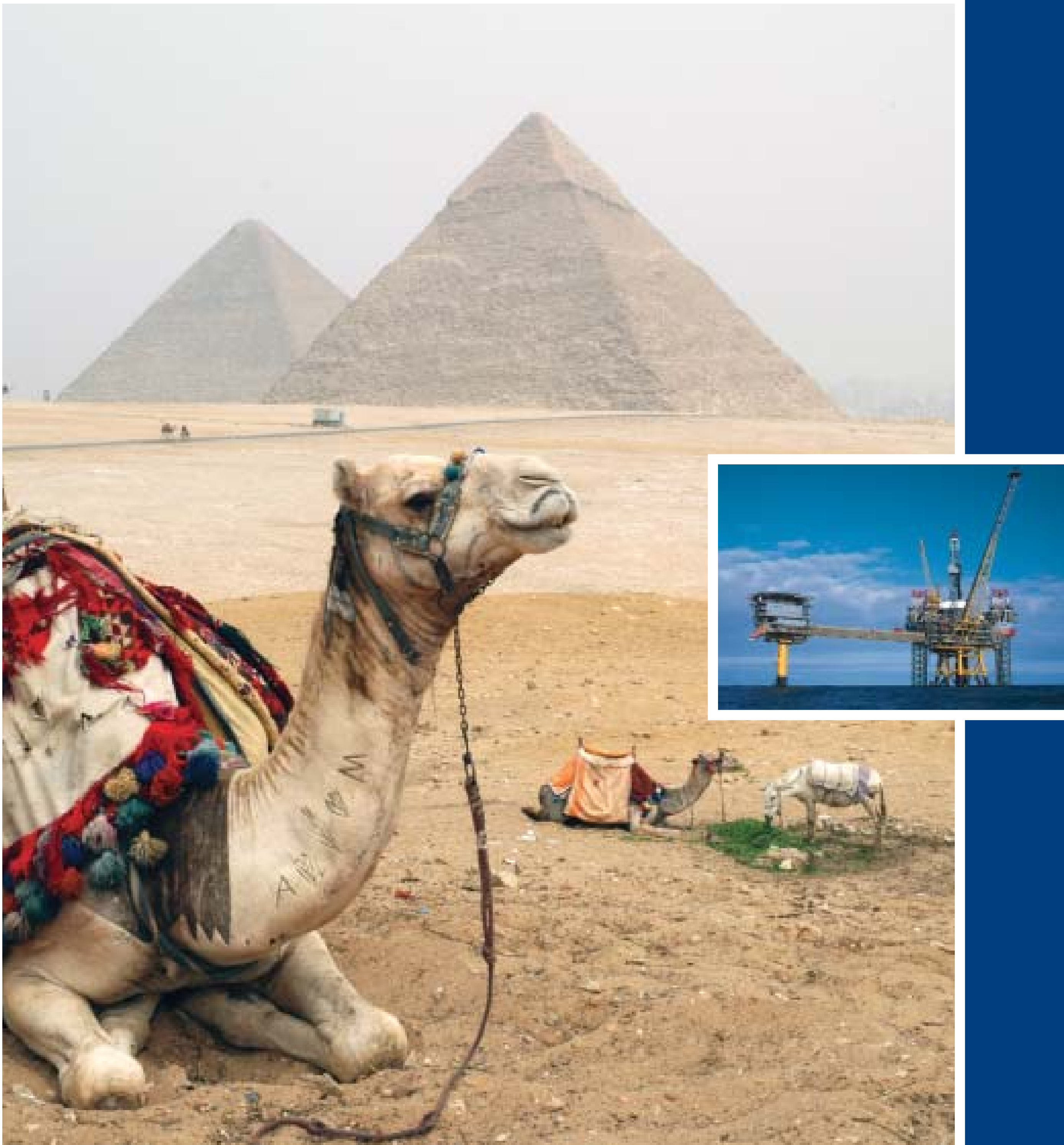
ENERGY IN EGYPT



A special report from
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Positive Posturing

Egypt is positioning itself to become a bigger player in the global oil and gas markets.

ARTICLE BY NAOMI SUTORIUS-LAVOIE and ADAM PLETTS

In this land of epics, oil has played a major role in the country's long history. Rather appropriately it was used by the Pharaohs to embalm their mummies and the Romans would later note its presence on the west coast of the Gulf of Suez, near a mountain which still bears the name Jebel el Zeit (Oil Mountain).

In more recent times, Egypt was the first Middle Eastern country in which oil was found, at Gemsa Field in 1886, and there has been active exploration and production since the turn of the 20th century. The industry is of vital importance to the national economy with petroleum products accounting for about 40% of exports and the upstream industry contributing 10% of GDP.

By no means the first Middle Eastern country that would spring to mind for its petroleum industry, Egypt is nonetheless a significant player. And although oil production is on the decline, with crude oil falling from a peak of 922,000 barrels per day in 1996 to around 600,000 in 2004, this is overshadowed by the exploitation of sizeable gas discoveries.

A jackup rig is ready for assignment offshore Egypt.

Current estimates are that oil reserves stand at 3.7 billion barrels (27th in world), and gas reserves at 65 trillion cubic feet (23rd in world) and could be as high as 120 trillion (Tcf). Cumulative gas production to July 2004 stood at 14.6 Tcf, and has more than doubled since 1999. These figures underlie the recent dynamics of the Egyptian petroleum industry, which is undergoing a swift change of emphasis from oil to gas.

The current president, Hosni Mubarak, in power since Sadat's assignation in 1980, has made a priority of improvements to the economic performance and business environment of the country. These measures were kick-started after the International Monetary Fund's institution of stabilization programs in 1991. They include a greater commitment towards privatization and a series of incentives to attract foreign investment.

On the petroleum front, E&P concessions were made more attractive with increased cost-recovery allowances, larger blocks and longer license periods. Several industries, such as telecommunications and utilities, have seen significant privatization, but the petroleum ministry holding companies remain strictly off-limits for the time being.

That said, there has been smaller-scale petroleum industry privatization of, for instance, downstream infrastructure.

One of the key recent developments in the local petroleum industry has been the restructuring of the petroleum ministry's holding company into distinct branches. EGPC continues to exist but its jurisdiction has been limited to oil activities, while separate bodies have been established to cater for the rapidly changing needs of the industry.

Tamer Abu Bakr, senior vice president of gas-orientated Genco Group, says, "Sharing the duties between these bodies was an important move that properly reflects the changing needs of the industry."

Responsibility for gas activities was split out to the Egyptian Natural Gas (EGas) holding company, which was set up in August 2001, while the Egyptian Petrochemicals holding company (EChem) was established in 2002 to develop a fully integrated petrochemicals industry with a view to achieving substantial self-sufficiency in this field.

Also in 2002, the Ganoub El Wadi Petroleum holding company (Ganope) was put into place with the role of spreading oil and gas activities, infrastructure and benefits to upper Egypt.

Of the new bodies, the majority of the activity has been centered on EGas. Whereas natural gas was introduced into the local Egyptian market in 1975 with the opening of Abu Madi Field, proven gas reserves were only around the 12 Tcf mark as recently as the 1990s. The discovery of further proven reserves, currently thought to be around 65 Tcf, combined with declining oil production, has lead to large-scale integration of gas into the national energy policy.

All new power stations are being built to accommodate dual oil-gas fueling, while the older ones have been converted. Power sta-

About the cover

Operators are exploring Egypt's desert and offshore waters.

tions account for 62% of domestic gas demand and the fertilizer industry for a further 10%. There is a national grid with approximately 14,000 kilometers of network and some 2 million domestic and commercial customers. A further initiative has been the use of compressed natural gas for vehicle fuel. With more than 55,000 converted cars and 83 filling stations, Egypt is among the Top 10 countries to make use of this more environmentally friendly option.

Current domestic gas demand is limited by the current poor state of the local infrastructure and is more than satisfied by domestic production, leaving ample surplus for export. The chief challenge of EGas has been to pave the path to export markets. Two liquefied natural gas (LNG) projects have been undertaken as well as a pipeline to deliver oil to Jordan.

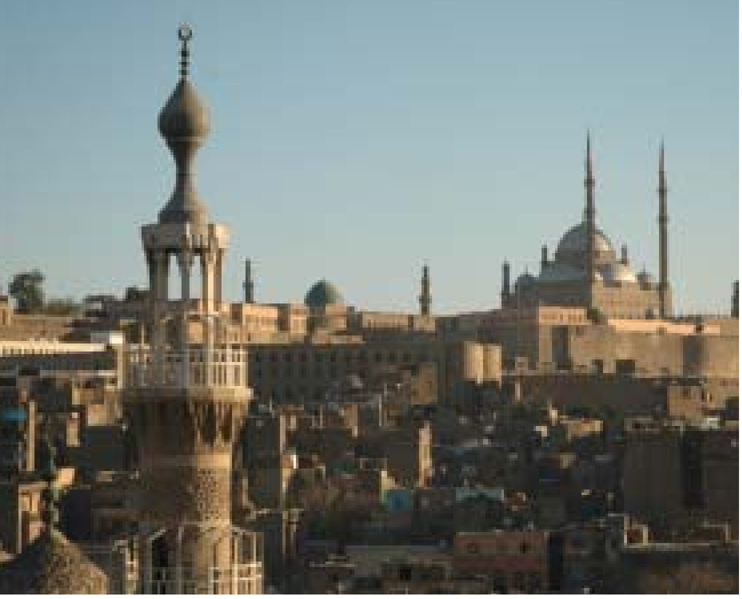
The first of the LNG plants is the one-train facility at Damietta, which came online in December 2004 to provide gas for Spanish power-generation plants. It is a joint venture of EGPC, EGas and Union Fenosa, who have an 80% interest. At press time, this was the largest single-train facility in the world, with a capacity of 5 million tons of LNG per year.

In light of recent gas discoveries in the Nile Delta, a memorandum of understanding has now been signed between EGas, ENI and BP to construct a second train at Damietta, doubling the LNG-production capacity.

A second LNG plant is the aptly named Egyptian LNG project. This comprises two trains and was set up through a joint venture of EGas, EGPC, BG, Petronas and Gaz de France. The first train is due to come online in mid-2005 for export to France based on an agreement with GDF to provide 10% of its trade in 2005. The second train is due onstream mid-2006, with targeted markets in Italy and the U.S. Both plants have a capacity of 3.6 million tons a year.

Political regime

Closer to home, Jordan has been importing natural gas from Egypt via the Arab Natural Gas Pipeline since July 2003, which is used in the Al Aqabah power station. The pipeline runs from



A section of the Cairo skyline evokes Egypt's ancient history.

Egypt's Mediterranean coast down to the Gulf of Aqabah, skirting the Israeli border. Completion of the pipe extension to Rehab in northern Jordan is due mid-2005, and then possibly to Syria and Lebanon and perhaps further afield to Turkey, although it seems likely that Turkey's demand will be satisfied from Iranian or Russian sources.

There is the distinct possibility that an agreement to supply natural gas via pipeline could be reached between Israel and Egypt. The so-called "peace pipeline" makes economic sense; Israel is, after all, the most energy deficient of Egypt's neighbors. However, the Palestinian Intifada of 2000 has reignited tensions between Israel and the Arab world.

Even though Egypt has perhaps the best relations with Israel of any of her neighbors, eyebrows would still be raised. It would be a bold statement, what with a pipeline to Jordan, one of Egypt's closest allies, having only just been opened. Nonetheless, similar initiatives that make sense from both a peace-sustaining and economic view have had considerable success, such as the Qualified Industrial Zones program, in which certain goods manufactured in Egypt and Jordan gain duty-free entry to the U.S. provided they contain a stipulated minimum content of Israeli input.

As for government involvement in the Egyptian energy industry, the petroleum ministry retains a strong grip on the hydrocarbons sector, being responsible for sanctioning all exports of crude oil and other petroleum products, through the ministry holding companies, primarily EGPC. All E&P activities are controlled through concession allocations and joint ventures between the private company and EGPC or EGas. The joint-venture companies are dual-signatory entities that require the agreement of both parties and are set up by stand-alone, national laws.

Once a concession is granted, the private company is obliged to meet a minimum level of investment in E&P and infrastructure, the amount of which is decided upon on a case-by-case basis as laid out in the individual concession agreement. In the case that a commercial discovery is made, a joint-venture company would be established and the private company is able to recoup its costs based on a production-sharing arrangement, the details of which are again unique to the individual case and depend on the economics of the field, its size, infrastructure required and so on. The ministry holding company pays taxes out of its share of the oil revenues so that a tax incentive is essentially included as part of the system.

EGPC has a great deal of experience in working in cooperation with private companies in joint ventures and in the allocation of concessions. The overwhelming consensus among private companies is that the system works well and provides the right level of incentives to attract high-quality E&P operators, while still ensuring that there is substantial investment in high-quality infrastructure.

Hany Elsharkawi, general manager, Egypt, of Calgary-based Centurion Energy International Inc., says, "It's a fair system, which is well evaluated. I don't think anybody has any major concerns, but there is always some room for improvement."

A few of the more aggressive upstream operators feel that there are times when they would like to move quicker than the holding company will allow, and there were indications that operators would feel happier if they were able to balance investment costs from a field in which they might not have made commercial discoveries by gains in fields that have exceeded expectations. This would diversify the operator's risk.

Waleed Abukishk of Shell says this could "also be beneficial to Egypt, since the private companies would feel securer in making substantial investments in areas that do not already have well-built-up infrastructure."

To encourage development to across the country, the government is now trying to encourage E&P activities beyond the already well-serviced areas in northern Egypt. Traditionally oil production has been centered in the Gulf of Suez, where some 70% of Egypt's oil has been produced, with the remainder coming mainly from the north of the Western Desert, but also from the Eastern Desert and Sinai. Proven gas reserves are mainly in the Nile Delta and the offshore area around this, where BP, Shell and Apache Corp. have significant concessions.

After the 2004 concession bid rounds, most of the land within a band of some 200 kilometers of the Mediterranean coast and a substantial offshore area around the Nile Delta will be accounted for by concessions. The 2004 bid rounds also included sizeable blocks in areas farther south of the Western Desert and beyond the now well-established and -serviced areas of activity in northern Egypt.

For instance, Canada's Centurion holds the rights to the first major concession in southern Egypt, Komombo. This is in fitting with the ministry's strategic goal of further developing the south of the country and the concession's location, running for some 300 kilometers parallel to the Nile, means that it is at least close to areas with some pre-existing infrastructure.

Major producers

When it comes to production, BP has been the biggest player in the Egyptian oil industry, having produced more than 4.5 billion barrels of oil since 1963, accounting for almost 40% of Egypt's entire oil production. However the future of activities is going to lie increasingly in the gas arena. In partnership with ENI, BP produces approximately 30% of Egypt's total output.

Hesham Mekawi, BP Egypt president, says, "Gas is growing and it's very exciting for us. We plan to double our investments in Egypt, totaling US$3 billion in gas [spending] during the next five years." At the same time BP will continue to plough some US$300- to US$400 million into its oil activities, continuing to explore, but with a focus on maximizing production efficiency from the already mature Suez fields.

A particular success of BP's gas exploration program in 2004 was the Raven discovery. This was the first discovery in the Western Hub, opening what looks to be a very promising area. With reserves thought to be 4 Tcf or greater, the field was BP's second-largest gas discovery worldwide in 2004. (The biggest was in Russia.) Developing the technologically challenging deepwater Raven Field will be a main priority for BP with a view to producing gas for exportation through future LNG projects.

On BP's oil front, the significant discovery of Saqqara Field, shows that the mug is far from drained. Saqqara should be online and producing around 40,000 barrels per day as of third-quarter 2006 and is the largest

Hany Elsharkawi, Centurion Energy

LOCAL PARTICIPATION

Eygypt welcomes foreign participation in the local hydrocarbon sectors. While the bad old days of Nasser are a fading memory, the recent exciting gas discoveries and the desire to squeeze more out of aging fields have made outside help essential. Stimulation from these big multinational companies has helped a host of healthy homegrown firms flourish, with involvement in every area of the value chain, from upstream E&P through services and infrastructure to downstream delivery.

Akmal Kurtam, Sahara Oil & Gas, parent of Sapesco

Egyptian companies are becoming increasingly involved in highly skilled and technologically advanced areas of operation. These companies enjoy the benefits of being able to draw upon graduates from Egypt's technical universities, which have been responsible for educating a whole generation of Egyptians who have provided expertise to other parts of the Middle East, during the last couple of decades.

One key national player is Sahara Petroleum Services (Sapesco), part of the Sahara Group, and the largest Egyptian oilfield-services company. It has a wide range of capabilities including well services, such as coiled-tubing and nitrogen-pumping for stimulation and downhole measurement for reliable monitoring of well performance.

Sapesco is also active in other countries across the Middle East, notably Syria, where it is the largest provider of oilfield services in the country.

Mamdouh Mahfouz, Sapesco president, says, "The success of the oil and gas industry has two crucial components, the operator and the contractor. To fly higher and go further, these partners need to have full cooperation and transparency, as well as respect and understanding. Sapesco understands this."

Another company that operates at a high level in the services field is ADES Advanced Energy Systems, part of a group of 11 companies that includes the Egyptian Chinese Drilling Co. as well as other diversified companies in the fields such as telecoms and real estate. Head of the group, Mamdouh Abbas recognizes the attractiveness of the Egyptian hydrocarbons sector.

"Everyone wants to play a part of the Egyptian petroleum sector; it has great potential," he says. For its part, ADES successfully competes with international firms to provide on- and offshore services with a focus on rigless offshore workovers. ADES has been a major proponent of the introduction of new technology and methods, such as the sponsoring of the modular offshore hydraulic workover in place of standard procedures.

Beyond the provision of technical field services, there are successful Egyptian services companies involved in other operations that play an important role in operations of the fields. The Egyptian International Co. is one such player. With more than 80 trucks, the core of its activities is crude-oil trucking and freshwater delivery, primarily within the Western Desert area. The company has actively identified other areas of need in the oil fields, and now deals in equipment hiring and even catering services for field operations.

Mohamed Elhamy Hussein, chairman, says, "We are here to help, open to partnership and driven to succeed."

The Egyptian business environment and measures that the government has taken to encourage foreign investment, specifically in the hydrocarbons industry, warrant a mention. In recent years, several laws have been passed that are aimed at moving Egypt towards a fully fledged market economy, such as property-ownership guarantees, investment laws and competition law.

Mahmoud Mohieldin, Egyptian minister of finance, is confident in the new laws. "I think we are approaching a very good and supportive framework for the country. We have taken measures to insure there is a healthy and functioning banking, insurance and legal framework, which will encourage further investment from the oil and gas sector."

He made it clear that there is still work to do, for instance, towards an efficient stock exchange and a better-managed foreign exchange market but he believes the overall picture is showing strong improvement, which he says is reflected in the fact that "according to our performance so far this year, FDI will be multiplied by a factor of three as compared with year."

Mohieldin says the work required from the finance ministry for the petroleum sector has been minimal since the petroleum ministry "has always put a very good program together to attract investors."

Indeed, this matched the sentiment of the overwhelming majority of multinationals interviewed for this report and the confidence that they have expressed in Sameh Fahmi, Egypt's petroleum minister.

Interestingly enough, although Egypt has one of the poorer levels of proven reserves in the region, it has become a lead player in the region by virtue of the fact that many "local" workers throughout the Middle East are in fact Egyptian. The importance of the technical schools and universities cannot be stressed enough to highlight how important the sector is to the local economy.

Egypt may have too much for the resources that she possesses. Nevertheless, given their work with multinationals, Egyptian companies are increasingly proving growing levels of value-added services at home, but also abroad.

—Naomi Sutorius-Lavoie and Adam Pletts

Sapesco is the largest Egyptian oilfield-services company.

Gulf of Suez discovery in 15 years. A further sign of BP's commitment to continued oil production is the renewal of its Gulf concessions for a further 25 years, due to be ratified by parliament at press time.

Mekawi says, "We hope to sustain oil production at or above current levels for 10 to 20 years."

The single-largest producer of gas in Egypt is Shell, at 600 million cubic feet per day in mid-2003. Shell currently produces about 20% of Egypt's gas and wants to significantly increase production during coming years.

"Egypt is one of the areas in the Middle East that we are really pumping investments into," says Waleed Abukishk, commercial manager, Shell Egypt. At the core of its activities is the offshore North East Mediterranean (Nemed) Field, which is the size of Holland, at some 41,000 square kilometers. In 2004, Shell had two discoveries there but is waiting to really hit it big.

That said, the development period will be long, what with the concession being in ultradeep waters; discovery through to production will be some four-plus years. Shell is bullish about its prospects of new discoveries from current concessions, and "wants to grow its business to the point of doubling capacity or more," says Shell's Abukishk.

Other important players in the arena include BG, ENI and Apache, with several smaller independents such as Merlon and Centurion taking a piece of the pie. In recent years, Houston-based independent Apache has been one of the biggest investors in Egypt, through E&P activities in the Western Desert. Its Khalda concession has been the site of the Western Desert's most significant gas discovery in the past 10 years, with recoverable reserves somewhere between 2.5 and 3 Tcf.

Infrastructure to deliver gas from this field to market is being finalized and full production should start in July 2005 at approximately 150 million cubic feet per day, rising to perhaps 300 million by close of 2006.

Canada's Centurion Energy holds rights to the first major concession in southern Egypt, Komombo.

Summary

One of the most important considerations of any company or individual when relocating is the issue of safety. These considerations are of particular importance to oil and gas companies, which are often in areas with inherent geopolitical risk. With this in mind, there is some local concern that Egypt's reputation abroad may be tarnished by broader events in the Middle East, but Apache's experience has been positive.

Rod Eichler, Apache executive vice president and general manager, Egypt, says, "Even if there are attractive oil and gas prospects in a country, we won't do business unless that country has a wholesome environment and political stability, which are both true of Egypt."

A statement that is backed by the fact that Egypt is Apache's second-largest oil operation and third-largest gas operation worldwide.

Egypt has already weathered some of its toughest challenges in its transition from oil to gas. Chiefly, the infrastructure has been put in place to take advantage of gas-export markets, trade partners have been identified and the first shipments have been made. However, there are still hurdles ahead: the Egyptian petroleum industry must perform something of a balancing act, splitting its efforts between oil and gas to ensure that maximum benefits are extracted from the maturing oil fields, while fully developing the potential of relatively new gas discoveries.

Egypt will undoubtedly move from being a net exporter to a net importer of oil but when this occurs depends to some extent on the management of these assets. At any rate, Egypt has a bright future in gas with a growing domestic market fueled by the Arab world's largest and fastest-growing population, close proximity to European markets and competitive pricing for the U.S. market. ☐

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