involved; however, if the production of the same amount (5tcf of gas, 55m barrels of condensates) costs more than the agreed upon price by a minimum of $1bn, the operator (BP) will have the right to ask for a price revision, pending the approval of the Egyptian government. The price would then increase accordingly with a ceiling of 15%. This increase comes to a maximum of about 60 cents. Similarly, if the cost to produce the same amount is less than the estimated $9bn by at least $1bn, then the price will be reviewed—pending the agreement of the operator—with a 15% decrease floor," said Wali.

The price is revised every five years, which means that the price will be revised four times over the contract duration of 20 years. Every price revision uses the original price of $4.1/m Btu as the foundation for calculating the percentage of increase. Given the likely scenario where the price will increase in each of the four price revisions, the final cost will hit $6.2m Btu by 2030 (15 years from now).

The agreement includes a cutoff point to the commercial terms giving BP and DEA 100% ownership of production. According to the agreement, any additional discovered quantities of gas or condensates will be shared on a 50:50 basis between the EGPC and BP/DEA. The split is conditioned on the cost of development passing the $450m mark; otherwise the discovered quantity will follow the original terms.

The terms of the agreement give priority of purchase to the EGPC, or local consumption generally speaking. In other words, even though BP and DEA own the marketing rights to the production of WND, according to the agreement, only if the EGPC or other local entity does not wish to buy WND production can BP market it internationally.

Economic Factors Influencing the Deal:

The Egyptian government has been open about its dire need for the amount of natural gas that can be produced from the WND. It is indeed no secret that the Egyptian government has been spending billions trying to close the gap between its energy consumption and production levels. This is a problem not only brought on by the exponential increase in local consumption, but by the lowering of production rates as a response to the arrears owed by the government to foreign oil companies. These two factors constitute the reality that Egypt has been left in a weaker negotiation position than previous attempts in reaching this deal.

When asked about it, Tarek El-Molla, Chairman of the EGPC, repeatedly emphasized that the EGPC is attempting to show very concrete commitment to its partners by working on this issue. "We were able to successfully reduce the debts owed to foreign partners from $6.3 billion to $3.1, and we are working to reduce this further."

The Egyptian government does not only owe money to foreign firms, but it also owes to itself. El-Molla was very frank about the problems facing the petroleum ministry and EGPC. "We are owed about EGP 70bn by the ministry of electricity, and nearly EGP 6bn by Egypt Air. All told, we are owed about EGP 140bn."

A significant factor that further heightened Egypt's need to reach a deal with BP is the remarkably high cost of importing natural gas and fuel oil to generate enough electricity to meet local demand. Accurate estimates of the total amount the Egyptian government has paid over the past years trying to bridge the gap between consumption and production is unknown; however, glimpses of the considerably escalated cost can be seen in the recently announced $3.55bn price tag of LNG imports for the current fiscal year of 2015-2016.

Egypt, however, has long been willing to offer generous terms to attract investors to explore in areas that are expensive to develop. With the usual production sharing agreement, an exploration and production (E&P) company would not recover any of its costs if potential reserves are not found; this translates into a catastrophic loss if it occurs in a deep-water concession.

"We are trying not to be rigid. We want this to be a win-win situation because at the end of the day, if you compare prices it will always be cheaper to produce locally than to import, especially for LNG," El- Molla clarified.

BP, on the other hand faced some challenges shortly before closing the deal. BP worldwide reported a loss of $969m in the fourth quarter of 2014. The company reacted by cutting its capital and exploratory budget by nearly 20%, down to about $20b.

Agreement Postponed

Despite originally announcing the agreement in mid-2010, due to several reasons the finalization of the deal was postponed to 2015. Speculations around the real reason for the delay vary, some deemed it to be an ongoing negotiation on the price of gas, others explain it as a calming response to the media criticism of the agreement during a time where any negative attraction was blown out of proportion, and the rest describe it as a normal reaction to the volatile situation in the country during the past years.

The agreement includes a cut-off point to the commercial terms giving BP and DEA 100% ownership of production

Answering this question, Wali said, "The main reason for postponing the agreement was a dispute over the land the onshore facilities were going to be built on. Right after the 2011 uprising, the people living near the planned site refused the project due to environmental concerns. Many high level officials tried to convince the civilians of the importance of the plant, but failed. The Egyptian government then resolved the situation by granting BP another land to build the plant on. While the new location was suitable, the geological nature of the soil required significant cost to be able to build on. This is where the need to use BG's facilities emerged."

Role of BG:

"Any petroleum agreement between the Egyptian government and an operator has a clause permitting the Egyptian government to use the facilities, providing they do not affect the efficiency of the ongoing project. Through this clause negotiations between BP and BG took place, giving the WND access to Burullus & Rosetta facilities to transport production onshore," explains Wali.

The Taurus and Libra fields will be connected to the existing Burullus Gas plant, which currently has enough of a gap in its capacity to host initial production. The Giza and Fayoum fields will be tied back to the Rosetta plant, which will be modified to accommodate additional production rates. The Raven field will be connected to a new onshore plant adjacent to the existing Rosetta plant.

Public Opinion of the Deal:

Commenting on the project, Hesham Mekawi, BP North Africa Regional President said, "This is a critical milestone in the Egyptian oil and gas history. It marks the start of a major national project to add significant production to the domestic market. BP expects to double its current gas supply to the Egyptian domestic market during this decade when the WND project reaches its peak production."

Through press statements BP has portrayed a very optimistic vision of the effect of the WND project on the Egyptian economy. It promises to employ thousands of employees during the construction phase of the project, transfer technological know-how, and significantly contribute to the growth of petroleum related industries. While that may be true, some analysts see it differently.

Energy analyst Mika Minio-Paluello said: "If I was Egyptian, I would be absolutely freaked out about what it means to move away from product-sharing agreements. There is a difference in what is best for the Egyptian state and what is best for BP. The more control you give to BP in making decisions, the less the public's interests get represented."

Given the likely scenario where the price will increase in each of the four price revisions, the final cost will hit $6.2m Btu by 2030 (15 years from now)

"If Egypt had an alternative way of doing it, they could have done it," said David Butter, a Middle East analyst and associate fellow at Chatham House. "The basic fact is it is going to cost whatever it is going to cost to produce the gas."

When asked about the public's opinion of and the media response to the WND deal, Wali admitted that the EGPC has been widely criticized for not picking an Egyptian company to strike the deal with. "Regardless of ownership of the concessions, tapping into the gas reservoir of the WND requires drilling to very deep levels, using advanced tools that can sustain intensely elevated temperatures. This process is very costly and only exploration giants have the technology to perform it. If the Egyptian government did not make the development a profitable venture for BP, or any other contractor, they would be better off leaving their money in banks."

Other public concerns raised revolve around the Egyptian government buying natural gas that belongs to Egypt in the first place. Wali contested this point by saying, "That is simply not true. Our usual agreement involves paying for the cost recovery of the operator, which extends throughout the entire period of production. The new agreement states that the operator will handle all costs and Egypt will pay to acquire the gas, paying just enough to make the project profitable."

The possibility of mimicking the same type of agreement with other foreign operators in Egypt seems to be high, and when asked about it Wali confirmed this, stating that "If the agreement model is successful, why not repeat it with other companies? Provided they are developing a deep-water, expensive-to-produce-from concession, where the EGPC will acquire the entire production."

Watching the government deal with the energy gap is like watching someone solve a Rubik's cube. As it struggles to balance one side, other sides of the cube get scrambled. EGAS announced recently its decision to seize gas supplies meant for factories as it attempts to generate enough electricity for the public grid, a move that cost factory owners a significant loss and is expected to increase prices for final goods. Adding to the mix the significant LNG and fuel oil imports, as well as the soaring price of electricity, and we end up with the perfect puzzle.

FUGRO SAE:
INTERNATIONAL COMPANY WITH EGYPTIAN HEART (PT.2)

Fugro SAE Subsea Engineering and Intervention tooling

Fugro SAE (FSAE) is responsible for Fugro's survey and subsea activities in Egypt. Benefiting from investment in Egypt over more than 30 years, FSAE has developed a strong capability in the country, allowing delivery of world-class services to the Egyptian offshore industry entirely by Egyptian staff and locally available re-sources.

Subsea Life of Field Support Services

Over the years FSAE's Subsea Engineering and Tooling Department has been expanded to supply an extensive Subsea Engineering, Intervention, and Tooling Design service that can be delivered locally.

Fugro SAE understands there is an opportunity to apply the strategic planning required to fulfill operator's demands by having the required expertise and utilities available locally at short notice.

Offshore Change out Operations

Our teams are currently performing planned and emergency change-out operations for major clients in the deep-water market in the region such as Burullus Gas and Pharaonic Petroleum companies. These operations are essential to maintain the continuity and productivity of the oil and gas production from the subsea fields. Fugro SAE currently provides all these services locally and on short notice on board M/V PMS Burullus.

Onshore in Country Refurbishments for Client Running Tools

Our local Egyptian teams have both the experience and capability to perform various offshore planned and complete in-country refurbishments, as well as emergency troubleshooting maintenance activities for client's running tools. They have already done many locally successful onshore maintenance plans for various running tools such as CCOTs, MPRTs, and IWOCS, and also carried out successful override operations on Subsea X-mas trees.

Subsea Engineered Tooling

Fugro SAE has an advanced in-house engineering department which can design and build bespoke tooling as per client requirements; our local design engineers managed to manufacture several successful tools with local materials and machining services such as M2 Repair, Seized Hot Stab/ Dummy Hot Stab Puller, Subsea Liquid Sampler... etc, our Bespoke tooling are designed and fabricated using our Deep Works 3D simulation software, and the newly introduced Fugro Simulator. Several cases have inspired the team to enhance their local knowledge and fields of experience through new challenges with other global vendors supplied equipment via the continuous building of close relations with operators.

Conclusion

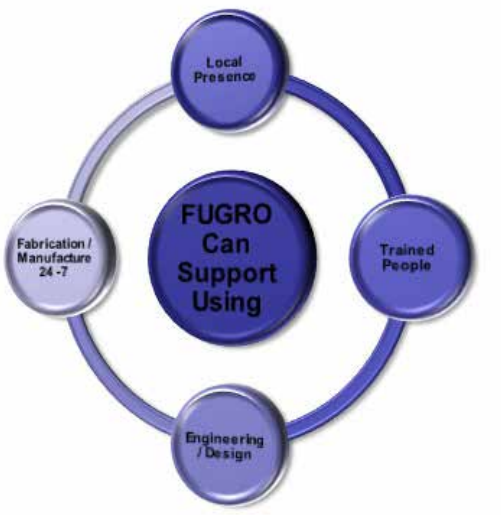
Fugro SAE is the only Egyptian company that is capable of providing a Global Subsea Engineering Service locally with very effective cost impact and has resources available in-country compared to other global competitors.

Our subsea teams are ready for all planned and emergency deep-water offshore change-outs, onshore maintenance operations for different running tools, and fault finding with solution making.

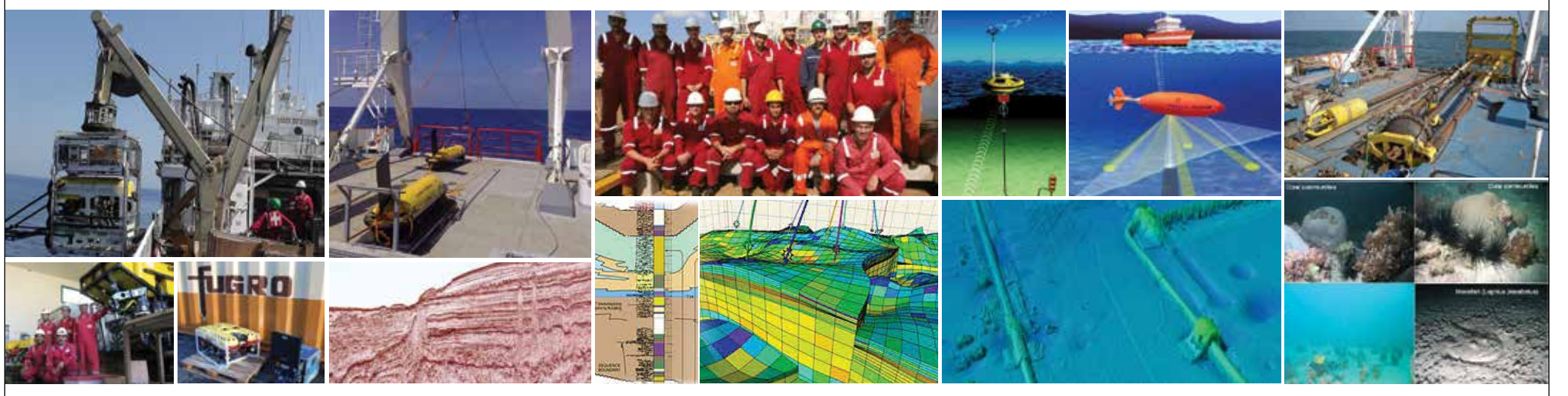
Running Tool after refurbishment

Running Tool before refurbishment

Offshore Subsea Change out operation



WHEN ADAPTABILITY COUNTS...



Our comprehensive Offshore Services deliver integrated disciplines for true 'life of field' solutions. The core services of Fugro SAE are geophysical surveys, offshore positioning, GIS deliverables, ROVs, and Subsea Engineering and Intervention Tooling. Fugro SAE can call on other Fugro OpCo's worldwide to provide other specialized services.

- Geophysical Drilling Hazard Site Surveys
- Pre engineering Pipeline Route Surveys
- Hydrographic surveys
- Field Development Surveys
- GIS services.
- Drill support
- Construction support
- IRM services (Platforms & Pipelines)
- Onshore engineering support & project management
- Subsea engineering & intervention tooling
- High Res. Seismic Acquisition, Processing And Interp.
- Geotechnical Surveys
- Environmental baseline surveys (EBS)
- Metocean (monitoring atmospheric ocean conditions)
- AUV Surveys

FUGRO SAE has the personnel to provide these services locally. Our extensive experience and track records enable us to be the market leader. Fugro provides global support locally.

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HILAL REDEVELOPMENT PROJECT

By Salah Mohamed Farid Tantawy - Chairman Assistant for Projects Suez Petroleum Company, GUPCO

Recently installed GUPCO platform gives new life to old project

GUPCO's recent installation of the Hilal-B production platform is intended to replace the existing Hilal platform located in the Shoab Ali field in the Gulf of Suez. The existing platform was constructed and installed in 1984, however in 1994 it was severely damaged by ship impact and fire. The topsides were replaced and production resumed, but repair work on the jacket was insufficient to provide enough structural rigidity to prevent excessive conductor/platform relative deflections. This resulted in the rupture of a flow line in 2004. Due to growing concerns over environmental protection and the safety of operators the decision was made in 2007 to cease production and seal the wells.

A decision made to build a new Hilal platform (Hilal-B) following a review of several options. It was decided that the most ideal scenario would be to build a new platform 300 meters distant from the old platform.

Following a FEED study completed by Enppi in April 2011, the project was sanctioned in September 2011. Detailed engineering has been completed and procurement of long lead items received at the site. Platform fabrication activity is now finished and the jacket has been towed to the location.

All piles, jackets, and offshore deck installation were completed in November 2013.

The Hilal-B commissioning was completed in January 2015 following a pipelines installation campaign, which was completed in December 2014.

Objectives

The overall objective is to resume production and recover all reserves. Production will be pumped onshore via the 18" subsea pipeline tie-in to the existing trunk line.

The main objective is to produce around 4.8 million barrels of oil from existing wells. This will be achieved by working over three wells to restore production, drilling three new wells, and side-tracking three existing wells with a total of nine slots required.

Project Budget

The project was successfully completed within its approved budget of $112.3 million, despite increasing offshore installation costs due to extremely bad weather conditions. This cost increase was offset by savings in other activities, such as procurement and fabrication.

Execution Strategy

The project execution strategy was based on a GUPCO Project Management Team managing contracts for engineering, onshore fabrication and offshore installation. A major contributor to the success of the Hilal Redevelopment Project has been the excellent performance of our contractors, which are represented as follows:

- ENPPI as the engineering design contractor.
- PETROJET as the fabrication contractor.
- VALENTINE MARITIME as the piles, jacket, and deck installation offshore contractor.
- PETROLEUM MARINE SERVICE (PMS) as the pipelines installation offshore contractor.

HSE Achievements

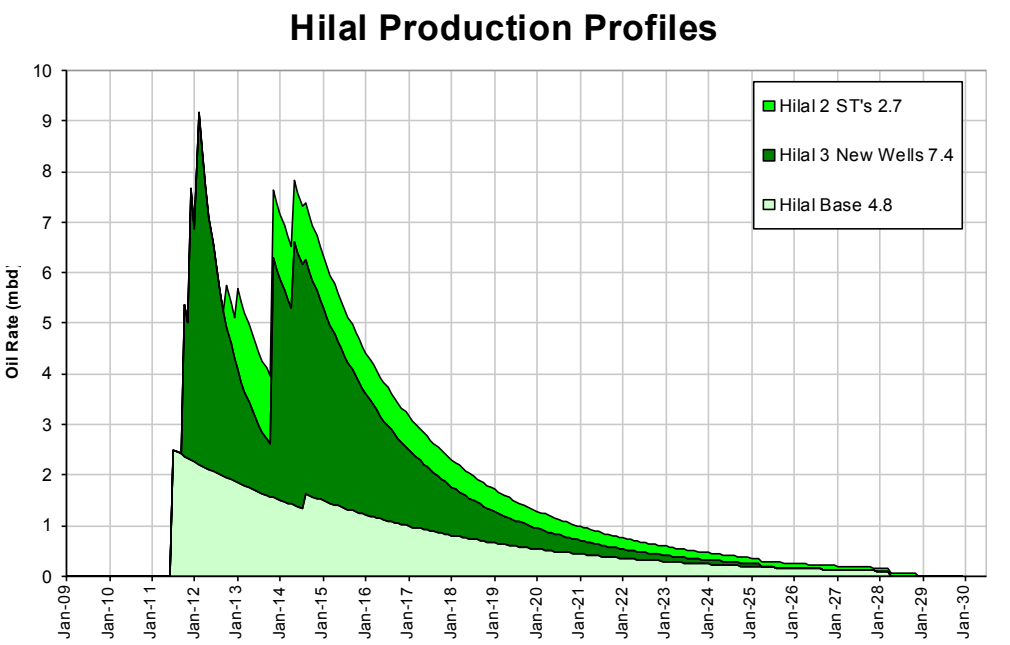
Safety continues to be our number one priority. Achieving 2.4 million man-hours without a lost time incident is an indication of how GUPCO has successfully managed the Hilal-B platform project activities while maintaining its commitment to safety.

Technology Development

A new technology has been developed in which the platform is fully operated through a solar power generation system that can provide the platform electric power demand up to four continuous days without requiring sunlight.

This power generation will minimize emissions to the atmosphere, and subsequently have less of an environmental impact.

The power system supply shall be through solar cells oriented in the direction of platform south to deliver its maximum power to feed platform electrical loads.



INTERNATIONAL WOMEN'S DAY **AT GUPCO**

8th March 2015

BP is one of the main sponsors of the International Women's Day held in the beginning of March. As such, it was proposed that GUPCO host an event to recognize and celebrate the contributions women have made to the oil and gas industry in Egypt. It was also held to try and inspire women currently working in GUPCO and our shareholder offices. GUPCO has a proud history of hiring, training, and developing all of their staff—including many of the women who now hold senior positions in government organizations.

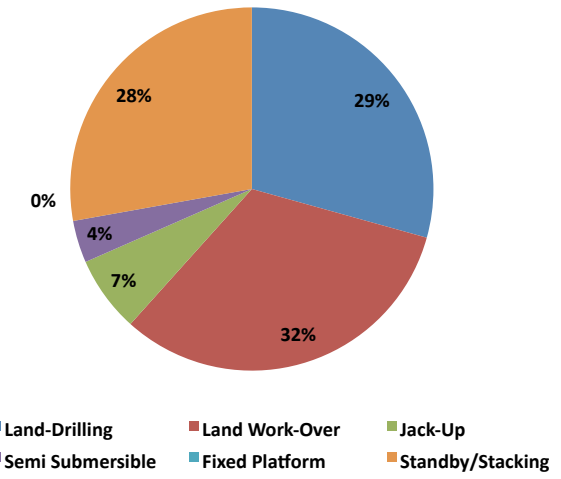
On March eighth, GUPCO, with excellent representation from the EGPC, and BP, began the event with a warm welcome from Fadia Fathy, GUPCO Women's Secretary and Labor Syndicate Vice President, followed by an overview of International Women's Day, where Ms. Somaya Ashour stated, "This year's theme is about women empowerment, empowerment to lead humanity and open opportunities in all fields. It is an invitation from the world to women to strongly and effectively participate in politics, economics, social affairs, legislation, etc."

Ashour continued, "Women accept the world invitation and emphasis that we are capable of driving events and achieving goals. We want our message to the world and to ourselves to be that we are capable and we accept the invitation, we will make it happen."

GUPCO management welcomed the guests and the audience, and then initiated a panel discussion where the four speakers shared their valuable experience and stories about career progression and how diversity in their work teams has led to better decisions and a better business. The speakers included: Lucy Amin (a former GUPCO employee), Inas Hosni (a former GUPCO employee), Safaa Marie (an EGPC employee), and Iman Orfy, (currently at the Ministry of Petroleum and also a former GUPCO employee).

Thanaa Ashry, the Administration General Manager, confirmed that this event is only the start and that GUPCO is looking forward to organizing this event every year with management ensuring the empowerment of women.

Rigs per Specification April 2015



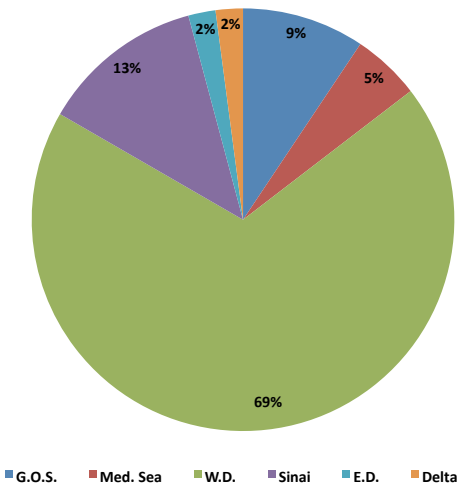
EGYPT STATISTICS

Egypt Rig Count per Area – April 2015

Area	Total	Percentage of Total Rigs
Gulf of Suez	9	9 %
Mediterranean Sea	5	5 %
Western Desert	66	69 %
Sinai	12	13 %
Eastern Desert	2	2 %
Delta	2	2 %
Ganoub El Wadi	0	0 %
Total	96	100%

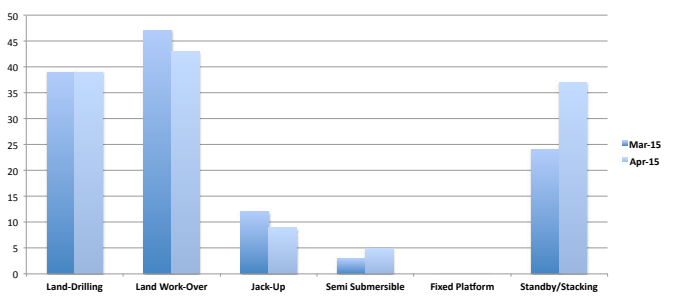
EGYPT OIL&GAS RESEARCH & ANALYSIS

Rigs per Area April 2015 (Total of 96 Working Rigs)

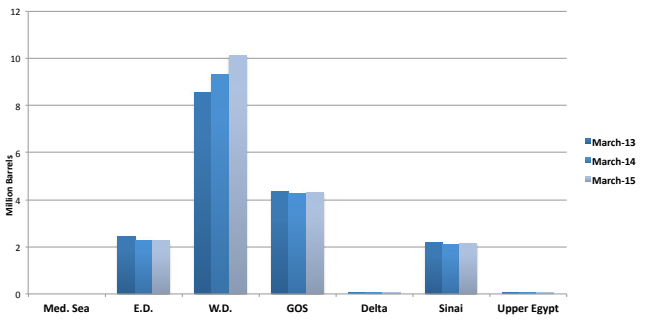


	Oil			Equivalent Gas			Condensate			Liquefied Gas		
	Barrel			Barrel			Barrel			Barrel		
	March-13	March-14	March-15	March-13	March-14	March-15	March-13	March-14	March-15	March-13	March-14	March-15
Med. Sea				22322857	17509107	14456964	1184860	918697	812587	397401	271300	294829
E.D.	2443578	2287477	2251949	31607	51607	34643	2687	2727	2403	7731	5356	4485
W.D.	8568041	9315242	10112629	7057321	7254821	7804107	1439860	1481351	1522982	694987	839765	706877
GOS	4358255	4271681	4305741	273214	371429	594107	63396	62031	75243	208939	207293	260490
Delta	20699	65638	44842	1556071	1964821	2191786	263575	165827	169886	83135	65216	110597
Sinai	2163757	2108303	2154358	3393	8571	536	34218	26534	29561	85660	58503	65065
Upper Egypt	13681	10586	9509									
Total	**17568011**	**18058927**	**18879028**	**31244463**	**27160356**	**25082143**	**2988596**	**2657167**	**2612662**	**1477853**	**1447433**	**1442343**

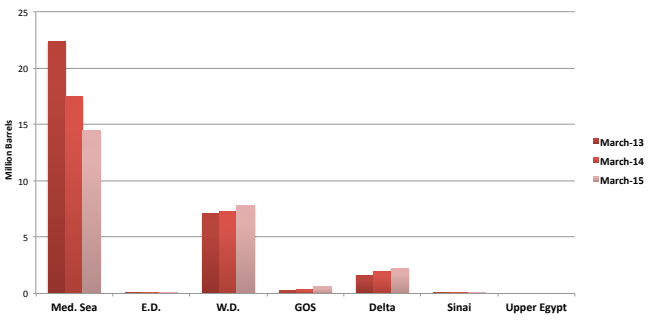
Rigs per Specification March 2015 - April 2015



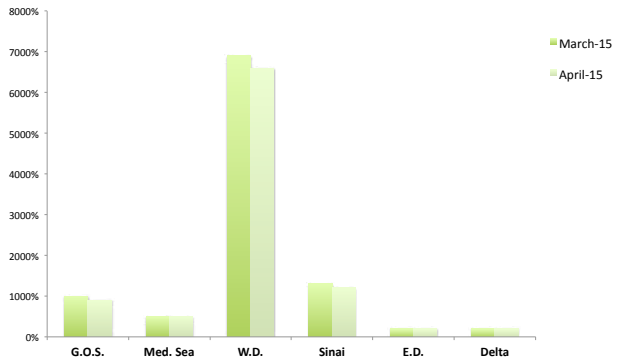
Oil Production March 2013 - 2015



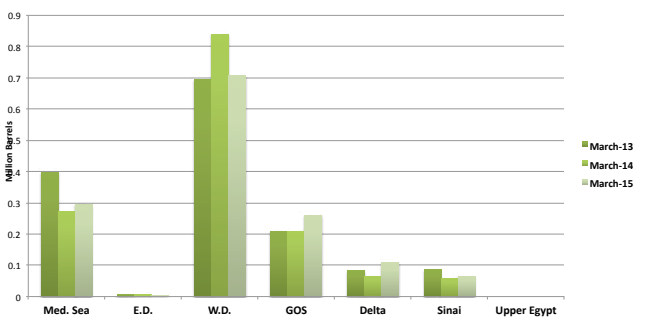
Equivalent Gas Production March 2013 - 2015



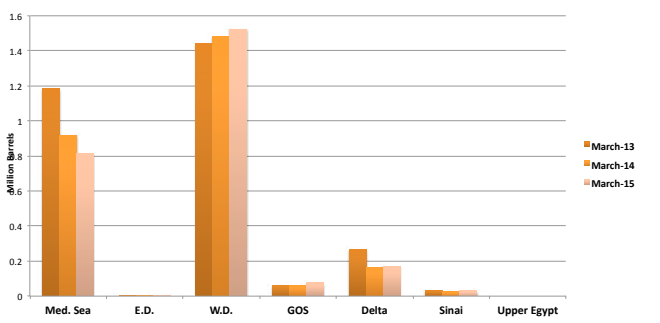
Rigs per Area March 2015 - April 2015



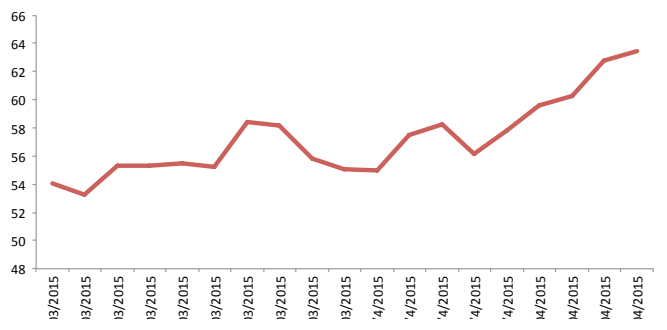
Liquefied Gas Production March 2013 - 2015



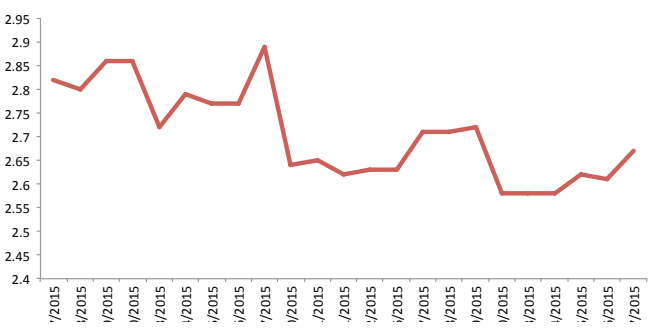
Condensates Production March 2013 - 2015



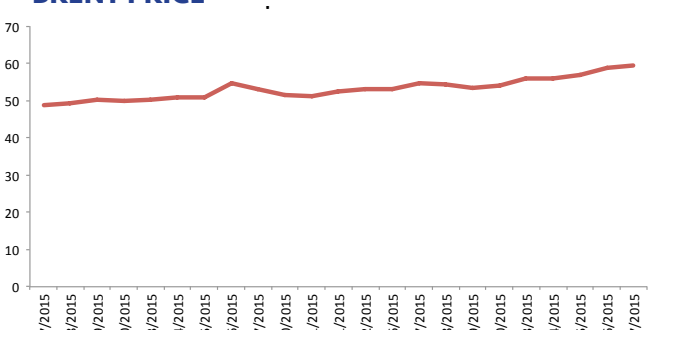
OPEC BASKET PRICE



NATURAL GAS



BRENT PRICE

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