



THE OIL & GAS YEAR

The Who's Who of the Global Energy Industry

ARTICLES | INTERVIEWS | VIEWPOINTS | MARKET ANALYSIS | RESOURCES | PROJECTS | MAPS | INVESTOR SPOTLIGHTS



EGYPT 2015

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In search of investment

Sherif ISMAIL
Minister of Petroleum and
Mineral Resources

Roadmap to stability

Amr MOUSSA
Head of Constitutional Review Committee

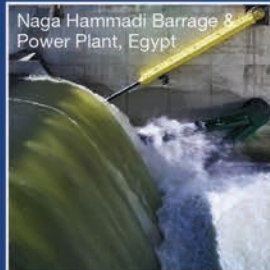
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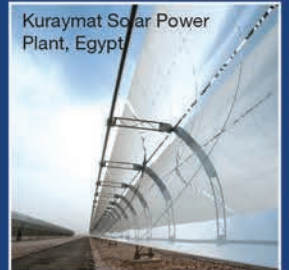
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Diplomacy & Politics

Economic and political instability in recent years has left Egypt with hurdles to overcome in attracting foreign investment and reviving its energy industry. Many see a positive sign in the government's embrace of energy reform and changes to the subsidy regime. But the global slump in oil prices has added a complicating factor to the scene in which Egypt's oil and gas industry is re-emerging.



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Gas Year

Gas production has been declining in Egypt, leaving the government to rely on imports in order to meet domestic demand. Unconventional and offshore gas plays still show potential, and the country's administration is working to attract international companies to exploit these reserves. Low prices make this venture all the more difficult, but the government aims to keep the gas flowing until its energy industry reforms are able to rejuvenate production.

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EGPC: The Egyptian General Petroleum Corporation is working as a holding operation, it owns 12 public sector companies, sharing in 39 joint company along with 87 investment company, 39 of which EGPC shares directly .



EGAS: EGAS was established on August 2001, adopting an effective action plan to organize and diligently handle the activities of the natural gas resources of Egypt and adding value to the Egyptian Economy.



ECHEM: With a clear vision for the next few decades, ECHEM was established in 2002 and assigned the task of developing a sophisticated petrochemical industry seeking to place Egypt prominently on the global map of this industry.



GANOPE: Ganoub El-Wadi Petroleum Holding Company is one of five main entities of the Petroleum Ministry, established on 2003 to intensify the efforts and to achieve comprehensive development in South Valley in all the petroleum activities.



EMRA: The Egyptian Mineral Resources Authority established on 2004 aiming at increasing Egyptian mineral resources reserves to fulfill exports along with Egypt's income of foreign currency as well as increasing the State's Public Treasury of mineral resources.

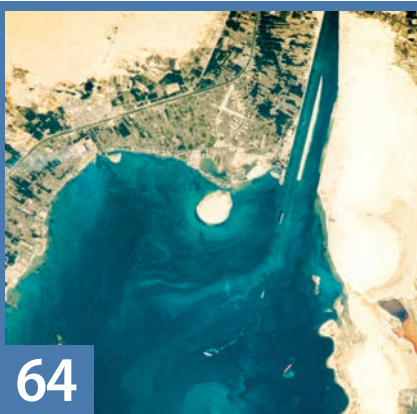
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The Year's Focus: Investment and Economy

The Egyptian economy gained strength in 2014, a positive sign that political change and structural reforms are moving the country towards a recovery from the years of economic uncertainty that saw recessions in 2008 and 2011-2013. Among foreign investors, the spectre of political risk is fading, and reviving the oil and gas industry holds added promise.



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Downstream & Industry

As Egypt's expanding population of energy consumers faces shortages due to rising demand and a scaled-back subsidy regime, increasing the capacity of the country's downstream sector has gained in importance. While imports are stopping the gap in supply for the short term, sustainable, long-term improvements such as refinery upgrades and new petrochemicals projects will be critical to meeting the growing domestic demand.



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Oilfield Services

Innovation in Egypt's oilfield services sector has become more important as the country's fields mature and the oil price remains low. Operators are targeting ultra-deep offshore high-pressure and high-temperature plays, along with deep onshore and long-distance horizontal drilling projects to tap the country's remaining potential. Meanwhile, services providers have excelled through becoming niche suppliers.

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THE YEAR IN REVIEW

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Sherif ISMAIL

Minister of Petroleum and Mineral Resources

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In search of investment

As the entity responsible for co-ordinating and approving the development of Egypt's oil and gas reserves, the Ministry of Petroleum has taken an active approach to incentivising foreign investment. Minister of Petroleum and Mineral Resources Sherif Ismail speaks with TOGY about these efforts, upgrades to Egypt's refining capacity and the country's plan to tackle its natural gas shortage.



Sherif ISMAIL
Minister of Petroleum and
Mineral Resources

What is the ministry's plan for paying arrears to upstream companies?

The Ministry of Petroleum is eager to pay back the rest of its arrears to international oil companies to encourage foreign partners to continue investing in exploration and development activities, which contributes to increasing domestic production. We have taken concrete measures, including successfully paying back \$1.5 billion in December 2013, \$1.4 billion in October 2014 and \$2.1 billion in December 2014.

We are in negotiations with international oil companies operating in Egypt to schedule the rest of the debt and bring it to a minimum

announced, including 10 blocks for Ganoub El Wadi Petroleum Holding Company in the southern Gulf of Suez and Nile Delta regions.

In light of the high cost and risk of recent discoveries in Mediterranean deep water, new models for production-sharing agreements were created to achieve appropriate revenues and encourage foreign investors to invest and accelerate the process of putting the discoveries on the production map. This will be a win-win situation for the exploration and production companies and the local market's gas needs.

What measures need to be taken to expand refining capacity in Egypt?

The Ministry of Petroleum is implementing a package of ambitious projects to develop infrastructure, which includes refineries and pipelines for petroleum products.

We are updating existing refineries, improving their safety systems and raising their capacity. We are also setting up new units for the production of petrol, gas oil, LPG and asphalt to meet the needs of the domestic market. We have started the implementation of these projects in Alexandria, Suez, Assiut and Mostorod, with total investments of roughly \$5.7 billion.

For example, the Middle East Oil Refinery Company (MIDOR) refinery in Alexandria is being expanded to increase its capacity by 60 percent, with investments of about \$1.3 billion. Other projects are being planned to add new units to the refineries, at a cost of roughly \$3.7 billion for the next phase of development.

“The Ministry of Petroleum is implementing a package of ambitious projects to develop infrastructure.”

level to restore foreign investors' confidence in the Egyptian economy. This will also accelerate development of discovered fields and boost exploration and development investments, thereby increasing production.

How can the Egyptian oil and gas industry attract more investment?

The ministry is eager for more bids and tenders, as these are the cornerstone of discoveries. After a three-year stoppage, new agreements have been signed with international exploration and production companies.

Between October 2013 and January 2015, 53 agreements were signed, with minimum investments of roughly \$2.9 billion and a total of \$432 million in signing bonuses for the drilling of 228 wells. In early 2015, procedures are underway to ink three new agreements, with investments totaling \$9.2 billion. At the end of 2014, a new international bidding round was

What efforts are being made to bridge the gap between supply and demand for gas?

The government is working hard to bridge the gap between natural gas production and domestic consumption, which represents a major challenge, through a multi-faceted programme. The first step is offering oil and gas exploration blocks for international bidding and signing new agreements with major oil companies.

The main emphasis of this programme is the acceleration of natural gas production projects in the Mediterranean, the Western Desert and the onshore Nile Delta. The Ministry of Petroleum is acting in co-operation with foreign partners to speed up the process of putting

About the Ministry of Petroleum

The Ministry of Petroleum is responsible for the management and supervision of all exploration, production, marketing and distribution of oil, gas and other natural hydrocarbons in Egypt. There are six primary entities through which it accomplishes this: the Egyptian General Petroleum Corporation, the Egyptian Natural Gas Holding Company, the Egyptian Petrochemicals Holding Company, the Ganoub El Wadi Petroleum Holding Company and the Egyptian General Authority for Mineral Resources.

“The North Alexandria project was halted in November 2011 and has had a very negative impact on the Egyptian oil and gas industry.”

gasfield development projects on the production map over 2015 to offset natural decline in existing fields' production and increase yield.

Many gasfield projects have been put into production, the most important of which are phase 9a of the development of the West Delta Deep Marine concession, the Denis-Karawan project on the Mediterranean, the onshore Desouk gasfield on the Nile Delta and the Karam and Assil gasfields in the Western Desert.

Has any progress been made rebooting the North Alexandria deepwater gas project?

The North Alexandria project was halted in November 2011 and has had a very negative impact on the Egyptian oil and gas industry, as it was scheduled to have gone into production by mid-2014, producing up to 900 mcf (25.5 mcm) per day. In 2011, the local inhabitants objected due to misplaced environmental concerns and forced BP to stop the project.

A preliminary agreement has been reached with BP to complete the project, including a proposed \$10-billion investment. It will go on line in 2017-2018 and reach a production rate of roughly 1.25 bcf (35.4 mcm) per day.

What other measures are being taken to meet domestic demand for natural gas?

Importing natural gas is the third step towards confronting the gap between production and consumption. The Ministry of Petroleum is stepping forward to import liquefied natural gas to meet part of the requirements of power stations in 2015. A contract was signed for six LNG shipments from Algeria to Egypt, amounting to a



The Ministry of Petroleum is working to boost investment

total of 750,000 cubic metres (26.5 mcf) per day from April 2015 to September 2015. The final contract for the first floating storage and regasification unit was signed in November 2014, between the Egyptian Natural Gas Holding Company and the Norwegian company Høegh for a period of five years. The unit is scheduled to start operations in March 2015.

The bids on the Egyptian Natural Gas Holding Company's tender for LNG shipments, which closed at the end of October 2014, have been evaluated. Russia's Gazprom has agreed in principle to supply shipments of LNG. ■

IN FIGURES

North Alexandria deepwater project to be completed

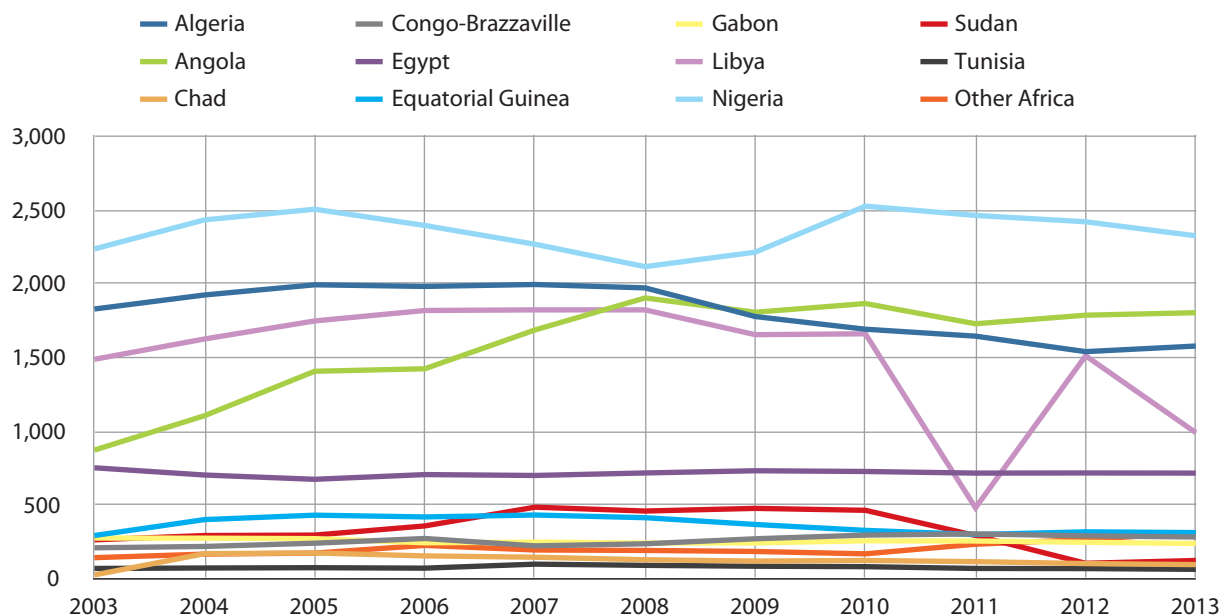
2017-2018

Proposed investment for project

\$10 billion

PRODUCTION

African oil production, 2003-2013 (thousands of barrels per day)



Source: BP Statistical Review 2014

MAN OF THE YEAR**Sherif ISMAIL**

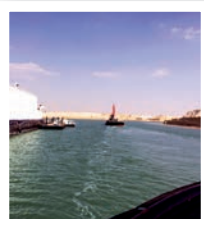
As the Minister of Petroleum and Mineral Resources, **Sherif Ismail** oversees the development and co-ordination of Egypt's oil and gas industry. This involves stimulating foreign interest in exploration and production, which he has done through the signing of 53 concessions from October 2013 to January 2015. It also includes setting an agenda for the modernisation and expansion of the downstream sector by upgrading existing refineries and building a more sophisticated value chain for petroleum products. Other efforts enacted with his oversight include ongoing negotiations of gas prices for new upstream activity targeting deep gas, and the partial settlement of debts to international operators.

**DOWNSTREAM PROJECT** OF THE YEAR

The **Tahrir Petrochemical Complex**, to be operated by Egypt's Carbon Holdings, is a \$7-billion dollar venture to use naphtha feedstock to produce 1.3 million tonnes per year (tpy) of ethylene, 600,000 tpy of propylene, 210,000 tpy of butadiene, 420,000 tpy of benzene, 1.35 million tpy of polyethylene and 450,000 tpy of high-density polyethylene. Many companies have been contracted, including project management consultant Amec Foster Wheeler, Linde, which will build the ethylene plant and Dow, which will provide process technology for polyethylene production.

UNCONVENTIONAL DEVELOPMENT OF THE YEAR

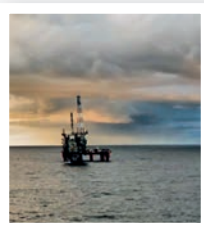
Apache Egypt and Shell Egypt are jointly investing to develop **unconventional gas reserves in the Appolonia Basin**. The Egyptian General Petroleum Corporation and Shell have agreed to allow Khalda Petroleum, a joint venture between Apache and the Egyptian General Petroleum Corporation, to operate the pilot project and full field development. Reservoir modelling has suggested that horizontal drilling and multi-stage fracture stimulation will yield economic production rates. The pilot project, set to begin in mid-2015, includes a commitment of \$30-40 million for three wells.

**INFRASTRUCTURAL DEVELOPMENT** OF THE YEAR

The **Suez Canal expansion**, being executed by a consortium involving the Egyptian Armed Forces Engineering Authority and Beirut-based consultancy Dar Al Handasah, has the potential to be one of the most important infrastructural projects for the global energy industry. Initial capital of \$8.5 billion has been raised for the addition of a canal and tunnels to facilitate road access. The Suez Canal Authority estimates the canal's revenues will increase from \$5 billion to \$13.5 billion, while vessel traffic will double from 49 to 98 ships per day.

GAS SUPPLY DEAL OF THE YEAR

In an effort to keep up with domestic gas consumption, the Egyptian Natural Gas Holding Company has signed a five-year deal with Norway's Høegh LNG for a floating storage and regasification unit to act as a **temporary LNG import terminal**. This will allow Egypt to import about 14.2 mcm (500 mcf) of natural gas per day, most of which will be used as feedstock for national power plants. The vessel is scheduled to go on line in March 2015 and the first LNG shipments will come from Algeria's Sonatrach. Egypt is in negotiations with Russia's Gazprom for further shipments.

**UPSTREAM INVESTMENT** OF THE YEAR

BP has announced plans to invest **more than \$12 billion** in Egypt in an effort to double its supply of natural gas to the local market. Nearly \$10 billion of the funds will be spent on a major gas project being developed in the West Nile Delta. The North Alexandria gas project, in which BP holds a 62-percent stake and RWE Dea holds the remaining 38 percent, is aimed at producing roughly 28.3 mcm (1 bcf) of gas per day by 2018. The project's gas streams are planned to be connected to the Al Borlos Treatment Plant, which can process 56.6 mcm (2 bcf) per day.



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POLITICS

- **Official name:** Arab Republic of Egypt
- **Political system:** Parliamentary democracy
- **Head of state:** Abdel Fattah El Sisi
- **Prime minister:** Ibrahim Mahlab
- **Population:** 86.9 million
- **Official language:** Arabic
- **Ethnic groups:** Egyptian (99.6 percent), other (0.4 percent)

GEOGRAPHY

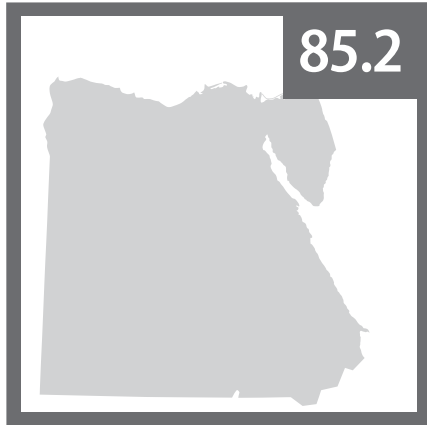
- **Area:** 1,001,450 square kilometres
- **Capital city:** Cairo

ECONOMY

- **Currency:** Egyptian pound, LE (\$1:LE7.15)
- **GDP (official exchange rate):** \$272 billion (2013)
- **Real GDP growth rate:** 2.2 percent (2014)
- **Share of oil and gas in real GDP:** 47.2 percent
- **Unemployment rate:** 12.9 percent (early 2015)
- **Mineral resources:** Natural gas, oil, gold and iron ore, phosphates
- **Gas reserves:** 1.8 tcm (63.6 tcf) (end 2013)
- **Oil reserves:** 3.9 billion barrels
- **Oil and condensate production:** 700,000 barrels of oil equivalent per day

Sources: EIA, CIA World Factbook 2014, BP 2014 Statistical Review

The Egypt 2015 Investors Index



Egypt is witnessing an economic revival marked by increasing GDP growth and the Egypt 2015 Investors Index rating of 85.2 demonstrates strong investor confidence.

More than 90 percent of respondents rate business conditions in Egypt's oil and gas industry as positive, and nearly 86 percent believe that conditions will continue to remain positive in the next 12 months.

RIDE THE WAVE: Optimism is running high in the market, with 86.3 percent of those surveyed suggesting that it was a good time to invest in Egypt. This appears to be a reflection of ongoing international bidding rounds and changing investment laws. The 12-month investment horizon demonstrates

that this optimism extends into the future, with 84.9 percent of respondents agreeing that the country would remain a good investment destination over the next 12 months from the date of the survey.

This optimism is tempered by the fact that only 68.5 percent of respondents said they expect their company revenues to increase in Egypt over the next 12 months.

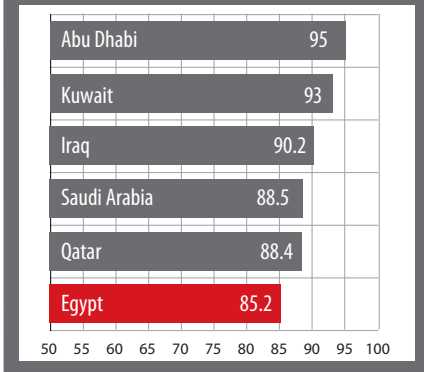
THE RIGHT BALANCE: There are still plenty of hurdles to operating in Egypt, with 87.7 percent of respondents saying that doing business in the country is difficult.

Processes for insuring compliance with the relevant laws and securing government authorisation could be behind this, although a majority – 74 percent – said they saw the government as pro-business but restrictive. This compares to 17.8 percent who see the government as simply pro business.

Establishing a strong business entity in the Egyptian oil and gas industry is no easy proposition, with 79.4 percent of respondents agreeing that it is a difficult task.

RELIABILITY: Investors are increasingly confident that political stability is returning to Egypt after four years of social upheaval. With the election of President Abdel Fattah El Sisi in 2014 and upcoming parliamentary elections, 71.2 percent of the respondents said the political and economic climate of the country could be described as stable. ■

BY MARKET



ABOUT THE INDEX: The TOGY Investors Index is designed to measure confidence among oil and gas investors as expressed in their level of spending in any given market. The index is valued based on the responses of major oil and gas executives in this market.

The survey consists of five attitudinal questions in which participants are asked to give positive or negative responses.

A reading above 50 on the index represents a positive perception among oil and gas investors, while a reading below 50 indicates an overall pessimistic outlook.

The Egypt 2015 Investors Index is based on the responses of 64 oil and gas executives and nine academics and policy makers who work in fields relevant to the energy industry.

RESPONSE

How would you describe the policies of this government vis-à-vis the oil and gas industry?

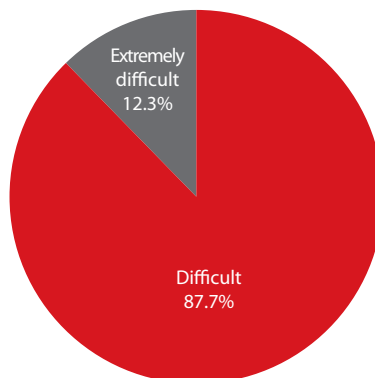
Pro-business	17.8%
Pro-business, but restrictive	74%
Anti-business, but accommodating	8.2%
Anti-business	0%

How would you rate the ease of starting an oil and gas business in this market?

Very easy	0%
Easy	1.4%
Difficult	79.4%
Extremely difficult	19.2%

How would you rate the ease of doing business in this country?

Very easy	0%
Easy	0%
Difficult	87.7%
Extremely difficult	12.3%



How would you rate the level of transparency in this oil and gas market?

Very transparent	0%
Transparent	75.3%
Not transparent	24.7%
Corrupt	0%

How would you rate the level of political and economic stability in this oil and gas market?

Highly stable	6.8%
Stable	71.2%
Unstable	19.2%
Highly unstable	2.8%

Source: The survey was conducted by The Oil and Gas Year in Egypt between July 2014 and February 2015

2014



13 Edison, Petroceltic and Dana Gas sign exploration deals worth \$265 million for a total of eight new wells in northern Sinai, the offshore Mediterranean and the Nile Delta.

12 US Secretary of State John Kerry announces that the resumption of aid, both economic and military, to Egypt is likely. The return of the aid programme is later approved.



6 Carbon Holdings, Maire Tecnimont and Archirodon sign a \$1.7-billion contract for the construction of the Tahrir Petrochemical Complex.



8 Abdel Fattah El Sisi is sworn into office as president of Egypt after securing 93.3 percent of votes cast during polls held between May 26-28.

24 The World Bank approves a \$500-million project to expand household gas connections in Egypt.

13 Drake & Scull International signs a \$4.2-billion contract to join the international consortium of companies developing the Tahrir Petrochemical Complex.

27 Minister of Petroleum and Mineral Resources Sherif Ismail says BP's \$10-billion North Alexandria gas project, which had stalled for three years, has restarted and that production will begin in 2017.

FEB

MAR

APR

MAY

JUN

JUL

31 The European Bank for Reconstruction and Development gives a \$190-million loan to Egypt to finance upgrades for the Shabab and Damietta power plants.



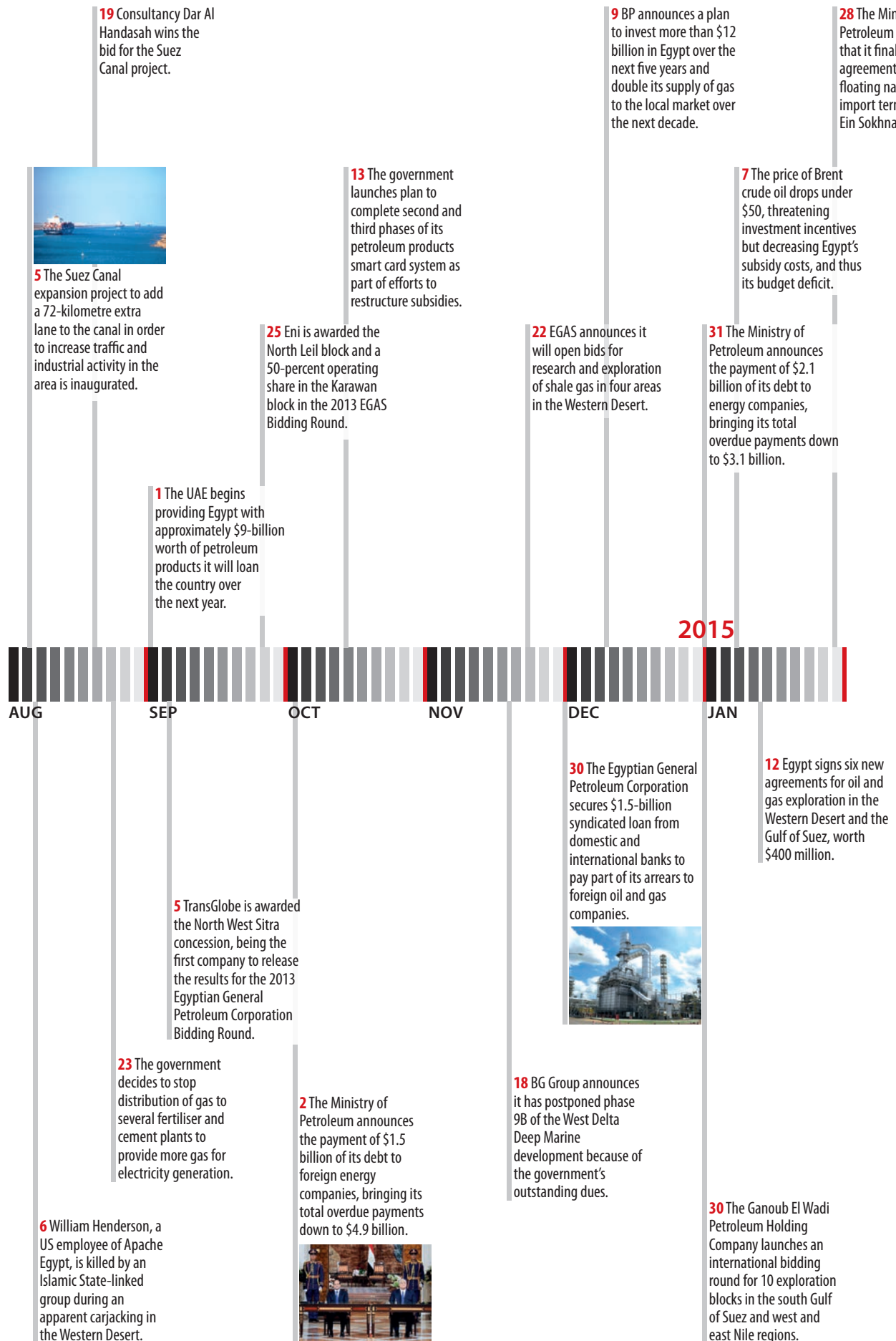
11 Saudi Arabia announces it will provide \$1.3-billion worth of petroleum products in May and June, in the form of fuel oil, diesel and LPG shipments, to Egypt.

23 The Egyptian Natural Gas Holding Company (EGAS) cuts 10.8 mcm (380 mcf) of gas per day for fertiliser and cement factories in the face of an ongoing gas shortage.

4 Following subsidy cuts, fuel prices increase overnight, rising 40 percent for 92-octane petrol, 78 percent for 80-octane petrol, 63 percent for diesel and 175 percent for gas.

26 Militants bomb a gas pipeline in north Sinai, marking the 21st attack since the ousting of former President Hosni Mubarak in 2011.

21 The Arabian Cement Company launches the first initial public offering in Egypt since the removal of Mubarak, raising confidence among local and international investors.





DIPLOMACY & POLITICS

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17 **EGPC moves into the future**

Tarek EL MOLLA

CEO

EGYPTIAN GENERAL PETROLEUM CORPORATION

21 **Roadmap to stability**

Amr MOUSSA

Head of Constitutional Review Committee

The route ahead

Political instability and economic recessions in the years leading to 2015 have resulted in reforms to improve the investment conditions underlying Egypt's oil and gas industry. The government must establish a new norm as it recovers from a series of revolutions and confronts gas shortages, falling oil prices and an unpredictable economic climate.

Egypt's foreign exchange reserves stood at \$15.4 billion as of early February 2015, while foreign debt is projected at 18.5 percent of GDP for the fiscal year 2014/15 (July-June). Since unrest in Egypt broke out in 2011, the former has fallen year-on-year, while foreign debt has grown considerably.

The country has become increasingly dependent on importing oil products, totalling as much as \$1.3 billion per month, to make up for a domestic shortfall. Meanwhile, the national gas shortage is having a damaging effect on the manufacturing industry and causing frequent blackouts.

Natural gas production in Egypt averaged around 137 mcm (4.84 bcf) per day in 2014, but continues to face declines at a rate of about 2.83 mcm (100

secured a loan of around \$1.4 billion in September 2014 from a consortium of four local banks to make a payment to foreign companies.

Egypt fell behind schedule on its payments in large part due to subsidy expenses, alongside the country's inability to monetise its oil and gas reserves through consistent development.

SUBSIDIES AMID SHORTAGE: The second hurdle to garnering more investments is subsidised domestic gas prices. There is momentum for change, however, as the state-owned Egyptian Natural Gas Holding Company has said on numerous occasions that it is in the process of negotiating fairer gas prices in existing domestic developments.

The baseline price of \$2.65 per million British thermal unit (Btu) is not high enough to recuperate costs associated with exploration and production activities at higher reservoir temperatures and pressures.

This is particularly the case for deep offshore and unconventional onshore developments, where the most novel opportunities for increasing domestic production lie. While working conditions and their corresponding break-even prices vary, adequate compensation would necessitate gas prices in the range of \$4-6 per million Btu, depending on the play.

The ongoing gas shortage in Egypt has seen the signing of a contract with Norwegian company Høegh for the supply of a floating, storage and regasification unit. Accordingly, Egypt could end up importing LNG at \$9-12 per million Btu.

There are signs of marked progress. Energy subsidies were cut by almost one-third on July 5, 2014, only a few weeks after President Abdel Fattah El Sisi was sworn into office, leading to a rise in wholesale energy prices. In 2013, Egypt's budget deficit was largely owed to such subsidies. They accounted for about one-third of the national budget, which stood at 12 percent of GDP.

The government also implemented a stimulus plan that year worth around \$4.28 billion, which included \$868 million for the delivery of natural gas to 800,000 residential areas, as well as to equip industrial zones, subsidise infant formula and cover student tuition fees. The Ministry of Finance claimed the stimulus package would not be detrimental to its 10-percent budget deficit target. Other budget reforms, such as those for subsidy reductions, and

A major hurdle in Egypt is the refusal of foreign companies to invest until the state has paid back its outstanding debt for oil products provided by operators during times of civil unrest.

mcf) every month. To regain control of its energy supply, the state is seeking to execute reforms to bolster investment in exploration and production. Still, there are formidable obstacles to overcome.

FOREIGN OBLIGATIONS: The first major hurdle is the refusal of several foreign oil and gas companies to invest in Egypt until the government has paid back its outstanding debt for oil products provided by upstream operators during the three years of civil unrest. Those now operating in Egypt have allowed for delays on their gas production projects.

The total amount of domestic arrears owed amounted to \$3.1 billion by December 2014, after Cairo managed to make a payment of \$2.1 billion. In November 2014, a senior official in the Ministry of Petroleum said that the government hopes to pay off the rest of this debt by mid-2015.

The payment in December follows two previous instalments of \$1.5 billion in December 2013 and \$1.4 billion in October 2014. The state-owned Egyptian General Petroleum Corporation had also

FIGURES

EGYPT'S FOREIGN EXCHANGE RESERVES STOOD AT \$15.4 billion AS OF FEBRUARY 2015

FOREIGN DEBT IS PROJECTED AT 18.5 percent FOR 2014/15

EGYPT'S TOTAL ARREARS TO FOREIGN OPERATORS IS \$3.1 billion