

EGYPT ON THE VERGE OF GAS HUB STATUS

DESPITE SOME SIGNIFICANT SETBACKS AT THE BEGINNING OF THE LAST DECADE, EGYPT'S LONG-HELD AMBITION TO BE A MAJOR GAS TRADING AND EXPORT HUB MAY NOW BE NEARING REALISATION.

BY **RICHARD KEENAN**, PARTNER, AND **GRAHAM VINTER**, CHAIR OF **COVINGTON'S** GLOBAL PROJECT FINANCE PRACTICE GROUP.

Production of gas from Egypt's super-giant offshore Zohr gas field in the eastern Mediterranean steadily picked up throughout 2018. A strengthening of relations between Egypt and Israel led to the announcement in 2018 of a US\$15bn deal involving the sale of gas produced from Israel's Mediterranean gas fields to Egypt together with renewed investment in pipeline infrastructure to enable this to happen.

Egypt's attractiveness as a gas trading hub has also been enhanced by recent reforms in Egypt's domestic energy policy and the implementation of legal reforms allowing for the liberalisation of Egypt's midstream and downstream gas supply and trading activities. The announcement by seven Eastern Mediterranean countries in January 2019 of the establishment of an Eastern Mediterranean regional gas market based in Cairo adds to the momentum.

A recent history

For Egypt, the turn of this century heralded the launch of its nascent gas sector and the opportunity to export gas to the Levant countries, Europe and beyond.

Construction of the Arab Gas Pipeline had commenced. The first stage of this pipeline was commissioned in 2003. The pipeline was designed with the intention of supplying Egyptian natural gas to Jordan, Syria and Lebanon, and there were plans to eventually extend this pipeline to Turkey, from where the European markets could ultimately be reached.

BG Group and Enel had commenced the development of a 6m tonnes per annum LNG importation and regasification terminal in Brindisi Port, on the south-east coast of Italy. The LNG feedstock for the Brindisi regasification plant was to come from the Idku LNG facility situated on Egypt's Mediterranean coast, 50 kilometres east of Alexandria.

The Idku LNG facility is one of Egypt's two gas liquefaction plants and at the time it was under development by the BG Group and Malaysia's Petronas. BG Group was poised through its own vertical integration to supply mainland Europe with gas produced from Egyptian gas fields.

The Damietta LNG facility, located 60km west of Port Said, Egypt's other LNG facility, was also under development by Unión Fenosa of Spain and Eni of Italy at the same time.

Both the Idku and Damietta LNG facilities were commissioned in early 2005 with an aggregate capacity to produce more than 10 million tonnes of LNG per annum for export to world markets.

However, less than ten years later, Egypt found itself in the midst of an energy crisis and the infrastructure that had been developed to enable Egypt to export gas had either ceased to operate or was being operated at a fraction of its capacity.

By 2013, apart from the continued use of the Jordanian segment of the Arab Gas Pipeline by Jordan for domestic Jordanian purposes, the operation of the remainder of this pipeline had more or less ceased due to an acute shortage of gas for Egypt's own domestic consumption and disruptions to the operation of the Arab Gas Pipeline from attacks by Islamic militant groups in the Sinai.

Egypt's chronic short supply of gas soon led to the collapse of LNG exports from Egypt. The Damietta LNG facility was shut down in 2013 and has remained idle ever since.

In early 2014, BG Group announced to the markets that it was forced to declare force majeure under LNG contracts with some of its customers as a consequence of insufficient quantities of gas being delivered to the Idku plant. The shortfall stemmed from a decision by the Egyptian government to divert BG Group's offshore natural gas production to domestic consumption¹.

Perhaps fortuitously given the shortage of LNG ultimately produced by the Idku plant, the development of the Brindisi regasification terminal in Italy had already been shelved by BG Group in 2012 after years of delay.



Egypt's attractiveness as a gas trading hub has been enhanced by recent reforms in Egypt's domestic energy policy

As domestic demand for gas increased, Egypt turned to LNG imports and rented two floating storage and regasification units positioned on the Red Sea coast to supplement domestic Egyptian gas production. By 2015, Egypt had become a net importer of gas.

Now, only four years later, due to a series of events and circumstances, Egypt's prospects of becoming a base for trading and exporting natural gas and LNG, have significantly improved.

Egypt enjoys a very privileged position in terms of its strategic location when it comes to world trade. As the home of the Suez Canal it is an integral part of the most direct trading route between the east and the west.

From a gas supply and trading perspective its unique position is enhanced by Egypt's proximity to some of the largest natural gas reserves in the world, including those belonging to Israel, Qatar, Iran, Saudi Arabia, parts of East Africa and its own reserves.

Europe's, and in particular Germany's, reliance on Russian gas supplies has recently been in the spotlight following US President Donald Trump's engagement with European leaders and his meetings last year with the NATO alliance. However, Europe's exposure to Russian gas supply lines has for a long time been an issue of concern for European energy policy-makers. The European Union is looking at ways to reduce its dependency on Russian gas.

If Egypt is able to credibly position itself as a regional gas trading and export hub, it may be able to offer Europe a viable alternative market from which European countries can source natural gas supplies.

Natural gas reserves

Egypt's natural gas reserves are located in different geographical locations, including two onshore locations, the Western desert and the Nile Delta, and two offshore locations, the Gulf of Suez and the Mediterranean Sea.

One of the primary game changers for Egypt has been the recent discovery of the mammoth Zohr gas field, 150 miles off the Egyptian coast in the eastern Mediterranean Sea. This field was discovered in 2015 by Eni. It is often described as a super-giant field and, with reserves estimated at 30trn cubic feet, it is the largest discovery of gas ever made in the Mediterranean.

Production from the Zohr field commenced in 2017 with an initial production of 350m cubic feet of gas per day and is forecast to have a production capacity of 2.7bn cubic feet per day by the end of 2019².

However, the Zohr field's massive production capacity is already having a significant impact on Egypt's balance of trade in gas. It was reported by Reuters that Egypt's production of natural gas in September 2018 reached 6.6bn cubic feet per day, compared to 6bn cubic feet

per day in July 2018, with production having grown steadily since the field began operating in December 2017.

This led Tarek El Molla, Egypt's petroleum minister, to announce late in 2018 that one of Egypt's two floating storage and regasification units would leave Egypt³.

Other recent discoveries have been made in BP's West Nile Delta concession and in the Shorouk concession area of the Mediterranean, including the Noor gas field, also discovered by Eni, in the Shorouk concession.

In the middle of last year the market was awash with speculation that the Noor field could be as large as 90 trillion cubic feet – three times the size of the Zohr field. However, these rumours were subsequently downplayed by Eni, which at the time had not commenced drilling an exploratory well⁴.

Even if initial market speculation regarding Noor gas field reserves proves to be unfounded, the gas fields currently under exploration and development in the Shorouk and West Nile Delta concessions are expected to make significant contributions to Egypt's gas reserves in the coming years.

Egypt's gas infrastructure

In terms of the infrastructure that is needed to enable Egypt to achieve its goal of becoming a regional gas trading hub, much of this is already in place.

Egypt's Damietta and Idku LNG plants are the only two LNG plants in the Eastern Mediterranean.

The Damietta LNG plant has the capacity to produce 5m tonnes of LNG per year and is one of the world's largest single-train facilities. The construction of the Damietta plant is estimated to have cost US\$1.3bn and it is owned and operated by the Spanish Egyptian Gas Company, a subsidiary of Unión Fenosa Gas, which is a 50/50 joint venture between Eni and Unión Fenosa. The Egyptian government also has a 20% stake in the plant through shareholdings held by Egyptian Natural Gas Holding Company and Egyptian General Petroleum Corporation⁵.

The Idku LNG facility was developed by BG Group and Petronas of Malaysia and has two trains – each with a capacity of 3.6m tonnes of LNG per year. Often referred to as Train 1 and Train 2, both trains and the common facilities were developed by the BG Group and its Malaysian partner, Petronas.

When Royal Dutch Shell acquired BG Group in 2015, Shell automatically acquired a 35.5% stake in both trains. Petronas also continues to hold a significant stake in both trains and, in 2017, Total acquired Engie's 5% stake in Train 1. Similar to the Damietta plant, the Egyptian government owns a 20% stake in both assets⁶.

In 2014, Unión Fenosa commenced arbitration proceedings against the Egyptian government claiming damages for the government's failure to provide gas feedstock

to the Damietta plant. In September last year, the International Centre for Settlement of International Disputes, the World Bank arbitration body, ordered the Egyptian government to pay US\$2bn as compensation for the government's failure to comply with its obligations.

It is expected that the government is likely to comply with the terms of the arbitration award by payments in kind, or in other words, through the renewal of gas supplies to the Damietta Plant⁷.

Foreign investor confidence in Egypt's downstream gas market has been at rock bottom with the curtailment of feedstock supplies by the Egyptian government to the country's two LNG plants and petrochemical facilities.

This recent arbitration award will hopefully prove to be a significant step towards the rehabilitation of Egypt's LNG export market. The restoration of confidence in Egypt's gas sector is critical to Egypt's aspirations to reignite foreign investment in Egypt.

The government needs to send a strong signal to potential foreign investors by swiftly complying with this award, even if that is through the resumption of gas supplies to the Damietta plant.

It was reported by Reuters in early January this year that, according to a Ministry of Petroleum official, Egypt is currently exporting 520m cubic feet of LNG per day from the Idku LNG facility⁸.

It was also recently reported in Egypt's Daily News, that Shell currently exports one shipment of LNG produced by the Idku plant every 10 days⁹.

Assuming this information is accurate, the Idku LNG facility should now be operating at around 50% of its nameplate capacity. According to this same article published in Egypt's Daily News, Egypt's Ministry of Petroleum aims to have the Idku plant fully operational by 2020/21.

Significant development of infrastructure is also taking place in the Gulf of Suez. Arab Petroleum Pipelines Company, a partly state-owned Egyptian company, is building a new 2.5km wharf that will have three berths to receive LNG and petroleum carriers.

The first berth was scheduled for completion early in 2018. The wharf will enable the Egyptian Gas Holding Company to install an FSRU on a permanent basis to receive LNG imported from LNG carriers berthed at the wharf. The wharf will also include the installation of petroleum storage tanks for the storage of fuel oil, gas oil and liquefied petroleum gas.

The Arab Gas Pipeline runs from Egypt's Sinai Peninsula through Jordan and extends into Syria and Lebanon. The first section of the Arab Gas Pipeline, which connects the Egyptian city of Arish on the Mediterranean coast of the Sinai

Peninsula to Aqaba, Jordan's Red Sea port, was commissioned in 2003. Since then, three more sections of this pipeline have been completed. A second section runs for 390km from Aqaba to El Rehab just south of the Jordanian/Syrian border.

Since 2013, this is the only section of the Arab Gas Pipeline outside of Egypt that has continued to operate. It is used to transport gas domestically within Jordan from a floating storage regasification unit situated at the Port of Aqaba.

The third section of the Arab Gas Pipeline takes the pipeline over the Jordan-Syrian border through Damascus and then north to a gas compressor station located near the Syrian city of Homs.

The connection of the Arab Gas Pipeline to Lebanon is the fourth section of the pipeline that has been completed thus far. This includes a stretch of pipeline from Homs across the Syrian/Lebanese border to the Lebanese city of Tripoli.

Further extensions of the Arab Gas Pipeline from Syria to the Turkish city of Kilis have been proposed. However, construction of this segment of the pipeline has not yet commenced¹⁰.

There is a section of pipeline that connects Egypt to Israel. Not officially considered part of the Arab Gas Pipeline, this section is known as the Arish-Ashkelon pipeline or the EMG pipeline – the reference to EMG is derived from the name of the company that owns and operates this pipeline – East Mediterranean Gas Company.

The EMG pipeline first became operational in 2008 and was initially developed to enable Egypt to supply gas to Israel. At one point, the EMG pipeline supplied 40% of the natural gas consumed in Israel¹¹.

However, as the Arab Spring swept across North Africa in early 2011, the EMG pipeline became the target of disgruntled and marginalised local groups in the Sinai. Following a deterioration in security in the Northern Sinai, the EMG pipeline was repeatedly blown up and sabotaged by militants and the supply of natural gas by Egypt to Israel during this period was continually disrupted.

Egypt-Israel gas co-operation

Egypt's gas supply arrangements with Israel came under intense scrutiny prior to and after the overthrow of the Hosni Mubarak government. Selling gas to Israel proved to be a highly sensitive issue in Egypt, particularly as unrest under the Mubarak administration grew.

The price of gas sold by Egypt to Israel was reported to be very low in comparison with prevailing international market prices. There were also widespread reports of corruption associated with the agreement – Mubarak and some of his colleagues were accused of using the deal with Israel as a means of enriching themselves.

This led to the cancellation of the Egyptian-Israeli gas supply agreement by the Egyptian government in 2012. Relations between Egypt and Israel deteriorated as a result.

However, since the overthrow of President Morsi and the Muslim Brotherhood in 2013, Egyptian-Israeli relations appear to have improved dramatically. Indeed, some commentators on the subject of Egyptian-Israeli affairs have recently described the current relationship between the two countries as the best it has ever been.

While it may still be apt to describe the relationship as a “cold peace” and no one could credibly claim that full normalisation of relations has occurred, some steps in this direction have been taken over the last few years.

In a somewhat ironic turn of events, it was announced early last year that Israel will soon commence supplying Egypt with gas produced from Israel’s Tamar and Leviathan offshore fields in the Mediterranean. Production of gas from the Tamar gas field has already commenced and the Leviathan gas field is expected to come on line at the end of this year.

Texas-based Noble Energy and Israel’s Delek Drilling, both operators of these fields, have agreed to supply Dolphinus Holdings of Egypt with 64m cubic meters of gas from these fields over a 10-year period. The deal is said to be worth US\$15bn.

This is a landmark trade agreement between Egypt and Israel. Yuval Steintz, Israel’s energy minister, described it last year as the most significant deal between Israel and Egypt since the 1979 Camp David accords¹².

The supply of Israeli gas to Egypt became an even more realistic proposition with the announcement late last year of another historic transaction between Egypt and Israel. This one concerned the EMG Pipeline.

A joint venture between Noble Energy, Delek Drilling and Egyptian East Gas Co has agreed to purchase a controlling stake in the EMG pipeline. The joint venture’s US\$518m investment in the pipeline was unveiled last September following a meeting between Prime Minister Benjamin Netanyahu and President Al-Sisi in New York¹³.

The EMG pipeline has been idle ever since the cancellation of Egypt’s gas supply agreement with Israel in 2012. The utilisation of this pipeline to deliver Israeli gas to Egypt does present some technical challenges, including a reversal of the pipeline’s flow. However, gas is expected to start flowing through the pipeline sometime later this year.

These agreements have very significant implications for Egypt’s plans to become a regional gas trading and export hub. Along with Egypt’s own gas reserves, Israel’s commitment to supply gas produced from the Tamar and Leviathan gas fields, provides a massive boost to Egypt’s aspirations.

The Tamar and Leviathan gas fields are located in the eastern Mediterranean off the coast of Israel. Until the discovery of Egypt’s Zohr offshore gas field in 2015, the Leviathan gas field was the largest gas field discovery ever made in the Mediterranean Sea.

Together, the Leviathan and Tamar gas fields contain about 900bn cubic metres of natural gas, consisting of 605bn cubic metres of contingent reserves in the case of the Leviathan gas field and 318bn cubic metres of proved and probable reserves in the case of the Tamar gas field¹⁴.

Accessing European markets with respect to gas produced from Israel’s Mediterranean gas fields is not straightforward. There is a plan to develop a long sub-sea pipeline across the Mediterranean connecting the offshore gas fields belonging to Israel and Cyprus with European markets via Greece and Italy.

However, the construction of such a pipeline will be technically very challenging and prohibitively expensive, and is some years away, if it ever happens. The absence of a gas supply grid through Greece to the European markets also makes this potential supply route less feasible¹⁵.

An underwater pipeline running from Israel to Turkey past Lebanon and Syria would also be a very challenging and expensive undertaking, and would currently also face significant exposure to sabotage and terrorism risk. Such an alternative is unlikely in any event to be contemplated by Israel in the near future given the current poor state of relations between these two countries.

The EMG pipeline currently presents the shortest and cheapest route to export Israeli gas. However, the delivery of gas to Egypt using the EMG pipeline is also not without its challenges.

Gas exported to Egypt through this pipeline will inevitably have to cross the northern Sinai at some point in order to either reach Egypt’s LNG plants on the Mediterranean or, if the gas is transported south through the Arab Gas Pipeline.

It is in the area of military and security cooperation where the forging of closer ties between Israel and Egypt is most visible. This has proven critical to the Egyptian government’s efforts to combat a chronic and deeply entrenched insurgency in the northern Sinai.

It was reported in the Washington Post last year that Israel, in coordination with Egyptian authorities, has conducted airstrikes against jihadist militant groups operating in the northern Sinai using unmarked drones,



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helicopter gunships and fighter jets¹⁶.

The defeat or at least containment of this insurgency is likely to depend on continued cooperation between Israel's and Egypt's military leaders.

The security issues related to the EMG pipeline were doubtless a major factor in the Israeli Energy Minister announcing in January 2019 that construction could begin on a new underwater gas pipeline between Israel and Egypt as early as 2020¹⁷.

In January this year, a new organization known as the East Med Gas Forum met for the first time in Cairo. This meeting was attended by delegations from Israel, Egypt, Jordan, Greece, Italy, Cyprus and Palestine.

Reuters reported that the forum agreed to "create a regional gas market that serves the interests of its members by ensuring supply and demand, optimising resource development, rationalising the cost of infrastructure, offering competitive prices and improving trade relations"¹⁸.

Significantly, this meeting was attended by Yuval Steinitz, Israel's energy minister, who has been reported as saying at the conclusion of the meeting that "this is the most significant cooperation between Egypt and Israel since the signing of the peace treaty 40 years ago"¹⁹ – reinforcing the sentiment he expressed last year following the announcement of the Delek Drilling and Noble Energy gas supply deal.

It is not clear what the creation of a regional gas market through this forum means in terms of the realisation of Egypt's own ambitions.

However, Israel's endorsement of Cairo as the forum's headquarters and the presence of Israel's energy minister at the forum's inaugural meeting along with Israel's commitment to supply Egypt with gas, highlights the important role Israel is playing in the development of a regional gas trading and export market in Egypt.

Role of Egypt's electricity sector

Egypt's ambitions to become a regional gas trading hub will not be realised in the long term without the implementation of significant electricity sector reform and other changes to reduce inefficient consumption of natural gas.

Over the last 10 years, Egypt's domestic consumption of natural gas has increased at the rate of approximately 7% per year²⁰. This annual rate of domestic consumption is expected to rise on the back of strong economic growth forecasts for Egypt's economy.

Egypt's power generation is heavily dependent on natural gas. More than 75% of electricity that is generated in Egypt is produced by gas-fired power plants.

In July last year, Siemens and its consortium partners, Orascom Construction and Elsewedy Electric, announced the completion of the "Egypt Megaproject". This project comprises three high efficiency natural gas power plants

that will add a total of 14.4GW of power generation capacity to Egypt's national grid.

In March 2018 it was reported that Egypt's total annual gas production stood at 5.5bn cubic feet a day while its annual consumption of natural gas was estimated to be 6bn cubic feet per day, of which roughly 65% is allocated to the electricity sector²¹.

This deficit in production of natural gas in comparison to Egypt's consumption is expected to be eliminated in the near future as Egypt heads toward a gas surplus on the back of increased production from the Zohr and Egypt's other gas fields. However, unless Egypt addresses soaring rates of domestic gas consumption, Egypt's gas surplus could once again be short-lived.

As part of a US\$12bn International Monetary Fund loan programme launched in 2016, the Egyptian Government has committed to the implementation of various austerity measures, including the phasing out of electricity subsidies by 2021/22.

In June 2018, the government announced cuts to electricity subsidies, resulting in a 42% rise in electricity costs for factories and a 21% rise for households. Significant increases in the price of natural gas for home and commercial uses were also announced by the Egyptian government last summer²².

These are significant steps in a country where the current administration walks a tightrope between economic necessity to reduce gas and electricity subsidies and the preservation of social and political stability.

While rising electricity and natural gas costs should hopefully have some effect on consumer behaviour, as Egypt's economy grows there will inevitably be continued escalation in the demand for new power generation. Diversification of Egypt's sources of new power generation is therefore a central feature of the structural reforms taking place within its electricity sector.

In October 2017, the Benban Solar Park was successfully financed by different lender groups led by development finance institutions and multilateral development banks, including the International Finance Corporation and European Bank for Reconstruction and Development.

By mid-2019, when all the plants forming part of the Benban Solar Park are expected to be completed, the Benban Solar Park will have a capacity of 1,650 megawatts of electricity and will be one of the largest solar installations developed anywhere in the world.

The development and financing of the Benban Solar Park is a very significant step towards the diversification of Egypt's power sector away from a heavy reliance on gas-fired power generation.

In addition to the Benban Solar Park, several other renewable energy projects are under development in Egypt.

TABLE 1 - POTENTIAL PRIVATE SECTOR ACTIVITIES

Activity	Function
Transmission system operator (TSO)	Operation of high pressure gas pipeline and grid system.
Distribution system operator (DSO)	Operation of distribution network - includes medium and low pressure gas pipelines.
Shippers	Transmission of gas through a TSO to a supplier.
Supplier	Transmission of gas through a DSO to a consumer or to reach export pipelines.
Storage facility operator	Usage of underground and over-the-ground containers and warehouses of gas in its gaseous, compressed or liquefied form.
Liquefaction/Regasification facility operator	Operation of liquefaction/regasification facilities.
Consumers	Licensed consumers will be entitled to purchase gas from suppliers - price and quantities to be determined by contract parties.

2017 Gas Market Law

In August 2017, a new law was officially issued and published – Gas Market Law No 196 of 2017 (the Gas Law). Executive regulations providing for the implementation of the Gas Law were subsequently issued in February 2018. The implementation of the Gas Law is central to the goal of the Egyptian government to become a regional gas trading and export hub.

One of the primary objectives of the new law is the liberalisation of Egypt's gas sector, allowing the private sector for the first time to utilise Egypt's state-owned gas transmission and distribution infrastructure and to participate in gas trading activities.

The Gas Law focuses on the regulation of downstream and midstream activities – it does not apply to the upstream sector – this will remain subject to the existing legal framework.

The Gas Law provides for the establishment of a gas regulator – a public authority that will be responsible for regulating, licensing and overseeing gas-related business activities. More specifically, the function of the gas regulator will include:

- Issuance of licences permitting performance of regulated activities – the Gas Law prohibits the performance of any regulated activity without a licence;
- Formulation of tariff calculation mechanisms with respect to transmission, distribution and storage grids;
- The development of standardised contract templates to be used in connection with the performance of gas-related activities;
- Ensuring competitiveness and transparency among market participants; and
- Handling and settling disputes that arise in connection with regulated activities.

The Gas Law groups regulated activities into two categories; service activities and market activities. In broad terms, service activities involve the operation of gas grids and facilities through transmission, storage, distribution of gas as well as liquefaction/regasification activities. Market activities include the shipping and supply of gas.

Participation in service and market activities will work through a licensing regime where licences will be issued by the gas regulator to private-sector and government entities. Table 1 sets out the different service and market activities that potentially can be performed by the private sector with the requisite licence.

A number of companies have already taken advantage of the implementation of the new Gas Law and have applied and secured licences to import and trade gas within the Egyptian market. These include TAQA Arabia, Energy Fleet, a company based in Panama, and BB Energy, which is headquartered in London.

Each of these companies has obtained a licence to import LNG using the regasification facility and other LNG importation infrastructure currently under development in the Gulf of Suez²³.

It was also reported late last year that Russian energy giant, Rosneft, has commenced the process of acquiring a gas import licence²⁴.

It is interesting that both of these companies have applied for licences to import gas into Egypt. Presumably they see an opportunity to import and then sell gas in a new liberalised Egyptian gas market.

With the implementation of the Gas Law, a gas trader could in theory purchase gas from Israel, import the gas into Egypt through the EMG pipeline and then, through the utilisation of Egypt's gas transmission grid and one of its LNG plants, export LNG to Europe and elsewhere.

Whether or not this will be commercially viable, given current and forecast gas prices, remains to be seen. The liberalisation of Egypt's midstream and downstream gas sector should also hopefully open up a whole new industry of gas-related services generating revenues for the Egyptian economy through tolling and transit fees.

Ultimately, the Egyptian government is hoping that through a combination of its own enhanced gas reserves, the importation of gas into Egypt from Israel and elsewhere, and Egypt's gas transmission grid and LNG facilities, there will be an aggregation of gas supplies in Egypt that will lead to significant volumes of gas trading within the Egyptian market and with overseas buyers.

The application of the Gas Law raises a number of questions that have yet to be answered or addressed in regulations. For example, it is not clear from the Gas Law how access to Egypt's gas transmission and distribution infrastructure will be regulated and prioritised to avoid discrimination and to promote competition.

Similarly there is no visibility on whether third-party access to the Damietta and Idku LNG plants will be implemented, if at all, and if so, how and on what terms capacity will be allocated.

After years of gas feedstock supply failures, it is conceivable that the government and private-sector stakeholders of these plants might move to operating the plants on a merchant gas supply regime. It is also not clear how the new liberalised legal regime will apply to the allocation of gas produced from Egypt's own reserves.

Although Egypt is now close to producing a gas supply surplus, it is expected that the government will continue to prioritise the allocation of gas produced from Egypt's reserves to power generation and domestic household consumption, at least in the near term.

If Egypt is to realise its ambitions to become a gas trading and export hub, these and other questions will need to be answered and addressed through appropriate enabling regulations. However, the Gas Law and regulations that have been implemented so far are a significant step forward.

A number of other things must also continue moving in the right direction. The Egyptian government needs to maintain a stable political environment in order to restore foreign investor confidence.

Continued cooperation with Israel is fundamental to maintaining security in the Sinai Peninsula and overcoming or at least containing the Sinai insurgency. This will also be necessary to ensure that the export of gas produced from Israel's offshore Mediterranean gas fields to Egypt using the EMG pipeline and associated infrastructure can become a reality.

The continued implementation of electricity and gas pricing reform through the removal of subsidies is also critical to Egypt's long-term goals.

However, major steps have already clearly been taken to lay the foundations for Egypt to develop as a regional hub for gas trading activities and as a base for the export and delivery of gas throughout the region and to markets in Europe and beyond. For industry players and investors prepared to invest in Egypt's potential, the next few years may be the time to make a move.

Once the final pieces of Egypt's gas import and transmission infrastructure are put in place and Egypt makes the transition from being a net gas importer to an exporter, a vibrant gas trading and export industry may quickly develop. Those industry players that establish themselves in Egypt ahead of the curve will be best positioned to take advantage of any rapid upswing in gas trading and export activities. ■

Footnotes

- 1 - BG Group Warns of Gas Problems in Egypt, New York Times, 27 January 2014
- 2 - Salma El Wardany, Why One Giant Gas Field is a Big Deal for Egypt, Bloomberg, 20 December 2017
- 3 - Egypt halts gas imports after final shipments arrived - minister, Reuters, Commodities News,

29 September 2018 and Update 1, 16 October 2018

4 - Eni denies talk of major new discovery in Egypt, Reuters, 5 July 2018

5 - SEGAS Liquefied Natural Gas Complex, Damietta, Hydrocarbons-technology.com

6 - Arab Republic of Egypt, Ministry of Petroleum, Strategic Projects, www.petroileum.gov.eg

7 - Egypt to pay Spanish-Italian JV \$2bn in natural gas dispute, Financial Times, 3 September 2018

8 - Ahmed Ismail and Nadine Awadalla, Egypt exporting 520 mln cubic feet of LNG per day from Idku plant, Reuters, 2 January 2019

9 - Shell exports 300 cfpd of gas through Idku LNG Plant, Egypt Daily News, 11 November 2018

10 - Egypt's Ministry of Petroleum (www.petroileum.gov.eg), Strategic Projects, Arab Gas Pipeline

11 - BBC News (www.bbc.com/news/world/middle east), Egypt gas pipeline to Israel and Jordan explodes, 27 April 2011

12 - Ed Crooks, The Week in energy: A new gas export hub? Egypt's deal with Israel could help re-establish the country as an LNG exporter, Financial Times, 23 February 2018

13 - Mehul Srivastava and Anjali Raval, Israel gas exports to Egypt set to start next year, Financial Times, 28 September 2018

14 - www.delekdrilling-co.il/en/natural-gas/gas-fields/Leviathan and Tamar

15 - Nick Butler, A Power shift in the Middle East, Financial Times, 15 January 2018

16 - Ishaan Tharoor, Israel's growing ties with former Arab foes, The Washington Post, 5 February 2018

17 - Mirette Magdy, Talks Underway to Build New Gas Pipeline to Egypt, Israel Says, Bloomberg, 15 January 2019

18 - Ehab Farouk and Youssef Saba, Eastern Mediterranean countries to form regional gas market, Reuters, 14 January 2019

19 - Aron Heller, Egypt Launches Regional Gas Forum, Including Israel in Fold, New York Times, 14 January 2019.

20 - Mohamed Samir, Egypt's energy future between reality and fantasies, Daily News Egypt, 6 June 2017

21 - Egypt's natural gas production rises to 3.4M tons in December 2017, Egypt Today, 6 March 2018

22 - Ehab Farouk and Nadine Awadalla, UPDATE 2 - Egypt to cut electricity subsidies in latest austerity move, Reuters, 12 June 2018/Sami Aboudi and Momen Atallah, Egypt hikes gas prices by up to 75% in IMF-backed austerity plan, Reuters, 21 July 2018

23 - Ahmed Ismail, First gas import license to be granted in 2018, Daily News Egypt, 20 December 2017

24 - Energy Egypt (www.energyegypt.net), Rosneft applies for natural gas import license in Egypt, 2 December 2018