

Mr. Mark Fenton
General Manager of Dana Gas

EGYPT'S LEADING OIL AND GAS MONTHLY PUBLICATION - December 2014 - 40 PAGES - ISSUE 96

# EGYPT SITS ON MORE THAN 14 TCF OF STRANDED GAS RESERVES

Industry Leaders Discuss Challenges and Potential at the First Stranded Gas Roundtable





**BG Egypt Through the Eyes of Mr. Arshad Sufi** 

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We here at Egypt Oil and Gas are benefit from it. The coverage of the determined to bring our reader's the latest news and facts related to Egypt's petroleum industry. In this month's issue EOG was delighted We would very much appreciate to be able to sit down and interview Mr. Arshad Sufi, President of BG Egypt, and get the inside scoop on BG's current activities and future plans. We also were very glad to have interviewed Mr. Mark Fenton, Please don't hesitate to contact our General Manager of Dana Gas Egypt. I would like to thank Mr. Sufi and Mr. Fenton for their time, effort, and contribution.

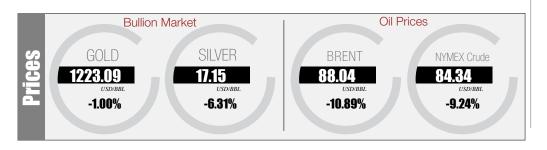
Additionally this month, EOG organized a roundtable titled "Egypt's Stranded Gas Roundtable," under the patronage of Petroleum Minister Eng. Sherif Ismail, that discussed and highlighted they key issues revolving around stranded gas in Egypt and what needs to be done in order for the country to be able to

event will be under the heading of "Roundtable" in the newspaper.

any feedback or insight into the planning of future events or editorial content.

team at MMarei@egyptoil-gas.com

Editor in Chief Mai Marei





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### **ECG'S OIL & GAS FLAGSHIP ACROSS THE "MENA" REGION**



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many of the Middle East developments, ECG projects cover aviation, all types of buildings, infrastructure utilities, industrial, oil & gas, power generation as well as transportation sectors, with a total construction value exceeding US \$ 80 billion.

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in the Middle East through the completion of a wide variety of mega projects. Some of our relevant experience in Egypt include: "Shukeir Gamma Gas/ Oil Separation Plant and associated Oil & Gas Transmission Pipelines", "Alexandria Chemicals Terminal", "Extension of ELAB Storage Tanks" along with "Wastani Nodal Gas Compressor Facilities". In Syria, ECG performed FEED and detailed engineering for the project of the "Sweidieh Massive Development Project". In Sudan, ECG's successful projects are witnessed in the rapidly growing Oil & Gas industry incluing: "Quality Improvement of Crude Oil Export Pipeline in Heglig Central Processing Facility (CPF)", "South Annajma Early Production Facility" and "South Annajma Export Pipeline System".





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#### Saudi Provides \$350 Million Fund

The Egyptian government signed three agreements with Saudi Arabia for \$350 million. The agreements signed cover finance for upgrading two power stations in the north of the country as well as petroleum products. The cabinet announced that \$100 million is allocated for the upgrade of two power stations, Western Damietta and El-Shabab. El-Shabab Station is to turn into a complex cycle by adding two steam turbines of a 500 MW capacity, and an overall capacity of 1500 MW. The Western Damietta Station will be turned into a complex cycle, by adding one steam turbine of a 250 MW capacity to become 750 MW. A funding agreement has also been reached between a Saudi fund and the General Petroleum Authority, worth \$250 million of Saudi exports to Egypt. The cabinet said in its statement the loan has a 2% interest rate and is to be repaid over 20 years with a five-year grace period.

The Arab country has provided \$3 billion worth of refined oil products between April and September of this year, and \$5 billion worth since July 2013, according to Reuters.



## **Egypt Signs Agreement for LNG Terminal With Hoegh LNG**

After months of negotiations, EGAS signed a five-year deal with the Norwegian Hoegh LNG for a long-delayed liquefied natural gas import terminal. The LNG terminal was expected to arrive in the third quarter of the year 2014; however, it is now delayed until March 2015. The terminal is to convert imported LNG into natural gas and pump it into the national grid. Hoegh said the new contract was expected to generate earnings before interest, taxes, depreciation and amortization of around \$40 million a year, the firm

announced its letter of intent with EGAS in May. LNG imports, which are urgently needed to alleviate the country's worsening energy crisis, have been delayed for months when no deal was reached with the Norwegian company or other options the Egyptian government was considering. A source at the Ministry of Petroleum said –to the Daily News Egypt– it would cost \$1.25 to convert one million BTUs from LNG to natural gas. Transporting the gas from the port to the national gas network would cost \$1.

#### **BP to Invest \$240 Million in Two New Blocks**

BP announced it has been awarded two exploration blocks as part of the 2013 EGAS bid round. The company plans to invest \$240 million in the blocks. The blocks awarded are Block 3 - North El Mataria, which is BP's first entry into the onshore Nile Delta, and offshore Block 8 - Karawan located in the northeastern part of Egypt's economic waters in the Mediterranean Sea. Block 3 is located in the north-

eastern part of the Nile Delta cone, approximately 57 km to the west of Port Said city. BP will operate the block with 50% equity and Dana Gas will hold the remaining 50% working interest. Block 1 is approximately 220km to the northeast and 170km to the northwest of Alexandria and Port Said cities respectively. BP will have 50% equity and the block will be operated by ENI, which holds the remaining 50%.

#### **Kuwait to Raise Crude Exports to Egypt**

A Kuwaiti official told Reuters that his country plans to raise its crude oil exports to Egypt to up to 100,000 b/d from 65,000 b/d now. He said Kuwait is ready to supply Egypt with refined fuel too, if needed. Kuwait was studying Egypt's need for petroleum products, said Nasser Al-Mudhaf, Managing Director for International Marketing at state owned Kuwait Petroleum

Corp (KPC). "We are ready to provide it with diesel," he told Reuters before a visit to Cairo. Early in October, the Gulf country said it would ship around two million barrels of crude oil a month to Egypt, giving it priority as a buyer ahead of sales from storage into the Mediterranean market.

#### **EGAS Halts Supply to EBIC**

A senior official in EGAS told the Daily News Egypt that the company has suspended gas supplies to Egypt Basic Industries Corporation (EBIC), a subsidiary of Orascom Construction, since August. The halt came because EBIC does not provide production for the local market but exports all their ammonia production. The official also stated that the 70 million cf/d supplies to Talkha Fertilizers were also halted mid-October due to maintenance work at the factory. He added that cement and fertilizer factories are currently receiving 470 million cf/d, mounting to about half of their pre-

vious supply estimated at 920 million cf/d. The official mentioned that EGAS pumps about 330m cubic feet per day, representing 72% of fertilizer factories' total needs, which amount to 510 million cf/d. He explained that about 140 million cf/d are supplied to cement factories whose actual needs are estimated to be 410 million cf/d with the remaining quantity being compensated for through quantities of fuel oil.

#### Fuel Subsidies Amount to EGP 22 Billion in First Fiscal Quarter

An official in the Ministry of Petroleum told Reuters that Egypt has spent EGP 22 billion on fuel subsidies in the first quarter of fiscal year 2014-2015, a 29% decrease from the first quarter of the last fiscal year. Subsidy cuts have been introduced as the country's government tries to revive an economy battered by three years of political turmoil. Energy subsidies were cut in July, raising fuel prices by approximately 78%. The country's budget for the full year foresees savings of more than 40 billion on energy subsidies. The government is planning to completely remove all energy subsidies in the next three to five years. Fuel subsidies amounted to EGP 31 billion in the first quarter of 2013-2014, the petroleum ministry official said. They reached EGP 126 billion during the whole year, compared with EGP 128 billion the year before.



#### Orascom to Construct Coal-Fired Red Sea Power Plant

Orascom Construction, a subsidiary of OCI N.V., announced plans to build a 2,400 to 3,000 MW coal-fired power plant in Egypt. The plant is to be constructed as a joint venture between Orascom and the UAE's International Petroleum Investment Company. The project is "pending technical studies and governmental and corporate approvals," according to the company's statement. The statement did not reveal the size of the expected investment, but it is estimated at about \$3 billion, according to a source close to the deal. "Growth in power generation is crucial to the sustained

development of the Egyptian economy," Sawiris was quoted as saying. "This is also a strategic step in developing Orascom Construction's infrastructure focus in Egypt and other key regional markets." IPIC's Managing Director Khadem Al-Qubaisi said: "As a company wholly owned by the government of Abu Dhabi and under the direction of Sheikh Khalifa Bin Zayed Al Nahyan, President of the UAE and Ruler of Abu Dhabi, IPIC is proud to play a role in assisting Egypt in meeting its current and future energy needs."

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#### Steel Manufacturers to Request Gas Price Reduction

Egyptian Steel factories are requesting a modification of energy prices for the steel sector from the Ministry of Industry, having been unable to cope with the new rates quoted since July, reported Egypt Independent. Natural gas prices were raised in July from \$4 to \$7 per one million BTUs. Mr. Mohamed Hanafy, CEO at the Chamber of Metallurgical Industries at the Federation of Egyptian Industries, said that the government decision to reduce prices for glass factories encouraged steel manufacturers to study submitting a similar request. He noted that glass factories consume more gas compared to steel. Mr. Hanafy said that the government had reduced prices for the glass industry from \$7 to \$5 per million BTUs. Factory representatives, assisted by accounting professors and technicians, have held a series of meetings to formulate the request to be submitted to the government,

preparing their suggestions for prices that they believe can sustain their businesses.



#### Cement Companies Make the Gas-Coal Switch

Several cement companies have started retrofitting the factories to rely on coal for power generation instead of natural gas, reported Reuters. Gas supplies to cement factories have decreased in the last few months due to a drop in gas production, while the prices have gone up. As the country's energy crisis worsened, The government has targeted energy-intensive cement companies for cutoffs while its priority has been to preserve gas for power generation, which would avoid blackouts and public unrest. The government allowed the import of coal for power generation purposes for cement companies in April of this year. Arabian Cement has already started a gradual switch to coal and has imported 700,000 tonnes so far this year, mostly from South Africa, Ukraine

and Spain, Investor Relations Manager Haitham El Shaarawy said. It expects to bring in another 200,000 tonnes by the end of 2014, he added. Lafarge Cement Egypt, which has one cement plant in Egypt, has already converted it to coal power and has applied for a permit to import coal, a spokeswoman said. Suez Cement, which has five cement factories, began testing coal use at its Kattameya plant in September and will begin testing at its Suez plant by year-end, the company said in its quarterly earnings statement. Earlier this year, an Egyptian minister said government estimates had found that burning coal in cement plants alone would save 450 million cubic feet of gas per day.

#### Egypt Received EGP 53 Billion in Gulf Aid in 2013/2014

Egypt's Finance Minister Hany Kadry Dimian, told a news conference reported by Reuters that the country has received \$10.6 billion in aid from Gulf countries during the last fiscal year. Aid worth EGP 74 billion was received during 2013 - 2014; EGP 53 billion was in the form of petroleum products and the remaining EGP 21 billion as cash. The Gulf countries –including Saudi Arabia, UAE and Kuwait– have provided aid

to Egypt since the ousting of Morsi in July 2013 by then Army Chief Abdel Fattah El Sisi. The Finance Minister also stated that the country's deficit has decreased from 13.7% of gross domestic product (GDP) in the previous year –about EGP 239.7 billion to 12.8% of GDP amounting to EGP 255.4 billion

#### GDB and BG to Connect West Borollos Field to West Delta Processing Plant

In exclusive statements made to Al-Borsa, a senior official at the Ministry of Petroleum stated that Gaz de France (GDF) and British Gas (BG) will sign a new gas deal covering Egyptian gas fields by the end of November. GDF announced it will begin construction on a pipeline to connect the West Borollos field to the West Delta Processing Plant, which is owned by BG, and will add 100 million cf/d to production from the West Borollos field by 2018. GDF said the construction is

to start immediately upon signing the contract with BG. The official added that BG's production currently amounted to 1.1 billion cf/d of gas compared to 2.5 billion in 2008. This decrease is attributed to a natural fall in production rates, the failure to connect wells to compensate for losses, as well as the government's delay in the repayment of debts owed to foreign oil companies.

#### EGPC Seeks \$1.5 Million Loan for Further Debts Repayment

EGPC is to tender a loan for about \$1.5 million. The tender will be to global and international banks, Chairman of EGPC Tarek El Molla stated, according to the Daily News Egypt. He added that the loan will not be assigned to local or global banks to be marketed to other banks and will be intended to cover another portion of the debts owed to foreign oil companies. The Ministry of Petroleum secured a loan of EGP 10 billion in October provided by an alliance led by the National Bank of Egypt. El Molla also pointed out that the EGPC in-

tends to repay a further \$1 billion of the debts before the end of this year. Petroleum Minister Eng. Sherif Ismail said in a statement that the government will repay about 60% of the debts by the end of this year, while it's expected that the debt will be cleared within six months. He commented on the recent tender saying, "This offering comes as one of the short-term measures taken by the government to pay the international oil companies' arrears."

#### Naftogaz Ukrainy Produces 19 Million Cubic Meters of Gas From Alam El Shawish East

Ukrainian company Naftogaz Ukrainy has been producing 300,000 cubic meters of gas per day from its development fields in Alam I Shawish East concession in the Western Desert, reported Interfax Ukraine. "In September and October 2014 a total of 19 million cubic meters of natural gas has been extracted," the company said in a statement. Naftogaz stated that the expected production in Egypt during this year will reach 260,000 tonnes of oil, amounting to about 11-12% of the annual oil extraction in Ukraine. A total of 16 wildcats,

12 test wells and 12 exploitation wells have been drilled, and seven oil and gas fields have been explored, while extraction started at four of them. "In 2015, it is planned to finish building the technological infrastructure on the fields and commission pipelines, thanks to which it will be possible to connect other producing wells and enter the production rate of up to 950 tonnes (now around 740 tonnes) of oil and 700,000 cubic meters of gas a day," Naftogaz Ukrainy said.

#### Islamic State Ally Ansar Beit Al-Magdis Claim Responsibility for Pipeline Explosion

The Islamic State's Sinai ally Ansar Beit Al-Maqdis (ABM) has claimed responsibility for the attacks on the gas pipeline between Egypt and Jordan. A video was posted by the group showing the explosion of the 1,200 km gas pipeline, that cost \$1.2 billion to build, and is used to export natural gas to Jordan, Syria and Lebanon. On 25 October, the Egyptian government declared a three-month state of emergency in North

Sinai, after the security personnel were killed in two bombings. Egypt also launched a plan to create a buffer zone on its borders with Gaza to eliminate further attacks. There has been no official response from the Egyptian authorities on the video.

### CHOICE Words



The international community - Europe and the Americans - must help the Libyan national army regain its position and combat terrorism in Libya to restore security and stability.

Abdel Fattah El-Sisi Egypt's President

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The state increasing energy and petroleum product prices formed a necessary step for the Egyptian economy, which is undergoing various crises at present, and PepsiCo understands this. The move did influence our company as operation costs went up, and we are working very hard to ensure that these increases do not affect company sales.

**Omar Farid** 

Chairman of PepsiCo Middle East and North Africa



Egypt is a large market, cumulative knowledge, and a strong banking system. We have tourism and service resources and an investment capacity that requires a suitable investment requirement. This is the method that is being implemented by the government at the moment.

Naglaa El-Ahwany Minister of International Cooperation

99

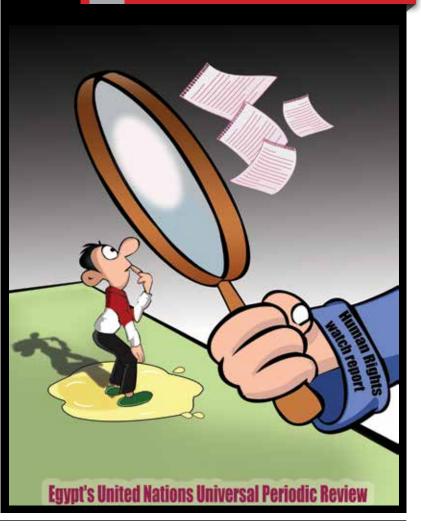


Although many people think revolution is the only method to solve the current political turmoil, we have to find an inclusive and unconditional solution to the current situation.

Yousry Hamad President of Al Watan Party

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### **CARTOON**



### Eng. Sherif Ismail: 36 Petroleum Agreements Since 2013 and 20 New Agreements

MENA news agency reported that Petroleum Minister Sherif Ismail said that 36 new petroleum agreements have been signed since 2013 with investments of about \$2 billion. He added that 20 agreements are expected to be signed by the end of the year with total investments of \$2.1 billion. "There have been no new concessions in the period from 2010 to 2013, which resulted in decreasing exploration areas to only 27 blocks during 2013, down from 53 in 2010," said Ismail. The Min-

ister revealed during the International Economic Forum that the government is to invest \$3.9 billion for the development of oil refineries and \$2.6 billion in the petrochemical industry. The ministry is channeling its efforts towards overcoming the recent challenges from the decreased production, the unstable political and economic situation, and the disagreements with the foreign oil companies on gas prices and debts.

#### **EGPC to Cover LNG Import Expenses**

EGPC President, Eng. Tarek El Molla, announced that the costs for the import of LNG and renting the floating LNG terminal for the import will be covered by the EGPC until June 2015. He added that the cost, which is expected to exceed the estimated \$5 billion, is allocated as part of the budget for the 2014/2015 fiscal year. The amount is to be settled with the finance ministry in the final accounts of the fiscal year. The contract signed between EGAS and Hoegh LNG stipulates that for five years, the vessel will provide quantities of LNG exceeding 500 million cf/d to fulfil part

of the additional requirements of power plants. Khaled Abdel Badie, Chairman of EGAS, explained that the seven offers received by EGAS for the global tender for importing LNG shipments was closed at the end of October, with bids currently being evaluated. The tender will be awarded before the end of November, he said. He pointed out that an initial agreement has been made with Algeria's SONATRACH and Russia's Gazprom to each supply seven shipments of LNG, and final procedures are being taken to receive the shipments, reported the Daily News Egypt.

#### **EGAS** Revises Gas Prices for Eni

Mahfouz El-Bony, Vice Chairman of EGAS, stated to Reuters that the government is currently negotiating new gas prices with Italian Eni. "The price ... is not becoming competitive for investors to develop as the cost of drilling and the development plans is all increasing", he said, suggesting that the government may pay a higher price. Eni would be the second company to reach a deal over revised gas prices

with the government. In June, Egypt agreed to a revised price with German oil and gas group RWE DE, but has yet to announce that price. "(For) RWE, we have the new price but it still is subject to approvals from relevant authorities," El Bony said. In October, Apache said to Reuters that they hope to reach an agreement with the government on gas prices.

#### **Four Shale Gas Exploration Areas Open for Bid: EGAS**

An EGAS official revealed to the Daily News Egypt that approvals to open bids for research and exploration of shale gas in four areas in the Western Desert have been granted. He said that the project would be offered in a special bid by EGPC, who is yet to decide on a date for the bid. The official explained that EGAS aimed to obtain two regions in the Western Desert, but authorities issued approvals for four. He added that the areas included in the bid include sites where Shell and Apache are conducting shale gas production trials in the Western Desert. In previous statements, Minister of Petroleum Eng. Sherif Ismail has said that the ministry plans to launch an international tender for shale gas extraction by the end of this year. A study published by the US EIA earlier this year stated that Egypt's reserves of shale oil,

for which extraction is a risky process, amounts to 114 billion barrels. Approximately 4.6 billion barrels of this are extractable, while conventional crude oil reserves number around 4 billion.



#### **Natural Gas Exports Fall By 81.4% in September**

Egyptian natural gas exports declined in September 2014 by 81.4% compared to September of last year, the state-run Information and Decision Support Centre (IDSC) reported. Exports amounted to \$18.1 million, compared to \$97.1 million in September 2013. Gas production fell by 12.2% than its September 2013 level. This September, Egypt produced 3.01 million tonnes of gas, compared to 3.4 million in September last year. On the other hand, 68.7% of the consumption was accounted for by power generation, which is up from 59.6% last year.



# **Shell Starts Production From Assil and Karam Fields**

Shell Egypt announced the start of production from the Assil and Karam fields in the Alam El-Shawish West (AESW) concession in the Western Desert. The company is partnered GdFSuez and North Petroleum International Company (NPIC). Jeroen Regtien, Chairman of Shell Eavot said. "Safety and quality are key drivers in the on schedule completion of the Assil and Karam project. The project achieved a record five million man hours without any lost time injuries and is an example of the close collaboration between Shell's joint venture partners Badr El-din Petroleum Company (BAPETCO) and the Egyptian General Petroleum Corporation (EGPC) to meet the country's energy needs." The project located about 300 km west of Cairo includes five deep gas wells, a CO2 reduction plant (CRP), dual pipelines and other associated facilities which are expected to add approximately 120 million cf/d of treated gas to Egypt's total production capacity once fully ramped up. Given the project's proximity to the BED-3 gas processing facility, these two fields form the focus of gas development in the Alam El Shawish West Concession area. Shell Egypt and BAPETCO operate the project, with a 40% stake, with partners NPIC 35% and GDF Suez 25%

### Drilling **News**

#### **Agiba Drills New Wells**

Agiba, a joint venture between EGPC and IEOC, has recently drilled three new developmental oil-producing wells in its concession areas in the Western Desert. The production rate of Agiba was 2.017 million barrels as of October 2014.

#### **EMRY DEEP 12**

The new crude oil development well was drilled at a depth of 10,500 ft. utilizing the PDI-147 rig. Investments surrounding the project are estimated to be \$3.006 million.

#### **Qarun Drills New Well**

Qarun, a joint venture between EGPC and Apache, has recently completed drilling a new developmental oil-producing well in its concession area in the Western Desert. The production rate of Qarun was 1.244 million barrels as of October 2014.

#### HNE-32

The new developmental well was drilled at a depth of 6,070 ft. utilizing the PD-1 rig. Investment in the project is estimated to be \$1 million.



#### **Khalda Drills New Wells**

Khalda, a joint venture company between EGPC and Apache, has completed drilling a new exploratory oil-producing well in its concession area in the Western Desert. The production rate of Khalda was 4.453 billion barrels as of October 2014.

#### SYRAH N-1X

The new exploratory well was drilled at a depth of 14,800 ft. utilizing the EDC-8 rig. Investments surrounding the project are estimated to be \$1.437 million.

#### **BAPETCO Drills New Well**

BAPETCO, a joint venture between EGPC and Royal Dutch Shell, has recently completed drilling a new oil-producing developmental well in their concession area in the Western Desert. The production rate of BAPETCO was 1.289 million barrels of oil as of October 2014.

#### **BED 3 C-16A**

The new oil-producing developmental well was drilled at a depth of  $13,124 \, \text{ft.}$  utilizing the EDC-52 rig. Investments surrounding the project are estimated to be \$3.747 million.

#### **PETROBEL Drills New Well**

PETROBEL, a joint venture between EGPC and Eni S.p.A, has recently completed drilling a new oil-producing well in their concession area in the Mediterranean and Sinai respectively. The production rate of PETROBEL was 3.366 million barrels as of October 2014.

#### PFM SE-2ST

The new developmental well was drilled at a depth of 10,484 ft. utilizing the KS MEDST rig. Investments surrounding the project are estimated to be \$35.450 million.

#### BLS-12

The new developmental well was drilled at a depth of 10,972 ft. utilizing the ST-12 rig. Investments surrounding the project are estimated to be \$4,090 million.

#### **PETRODARA Drills New Well**

PETRODARA, a joint venture between EGPC and TransGlobe, has completed drilling a new oil-producing well in its concession area in the Eastern Desert. The production rate of PETRODARA was 261,255 barrels as of October 2014.

#### ARTA-64

The new developmental well was drilled at a depth of 4,110 ft. utilizing the ST-7 rig. Investments surrounding the project are estimated to be \$749,000.

#### **GPC Drills New Well**

GPC has recently completed drilling a new gas-producing developmental well in their concession area in the Eastern Desert.

#### HF 35/5

The new oil-producing developmental well was drilled at a depth of 6,978 ft. utilizing the ST-4 rig.

#### **NORPETCO Drills New Well**

NORPETCO, a joint venture between EGPC and Sahara Oil, has completed drilling a new oil-producing well in its concession area in the Western Desert. The production rate of NORPETCO was 211,910 barrels as of October 2014.

#### ABRAR-8

The new developmental well was drilled at a depth of 6,684 ft. utilizing the EDC-2 rig. Investments surrounding the project are estimated to be \$1.144 million.

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#### Tamar to Undergo Upgrades Including a Pipeline to Egypt

Israel's offshore Tamar natural gas field could undergo an upgrade to increase capacity and build a new pipeline. The upgrade would cost \$1.5-\$2 billion, including the construction of an underwater pipeline to an export plant in Egypt run by Spain's Union Fenosa Gas (UFG). It aims to increase production capabilities with new wells, platform upgrades and a pipeline to Egypt if a final supply deal with UFG is signed, Israel's Delek Drilling said in a quarterly report. The partners

signed a non-binding agreement to deliver about 4.5 billion cubic meters of gas a year for 15 years to UFG's liquefied natural gas terminal in Egypt in May. UFG's plant in Damietta has been idle since 2012 as its gas supply was diverted to satisfy the domestic needs. The consortium running Tamar would cover pipeline costs up to the maritime border with Egypt and UFG would pay for the rest, Delek Drilling stated.

#### **Turkish Cypriot Tension Continues**

Turkey has carried out a "pure provocation" in the Exclusive Economic Zone (EEZ) but the government of Cyprus will continue its diplomatic work and Eni's exploration activities will go on as scheduled, Cyprus' Energy Minister Yorgios Lakkotrypis told reporters in Rome according to ANSAmed. Turkey stationed a seismic data ship Barbaros and additional vessels in Cyprus' southern waters. The European parliament has already condemned Ankara's decision to send the vessels with a resolution on 14 November, a reaction also shared by the US, Egypt and Israel. The Italian government is "of great support"," the Minister added, and the role of Eni and Italy in the strategic plans of Cyprus in the energy sector are very important for its government, he stressed. As far as Ankara's interest in hydrocarbons in those waters, he added, the issue "will not even be on the table" before an

agreement to re-unify the island is reached. Meanwhile, Turkish Prime Minister Ahmet Davutoglu said that hydrocarbons could not be used as a weapon by anyone, adding that if Greek Cypriots unilaterally continued to claim Cyprus' natural resources for themselves, Turkey would reciprocate on behalf of the Turkish Cypriots. "The Greek Cypriots can't claim that the Eastern Mediterranean is an area closed to Turks and Turkish Cypriots and conduct research wherever they want," he asserted. Eni holds an 80% stake in a consortium with South Korean Kogas to explore three EEZ blocks - number two, three and nine - an operation that started on 14 September right next to where Turkish vessel Barbaros is located. Drilling operations will have to determine the presence and entity of fields - at least four said the minister - and will be ongoing as scheduled until 31 December.

#### Algeria and Turkey Sign 10-Year Extension for **LNG Supply Contract**

Turkey and Algeria signed a contract for the extension on Algerian LNG supply to Turkey for ten more years with a 50% increase in volumes. The agreement was signed in Algiers by Energy Minister Youcef Yousfi and his Turkish counterpart Taner Yildiz, reported Algerie Presse Service. The Algerian Minister of Energy and his Turkish counterpart discussed the possibility of expanding the bilateral energy cooperation to the fields of exploration, fertilizers, petrochemical and renewable energy. Yildiz welcomed the increased relations

between his country and Algeria in the field of energy, expressing the hope that they can be extended to petroleum products and other fields outside of hydrocarbons.

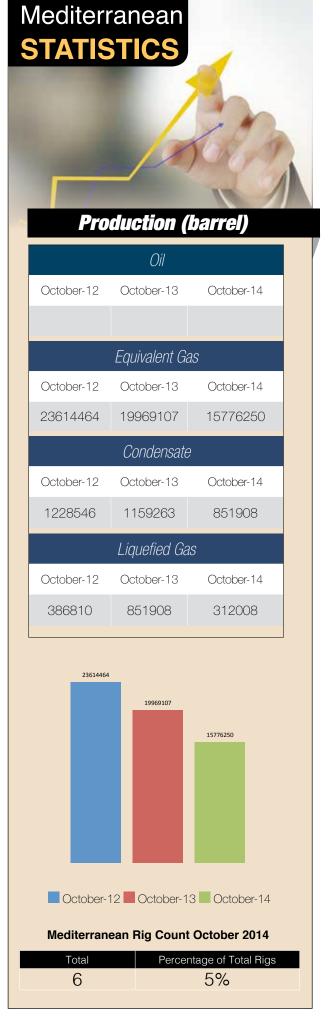


#### **Shell Egypt Abandons Deep Water Exploration in the Mediterranean**

Chairman of Shell Egypt, Jeroen Regtien, announced that his company will no longer "apply for any tenders for research and exploration in areas other than the Western Desert" and will abandon deep water exploration and drilling. "Shell Egypt will not work in deep water research and exploration after its experience in the Mediterranean, which cost us millions of dollars," Regtien said. Shell Egypt received a concession for gas exploration in the Mediterranean 11 years ago, but was unable to find sufficient quantities to achieve material returns to cover investment costs in the research and exploration operations. The company decided to abandon the concession. However, Shell reached an agreement with the Ministry of Petroleum on shale gas pricing and Shell will soon begin production trials in the Apollonia region in the Western Desert in cooperation with Apache using advanced US technology to carry out the operations. Regtien said the shale gas trials will continue for two to three years, then Shell would make a decision on whether to expand in the field. He also said, "We at Shell are moving firmly toward facing energy challenges and we have been one of the major international companies in the field of technological innovation for more than 100 years. We will continue to provide more solutions and technological innovations to meet energy market needs and innovate new sources of energy while producing more oil and gas from our existing fields."

### **Delek Upgrades Cyprus' Gas Reserves Estimates**

Noble Energy's Israeli partners Delek Group's Avner Oil and Gas LP and Delek Drilling Limited Partnership reported an estimate upgrade for the amount of Cyrus' natural gas reservoir to the Tel Aviv Stock Exchange, reported the Cyprus Mail. The amount of natural gas in Cyprus' Aphrodite (Block 12) reservoir was raised by 14 billion cubic meters reaching 127 billion cubic meters of gas. The firms also raised the estimated number of barrels of condensate at the Aphrodite field to 9 million barrels up from 8.1 million. The new gas estimate corresponds to roughly 4.5 trillion cubic feet (tcf). Despite the 12% increase, the revised numbers still do not come close to the minimum amount of gas which Noble Energy - operator of the Aphrodite prospect - says is needed to make an onshore LNG plant commercially viable. "Constructing a facility for producing liquefied natural gas (LNG) is very expensive; the cost could reach \$10 billion... On the one hand, gas consumption in Cyprus does not justify development of Aphrodite; on the other hand, exporting the gas in liquid form requires larger quantities," Israeli news outlet Globes - which first reported the Aphrodite field upgrade said. The increase resulted from an exchange of information between the partnership in the adjacent Israeli Ishai prospect and the partnership in Aphrodite in Cyprus.



# SOCAR Will Not Conduct Hydrocarbons **Exploration With** Turkey

Azerbaijan's state energy com- in Turkey's economy will reach \$5 pany SOCAR stated it has no billion by late 2014. Turkey is a agreements with Turkey on conducting exploration of hydrocarbons in the Mediterranean Sea, according to Trend Agency. It was reported earlier that Azerbaijan, jointly with Turkey, will explore for hydrocarbons near the coast of Cyprus. SOCAR is involved in a number of major investment projects in Turkey, including the construction of TAN-AP, Star refinery, and others. The volume of investment of SOCAR

key partner of Azerbaijan in the energy sector. The two countries in particular, are linked by the Baku-Tbilisi-Ceyhan oil pipeline and the South Caucasus Pipeline. As part of the delivery of Azerbaijan's gas to the European market, it is planned to build the Trans-Anatolian (TANAP) pipeline project, which will supply gas to Turkey's border with Europe.



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## Singapore and Malaysia Should Develop LNG Hub: Pavillion Energy

Seah Moon Ming, the CEO of Pavillion Energy of Singapore has suggested that Singapore and Malaysia need to develop an Asian LNG hub to help provide a sustainable energy solution to Asian nations. He said that this could help facilitate transparent LNG pricing and price discovery which could bring about a continent-wide LNG Price Marker as well as develop financial instruments such as LNG futures contracts. This was reported in Bernama news Agency. It also reported that recent developments of a

strategic nature between the two countries represented a scope for closer partnerships between them in energy and other related services. "Further ahead when the time is right, we could also look at how to tap the \$7 Billion Trans-ASEAN Gas Pipeline project which connects 4,500 km of gas pipeline networks of all ASEAN member states, so that the benefits of an Asian LNG hub can be fully reaped and enhance energy security for ASEAN." he said

#### **Halliburton and Baker Hughes Merger Stalled**

Service companies Halliburton and and Baker Hughes are currently holding talks on a merger between the two companies. The talks were stalled however, as Halliburton expressed their intention to replace the entire Baker Hughes board, a move that was not welcomed by the smaller company. "Baker Hughes is disappointed that Halliburton has chosen to seek to replace the entire Baker Hughes board rather than continue the private discussions between the parties," Chief Executive Martin Craighead said in a statement. The companies have also disagreed on a price and other key issues such as how to address antitrust concerns, a source said to Reuters. Baker Hughes also said that Halliburton refused to increase its first proposal after it had made a counter-offer, in what is already a strained

takeover courtship. Baker Hughes said mid October that it had rejected Halliburton's initial proposal, which was made more than a month earlier, in a deal that would create \$2 billion in synergies after divestitures. A merged company would be worth \$67 billion and have 140,000 employees. However, that would only be half the size of industry leader Schlumberger, which has a market capitalization of \$125 billion. If a deal were struck, the companies might have to sell assets to convince regulators they would not hurt competition, said Seth Bloom, an attorney who is a former veteran of the U.S. Department of Justice's antitrust division, to Reuters. One of the sources said that up to \$7.5 billion in divestitures was contemplated by the parties.

#### Nigeria to Cut Petroleum Subsidies in 2015

Nigeria plans to cut subsidies on petroleum products by half in 2015 after sharp falls in global crude prices, data from the country's revised budget seen by Reuters showed on Friday. President Goodluck Jonathan submitted the revised budget figures to lawmakers this week, proposing to spend 458.68 billion naira (\$2.59 billion) on petrol subsidy in 2015, down from 971.14 billion naira presented for 2014. It also assumed further cuts to petrol subsidies in 2016 to 408.68 billion naira and 371.18 billion naira for 2017. Nigeria's finance minister has proposed lowering the assumed benchmark oil price for the country's 2015 budget to \$73 per barrel from the \$78 proposed in September, after global crude prices collapsed.

The country had tried to remove subsidies in 2012 in efforts to cut government spending and encourage badly needed investment in local refining, doubling the price of a litre of petrol overnight to about 150 naira (\$0.93) from about 65 naira.



#### **Venezuela Ships First Merey Heavy Crude Shipment**

Venezuela recently started importing Saharan Blend from Algerian state-run Sonatrach to dilute its extra heavy crude from the Orinoco oil belt. Reuters reported that the first shipment of Venezuelan crude mixed with Algerian light oil was shipped to China, according to state oil company PDVSA and traders. The Carabobo supertanker carrying 1.8 million barrels of Merey heavy crude will arrive in China by the end of the year, PD-VSA said in a statement. It did not elaborate on the terms of the deal. PDVSA had

previously imported costlier naphtha to use as a diluent. The Merey blend using Algerian oil fetches Venezuela \$20 dollars more per barrel than crude mixed with imported naphtha, according to Foreign Minister Rafael Ramirez. Venezuela, which has the world's largest crude reserves, has steadily increased its commercial and financial ties with China, to whom it ships around 600,000 b/d of oil, much of it part of an oil-for-financing agreement.

#### **Statoil Halts Offshore Exploration in Angola**

Norway's Statoil halted its offshore exploration campaign in Angola after several disappointing wells and canceled a three-year rig contract with Stena Drilling, handing back a drilling ship two years early, the firm said in a statement. "The costs of terminating the operations and associated services including the Stena Carron rig contract will be onerous contract and expensed in fourth quarter amounting to approximately \$350 million," Statoil said in a statement. Statoil had high hopes for Angola's offshore pre-salt blocks 38 and 39 because the geology is similar to Brazil's, where major oil discover-

ies have been made in similar rocks. "Statoil's first well results from the area have been disappointing and although the company still sees remaining prospectivity in the basin and on the Statoil acreage, more time is needed to evaluate the well results and mature new prospects before deciding on future activities," it said in a statement. The firm still has commitments to participate in several more wells in Angola, but only as a partner and not an operator, reported Reuters. The firm said that its 2014 guidance for exploration costs at \$3.5 billion was unchanged.

## **ExxonMobil to Drill Two Ultra-Deepwater Blocks in Gulf of Guinea**

ExxonMobil is finalizing production sharing agreements with the government in Ivory Coast for two ultra-deepwater blocks in the Gulf of Guinea, a senior official from the country's energy ministry told Reuters. "It's with ExxonMobil. We expect to finish discussions before the end of the year," Ibrahima Diaby, director of hydrocarbons at the ministry, told the news agency on the sidelines of an oil and gas seminar in the

capital Yamoussoukro. "A memorandum of understanding was signed for the two ultra-deep blocks and negotiations for the production sharing agreements are very advanced," he said. Ivory Coast is seeking investors for seven new ultra-deepwater blocks, inviting ExxonMobil, Total, Eni, Anadarko Petroleum, Tullow Oil and ConocoPhillips to a promotional event in Texas in October.

#### **Lukoil and Chevron Invest in Nigeria Exploration**

Russia's privately-controlled Lukoil announced it planned to invest in Nigeria with U.S. oil major Chevron Corp, as part of the company's overseas expansion aiming to seek opportunities away from Russia's state-dominated oil sector, reported Reuters. "We have decided to enter a joint block with Chevron in a project in Nigeria, which we consider to be promising," Chief Executive Vagit Alekperov told reporters, he did not name the project or provide any details however. The Aparo field and the third-party-owned Bonga SW Field in Nigeria share a common geologic structure and a joint de-

velopment is planned for both, according to Chevron's website. Lukoil – after being added to the list of Russian sanctioned companies in September over the Ukrainian crisis – hopes to double its oil output outside of Russia thanks to its most ambitious project, West Qurna-2 in Iraq, as well as their explorations in West Africa. Alekperov also said Lukoil expects dividend payments next year to be at the same level as in 2014, while its investment programme will be cut by \$2 billion to \$14 billion due to the steep decline in oil prices.

#### **E.ON Attracts Investors on Final Day for Binding Bids**



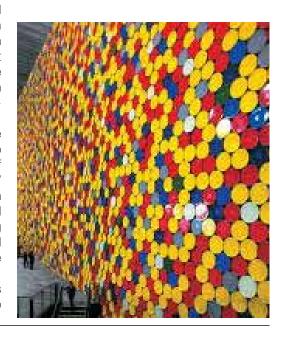
Several energy companies and investment funds have shown interest in the sale of E.ON's Italian assets on the final day for binding bids, sources familiar with the matter told Reuters. Two sources said French energy giant EDF was also looking to make a non-binding bid, outside the official process, for all the assets through its Italian utility unit Edison. E.ON has not yet decided if the sale of its Italy business, which could be worth more than 2 billion euros (\$2.5 billion), will be in a single block or in parts. The company put its Italian businesses up for sale more than a year ago to help cut debt, but Europe's depressed power market has prompted a series of delays. Three sources said Italy's biggest utility Enel and regional player Hera

made binding bids for E.ON's client portfolio, so did smaller gas and power marketing group Gala. Energy group Erg and infrastructure fund F2i made offers for the renewable assets, two of the sources added. EDF, Enel, Hera, Erg and F2i declined to comment while Gala could not be reached. Sources also said, to Reuters, investment funds Contour Global, Terra Firma and Germany's Aquila Capital had expressed interest in some assets. E.ON Italia, Italy's No. 4 electricity provider, has assets that include 6 gigawatts of generation capacity, a stake in a liquefied natural gas terminal and gas and power sales.

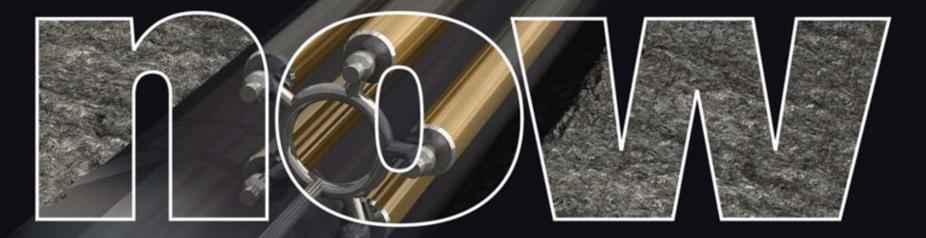
#### **Brent Below \$80 Per Barrel as Speculation on OPEC Cut Rise**

Crude prices have reached a record low, with Brent below \$80 a barrel, as Russia's offer to add to OPEC output cuts led some to bet the group will agree on a higher production cut than thought in its meeting, reported Reuters. Oil ministers from the Organization of the Petroleum Exporting Countries meet on 27 November in Vienna and some are imploring the group to cut 1 million b/d or more to support prices that have fallen about 30% since June. Russia, which needs higher oil prices to support its economy, tried to sway OPEC to slash production, suggesting Moscow could cut its own crude output by about 300,000 b/d. "Compared to a week ago, there's more speculation now of a higher-than-expected OPEC production cut," Phil Flynn, analyst at Price Futures Group in Chicago told Reuters. "If you were oversupplied by 2 million b/d and you were planning to going to cut just 1 million, it would not have changed the situation much. But if the Russians came on board with another 300,000 b/d, then, yes, it would help." Fund managers say oil prices could plunge to \$60 a barrel if OPEC fails to

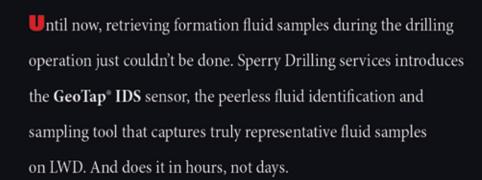
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# Kirkuk Oil Shipped Through Kurdistan Pipeline as Deal is Struck

Reuters reported that oil sourced from Kirkuk fields has been shipped through Kurdish-built infrastructure, according to Iraqi Oil Minister Adel Abdel Mahdi, as a deal reached with Iraqi Kurds to end a long-running feud over oil revenues is implemented. Iraqi Kurds and the central government in Baghdad struck a deal in November. The deal stated that 150,000 b/d - of their overall Kurdish oil shipments are to be given to the federal government in exchange for Baghdad paying overdue civil servants' salaries. Kurds are currently pumping 300.000 b/d via a Kurdish

Regional Government-built pipeline through Turkey. Iraq's northern export route, the Kirkuk-Ceyhan pipeline controlled by the federal government, has been damaged and segments of it fell under the control of Islamic State militants earlier this year, rendering it unusable, leaving Iraq little option for transport other than the Kurdish-built pipeline. "This oil shipment has already started. We have allowed it as a good-will gesture," Mahdi said. He later added that the bulk of 150,000 bpd was still being sourced from Kurdish-controlled Kirkuk.

## J.P. Morgan and NBK Lead Consortium for \$1 Billion Loan for KUFPEC

National Bank of Kuwait (NBK), in cooperation with J.P Morgan Limited, has led a consortium of international, regional, and Kuwaiti banks to arrange a syndicated loan of \$1 billion for Kuwait Foreign Petroleum Exploration Company (KUFPEC), a wholly owned subsidiary of Kuwait Petroleum Company (KPC), the company said in a statement. The five-year term loan will be used for KUFPEC's general corporate purposes and to finance its international expansion plans. The consortium includes: NBK, J.P Morgan, The Bank of Tokyo-Mitsubishi UFJ, HSBC and The Royal Bank of Scotland as Initial Mandated Lead Arrangers, and Ahli United Bank B.S.C, Australia and New Zealand Banking Group, Barclays Bank PLC - Wholesale Bank Bahrain, Burgan Bank, CITI Bank N.A. - Kuwait, Commercial Bank of Kuwait, Doha Bank. Gulf Bank, Mizuho Bank LTD, NATIXIS, National Bank of Abu Dhabi - Kuwait Branch, Qatar National Bank, Samba Financial Group, Societe Generale, Sumitomo Mitsui banking Corporation Europe LTD, and Union National Bank as Bookrunners and the Mandated Lead Arrangers, and Scotiabank Europe PLC, Bank of Bahrain & Kuwait, and National Bank of Bahrain as Lead Arrangers. Shaikha Al Bahar, NBK Deputy Group Chief Executive Officer, said "This transaction reflects NBK's leading position as the banking partner for Kuwait's oil companies. NBK has always been at the forefront in supporting Kuwait's oil sector. NBK's relationship with KPC and its subsidiaries extends for almost four decades.'

#### Iran to Pursue OPEC Output Cut

Iran's Mehr news agency reported, citing a television interview with the country's oil minister, Bijan Zanganeh, that Iran will try to persuade Saudi Arabia to cut oil production when the oil ministers from the two OPEC members meet in Vienna by the end of November. "Iran's oil minister will meet his Saudi counterpart in Vienna to persuade the oil giant for cuts in oil production and supply," Mehr reported. OPEC meets on November 27 to set its output policy as some of its members have called for output cuts to shore up the falling oil prices. Brent crude oil has lost about 30% of its value since June reaching about \$80 a barrel due to abundant supplies and weakening demand, Reuters reported. Saudi Arabia has so far not expressed whether it supports an cut in the OPEC output, which leaves the possibility of such an agreement uncertain. OPEC

delegates expect a difficult meeting, and analysts are split over the outcome. Minister Bijan Zanganeh said he would meet with his Saudi counterpart Ali al-Naimi in Vienna to talk about market share as Tehran aims to boost its oil exports if sanctions against it end, according to IRNA news agency.



#### **Kuwait's Exports to China Increased by 27.8% in October**

Kuwait's crude oil exports to China increased by 27.8% in October from a year earlier to 986,000 tons, equivalent to around 233,000 b/d, latest government data showed according to Kuwait News Agency (KUNA). China imported 4.1% of its crude oil imports from Kuwait in October, compared to 3.8% the year before, according to the Kuwaiti General Administration of Customs. In the January-October period, Kuwait exported 191,000 b/d to the world's second-largest oil consumer, up 29.8% on the year. State-run Kuwait Petroleum Corporation (KPC) signed a landmark deal with China's Unipec in September. The deal is expected to significantly boost crude oil deliveries to China over the next 10 years, and is the biggest-ever sales contract in KPC's history by volume and revenues. Under the agreement, KPC supplies Unipec 300,000 b/d of crude oil starting from this year, with a strong possibility of increasing the volume to 400,000 b/d, KPC told KUNA in late September. China's overall imports of crude oil in October grew 18.0% from a year earlier

to 24.09 million tons, or 5.70 million b/d. Saudi Arabia remained China's top supplier, but its shipments dropped by 0.7% to 1.08 million b/d from a year earlier, followed by Angola with 719,000 b/d, down 5.6%. Russia became third, with imports from the country jumping 38.7% to 652,000 b/d.



### Unconventional **News**

#### Ineos Invests \$1 Billion in Shale Gas in UK

Chemicals giant Ineos has announced plans to invest up to \$1 billion in shale gas exploration in the UK according to the BBC. The company is applying for more licenses to expand its operations in Scotland and in northern England. Chairman Jim Ratcliffe says he wants the company to become the biggest player in the industry in the country. He also added that he believes shale gas could revolutionize British manufacturing, and that Ineos has the resources and skills to extract the gas safely. The company plans to use the gas as a raw material for its chemicals plants, including Grangemouth in Stirlingshire. Grangemouth is currently running at a loss, but lneos believes shale gas will transform the economics of the plant. The firm also added that "substantial further investment would follow if the company moved to development and production."

# Ohio Issues 38 New Horizontal Drilling Permits in Utica



The Ohio Department of Natural Resources (ODNR) issued 38 new permits for horizontal drilling in the Utica and Point Pleasant Shale plays, according to a report by the Morning Journal. One permit was issued in Harrison County, four in Guernsey County, six in Monroe County, 13 in Belmont County and 14 in Carroll County. Currently there are 51 drilling rigs operating in the area. The total number of permits issued so far has reached 1,609, with 1,162 wells already drilled and a total of 617 wells in production, the report stated. In Carroll County, nine permits were granted to a Chesapeake Energy subsidiary in Fox Township. The remaining five permits were issued to R.E. Gas Development in Washington Township. Meanwhile, Belmont

County had five new permits issued to American Energy Utica. Four permits were issued to Gulfport Energy, three permits went to Rice Drilling, and the last one to XTO Energy. These permits were issued for drilling in the townships of Richland, York, Somerset, and Smith. In Monroe County, American Energy received three permits for drilling in Washington Township. Gulfport Energy was granted three permits to drill in Sunsbury Township. Meanwhile, in Guernsey County, Chesapeake Exploration (the subsidiary of Chesapeake Energy) was issued four permits to drill in Millwood Township. In Harrison County, Chevron Appalachia was granted a permit to drill in Washington Township.

#### ABB to Provide Support to Sinopec's Fuling Shale Field

ABB, a leading power and automation technology group, announced a deal with China Petroleum and Chemical Corporation (Sinopec) to provide automation and engineering services for Phase I of Sinopec's Shale Gas Project in Jiaoshiba Block in Fuling, Chongqing over the next three years, reported Xinhua. According to the "Shale Gas Development Plan" released by the Chinese government in 2012, China will actively promote the de-

velopment and use of unconventional oil and gas resources, including shale gas, which is expected to alleviate natural gas supply shortage in the country, as well as optimize China's energy structure, promote energy conservation and cut emissions. The Fuling field, discovered in 2012, has reserves of 2.1 trillion cubic meters of shale gas, according to Sinopec.

#### Romanian President: "We Don't Have Shale Gas"

Romanian President Victor Ponta announced that national exploration for shale gas in his country has failed and there are no significant amounts of shale gas anywhere in the country. He was quoted on Romanian television saying,"It looks like we don't have shale gas; we fought very hard for something we don't have." Based on the U.S. Energy Information Agency (EIA) estimation that Romania possessed 51 TCF of shale gas, Romania invited a number of foreign companies to search for shale gas. The re-evaluation of the numbers came after Poland lowered its potential amount of gas to 10% of original EIA estimates. Earlier this year, Chevron completed initial exploration works in the village of Pungesti. Despite the President's comments, a spokesman for Chevron said, that the company is continuing to analyze the "data gathered during its drilling and seismic operations to further understand the resource potential from shale." This indicates the possibility of some projects going forward at some point. This

comes as a disappointment amid Russia-Ukraine tensions, however it is not as much of a problem for Romania, a country that gets 20% of its energy from Russia and being the third-most energy self-sufficient country in Europe.



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#### Kinder Morgan Resumes Trans Mountain Pipeline Construction

Kinder Morgan Energy Partners LP announced the resumption of the preliminary work on its Trans Mountain pipeline after a British Columbia court granted an injunction against protesters blocking work crews in the Vancouver suburb of Burnaby in Canada. The company said after the court ruling, that it was coming up with a schedule to restart preliminary work at the Burnaby Mountain conservation area, reported Reuters. Kinder Morgan is hoping to triple the size of its 300,000 b/d Trans Mountain pipeline in a \$4.79 billion expansion that would carry more tar sands crude from Edmonton, Alberta, to the port of Vancouver and on to Asian markets.

#### **SACOIL** to Build Pipeline in Mozambique



According to Bloomberg, SACOIL is to diversify its assets by building a natural gas pipeline in Mozambique and developing Egyptian oil wells, according to chief executive Thabo Kgogo. "We are in discussions with a couple of international engineering companies that would like to participate" in a project to build a gas-processing plant in Mozambique and a line that would bring the fuel 600 km to South Africa, he explained. Feasibility studies are

expected to start in the first quarter of 2015. Along with South Africa's Public Investment Corporation and Mozambique's Instituto De Gestão Das Participações Do Estado, the company entered into a memorandum of understanding over the gas pipeline and plant. SACOil may first finish the processing plant to service the domestic market as the pipeline is under construction, according to Kgogo.

#### Russia and China Sign New MOU for Altay Pipeline

Russia Today reported that the Russian President Vladimir Putin and Chinese leader Xi Jinping have signed a memorandum of understanding on the so-called "western" gas supplies or "Altay" pipeline route to China; an agreement which paves the way for a contract that would make China the biggest consumer of Russian gas, exceeding the amount the EU imports from Russia. "After we have launched supplies via the "western" route," the volume of gas deliveries to China can exceed the current volumes of export to Europe," Gazprom CEO Aleksey Miller told reporters. The route is expected to supply 30 billion cubic meters (bcm) of gas a year to China. The new supply line comes in addition to the "eastern" route, through the "Power of Siberia" pipeline, which will annually deliver 38 bcm of gas to China; the con-

struction of the pipeline route has already begun after a \$400 billion deal was clinched in May. "We have reached an understanding in principle concerning the opening of the western route," Putin said. "We have already agreed on many technical and commercial aspects of this project, laying a good basis for reaching final arrangements." The "western" route deal is one of the 17 agreements signed at the Sunday meeting between Putin and Xi. They also included a framework agreement between Gazprom and China's CNPC on gas deliveries and a memorandum of understanding between Gazprom and another Chinese energy giant, CNOOC. Gazprom and CNPC have also signed a preliminary agreement for China National Oil and Gas Exploration and Development to take a 10% stake in Russia's Vancorneft.

#### Israel Seeking EU Backing for East Med Pipeline

Israel has asked the European Union to back the East Med Pipeline project which would connect the natural gas fields in Israel and Cyprus to the European market through Greece, the Greek Kathimerini reported. Addressing the European Commission's new energy chief Maros Sefcovic during an event organized by the Italian EU presidency in November, Israel's Energy Minister Silvan Shalom said that the pipeline would ensure that European consumers get the cheapest possible gas. Construction of the pipeline appears to have fallen out of favor because of technical and economic concerns. Cyprus Foreign Minister loannis Kasoulides said that a viability study was underway to determine whether such a project is financially as well as geologically feasible. "Israel's stated decision to work with Cyprus for a network linking the countries of the eastern Mediterranean

is a particularly positive development," he said.



#### **Consortium of Egyptian Investors Proposes to Build Four 50 MW Solar Powered Electricity Stations**

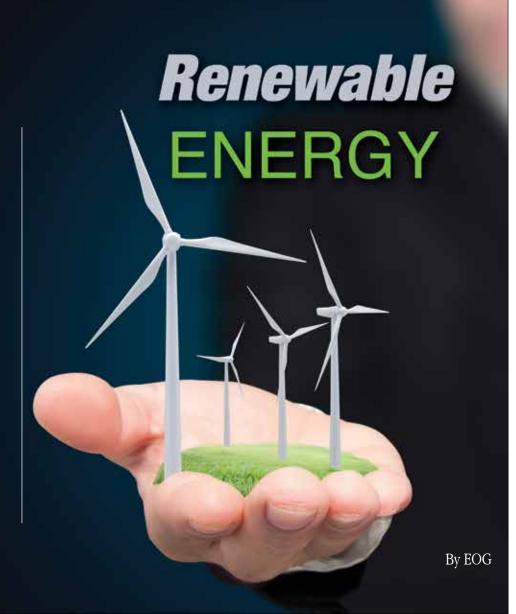
OneraSystems CEO Wael Al-Nashar said in sell electricity at 14.34 cents per kilowatt per a phone interview with Al-Ahram that a consortium of Egyptian investors comprised of three local banks, two local companies and two international companies, is proposing to build four solar powered electricity stations with a capacity of 50 MW each. Each station would cost \$90-\$100 million with an expected rate of return of 14%. They have already submitted an offer to the Ministry of electricity, to be decided upon by the end of November. In September, the cabinet approved feed-in tariffs for renewable energy production, enabling solar energy producers to sell electricity to the government. OneraSystems and its partners will be able to

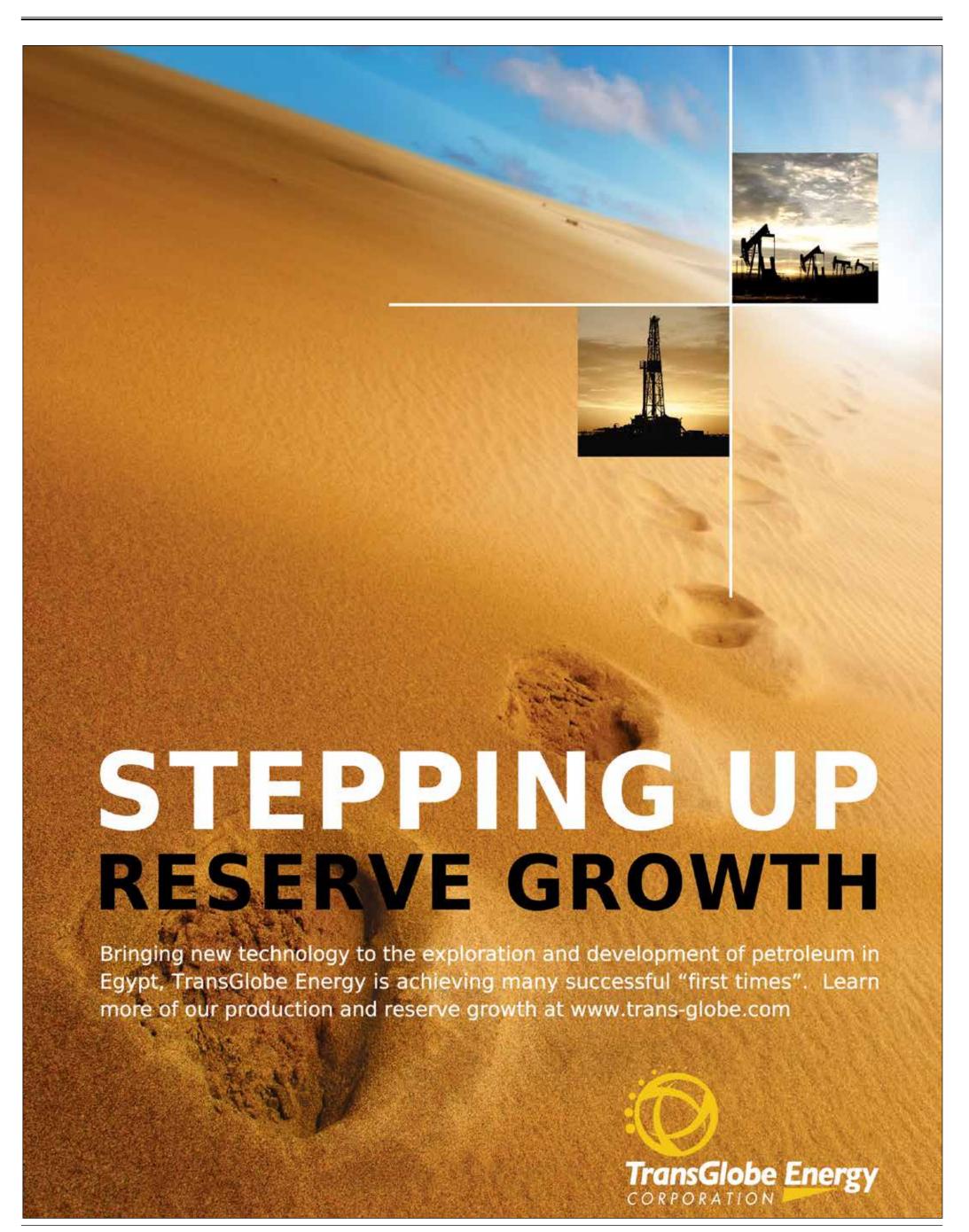
hour for the maximum production tranche of 50 MW. Payment will be in domestic currency according to the exchange rate at the time of payment. "We are not expecting to have all four stations approved as there are other bidders," said Al-Nashar. The Ministry of Electricity is only accepting offers to produce a total of 2000 MW in renewable energy, he explained. Land will be provided to private investors through usufruct agreements at competitive prices. For solar energy projects, land will be offered for 25 years whereas wind energy projects will have 20 years of land use.

#### **Egyptian Solar Production Falls By 48% in 2012/2013**

Egyptian electricity production generated from solar energy dropped by 48% in 2012/2013 compared to the year 2011/2012, the Egyptian Center for Public Opinion Research (Baseera) declared. They reported that solar energy production in Egypt totaled 247 million KWh in 2012/2013, compared to 479 million KWh in 2011/2012. Solar research professor and former head of solar research at the National Research Institute of Astronomy and Geophysics (NRIAG) Rabab Helal told Daily News Egypt that the

country has massive potential in solar energy. "There are 300 solar days in the year in Egypt, which is a wealth that is not exploited because of the high cost of solar power generation," said Helal. She attributed the cause of solar energy production decline to poor maintenance of the devices generating solar energy or damage in some solar cells. She added that wind energy is a more common source of renewable energy in Egypt due to its low cost.







Rex Tillerson, ExxonMobil Chairman and CEO, addressing the 21st World Petroleum Congress in Moscow this year, discussed the extraordinary changes that new technologies have made in the field. "With each passing year, our industry continues to advance the technologies we employ - enabling us to go deeper, more quickly, more accurately, and more safely than ever before."

New technologies are being developed at every level and from every angle - the amount of extractive industry patents rose from under 700 in 2005 to 1400 in 2010, and that pace is accelerating, reports the Venture Beat in a guest column by Mac Eltab.

GE Oil & Gas' new NovaLT16 gas turbine, which provides over a third more mechanical efficiency and can operate continuously for four years between maintenance cycles, was introduced this November at the 2014 Abu Dhabi International Petroleum Exhibition & Conference (ADIPEC).

On the local front, Egypt celebrated the manufacture of the 1000th locally manufactured API Certified Sucker Rod by GE Oil & Gas and Petrogas.

#### **Drones and Energy Use**

- SkyHunter, winner of the Technology Star Award, has developed technology that uses airborne surveys to map micro-seep data; this data indicates the presence of pressurized hydrocarbon reservoirs. Prospect evaluation and verification is aided and speeded up, and this information enhances other data used to make decisions. The SkyHunter can operate in all terrains, including ice and water, where seismic exploration would not be possible.
- Agribotix from Colorado has adapted drones used in agriculture, equipped with cameras and sensors, linked to cloud based data, to check pipelines and get to spills much more quickly.
- The 2014 Southwest Oil and Gas Awards for New Technological Developments of the Year, 2014, was won by Energy Recovery Inc. "They showed how they were able to capture energy from high pressure fluids and transfer it to power applications, creating reusable energy from what was formerly waste energy," said the judges, noting the "environmental benefits as well as cost savings from the recovery solution."

#### **New Opportunities**

The Natural Gas Organization provides figures that suggest that 22,000 fewer wells are needed to produce the same amount of energy as in 1985; technology has reduced the size of well pads with a concomitant decreased need for land. New exploration techniques do not depend on explosives, which lowers risk and impact.

- Seismic imaging in 3D and 4D means that wells are identified more easily, placed more effectively, and the number of holes drilled is reduced, which reduces exploration time.
- Measurement While Drilling (MWD) collects data from the bottom of the well as it is being drilled.

Colorado Cleantech Industries Association organized a seminar for new innovations, which was held at the Governor's Mansion - a clear sign of the importance attached to innovation in the field. They had issued a challenge in July that 40 companies responded to, and 12 were chosen to make presentations.

Denver-based Solar Multiple adapted technology from the National Renewable Energy Laboratory and created a thermal solar system which evaporates water from drilling much more rapidly than at present.

- Capturing methane is such another high-priority technology, with much significant focus on valves, pumps, and plungers.
- Alert Plus from Wyoming has a monitor that includes an alert system, which features an automatic shutdown as well as an alert on Twitter, online, and on cellphones.
- OptiEnz used technology from Colorado State University to develop the Real Time Sensor, which tests well wastewater for pollutants, methanol, and BTEX, precluding the waiting time that labs need to do analysis. "The operators are flying blind - this gives up to-the-minute information," explains Jeff OptiEnzx vice
- Agribotix from Colorado has adapted drones used in agriculture, equipped with cameras and sensors, linked to cloud based data, to check pipelines and get to spills much more quickly.

According to the Guardian, innovations in the oil and gas industry have led to development in other areas. The oil and gas industry has the resources to stress test water treatment technologies that might not have made it out off the drawing board.

- Clean Membranes, a start up company, have developed a "novel filtration system that can produce extremely pure, lab-quality water." A pilot test is being run on water produced from fracking, and it might have wider applications in the food and beverage industry, which also produces huge amounts of wastewater.
- Oasys Water designed a forward osmosis system intended for desalinating water, but has turned to the oil and gas industry for further development and testing. CEO Jim Matheson reports that it has been able to demonstrate the viability of the system and has attracted its first customers: "It can cost up to \$10 a barrel to truck produced water to a well for disposal: we are able to do that for half or a third of the cost, "he says. This process can also reduce significantly the amount of wastewater.
- Christopher Robart, partner at PacWest Consulting, tracks about a hundred water companies serving the oil and gas industry and says, "A lot of leadership in the oil companies is looking at water as a major risk and are willing to invest in solutions."

#### **Microbes and Low Salt Content**

- BP, du Pont, and Energy Biosciences Institute are investigating the use of microbes to lubricate rock surfaces and to break down oil, making it more viscous and easier to move.
- aste from wastewater: scaling up makes it cheaper, but also exposes flaws.
- BP is using a LoSal process, developed and owned by BP, using water with a low salt content appears to boost recovery by up
- Injecting carbon dioxide into wells as an alternative to water is also gaining popularity. CO2 can be separated from oil and other hydrocarbons during hydrogen power production – using this carbon dioxide means it is not released into the atmosphere.

#### **Subsea Exploration and Drilling**

Subsea drilling is a giant leap into extending fossil reserves. The seabed - a hostile and previously inaccessible area - is now being explored, thanks to amazing technologies. Karl Johnny Hersvik, head of Norwegian Statoil's research and development, believes that "subsea is the next generation of field development."

- The Alberto Luiz Coimbra Institute (COPPE) in Brazil is at the forefront of research and engineering equipment to reach ever-deeper levels and make it commercially viable. They have a facility, Lab Oceano, that is equipped with sophisticated multidirectional waves and wind generations systems that simulate the conditions found in in offshore exploration and production, which allows new technology to be tested.
- Statoil has recently entered into an agreement with DNV GL to establish a joint industry project (JIP) to introduce an international standard for subsea process technology. DNV GL will lead the JIP to find industrial standards to make it more profitable to develop larger projects with subsea processing technology. Presently solutions are tailored to specific projects, which increases costs. Subsea pumps have been widely used, but Statoil is installing the first subsea compression systems to increase gas production from the Asgard and Gullfaks fields.
- Cortez Subsea UK, has created Structure Commander software to inspect offshore platforms and is currently using this software suite to inspect six offshore platforms in the Eastern Venezuelan basin. This software uses data acquisition, eventing, and digital video to aid in the planning and managing of structure and pipeline integrity.

#### **Engineering**

GE has an innovative solution to prevent corrosion and connection seizure issues caused by marine and calcareous growth. FLX360 employs a mechanism similar to the bayonet fitting on a light bulb - a threadless design with small pins fitted on the side. The remote operating vehicle (ROV) rotates the mechanism, which then catches and locks. There is guidance on the stab plates to avoid misalignment, angular, rotational or lateral. "The FLX360 is a clear example of common sense engineering, showcasing our 'systems wide' wide approach in the evolution of subsea technologies. Stab plates are a critical component, which once engaged, are held together by huge force. They should remain in position, regardless of external conditions for many years, but should also be able to be 'de-mated' on demand," says Paul White, Director-Subsea Technology at GE Oil & Gas Systems.

#### **Remote Controlled Vehicles**

ROV's replace people thus reducing the risk to life and also saving time. ROV's can operate at depths of 3000m, and function is conditions of poor visibility and strong currents. "ROV systems are evolving at a fast pace," says Moray Melhuish, commercial director of award winning company, ROVOP.

Cambrian Innovation also uses microbes to remove organic The development of ROV's has made previously impossible tasks

#### Conclusion

As we consider the enormous implications of new technologies for the oil and gas industry, Rex Tillerson added this perspective: "Simply put, the global need for energy we see today - and the growth and demand we anticipate in the decades ahead - will require the world to pursue all sources of energy, wherever and whenever they are economically competitive...This means that we must invest, innovate, and relentlessly advance the technologies and techniques that promote energy efficiency, improve environmental performance, and reduce the greenhouse gas and air pollution emissions associated with increased energy use." The oil and gas industry has already shown that it is dynamic and can rise to any technological challenge - they are





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# BG Egypt Through the Eyes of Mr. Arshad Sufi President of BG



#### Could you briefly tell us about yourself and your journey in the oil and gas industry before becoming General Manager of BG Egypt?

I have 32 years' experience in the oil and gas industry. I have a doctorate in petroleum engineering from Stanford University in the US, and I started my career in the US as well. I've been all around the world, joining BG in 2000. While I've lived in a lot of different places, Egypt is like my second home – I have lived here over 12 years. In fact, I first joined BG in Egypt. At that stage we were doing a lot of major developments, and BG had not yet produced any gas. By 2005, we were by far the leading gas producer in the country. This is something BG prides itself on—very rapid development and implementation, which has been the hallmark of our stay in Egypt.

# Considering your wide experience internationally, could you tell us about BG's activities in Egypt, and how it compares to the rest of the world?

The production we have is through two concessions, the West Delta Deep Marine and Rosetta. While we are the operator for the Concessions, the actual implementation is done through our joint venture with EGPC, Rashpetco and Burullus . BG has three exploration concessions as well.

In BG's portfolio, very soon after starting, Egypt became the largest producer for BG's assets. Of course, our production is now a little lower than it was before, and at the same time there are other major assets we are developing in Brazil and Australia – so at some point, these countries will take over. But Egypt has been a very major component of BG's portfolio.

### What is BG's share in oil and gas production in Egypt?

We have been as high as 40% of the gas production, and right now we are between 20 and 25%, but hoping to increase as we move forward. And we can talk a little bit about how we are working with the Egyptian government to try and counter some of the gas issues.

### How would you characterize BG's production in Egypt for 2014?

BG has opportunities to increase gas production and help stop the natural decline in production, which has been a feature of Egypt in recent years. We just invested \$1.5 billion in our latest phase of development of the West Delta Deep Marine Concession, "9A". The wells are actually coming on during this phase – this was a nine-well project, and we have seven of these wells on stream right now. This all helps compensate for the production decline

### What has been the biggest achievement in Egypt for BG?

Of course there's been a lot of development, and being one of the biggest gas producers is important for Egypt. That is what has contributed to keeping the lights on in Egypt throughout the past several years.

However, in my opinion, that hasn't been our greatest achievement. Considering how tech-

nologically complex deepwater development is, when I first came here to discuss the initial investments, a lot of the work was being done by expats, because that was where the technological talent was at the time. However when I came back five years ago, I saw a lot of leading positions, commercial discussions, and developments being undertaken by very capable and senior Egyptians. That made me very proud and I consider helping develop local talent to be one of BG's greatest achievements here.

# Did you have any doubts about the oil and gas sector in Egypt following the January 25 revolution?

Simple answer: no. Since BG has been here, over the last 25 years, we've invested \$14 billion along with our partners. Of that, \$3.5 billion has been invested since the 2011 Revolution – we continued to invest, as we had every confidence in Egypt.

### How are you positioning yourself in the coming years?

We are proud to say that we have been a long standing partner for the Government of Egypt, and we would like to continue to be a partner for Egypt.

Over 25 years of working in the country, we have invested in building one of the most comprehensive and largest networks of infrastructure in the Mediterranean, both onshore and offshore. Today, and as a reflection of our deep understanding of Egypt's need for energy, we are making our infrastructure available to other operators in the Mediterranean – neighboring IOCs with close discoveries in Egyptian waters – to bring their gas in through our infrastructure to ensure gas from these discoveries is developed sooner. We work with the Government to enhance gas energy supply into Egypt.

### Have there been any developments for debt negotiation with the government?

There's always been a clear message from the government of their intent to pay it back; in fact they paid \$1.5 billion to IOCs last month. They recognize bringing down the receivables sends confidence to future investors, and to current operators. The new government is showing a clearer direction as well. Even when I came five years ago, we were aware of the huge subsidy environment that had developed in Egypt, and there was a sense the government would take action. But the current government has come in with a very clear direction of reducing subsidies, which in effect reduces energy waste, and this also addresses concerns of payment balance.

## What does the government need to do to attract more investment in the Mediterranean?

First of all, there is a lot of gas that has already been discovered, but not yet developed. For one reason or the other, the developments have been delayed. The government needs to focus on getting energy in the short term, but also on getting these developments started, which requires creating a confident investment environment – the receivables need to be re-

duced, and the right gas price needs to be set to attract investment into development. Also, you can combine activities of one partner with another to fast-track development. In our case, BG will allow other operators to utilize our infrastructure to develop their gas.

It is in the government's interest to try to minimize the cost of development. So we are working with them, considering that we have a lot of infrastructure, thinking about how we can bring in other people's gas. For example, we expect to a sign an agreement to bring gas from a small field in the Mediterranean, from one of GDF Suez' blocks to our infrastructure, which minimizes cost for the government. Working with the government to capitalize on our infrastructure will both reduce the cost of development and fast track gas production.

# Some players see working with the Product Sharing Agreement (PSA) model as a challenge, with increasing cost of development, particularly with more advanced technologies and deepwater exploration in the Mediterranean. Do you think the model needs to change?

I think the PSA generally works, as variables such as the cost recovery can always be modified. I am generally not a believer in wholesale changes. Our counterparts have lived with a PSA environment for decades; if you start changing the model, this could create a gap in the process which in turn may result in delays, and Egypt cannot afford to have a big gap in its energy supply.

## How far have discussions progressed concerning the ongoing negotiations to import gas from Israel?

We are looking at a lot of options to bring more gas into Egypt; these options include further exploration in our Concessions in Egypt, further development of our producing Concessions in Egypt, tie-in of local third-party gas, and finally looking at regional gas options. There have been a lot of gas discoveries in the Eastern Mediterranean. BG has signed a non-binding LOI with the partners of the Leviathan field to explore options of bringing some of that gas to Egypt. This is still at an

early stage. Cyprus is also very interested to bring in their gas to Egypt, and the president of Cyprus recently met with H.E. President Abdel Fattah El-Sisi to discuss how Egypt and Cyprus can cooperate on this subject. There is clear recognition that any successful deal to bring in regional gas needs Government of Egypt approval.

# What difficulties do you see the sector facing, concerning attracting new investments in Egypt?

I believe the sector was facing an issue of credibility because of the way receivables have built up and other uncertainties. But the past few months have shown that the current government is taking solid steps, both on the general economic reform and regarding the energy sector. The repayment of a tranche of owed debts to IOCs in October was a very encouraging sign. In my view, direction now is set; there's a focus on managing demand, subsidies, receivables, and gas pricing. So the government is taking the right steps to create confidence in the market. As this continues, I think you will see the operators that are already here will start investing more, and also new players will begin to recognize opportunities.

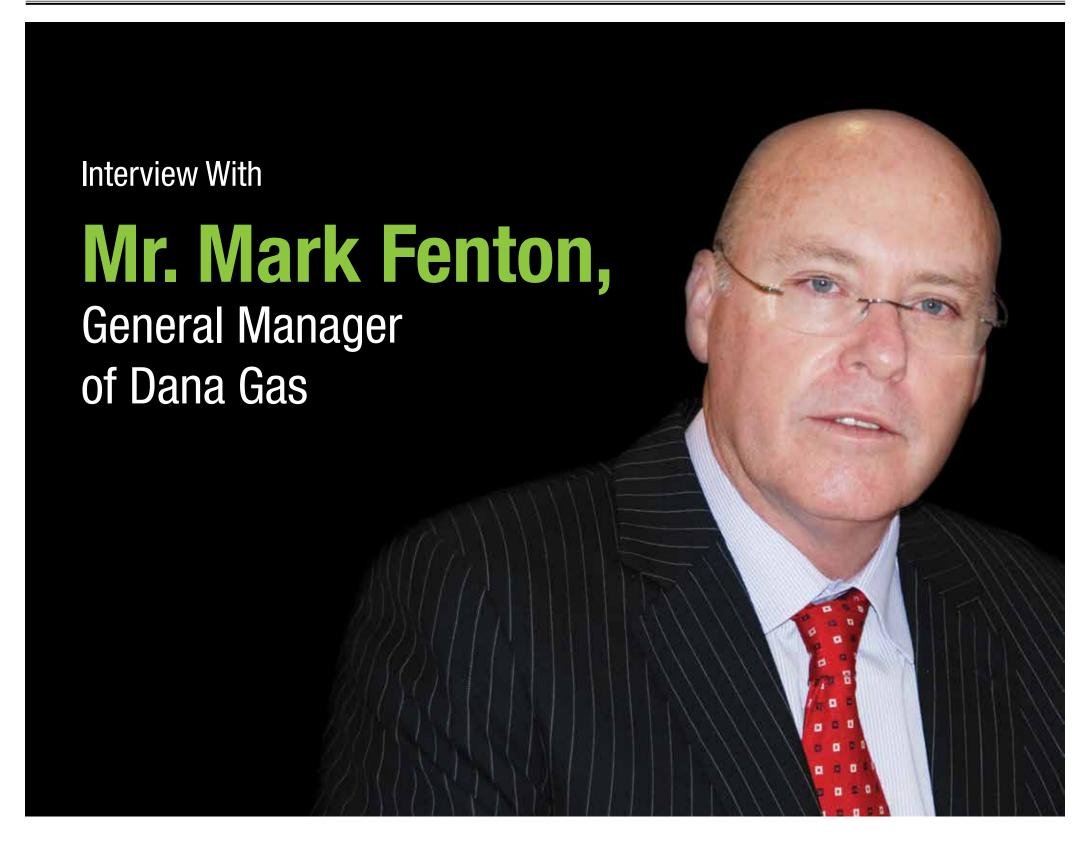
### What are BG's goals and future plans for 2015?

We'd like to continue working with the government to create the right investment environment for us and for others to bring in more gas quickly through our infrastructure. I stress the issue of infrastructure because the value of that cannot be underestimated – it reduces the overall cost for various investments and reduces the time cycle, both critical to Egypt.

I'd also like to add that Egypt has been a fascinating place to work. When I came here in February 2010, there were some decline and other issues, so I anticipated it would be a challenge – but of course I couldn't have predicted the political side of things. Being in Egypt during the past few years and today has been a fascinating experience that I've really enjoyed.







#### To what extent is the cash liquidity problem affecting your business in Egypt, and where does the debt repayment issue stand?

We managed to increase production targets of 2013 and we shall meet 2014 targets. The cash liquidity problem affects long-term growth plans. The total receivables balance as of mid-November 2014 is \$277 million.

### What do you think the new government should do to improve investment in Egypt over the fiscal year of 2015?

We would like to see the government develop practical mechanisms for paying the outstanding receivables and secure timely and steady payment of the new and future oil and gas proceeds. Revisiting the gas prices in the current and future gas sales agreements is another necessary improvement. Of course, a greater goal of establishing a secure peaceful living and working environment in Egypt should always be a priority.

#### Do you think the government needs to provide incentives for companies in order to explore and spend money in highrisk areas? If yes, what type of incentives do you think the government should offer?

Yes, indeed the government needs to provide incentives. Possible incentives for exploring high-risk areas may include defining an attractive minimum production share for the investors and defining an attractive minimum cost recovery percentage. Excess cost recovery should also be shared according to production split, and the signature bonus should be waved.

#### Can you brief us more about the newly signed production enhancement agreement with the government, and how you were able to reach to such an agreement?

The objective of the agreement is to increase our hydrocarbon pro-

duction and secure collection of receivables. Dana Gas is entitled to export to third party 100% of the incrementally produced condensate above an agreed profile to reduce outstanding receivables from EGAS/EGPC.

Dana Gas has committed to 7-year drilling/work-over program (ca. 200 MMUSD).

We reached this agreement because of the cooperative attitude of EGAS and EGPC and because it is a win-win deal for all parties.

### What were the main challenges you faced in assuring this agreement to go through?

The three main challenges we faced were the alignment and liaison of stakeholders, defining the condensate export route, and finalizing ancillary agreements.

### How do you see this agreement being of value to the country?

The agreement will result in increasing gas production, which will secure electricity generation. Meanwhile, the agreement helps EGAS and EGPC to pay part of their debts by applying similar deals with other operators. The agreement encourages Dana Gas and other investors to continue investing in Egypt, and helps growth of the oil and gas industry in Egypt.

# After your newly signed agreement with the government to increase production, how would you evaluate your investments in Egypt, and would we see new ventures in the near future?

Dana Gas has ambitious exploration and development plans in the existing acreage and in three new ventures: two onshore blocks in the Nile Delta and one offshore block North Al Arish.

How would do you rank Dana Gas compared to other

### gas companies in Egypt, and what has been the biggest achievement for Dana Gas in Egypt?

Dana Gas Egypt is currently the sixth gas producer in Egypt. Our growth plans should improve this ranking. We've unlocked the code for gas exploration opportunities in Egypt, and uncovered the value of the onshore Nile Delta. In just a few years we became the sixth gas producer in Egypt.

### How do you see the value of your new partnership with BP in the recently awarded concession?

The objective of the joint operation with BP is mainly to drill and produce the deep targets. BP will benefit in the offshore and Dana Gas in the onshore from sharing the Nile Delta experiences.

# What difficulties do you see that the sector faces as a whole and what is your message for investors to succeed in Egypt?

The difficulties we face are continuous increase of overdue payments to operator, delay of gas development projects, and low gas prices, which is related to the greater subsidy problem. Availability of hard currency is also a major issue.

#### What are Dana Gas's goals/future plans for 2015?

We plan to drill 13 wells in 2015 and we expect to see a substantial increase in our gas and condensate production during this period. We also plan to activate the gas production enhancement agreement, increase production as mentioned above and secure cash collection via condensate export. In addition, we will be commencing our exploration programs in Blocks 1, offshore Block 6 and in Block 3 with our partner BP. We will Evaluate the offshore block 6 after acquiring new seismic program, and spud the deep Oligocene well in Block-3 by end of 2015.



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# **EGYPT SITS ON MORE THAN 14 TCF** OF STRANDED GAS RESERVES

Industry Leaders Discuss Challenges and Potential at the First Stranded Gas Roundtable









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In Uptown Cairo on November 19, Egypt Oil & Gas changed in 1973 to the current Production Sharheld a roundtable to discuss the vast reserves of stranded gas in Egypt under the patronage of HE Eng. Sherif Ismail Minister of Petroleum. The event gathered industry leaders from the government and its foreign partners - representing the most prominent players and operators in the oil and gas sector in Egypt. The roundtable was chaired by EGAS Vice Chairmen Geol. Mahfouz El Bony; its participants included the former Minister of Petroleum Eng. Abdallah Ghorab, EGAS Vice Chairman Eng. Osama Elbakly, Apache Vice President Thomas Maher, Country Manager of KUFPEC Egypt Mohamed Al Ajeel, Country Manager of Sea Dragon Ahmed Moaaz, and Egypt newcomer Aidan Murphy, the Country Chairman and Managing Director for Shell Egypt.

Stranded gas refers to a reserve of natural gas that has been already been discovered, but remains undeveloped due to commercial, technological, or logistical reasons. The general consensus at the roundtable identified the economic challenges as the most prominent obstacle facing the development of stranded gas, but other barriers were examined.

Many participants expressed ambitions to tackle the issue and offered viable solutions. Eng. Mohamed Fouad, President of Egypt Oil & Gas, opened the event expressing his hopes for a fruitful and productive discussion, hoping the roundtable would achieve its goals and reinforce the cooperation between oil and gas producers and the Egyptian government.

Fouad noted that this roundtable discussion on Egypt's stranded gas came at the right time to address such changes, as previous meetings and dialogues emphasized the importance of collaboration to achieve stability of the energy markets and provide sufficient oil and gas supplies. He also explained that as the demand for natural gas increases, oil and gas producers have a big part to play in embracing new technologies to optimize the reach to the much needed stranded gas reserves, while the government should ease the path for the investors and producers to achieve their aim.

#### **Identifying Egypt's Stranded Gas Assets Within a Mature Oil Economy**

Geol. Mahfouz El Bony, Vice Chairman of EGAS for Agreements and Exploration, kick started the discussion, stating that Egypt is in dire need to increase its natural gas [and oil] production in order to cover the country's domestic energy needs. He also stressed that the main objective of the roundtable is to reach a conclusion and to propose recommendations, which will assist in the development of the country's untapped stranded gas

El Bony stated that according to studies conducted on the matter by the United States Geological Survey (USGS), IHS and others; there are about 1,700 economically stranded gas fields around the world containing some 3,500 trillion cubic feet (tcf) of gas. Of these, some 2,190 tcf is onshore and the remainder is offshore. 1,530 tcf consist of gas in gas fields and the remainder comprise of gas stranded in oil fields. The majority of these reserves are in Russia and the Middle East. He explained that as the majority of "easy" oil and gas is already discovered, more efforts should be channelled towards recovering the world's stranded gas

"Egypt is an oil mature country; we discovered oil a long time ago. However, until 1980, the concession agreement did not support the exploration for gas. There have been several modifications to the agreements since, so as to allow investments gas discoveries," El Bony explained. He added that since 1973 there have been a total of 455 concessions, of which 396 belong to the Egyptian General Petroleum Corporation (EGPC). Moreover, the Egyptian Natural Gas Holding Company (EGAS) has 34, and 25 concessions belong to Ganoub El Wady Holding Petroleum Company (Ganope).

El Bony elaborated that between the years 1963 and 1973, exploration in Egypt had begun taking place under the Participation Module, which was

ing Agreement (PSA). In the fiscal year 2013/2014, 36 concession agreements have been ratified, of which 13 agreements are new and nine amended - EGAS and Ganope each with seven concession agreements. He added that 20 more agreements are currently being ratified, allowing the drilling of about 133 wells amongst all 56 ratified agreements during the years 2013 and 2014.

Egypt is currently producing 5.4 billion cubic feet (bcf) per day from the Mediterranean Sea, the Nile Delta, and the Western Desert, El Bony pointed out adding that, "Two thirds, or 66%, of this figure is from the Mediterranean while about 26% of gas is from the Western Desert and 7% from the Nile Delta... As for reserves, 80% of Egypt's gas reserve is located in the Mediterranean Sea while 11% is located in the Western Desert."

"Egypt has a lot of stranded gas that we would like to add to the production; however, there are obstacles," explained El Bony as he elucidated that Egypt's stranded gas reserves face several economic and technical hurdles in extracting and adding it to the national production. He pointed out the importance of highlighting different technologies that make it possible to access these reserves.

#### **Discussion Leaders Classify Main Challenges**

Chairman of Agiba Petroleum Geol. Mostafa El-Bahr explained that stranded gas is gas that has already been discovered which is impossible or difficult to retrieve. As exploration "is a high risk-high cost process," El Bahr stressed the importance of data processing and availability. "We have to secure some data for the investors - without data it is difficult to apply for new concession licences.'

El Bony agreed that data and the volume of the SPEC are very important, especially for deep water drilling, ultra deep water and Oligocene extraction, adding that EGAS is proposing to acquire a 16,000 sg. km 3d spec survey and a 20,000 line km 2D spec survey.

Eng. Osama ElBakly, Vice Chairman of EGAS for Production and Fields Development, then commented that it is a fact that Egypt has a large quantity of stranded gas, and that investors, explorations companies, and the government should work together on eliminating the barriers currently making it difficult to reach those reserves.

President and Country Manager of GDFSUEZ Magsood Sher then introduced a very important question - whether EGAS or Ganope have any available information on stranded gas assets in Egypt as well their volumes. El Bony replied that EGAS, EGPC, and Ganope all have information and data on Egypt's stranded gas assets.

Shell Egypt Country Manager and Managing director Aidan Murphy explained that geological data facilitates the exploration, as the availability of such information has a huge effect not only on the development risk, but also on the cost of development. "The huge amount of geological information available in the U.S has a huge influence on the risk for development and it also has an impact on the cost of development," Murphy said. "One of the biggest resources Egypt has is its wealth of geological data, and particularly the data available on

Murphy went on to say that the main obstacle is not in fact identitying where stranded gas ιs, buτ ιτ it is economic to produce. "Shell has already identified at least 1 tcf of potential [stranded gas] in our existing concessions in the western desert... the question is not where, it is whether it's actually economic to produce."

Assessment-pilots – similar to the one Apache and Shell are conducting in Apollonia in the Western Desert - are needed as they provide exploration companies with information on the development of the wells, Murphy said, "It's not an identification of where the [stranded gas] resources lie, it's an identification of the cost of development."

Ahmed Moaaz, Country Manager and Director of Sea Dragon, clarified that it is vital to identify the category of stranded gas; if it is basins that The economics [of gas exploration] were created by contracts and agreements that can be modified. We need to consider this issue on a strategic level.

**Eng. Abdallah Ghorab**Former Egyptian Minister of Petroleum



80% of Egypt's gas reserve is located in the Mediterranean Sea while 11% is located in the Western Desert...Egypt has a lot of stranded gas that we would like to add to the production.

**Geol. Mahfouz El Bony**Vice Chairman of Agreements and Exploration EGAS



We are open to any proposal or changes that would help in producing our stranded gas.

**Osama El Bakiy** 

Vice Chairman Production & Fields Development EGAS



Shell has already identified at least 1 Tcf of potential [stranded gas] in our existing concessions in the Western Desert... the question is not where, it is whether it's actually economic to produce.

**Aidan Murphy** 

VP Egypt, Country Chairman and Managing Director - Shell Egypt



We continue to press horizontal and multistage fracturing technology. Hopefully Appolonia will be the first sizable test and if this pilot works out, we feel there is enough room on this resource for 30 wells for full-field development.

**Thomas Maher** 

Vice-President & General Manager – Apache



Quite frankly, in some of our areas we don't want to find the gas...at the moment the [value] propositioned isn't enough.

**Brian Twaddle** 

Country Manager Transglobe Energy



One of the main obstacles facing the production of our stranded gas is the cost.

**Geol. Mostafa El Bahr** Chairman, Agiba Petroleum Company



The government could consider leaving other terms than the gas price open for negotiation to allow room for flexibility.

#### **Shamel Hamdy**

Senior Vice President Trident Petroleum



It's not only the price only, it's the terms of the concession agreement. Maybe it is about time to change the model.

**Samir Abdel Moaty**Country Manager Beach Energy



If the government can facilitate third party access to facilities, this would aid in the production for stranded gas.

#### Magsood Sher

Country Manager GDF SUEZ



The public sector can't take risks, and the business we are in is a risk-rewarding business... We need a private entity that will be financed by the people of Egypt [to] make the big investments and get the big rewards.

#### **Ahmed Moaaz**

Country Manager and Director Sea Dragon Energy



Raising the gas price from the current \$2.65 to \$5.8 or \$6 — which is already being negotiated for some concessions — is indeed profitable to most investors.

#### **Mohamed Al Ajeel**

Country Manager KUFPEC Egypt



have been discovered but undeveloped or if they have been detected only by searches but not yet reached. "Stranded gas is typically a result of major challenges in its extraction, either commercial and logistic or technical. It is important to identify these issues in order to continue to their resolution," he reinforced

"Quite frankly, in some of our areas we don't want to find the gas," Country manager of Transglobe Energy Brian Twaddle said. He continued that for small and independent players in the field the current gas rate of \$2.65 per million Btu is deterring them from investing in gas. He further added that most of these reserves are in small pockets, which might be reached easier and sooner than stranded gas in the Mediterranean Sea. "At the minute the [value] propositioned isn't enough."

"Oil Investments are different from gas investments," replied El Bony. Development of an oil well is concluded sooner and with less investment in infrastructure and technologies than gas exploration. "The cost of development of any gas field is significantly higher than an oil field."

El Bony also agreed that small pockets could be aggregated, and suggested that data on these small pockets should be gathered from each investor to integrate into a possible valid economic facility.

Eng. Abdallah Ghorab, former Minister of Petroleum stressed that it is also important to discuss different aspects to the topic other than the financial one, "The economics [of gas exploration] were created by contracts and agreements that can be modified. We need to consider this issue on a strategic level."

Country Manager of KUFPEC Egypt Mohamed Al Ajeel asserted that his company is keen on investing more in Egypt but is faced by challenges. He also added that gas rate, being a very political issue, has been discouraging field players from participating in new bid rounds and attaining new concessions. "Raising the gas rate from the current \$2.65 to \$5.8 or \$6 – which is already being negotiated for some concessions – is indeed profitable to most investors," Al Ajeel stated. He suggested that EGAS might consider contributing with the gas developers as an investor, bearing some of the risks. He introduced another alternative that is developing a different receivables model to reassure investors.

#### **Time to Change the Model?**

"It's not the price only, it's the terms of the concession agreement, it is hard to work under the current system," countered Samir Abdel Moaty, Country Chairman of Beach Petroleum, questioning whether the PSA is the best agreement model. "One model can not fit all... Maybe it is about time to change the model," he said.

Murphy agreed that the current PSA model makes it very difficult to attain precise data, he pointed out that conventional and unconventional exploration varies widely.

Eng. Shamel Hamdy, the Senior Vice President of Trident Petroleum, also agreed that in case the terms of the agreements are modified based on whether the gas in question is conventional, unconventional, or stranded – it would allow [some of] the stranded gas reserves to be developed and brought onto production.

Sher on the other hand presented an important view as he brought up the need for easy third party access to refineries; a measure he reckoned would help develop some of the unreached gas.

El Bony then commented that the terms of agreement are not fixed and could be changed, although explorers should start by providing an estimate of the production as well as a full clear development plan including numbers of wells to be drilled, etc. Therefore, EGAS currently sees it fit to decide on the prices upon the actual gas discovery, and would consider this a better option to fixing a price, which might later prove difficult to change.

He added that it is no secret the government has raised the cost recovery from 20%-25% to 40%, a move aimed as an incentive to the investors.

Moaaz disagreed, saying that the PSA with the cost

recovery should be exchanged for a more profitable system such as the tax/royalty agreement, to which El Bony responded that EGAS is awaiting suggestions and recommendation on the amendment of current concession agreements that might need modification.

Hamdy then replied that a certain flexibility and ease is required between the government and the investors to allow such changes and modifications to the agreements to take place. "The economics should not stop us from producing gas from a well. [Egypt] needs all the gas it can produce."

El Bony expressed that EGAS wishes to participate in the exploration as an investor or change the PSA to another model but "it's not that simple;" he explained that a similar measure has been taken for a concession agreement in the Mediterranean Sea. The agreement was replaced by a service agreement. El Bony also agreed with GDFSUEZ's Sher on that easier access to refining facilities should facilitate the extraction of stranded gas.

Egypt used to be a place where private sector issues with concession agreements could be easily resolved with officials from EGAS or EGPC. Now however, the challenge of an expanding bureaucracy has loomed over the procedures, where everything has to go through committees and boards to be achieved. El Bony attributed the changes to the unrest in the last years since 2011 and the official's fear of being persecuted.

He concluded the first part of the roundtable by highlighting that in the case of gas imports, Egypt would be importing for a price close to the international one at about \$14. Thus, it is better to add stranded gas reserves to the production and ensure a solution to the issues hindering these efforts.

### **Employing Leading Technology to Monetize Reserves**

As the Roundtable progressed, technology came to the forefront of the discussion. Advances in technologies that aid in the harvesting of stranded gas are of an absolute necessity for the advancement of current and future projects. It was largely agreed upon that the means are already in use in other parts of the world, but need to be put to use in Fovot

Horizontal drilling was one of the methods most mentioned. The difference between a horizontally drilled well and one drilled vertically can differ as much as six to seven times in the amount of gas harvested. This method needs to be put in place alongside multi-stage fracturing to bring about the highest level of return. Mr. Thomas Maher, Vice President of Apache said this was admittedly done on a, "learning basis," but was showing a great deal of success in certain places, such as limestone layers.

Maher also stated that it was very important to bring in a service provider that could deliver horizontal well or fracturing technology to project sites for a reasonable rate. Although the initial price of \$200 million per well seems high, successful pilot programs could be quickly expanded into much larger producing concerns – for example, three trial wells could be expanded into 40.

There was also a lot of discussion of LNG, CNG, and Floating LNG. Egypt's many resources of stranded gas in the Mediterranean Sea and the deeper deposits were seen to be the deposits with greater future potential, but access and transportation were seen as key issues that needed to be addressed.

Mr. Jean-Pascal Clemencon, Managing Director of Total E & P, brought up that because some – although not all – of these deposits were small, what is needed for these deposits is a mobile system flexible enough to not only harvest these deposits one after the other, but also capable of reaching deposits farther offshore in deeper water. Both Clemencon and Maher considered some of the subsea and multi-phase technology that is currently in use in the Gulf of Mexico in favorable terms, that high-pressure exploitation of these deeper wells is paramount in having a profitable enterprise.

As the discussion continued, a question was raised

sponded that he believes "Egypt has about 15-17 tcf of stranded gas," a claim Jean-Pascal Clemencon agreed with according to To-

It was clear from this discussion that there are only a few companies in Egypt that were prepared to take this step. Moaaz stressed that contract agreements would have to be tailored to encourage implementation of the most up-to-date technology. New and returning companies would also need to receive special encouragement to join in the bidding, exploration and exploitation process. The stranded gas, which was not possible to recover in the past for geological reasons, would need to be revisited for potential advancements that would make recovery possible. This was especially true for many sites in the Western Desert.

#### **Stranded Gas Projects: Securing the Financing**

Financing stranded gas operations was a subject that was always in the background of all the other topics of discussion. One of the suggestions El Bony made was that of financial integration, or using money and material targeted to similar projects that were physically close to one another - for example, several small gas fields right next to each other either onshore or offshore. Sharing costs was seen as a good initial first step in the cutting of costs. Illustrating the need for financial integration, Maher stated that the cost of a single well is about \$150 million, and as high as \$335-\$410 Million for a deepwater high-pressure outfit.

There were divisions that came up as the discussion continued. EGPC and EGAS maintained that their role was to decide project financing. However Moaaz contested that the public sector is in an unfavorable position to run the oil and gas sector in Egypt, Governments are traditionally averse to taking large risks with money and to be successful in the energy sector. "You [the government] must be prepared to do exactly that," Moaaz believed, saying that no concrete examples of a government running such an enterprise exist.

Moaaz put forward Malaysia as a successful model - a privately owned, stock-traded entity to be financed by the people of the country. He stated that there are many investment entities in the Middle East presently that are ready, willing, and able to start this kind of enterprise, and who could draw in the expertise of Egyptian technicians, scientists, and engineers to benefit the country overall.

by Moaaz on Egypt's stranded gas reserves, to which El Bony re- El Bony countered that the philosophy of Egypt in both business and government was very averse to this kind of risk-taking, and it would be very difficult to set some similar thing up without it having a number of pre-conditions that would hamper the government currently.

> Murphy added that it was not only the issue of finance, but also an issue of trust and confidence. He mentioned that financing would always be readily available for a stranded gas project that seemed profitable, but once that project was underway, delays in various inspections and certifications by various government bodies tended to cost the overall project and lessen its profitability.

#### **The Future of Stranded Gas: Recommen**dations and Consensus

The general outcome of the evening was an appeal for increased collaboration on every front. One major consensus at the roundtable was a call for more comprehensive data collection to present to investors. Participants agreed that Egypt is at an advantage for the wealth of geological data that has been collected, and it is vital for EGAS to compile it for publication by a data consultancy firm such as Wood Mackenzie or Deloitte.

As El Bony suggested, data on small pockets of stranded gas should be integrated. Representatives from the private and public sector – Sher and El Bony respectively – came together in proposing that easier, third party access to refining facilities would assist the process in tapping into stranded gas reserves.

Financial integration of marginal discoveries is also an important step, so operators could share the costs for nearby gas fields, which would make implementation of advanced technologies more acces-

Several recommendations were put forth concerning the investment

model. As Ajeel suggested, EGAS could play a larger role and bear some of the investment risks along with the foreign partners. Moaty and Murphy both agreed that the terms of the concession agreement poses difficulties, particularly in reference to the specifications that unconventional exploration and development requires. Hamdy also believed the terms of agreements must be amended, and doing so would unlock stranded gas reserves. Concerning technology, as Moaaz points out, flexibility in contract agreements are vital to implementing the most up-to-date, advanced methods.

From the government side, El Bony called on every partner to provide a report of production estimates and clear development plans. and to submit concrete recommendations for the agreement model. A joint effort between the private and public sector should produce a map representing stranded gas reserves, illustrating what is required to produce the reserves, in terms of resources, what type of technology, and the cost impact of technology.

Greater communication between the private and public sector, as well as between operators, was goal for all parties involved. It was also suggested that greater transparency in the media was imperative for the people of Egypt to better understand the energy economy and the oil and gas sector. To that end, various government departments would update their websites more frequently and provide more information that could be easily accessed by all parties, particularly the media.

"These events may be transient," Fouad acknowledged, "but they mark a clear indication for effective and more comprehensive collaboration as we are facing significant uncertainties and change ahead in the [Egyptian] energy market." Despite uncertainties, the fact is that Egypt's vast stranded gas reserves represent a great potential. The commercial, technical, and logistical challenges the sector faces in accessing these reserves has already begun to inspire all-encompassing advancements.





# Offshore Oil and Gas Boom: A Brighter Future for the Mediterranean

When we think of offshore energy, we usually think of places like the North Sea or the Gulf of Mexico. The Mediterranean is a relative late-comer, driven by the need to develop more energy to drive developing economies and increasing populations. Many countries that border the Mediterranean such as Libya, Algeria, and Egypt already have established onshore energy economies, while recent offshore gas finds in Israel and Cyprus have redoubled attention to its vast hydrocarbon resources

By Lily Leach and Curt Champeon



Before 2009, Libya and Algeria were the biggest energy producers of all the Mediterranean nations. Then two things happened, almost simultaneously. Large reserves of oil and gas were discovered off the coasts of Israel and Cyprus, and about a year and a half later, a wave of unrest and uprising replaced the regimes of Tunisia, Egypt, and Libya. This opened up the possibility of investment and exploration in many different projects, including offshore development. Financial market instability, which began in 2008, left other countries in the area – such as Italy, Cyprus, Greece, Italy, and Spain – in need of shoring up their economies. One of these ways was to cut their reliance on foreign energy imports.

#### The Battle Over Cyprus' Gas Fields

Mediterranean offshore gas finds in both Israel and Cyprus could potentially supply Europe via Turkey though the Trans-Anatolian Pipeline (TANAP), though this won't be actualized before considerable political challenges are resolved.

Arguably the most contentious issue in Mediterranean exploration is occurring between Turkey and Cyprus, over potentially large undersea gas fields. Cyprus, recognized by the United States and a member of the European Union, is actively pursuing the development of its gas reserves in its exclusive economic zone (EEZ). Meanwhile, Turkey does not recognize Cyrus as a sovereign nation, which is ethnically split between Greek and Turkish populations. Turkey claims that Cyprus' EEZ is on Turkey's own continental shelf.

In October, the Republic of Cyprus awarded an Italian-Korean consortium (ENI-KOGAS) a license to begin offshore drilling in the Mediterranean, south of Cyprus, reported Cyprus Mail. Turkey subsequently dispatched a research vessel and a warship to begin conducting its own seismic surveys in Cyprus' EEZ.

"Turkey justifies its show of force by the argument that the Republic of Cyprus should not develop its offshore resources in the absence of a settlement of the 40-year dispute over the division of the island," wrote Sir Michael Leigh for Cyprus Mail.

Following the event, the foreign ministers of Egypt, Greece, and Cyprus met in the end of October to sign an agreement to boost energy cooperation, meanwhile condemning Turkey's exploration for gas in the Cyprus' east Mediterranean seas as illegal.

EU leaders have joined the condemnation, urging Turkey "to show restraint and to respect Cyprus' sovereignty over its territorial sea and Cyprus' sovereign rights in its exclusive economic zone."

"It did not have to be this way," says Leigh. "The energy discoveries in the eastern Mediterranean could bring benefits to all the countries in the region, including Turkey."

In mid-November, Israeli firms involved in the development of Cyprus' Aphrodite offshore natural gas field announced a 12% increase in reserves. Delek Drilling and Avner Oil Exploration – both subsidiaries of Israel's Delek Group – each own 15% of Aphrodite, with Texas-based Noble Energy controlling the remaining share. Reuters reported the new estimate given to be 4.54 trillion cubic feet (tcf), also raising the estimate for condensate from 8.1 million to 9 million barrels.

### Major Finds in Israel; Political Unrest Delays Exploration in the Levant

According to The US Geological Survey, the Levant Basin, covering the waters of Syria, Lebanon, Israel, the Gaza Strip, Cyprus and Egypt, is estimated to contain 122 tcf of natural gas and 1.7bn barrels of oil.

Israel's potentially vast untapped gas resources at the Leviathan field — located off the coast of Israel and southeast of Cyprus — represent a tipping point in the eastern Mediterranean gas plays. It claims the largest offshore gas finds in the Mediterranean to date, with recent estimates of the Leviathan field's reserves to be 21.93 tcf.

Israel has recently increased security cooperation with Cyprus, hoping for safe export via pipelines passing through the island

Fazil Can Korkut, Ambassador of the Turkish Republic of Northern Cyprus to Turkey (a nation recognized only by Turkey, north of the Greek-Cypriot administration on the island), said in mid-November that "Delivering the Israeli gas through southern Cyprus is not feasible."

"The cheapest and most practical way is to transfer the gas to Europe through Turkey," he added, citing rising tension between Turkey and Cyprus as barriers for transportation of Israel's gas.

However according to Al Jazeera, another option is known

as the "pipeline plus LNG promise". That is, "an arrangement whereby following a Cyprus settlement a gas pipeline runs from Israel to Turkey through Cyprus' EEZ, while at the same time Israel pledges to supply gas for an LNG plant in Cyprus."

While this model could bring considerable gains to all parties involved, there are uncertainties, including Israel's security concerns. Al Jazeera suggests "new technologies such as a floating LNG (FLNG) plant or Compressed Natural Gas (CNG) by ship," could be gaining traction due to concerns.

While the \$6.5 billion Leviathan field – operated by Israel's Delek Drilling and Noble Energy of the US – plans to commence gas production by 2017, "industry investors warn this could be the last significant gas project off Israel's shores for some time," reported Financial Times this November. "Drilling ships have stopped the search for new gas fields under the eastern Mediterranean off Israel, where 1,000 billion cubic meters of proven reserves lie, and about 1,500bcm more are still to be found," said the report. "The reason for the hiatus, according to the industry, is the increasingly hostile regulatory environment, including a rule that about half the output should be reserved for the domestic market, although analysts say the recent softening in gas prices has played a contributory role."

Israel's Tamar field, which began producing last year, recently saw an increase investment of \$1.5 billion from its partners, which include Israeli Delek Group Ltd and Avner Oil and Gas LP, and US Noble Energy.

Meanwhile, Israel is still technically at war with Lebanon over a 300-sq-mile, gas-rich triangle of the Mediterranean where their maritime boundaries intersect. Both sides have threatened force, and Israel is developing special offshore protection for the gas fields – though the conflict isn't expected to escalate any time soon.

According to Equities Magazine, "Lebanon claims that 3D seismic surveys of a 1,160-sq-mile sector conducted off its southern coast in 2012 by the British firm Spectrum indicate that it contains more than 25 tcf of gas. Officials claim that this block alone probably contains more gas than lies off Syria and Cyprus combined."

The Daily Star, estimates the value of Lebanon's gas reserves at \$300 billion to \$700 billion, which is "enough to erase a \$55 billion national debt and transform an economy based on

banking and tourism."

Though Lebanon has begun seismic surveys to determine the size of its energy reserves, its essentially frozen political system has delayed exploration. Regional chaos surrounding the small Mediterranean country has caused paralyzing political and sectarian rivalries.

As of August, the Lebanese government delayed the first offshore bid round for the fifth time, and the dispute over terms of the draft exploration and production agreement isn't expected to be resolved soon.

In October, The Daily Star reported that the government was turning its focus to onshore petroleum development. "The offshore deposits will be huge, and Lebanon will one day reap tremendous rewards from them, but if we want to get an early start, onshore offers a host of clear-cut advantages," Roudi Baroudi, CEO of Energy and Environment Holding, an independent consulting firm based in Doha, Qatar, told The Daily Star

Sami Baroudi, a political analyst at the Lebanese American University in Beirut, told Reuters this November that the influence of regional players on Lebanese politicians is marginalizing the state. "We have a very, very volatile mix. A region on fire, a civil war raging on your borders and at the same time the local players are so entrenched to their positions that they are unable to reach agreement," he said. "The stalemate has hampered efforts to tackle public debt, exploit potential off-shore gas reserves and improve crumbling infrastructure."

There is no telling when Syria's civil war will end, though after it emerges from violence and political unrest, it too could begin developing its offshore potential.

Similarly in Palestine, potential reserves off the coast of Gaza have been on hold for several years due to disputes between Israel and Palestine. The Gaza Marine gas field is located 30km off the coast of the Gaza Strip, with the Palestinian Authority having awarded BG a 90% stake in 1999.

#### **Uncertainty in North Africa**

Libya has a potential goldmine in the Gulf of Sitre project, run by BP. This \$900 million program went into effective hiatus with the uprising of 2011.

In June, BP announced it would push back its plans to drill its first offshore exploratory oil well in Libya to 2015 due to ongoing security concerns. The country's new government is mainly occupied with bringing the onshore infrastructure online and doesn't have the ability to do much else. At a future time when the offshore projects are addressed, Libya's 53tcf of natural gas — which is already the world's 14th largest — could actually increase to 70-100 tcf.

Eni, which has operated in Libya since 1959, was the first international oil company to have re-started production after the 2011 uprising, at the Abu Attifel field, through Mellitah Oil & Gas, a 50-50 joint venture between Libya's NOC and Eni. In 2012 Eni restarted offshore exploration activities with the acquisition of a 3D seismic survey.

Eni plans to invest more than \$8 Billion in the country by 2020. Even with 47 Billion barrels of land-based gas reserves, offshore could produce an even bigger boom, and its low production costs and nearness to its European consumer base could mean huge profits in the future without the need to spend upfront for additional infrastructure.

Morocco and Tunisia, despite holding minor finds historically, may also take part in the offshore boom. Tunisia and Libya were reportedly set to jointly develop a 678,000-acre offshore oilfield in the Gulf of Gabes where their maritime borders converge. As of June 2014, Sonde, the Canadian Energy company set to conduct exploration, was still seeking partnership. Tunisia's offshore reserves also encompass the Ashtart and Miskar fields.

Algeria is another case of a Mediterranean country that is already a leader in land-based energy resources that could see even more success with offshore projects. The country avoided the worst of the "Arab Spring" uprisings. It also has one of the largest seacoasts, and is in an overall under-explored position. All of these point to a huge future potential in the offshore game.

Sonatrach, Algeria's state-owned energy company, has had problems resulting from internal political power struggles. With these problems largely in the immediate past, it now

stands to take advantage of relaxed laws concerning exploration and foreign investment. It has increased the 2012-2016 development plan of \$62.2 billion to \$80 billion and also plans to attract foreign investors such as Royal Dutch Shell, Exxon Mobil, Talisman Energy Inc., and Italian Eni.

At the end of October, Sonatrach announced its plans to carry out their first offshore drilling campaign, to begin drilling by the end of 2015, reported UPI News. The exploration will be carried out alone or in partnership, pending a decision by the Ministry of Energy.

Algeria is the third-largest gas supplier to Europe, and has the tenth-largest natural gas deposits in the world, though most of the reserve interest has been onshore.

"Although it's a major African producer, Algeria's still considered to be relatively under-explored," says Equity Magazine say of Algeria, which has reserves of 12.2 billion barrels of oil and 159 tof of gas.

New Prospects for the Western Mediterranean

European countries along the Mediterranean, which are typically energy importers, are also beginning to explore their offshore potential. The Spanish government has recently announced environmentally controversial plans to open 45% of the Spanish Mediterranean to offshore oil development, beginning with seismic blasts, reported the Huffington Post. The two operators, Spectrum and Cairn, estimate that the deposits in oilfields off the Canaries amount to 500m barrels of crude. Spain's national government recently offered environmental approval for Repsol-led exploration efforts in the North of the country.

Deloitte predicts that Spain could become a gas exporter by 2031 while producing 20% of the oil it consumes. While the government insists the offshore exploration is vital for Spain's economy, which struggles with high unemployment rates, the backlash from environmental groups has been substantial.

Forbes reported in October that Italy, which imports roughly 90% of its natural gas needs, is also warming to offshore domestic exploration, and is showing definite potential for a booming energy industry. After initial discoveries and follow-up imaging, Italy began an ambitious program that was abruptly ended in 2010 when then-leader Silvio Berlusconi imposed a ban on drilling offshore after BP's Gulf of Mexico snill

With time and a change in government, this situation has eased a bit, but only for owners of pre-existing licenses. Bureaucracy and government corruption are constant drags on the system and hope of expansion, but there is hope. Petroceltic's CEO, Brian O'Cathain is quoted as saying, "there is a lot of pent-up demand for drilling there. Before the ban, there were tens of thousands of people employed in supporting the oil industry on the Adriatic coast. Most of those people were laid off- the government has a big incentive to get them back to work again."

According to Bloomberg, the Italian national utility Enel is expecting the approval of permits for onshore gas exploration in the northern Emilia Romagna region, which they suggest could someday meet 20% of the country's demand at a price far lower than current imports.

Malta may also be on the cusp of an energy boom; the small island has always been valued beyond its size historically for its strategic location. Mediterranean Oil and Gas (MOG) has begun to explore and develop offshore Malta, which has the advantage of very little previous exploration and drilling. The areas explored are very similar to Libya, according to William Higgs, the Chief Executive at MOG. The initial prospects are for drilling in shallower waters, with the possibility of larger finds in deeper waters.

In 2012, Genel Energy, headed by former BP Chief Executive Tony Hayward, bought a stake in exploration blocks from MOG

"But there is another territorial dispute here, with nearby Libya over offshore zones that are likely to hold sizeable volumes of gas and oil," informs Equity Magazine.

Increasing interest in domestic exploration by Italy and Spain are a testament to anxieties about dependence on foreign energy, as well increased security concerns surrounding importing energy from Libya and Algeria. Most recently, according to Forbes, "the possibility of a new sub-Mediterranean gas pipeline linking Italy with Algeria has faded from view with

Enel CEO Francesco Starace telling Reuters that the situation surrounding the transport project was 'not encouraging.'"

According to Leigh, "Gas from the eastern Mediterranean could strengthen the energy security of all the countries in the region. There is scope for cooperation in trade and investment, environmental protection, offshore safety and, in the event of an accident, search and rescue." However, "these benefits could be lost if long-standing conflicts are exacerbated by tensions over ownership of the resources."

#### Offshore Opportunities: Egypt's Silver Lining

Egypt, a country that has had more than its share of bad news over the past few years, is in a very good position when it comes to offshore energy development. Egypt has many long-standing relationships with oil companies on the international markets, has had offshore exploration and harvest under way for years, and is still selling new concessions for additional exploration. Since there are already proven wells that produce energy, it is a lower risk for companies to look for more.

Italian Eni is a huge international participant in the Egyptian energy market and makes great contributions offshore. It has recently, thanks to EGPC and EGAS bid rounds, won three new exploration licenses, two of which are offshore. It obtained Blocks 8 and 9, both in a deep offshore development block near Cypriot waters. It will hold 100% equity in Block 9, which is also called Noth Leil Offshore. It covers an area of 5,105 sq. km and it's depths range from 2,100 to 2,800. Block 8 is referred to as Karawan Offshore and covers 4,565 sq. km in depths ranging from 2,000 to 2,500 meters. Block 8 will be shared 50-50% with BP. Eni has been operating in Egypt since 1954. These two licenses are in addition to its Shorouk Block in the Mediterranean.

Eni's compatriot Edison is now in possession of three East Mediterranean blocks for deepwater exploration. It bid for the North Port Faud Block in partnership with Petroceltic. This borders Eni's acreage. Edison and Petroceltic also own the North Thekah Block as of last year. Edison now holds the blocks on either side of the territorial waters of Egypt and Israel.

The offshore partnership of Eni and BP has become known as the DEKA, (Denis-Karawan) gas project. The project is producing 1.8 cm of gas per day and associated condensates of approximately 800 barrels per day. Production began through the Denise South 6 subsea well, the first in the Temsah concession area, offshore of the Nile Delta. The Denise field is around 70 km off the Egyptian coast and Karawan is 60 km off the coast. The Denise field is at a depth of 100 m and Karawan is 68km.

Dana Gas now has a 100% interest in Block 6 offshore concession area, (North El-Arish) which is located off of the Nile Delta. It is in water depths of 100m and covers an area of 2,980 sq. km. According to Dr. Patrick Allman-Ward, the General Manager of Dana Gas Egypt, "Block 6 holds significant potential, lying as it does on strike with recent material discoveries in adjacent discoveries in adjacent acreage in the Levantine Basin. The Block provides an opportunity for Dana Gas to expand its operating activities in Egypt into both shallow and deepwater operating environments."

One only has to look at a concession map to see that the BG Group has played and continues to play a leading role in Egypt's energy industry, including huge exploration and developments offshore.

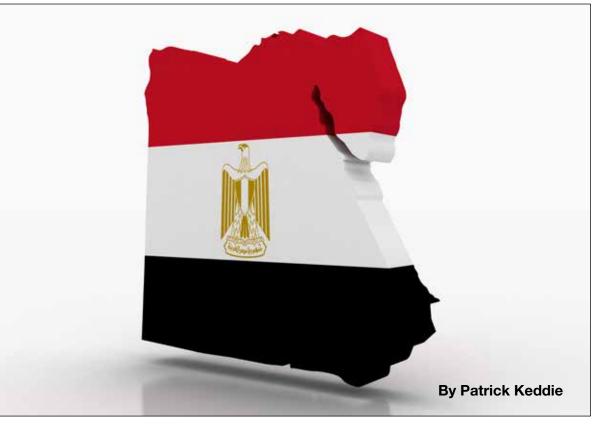
BG Group in Egypt has operatorship of two gas-producing areas in the offshore Nile Delta area – Rosetta and WDDM (West Delta Deep Marine) concessions. It also has operatorship of three other concessions – El-Manzala (EMO), El Burg Offshore (EBO), and North Gamasa Offshore (NGO). It has a non-operational interest in the East El-Burullus Offshore Concession (EEBO). These are all undertaken as part of a group of joint operating companies. In the case of Rosetta, this is through Rashid Petroleum Company and in the case of WDDM, this is through Burullus Gas Company. They are owned in a 50-50% arrangement with EGPC.

As everyone can see, Egypt is poised to take as much, if not more, advantage of offshore Mediterranean opportunities just as any country in the region. It has come out of the Arab Spring with a more stable system than many of its surrounding neighbors, and has recognized the need to pay off its debts to energy companies and has taken definite steps in that direction.

# Universal Periodic Review:

# **Egypt's Human Rights Record Under the Spotlight**

On 5 November the stage was set for a public accounting of Egypt's human rights record at the United Nation's (UN) Universal Periodic Review (UPR); a mechanism that examines UN member states every four years. Egypt's last review was in 2010, before the uprising that toppled former president Hosni Mubarak.



In the build-up to the UPR, Egyptian government hailed the "great efforts" and "achievements" made by Egypt in the field of human rights since 2010

However, 19 independent rights groups released a joint report for the UPR in late October, stating that human rights have undergone a "dramatic deterioration" in Egypt over the past four years.

Egypt's authorities, implicated in the some of the most serious allegations of human rights abuses, had to face the world and defend its actions

#### The UPR in Geneva

The Minister of Transitional Justice, Ibrahim El-Heneidy, headed Egypt's delegation at the UPR. In his opening statement to the UN's Human Rights Council in Geneva, El-Heneidy said that he had arrived from an Egypt "full of hope and determination", and alluded to the massive upheaval since the country's last UPR in 2010, according to a report in the Daily News Egypt.

In that review, Egypt had received 165 recommendations. El-Heneidy claimed that Egypt had taken measures to address 119 of them.

The Egyptian delegation then listened to one-minute speeches from 125 contributing member countries. Egypt's allies – including Russia and Saudi Arabia – expressed support for Egypt's "war on terrorism" – referring to the struggle between the security forces and growing Islamist militancy.

Germany, Norway, Sweden, the UK, and the US – among others – called on Egypt to amend or repeal the Protest Law – which effectively bans demonstrations that are not sanctioned by the police – and the controversial NGO Law, first drafted under Mubarak, which allows the authorities to control NGO activities, funding, and staffing.

NGOs that have not registered by the 10 November deadline may face criminal prosecution. In the days leading up to the review, many of Egypt's most prominent NGOs announced they would not participate in the UPR for fear of reprisals from the Egyptian authorities.

Austria, Iceland, and the US made specific reference to the violent clearance of supporters of the ousted president Mohamed Morsi at Rabaa on 14 August 2013 that resulted in the deaths of hundreds of protesters, calling for a public investigation into claims of excessive force by security forces.

Other delegations raised the issue of torture and ill treatment in detention. There were also calls on Egypt to adopt a moratorium on the death penalty, in light of mass death sentences handed out by the Minya Criminal Court earlier this year. Others criticized the lack of media freedom in Egypt and alleged that the judiciary was politicized.

Several delegations – including Israel, Singapore, and South Africa - urged Egypt to uphold and extend the rights of children and women.

Overall, Egypt received 300 recommendations; more than double the 2010 figure and more than recently-reviewed Iran (290 recommendations) and Iraq (229 recommendations).

#### **Rhetoric and Reality**

El-Heneidy "hailed" the international community's assessment of the overall human rights situation in Egypt, according to a report by Egypt's State Information Service (SIS): "Heneidy asserted that Egypt will work on preserving freedoms, rights, social justice, and revolution [sic] principles in the coming period. He said that Egypt's war against terrorism does not violate its full commitments towards respecting the human rights of its citizens."

In a press conference reported by state-owned Al Ahram newspaper, El-Heneidy claimed that the UPR proved Egypt's positive attitude towards human rights. The minister claimed that, out of 122 countries that contributed to Egypt's review, at least 105 could be said to have

endorsed Egypt's approach. El-Heneidy described many of the recommendations as "positive". He also alluded to strained diplomatic relations with some of the more critical countries, such as Turkey.

The Egyptian government's upbeat slant was not shared by human rights organizations.

"As expected, we saw a lot of posturing today from Egypt. The picture of the country the delegation provided was unrecognizable," said Hassiba Hadj Sahraoui, Amnesty International's Deputy Director for the Middle East and North Africa Program, describing it as a "pathetic attempt at a cover up".

Amnesty International claimed that the evidence of human rights abuses was damning and, although Egypt rejected criticism, "Egypt's defense of its human rights record lay in tatters."

The gulf between the rhetoric of the Egyptian government and the evidence collected by human rights organizations and the media, emerged from the UPR.

Egypt pointed out that torture is a criminal offence, and claimed that there have only been a few cases carried out by a small number of individuals. Amnesty states that, according to its research, torture – including beatings, electric shocks, and forced stress positions – is "rife in police stations and other unofficial places of detention such as National Security offices."

Whilst Egypt said that the law guarantees freedom of expression and that Egypt had made a "wide leap" in progress, several individuals are in prison for exercising their right to freedom of expression, including jailed Al Jazeera journalists and the freelance photojournalist Mahmoud Abu Zeid, who has been in prison for over a year.

Egypt stated that freedom of assembly is guaranteed under the constitution and that the Protest Law is under review. Amnesty claims their research shows that "the authorities do not tolerate the exercise of the right to freedom of peaceful assembly". Over 41,000 people have been arrested since the ousting of Morsi in July 2013, according to independent online statistics group Wiki Thawra.

Egypt said that security forces are restricted, by law, to only use force in matters of "self-defense." Yet, human rights groups and journalists have consistently documented the use of excessive force against protesters. Human Rights Watch (HRW) claim that the violent clearance of Rabaa was a premeditated assault and likely amounts to a crime against humanity. Culpability for the massacre may reach to the highest echelons of Egyptian power, given that President Abdel Fattah Al-Sisi was Defense Minister at the time.

Whilst Egypt claimed that the judiciary is independent and that all trials meet international standards, the systematic arrest and imprisonment of thousands of members of the political opposition – both Islamist and secular – and violations of due process casts doubt on the judiciary's independence and ability to consistently provide a fair trial.

The Egyptian UPR delegation blamed the Muslim Brotherhood for discrimination and violence against women. However, Amnesty claim that "women have faced decades of systematic discrimination in law and practice, as well as epidemic-levels of sexual violence."

In their defense of the imminent "NGO Law", the Egyptian delegation at the UPR said freedom of association was guaranteed in the constitution. Amnesty claim their research shows that NGOs are subject to "crushing restrictions in Egypt," and Egyptian human rights organizations have been given an ultimatum of surrendering their independence to the authorities or face closure and criminal prosecution.

#### **Between Paper and Practice**

It seems clear that there is a disconnect between freedoms and rights on paper - enshrined in the constitution or in law - and what really happens in Egypt's streets, police stations, courts, prisons, of-

fices, and homes.

Although some criticized the latest constitution passed in January 2014 for permitting military trial of civilians and making Sharia law the basis for legislation, many analysts and human rights activists said that the constitution was an improvement on previous documents and largely provides for many economic and civil freedoms.

However, "Regarding the constitutional text itself, it depends upon the rule of the president or the authorities in power," said Yussef Auf, Nonresident Fellow at the Rafik Hariri Center for the Middle East, back in December 2013. "There were actually many good points about human rights in Mubarak's constitutions but unfortunately they weren't applied...the gap between reality and the constitution can undermine confidence in the constitutional text."

Furthermore, much recent legislation – such as the Protest Law and the NGO Law - appears to be at odds with the constitution.

Daily News Egypt reported that Germany's ambassador to Egypt Hansjörg Haber stated in a meeting with journalists following the UPR that, while he believes Egypt's constitution contains many necessary human rights safeguards, Germany's concerns relate to the "implementation of the constitution" within the law.

What is also clear from the evidence presented by human rights groups – some of which was alluded to in the UPR – is that, not only has Egypt's human rights record been dire under successive regimes over the past four years – it's getting worse.

Many human rights groups argue that the Egyptian authorities are currently waging an unprecedented campaign to crush all perceived dissent and non-conformity, that goes way beyond the remit of a "war on terror", encompassing Islamists, secularists, students, liberals, leftists, atheists, LGBT (Lesbian, gay, bisexual, or transgender) people, NGOs, publishing houses, journalists, and football supporters.

HRW had called on the Human Rights Council to hold the Egyptian government accountable for what it called "the most dramatic reversal of human rights in Egypt's modern history under President Abdel Fattah al-Sisi."

#### What Next?

Egypt will consider the UPR recommendations and respond to them before the Human Rights Council's next ordinary session due to be held in March 2015.

The UPR is a flawed mechanism. It is both partial and politicized, as friendly countries lend each other support. There was tepid criticism of Egypt from supposedly liberal allies such as the UK or the US. The UPR is also partly an exercise in hypocrisy as countries with lamentable human rights records point out abuses by others that they too practice.

Amnesty also reported that "UN member states largely failed to address economic, social and cultural rights, and discrimination against religious communities."

The UPR carries no tangible powers of enforcement, penalties or sanctions; it is a court of international public opinion, with the strongest punishment being a sharp rebuke. In the immediate future there seems little hope for a substantial improvement in human rights in Foypt.

The Egyptian authorities believe that the crackdown on dissent will bring about stability. However, 'stability' characterized by corruption, brutality, inequality, and discrimination sparked the uprising against Mubarak nearly four years ago.

Egypt cares about its international image to some extent. The UPR and the attendant coverage cast a grim light on Egypt's human rights record on the grander stage.





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# The Beginning

Eng. Abdel Reheem El Marsafawy Seaharvest, Business Development

At the end of the 20th century, Seaharvest Oil and Gas Services was established. Its first line of work was mainly in solid control and waste management. Then, at the start of the new millennia, gained an agency contract with Baker Bits. Starting off with little resources, Seaharvest Oil and Gas Services was able to open up a branch in Algeria offering all the services that Baker Hughes offers. Five years later, Seaharvest was able to boost Baker Hughes revenue about 10 times the amount they started with. After such a huge success, Baker Hughes felt that the North African market was full of potential thus opened up its own offices in Egypt and Algeria. After Baker Hughes left, Seaharvest obtained the agency for Boots and Coots. Boots and Coots was the spark that enabled Seaharvest to become the company that it is right now. After Boots and Coots was acquired by Halliburton, and Seaharvest was given a sum of money to give up the agency, Seaharvest went on to acquire the agency for National Oilwell Varco (NOV).

#### **The Present**

Currently, Seaharvest is an agent for many companies and products that serve the oil and gas industry. It currently operates three business units, each dealing with a set of issues that revolve around the oil and gas industry. The oldest unit would be the AID, Asset Integrity Development unit. The AID unit currently holds distribution and agency licenses for Walker Technical Resources, a leader in Cold Repair, Seal-Tite, a leader in downhole leak repair, and many other brands and products. The other business unit is the Wellbore Technology Solutions unit, or WTS. This encompasses tools that are needed for drilling such as drill pipes, casing, tubing,

casing accessories, jars, and bops, and tools needed in the production process such as artificial lifts and production chemicals. Last but not least, and the newest business unit is the SOS, or Supply Chain Oil-Field Services, which includes three divisions: Distribution, Supply House, and Management. Seaharvest Oil and Gas is part of the Seaharvest Group. The Seaharvest group is currently the controlling stakeholder of over 20 companies all around the globe. The group is very diversified, with companies in 8 different sectors. These companies compete in sectors that include oil and gas, freight, tourism, real estate, medicine, medical supplies and more.

#### The Future

The potential for future growth is vast in the Seaharvest Group. With over 10 new start-ups, the possibilities are endless. The potential for Seaharvest Oil and Gas is also vast, celebrating its 15th year servicing the oil and gas industry in 2014. Its mission is to become one of the major rig contractors in the MENA region. Starting with smaller work over rigs and hopefully advancing into the drilling rigs category. Seaharvest acknowledges that the energy from oil and gas is an unsustainable form of energy. Thus, it has decided to expand into the renewable energy sector. Seeing that Egypt is one of the top ten countries in the world that receives sunlight (over 3000 hours per year). Seaharvest aims to expand into the solar energy market. Even though nobody knows what the future holds, it is apparent that Seaharvest Oil and Gas is on its way to become the next big name in oil and gas services.





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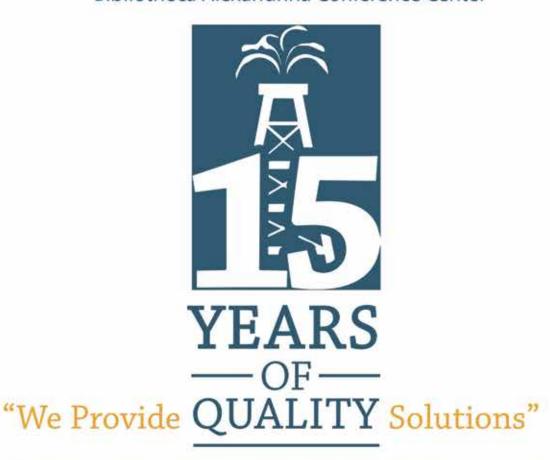


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Website: www.seaharvest.org Email: egypt@seaharvest.org

# **Pan Marine Group**

Pan Marine Group is your Egyptian diversified and independent group. Our organization has been doing business for over than thirty years, and we are proud of our past success and continue to strive into the future. We provide an efficient and trustworthy service supported by our branches covering all over Egypt, guaranteed by quality management systems ISO certificated 9001, ISO 14001 and OHAS 18001 by BUREAU VERITAS.

Our Group Consists of Three Companies:

- Pan Marine Petroleum Services FZ-Egypt (Exclusive agent of **V0S** in Egypt)
- 2. Pan Marine Shipping Service
- 3. Pan Marine Logistics Services



Our customers are our greatest asset; we aim to provide them with one stop service in the most economical way through understanding their needs, solving their problems and being supportive consultant. Our duty and target is to meet and exceed their expectations.

Pan Marine strives to create value business relationships all over the world; therefore it's our great pleasure to provide you with an overview about our group services and activities including the trends of cooperation which we can work together.

Our group integrated core services are providing the international oil & gas companies with one-stop service contact for their local needs in the Egyptian market. We have great experience and track record in successfully supporting chartered

and operated offshore rigs, vessels & equipment such as (Semisubmersible Rigs, Drill Ships, Jack-ups, and Pipe laying Vessels, Anchor Handling Tug Supply Vessels, Platforms Supply Vessels, Diving Support Vessels, IMR Vessels, Tug Boats, Drilling and Construction Operations, Geophysical & Geotechnical support etc.)

Below is our group day to day regular Services which we provide to our clients:-

- » Shipping Agency.
- » Suez Canal Transits.
- » Provision of chartering services of International Offshore Vessels & barges to the local E&P Companies.
- » Provision of chartering services of International Offshore Jack-up & Semi-submersibles Rigs to the local E&P Companies.
- » Free-Zone Warehousing Services.
- » Project Permits Legalization.
- » Offshore Units Custom Importation/Exportation.
- » Offshore Personnel Work Permits & Security Passes.
- » Project Conciliation and Changing umbrella.
- » Crew Changes Support:
- Meet and assist & Visa entry.
- On/Off-signers formalities & inland transportation.
- Air tickets & Hotel Accommodation.
- » Office & Accommodation Rental.
- » Equipment rentals:
- Cranes & Forklifts.

- Containers & trailers.
- » Cargo/Equipment Packaging, Marking & Labeling.
- » Warehousing and Pipeline Yard Operations.
- » Supply Base Management.
- » Global Sea & Air Freight.
- Project vessels chartering.
- Aircraft Chartering.
- FCL, LCL consolidation & Special Equipment.
- Dangerous Goods.
- RO-RO Cargos
- Trucking & Road Transportation.
- » Project & Turnkey Cargo Management.
- » Oil Field Equipment Handling & Storage.
- » Supplies Catering & Provisions.
- Food Provisions & Galley Stores.
- Publications & Navigation Instruments.
- Deck, Engine, Electricity Stores.
- Chemicals
- » Technical Support & Marine Contracting.
- Life-raft & Underwater inspections, etc..
- Hold & Tank Cleaning Service.
- Dry-docking services.
- » Bunker, Lube Oil & Fresh Water Supply.
- » Medevac, Contingency Coverage, & Paramedic Doctors.
- » Garbage & Waste Oil Disposal.

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- Pan Marine Logistics Services.

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### **Petrobel Project:**

# El-Gamil Plant Operability Improvement

**Project Description** 

By Wael El-Serag

The project consists of the following:

- El-Gamil plant HAZOP study
- Fire alarm and fire fighting phase 2 (material procurement by Petrobel and construction by Petrojet)
- Construction of water tank (5,000 m3) (engineering, procurement, construction, and supply by Petrojet)

#### **Budget/Cost Situation (K US \$)**

	Curre	nt Approved B	udget	Accrued Costs						
Description	Total	EFC	Diff.	Previous Years	14/15 Up to Aug., 14	Total				
El-Gamil Operability (38% Petrosaid)	4,256	4,256	0	804	38	842				
(55% Petrotemsah)	6,160	6,160	0	1,164	55	1,219				
(7% REB)	784	784	0	148	7	155				
Total	11,200	11,200	0	2,116	100	2,216				

#### **Project Status**

- HAZOP recommendation classification under study by Petrobel team to define the matrix of action.
- Vendor list concerning fie fighting & fire alarm PH-2 is approved by the Bid Committee, and Enppi completed tender out of the material P.O. EGFF-08 (fire alarm)-awarded to Fores.
- P.O. EGFF-03 (piping) was awarded.
- P.O. EGFF-07 (fire fighting) under issuance.
- P.O. EGFF-05 (cables) was awarded.
- Fire fighting water tank- engineering is in progress by Petrojet, and construction work has started.

#### **Project Schedule**

As per below

#### **Project Milestones**

Activity Description	2014									2015									2016																			
	J	F	М	Α	М	J	J	Α	s	0	N	D	J	F	N	1 /	۱ ۵	М	J	J	Α	S	0	Ν	D	J	F	М	Α	М	J	J	1	4	s (	٦	۷	D
Fire Alarm and Fire F. Phase 2																															Planned			1				
Water Tank Construction																	7	☆													_	-	-			oate		





### وفر في الكهرباء و اضبط التكييف على درجة ماتقلش عن ٢٥ م







وفر في الكهرباء وأجل استخدام الأجهزة المنزلية في أوقات الذروة من ٢:٠٠ حتى ١:٠١ مساءً









وفر في الكهرباء وشغل السخان قبل ما تستخدمه بـ ٣٠ دقيقة بس



F/Belma32ol

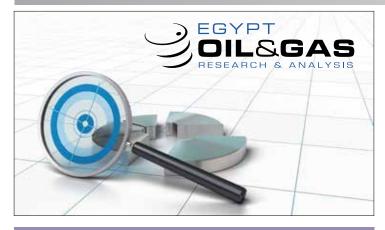
المبادرة المصرية للحفاظ علهء الطاقة



هدفنا نوفر ۲۰٪ من الطاقة

### Industry **Statistics**

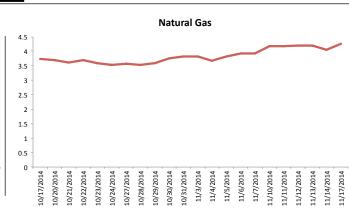
#### Egypt Statistics

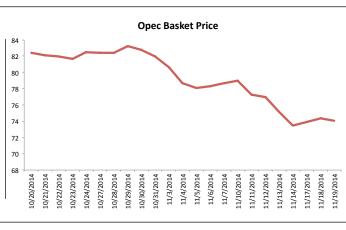


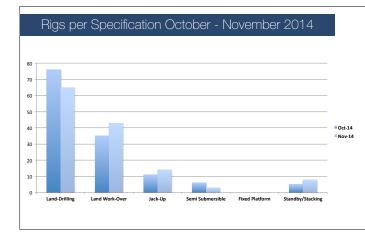
Egypt Rig Count per Area – November 2014											
Area	Total	Percentage of Total Rigs									
Gulf of Suez	11	9 %									
Mediterranean Sea	6	5 %									
Western Desert	84	67 %									
Sinai	13	10 %									
Eastern Desert	9	7 %									
Delta	2	2 %									
Ganoub El Wadi	0	0 %									
Total	125	100%									

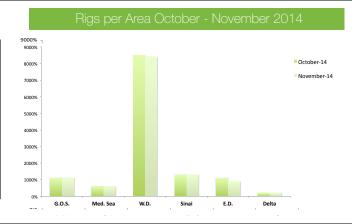
		Oil		Equ	uivalent	Gas	Сс	ondensa	te	Liquefied Gas						
		Barrel			Barrel			Barrel								
	October-12	October-13	October-14	October-12	October-13	October-14	October-12	October-13	October-14	October-12	October-13	October-14				
Med. Sea				23614464	19969107	15776250	1228546	1159263	851908	386810	851908	312008				
E.D.	2210118	2524962	2191376		40893	36964		3330	2763		2763	7829				
W.D.	8853096	9570526	9617058	6827500	7128214	7146786	1438822	1395311	1490631	669916	1490631	505461				
GOS	4451425	4260446	4298733	297143	316071	432857	66940	70758	82168	187365	82168	238435				
Delta	87288	73476	41440	1748214	2024286	2363393	141103	180444	187661	108705	187661	109206				
Sinai	2218998	2067151	2138608	1607	12679	1964	35206	33287	29823	89433	29823	71441				
Upper Egypt	13455	12025	9823													
Total	17834380	18508586	18297038	32488928	29491250	25758214	2910617	2842393	2644954	1442229	2644954	1244380				

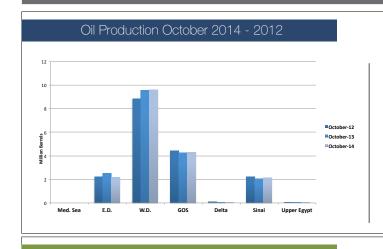


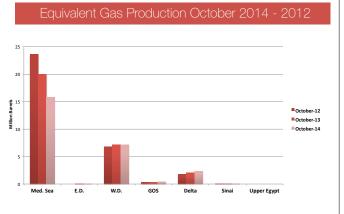


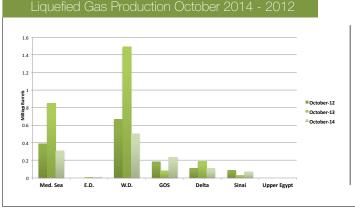


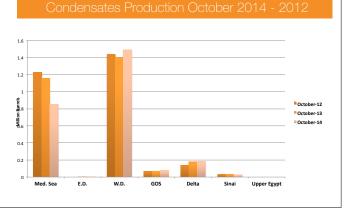


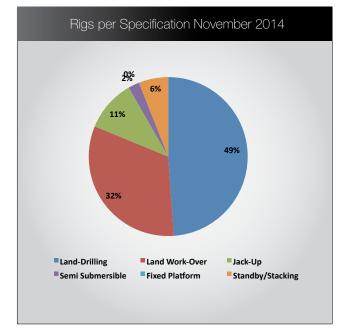


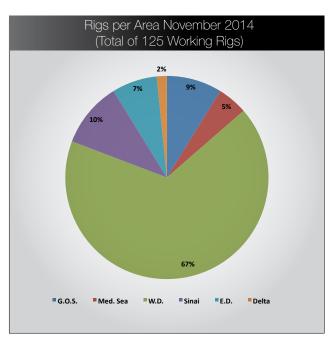




















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