

Globes (Eli Zipori) - This time one must not miss the opportunity to export gas to Egypt: “the government of Israel must support this project”



Eli Zipori

Gina Cohen, an expert in the energy and natural gas markets, in an interview on the ramifications of the Egyptian gas pipeline deal

The Egyptian gas transaction, within the framework of which Delek Group, Noble Energy and an Egyptian company bought about 40% of EMG, shows that the export of Israeli gas to Egypt is feasible ■ According to the expert, this project is moving ahead at the most opportune time, when a combination of global, regional and local circumstances, such as global demand for gas, an increase in gas prices and higher demand for gas in Egypt, is making it possible to sell Israeli gas to Egypt.



Cohen: the quickest alternative to export Israeli gas (photo by Eli Izhar)



Gas pipeline in Egypt: “the objective is to maximize the volume of gas that can be transmitted in the pipeline every day”

Global Gas Demand Growth

Country / Region	2015 bcm	2025 bcm	2030 bcm	2035 bcm	2040 bcm	Average Annual % Growth	Growth 2016-2040 bcm
World	3635	4174	4545	4950	5304	+1.6	+1669
Asia Pacific	732	998	1167	1331	1472	+3.0	+740
(China + India)	266	494	608	709	793	+19.8	+527
Middle East	477	568	657	737	795	+2.2	+318
North America	961	1045	1068	1109	1143	+0.7	+182
Africa	134	177	211	251	2306	+3.5	+171
Latin America	166	183	205	237	271	+2.1	+106
Eurasia	692	693	714	740	807	+0.4	+61
Europe	590	604	618	633	631	+0.3	+41

Global demand for natural gas in BCM - Source International Energy Agency's World Energy Outlook

Forward Looking Gas prices

Forward Looking gas prices in \$/MMBtu							
Prices calculated by Miki Korner based on Platts	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
Holland TTF	9.721	9.678	9.781	9.833	9.781	9.781	9.781
UK NBP	10.047	9.863	10.318	10.654	10.703	10.436	10.436
LNG Japan/S. Korea	11.575	10.6	11.9	12.75	13.45	13.45	11.8
LNG Middle East	10.925	9.95	11.25	12.1	12.85	12.85	11.2

הצמיחה העולמית בביקושים לגז טבעי ב-2040 (מיליארדי מ"ק)

צמיחה (BCM) בין השנים 2016-2040	צמיחה שנתית ממוצעת (%)	2040	2035	2030	2025	2016	אזור
+1,669	+1.6%	5,304	4,950	4,545	4,174	3,635	בעולם
+740	+3%	1,472	1,331	1,167	998	732	אסיה פסיפיק
+527	+19.8%	793	709	608	494	266	סין והודו
+318	+2.2%	795	737	657	568	477	המזרח התיכון
+182	+0.7%	1,143	1,109	1,068	1,045	961	צפון אמריקה
+171	+3.5%	305	251	211	177	134	אפריקה
+106	+2.1%	271	237	205	183	166	דרום אמריקה
+115	+0.4%	807	740	714	693	692	אירואסיה
+41	+0.3%	631	633	618	604	590	אירופה

מקור: International Energy Agency's World Energy Outlook

מחירי גז עתידיים בדולרים ל-**MMBTU** (מיליוני יחידות תרמיות בריטיות)

מאָרס 2019	פברואר 2019	ינואר 2019	דצמבר 2018	נובמבר 2018	אוקטובר 2018	ספטמבר 2018	
9.781	9.781	9.781	9.833	9.781	9.678	9.721	הולנד [TTF]
10.436	10.436	10.703	10.654	10.318	9.863	10.047	אנגליה [NBP]
11.8	13.45	13.45	12.75	11.9	10.6	11.575	גזיץ ביפן/קוריאה
11.2	12.85	12.85	12.1	11.25	9.95	10.925	גזיץ מזרח התיכון

* המחירים חושבו ע"י מיקי קורנר על בסיס נתונים מ-Platts

On issues regarding energy in general and natural gas in particular, it is always best to listen to the best experts in the sector before forming an opinion. The energy sector is one of the most complex aspects in economy, rich in issues and resources, and it is certainly not something that one can summarize with black and white slogans. Any such attempt, and over the last few years we have witnessed endless such attempts for example regarding the gas outline - that serves so well the populist, demagogic and shallow segments of our population. Gina Cohen is in my view the #1 expert on natural gas, a lecturer at the Technion and over the last few years, I have shared her explanations, understanding and forecasts on these issues with readers.

The Egyptian gas transmission deal, within the framework of which Delek, Noble and an Egyptian company bought about 40% of the EMG pipeline, is a good opportunity to approach Cohen once again in order to hear from her about the ramifications of the deal and the chances of moving ahead with gas exports from Israel to Egypt.

This transaction causes Cohen to reminisce about some interesting historical details of the gas deals between Israel and Egypt. "Like every event, so also the project to export Israeli gas and buy the EMG pipeline as the conduit has a beginning and an end", she says. "The beginning was on 18th August 2004. I was working at the time for British Gas (BG) that had a prominent position in both Egypt and in the Israeli emerging gas sector, and we had been told by the Israeli government that PM Ariel Sharon was going to make an important announcement that day. I opened channel-1 News at 17:00 pm to hear Haim Yavin say that "PM Sharon decided that Israel's second gas supplier would be Egypt" and "that the PM demanded that talks with the Egyptians be completed within a month."

"I was in shock, as I knew only too well that Egypt did not have enough gas", recalls Cohen. "I wasn't the only one in shock, as the next day, BG's manager in Egypt sent us an urgent email stating that "His Excellency the Minister of Petroleum was surprised to hear that Israel thought that Egyptian gas would be supplied any time soon. It took another 5 years for the first molecule of Egyptian gas to reach Israel. The total ever supplied over the next 5 years (2008-2012), via the EMG pipeline amounted to barely 4.7 bcm, less than 10% of what had been contracted between EMG and various Israeli clients for 15 years, and nothing else since. The project was fated to fail, as not only did Egypt not have enough gas, but the price set at \$1.75/MMBtu for the gas sellers +\$1/MMBtu for the EMG pipeline owners was unsustainable for the Egyptian sellers."

However, something good came out of all this entanglement, despite the failure of that transaction. "That project was most propitious as it laid the foundations for the current deal, namely to export Israeli gas to Egypt, a project that is based on regulations that Israel has discovered and developed over 400 bcm of gas that can be exported, a commercially sound gas price based on international standards, and the knowledge that

Egypt whose population is just shy of 100 million has a growing need for gas and is the only country in the region that has not only one but two LNG export facilities.”

“Leviathan gets first rights to transmit gas in the pipeline”

Cohen explains how the transaction is constructed and what it includes: “it consists of a combination of buying equity and the exclusive rights to use the 7 bcm/year capacity of the 90 km EMG pipeline (with potential to expand to 9 bcm/yr) that connects between Ashkelon in Israel and El-Arish in Egypt to allow the implementation of the Tamar and Leviathan gas sales’ contracts with Dolphinus in Egypt. In addition, it includes an option to use the 10 bcm/year pipeline from Aqaba in Jordan to El Arish to transmit additional volumes of Israeli gas, via Jordan to Egypt.”

“The newly established company - EMED - by the Israeli Delek, the American Noble and the Egyptian East Gas to buy 39% of the 26” EMG pipeline for \$518 million in cash. This investment, combined with a transportation agreement, will provide the three partners with the exclusive rights to lease, operate and use all of the EMG pipeline capacity. The other owners of EMG (such as PTT) remain as financial partners and will benefit from the gas tolling fee.”

And what is the payment structure?

“Delek and Noble will each pay \$185 million (total of \$370 million). From the \$370 million, the Leviathan and the Tamar partners will pay in total \$250 million in consideration for both suppliers' access to the EMG pipeline; Delek and Noble will each pay an additional \$60 million. The \$250 million will be paid upon closing the EMG transaction by the Leviathan partners, and half will be reimbursed by the Tamar partners on 30.6.2020. Most significantly, the Egyptian company East Gas, which is an affiliate of the Egyptian State Gas Company EGAS, will be investing \$148 million which is a considerable amount for Egypt. This strategic partnership with a leading Egyptian infrastructure owner, that also owns the pipeline from Aqaba to El Arish, provides “skin in the game” and an Egyptian umbrella to the entire transaction to sell Israeli gas to Egypt.

Does one of the gas fields get any preference on using the pipeline’s capacity to transmit the gas?

Leviathan gets first right to transmit gas in the EMG pipeline. Namely, if for any reason the capacity in the line is low, then the first 3.5 bcm/year is for Leviathan gas; the second tranche of 3.5 bcm/year is for Tamar gas if the field can supply this on a fixed basis. Failing this, Tamar has the option to pipe its gas on an interruptible basis and any capacity not used by Tamar, will automatically revert to Leviathan. The concept is to maximize the volume of gas that can be transmitted in the line on any given day.

In addition, it includes the ability to transmit Israeli gas in the relatively new 10 bcm/year East Gas owned pipeline from Aqaba to El Arish.

Does the gas transaction signify that the export of Israel gas to Egypt is feasible?

“Interestingly, the project is moving ahead at a most opportune time, when a convergence of global, regional and local circumstances is making it possible to sell Israeli gas to Egypt, which - according to its President A-Sisi - has positioned itself as a regional hub for natural gas, for both domestic uses and for exports through the two LNG processing plants.”

What do you mean by convergence of circumstances?

“I am referring to 3 main aspects: the first **Global Gas Demand** - There is a general consensus that global demand for both pipeline and LNG gas is growing. Bloomberg New Energy Finance (BNEF) predicted this month that global demand for LNG would increase from 284 million tonnes per year (mtpy) in 2017 to 450 mtpy in 2030, while Bernstein put this figure at 575 mtpy, and looking further ahead, DNV said demand would reach 707 mtpy in 2040. A strong component of this growth comes from China, where data from China's General Administration shows that total imports of gas grew by 69% in 2016 and 27% in 2017 and that growth rate so far in 2018 is 37%.

The second development relates to **global gas prices** - Gas prices in Europe are already high and are entering the winter season under strain with a significant risk premium priced into the forward curve. There is limited supply-side flexibility in the gas market, a shortfall in Belgian nuclear and Nordic hydro in the power sector, and a bullish wider energy, power and carbon prices leading to record high gas prices. LNG prices in the world have once again risen to a level that make the chain of exporting LNG via the Egyptian facilities economic. This is especially true as the facilities were constructed in 2005 and their costs have been amortized.”

“The third occurrence relates to what is happenign in the **Egyptian gas market**: **Egyptian Gas market** - This September local production has reached 69 bcm/year out of which Zohr provides 20 bcm and is expected to increase to 28 bcm/yr when it reaches full capacity by Q1 2019. This has finally caught up with domestic consumption (65 bcm/year in mid-September 2018) even enabling a few cargoes of LNG to be exported from Idku. However, over the last 5 years, 75% of the gas has been used by the power sector, whilst the non-power sector (industrial, petrochemical, residential and transportation) demand for gas use to amount to 43% of total demand before the crisis. In addition, despite increased gas production, primarily from the Zohr but also from Nooros, North Alexandria, Atoll and others, the veteran fields are depleting and consumption is anticipated to grow. The power sector alone has seen construction completed two months ago by Siemens of another 14.4 GWs of gas operated power stations, and moving forward Bloomberg New Energy Finance (BNEF) assessed that Egypt's gas power generation is expected to increase 4% a year, which will lead to power demand for gas increasing 44% by 2025 to reach 74.4 bcm.”

So, your assumption is that there will be a growing demand for gas in Egypt which will, inter alia, be based on imports from Israel?

“As more gas becomes available from both Egyptian sources and imports (Israel, Cyprus), the non-power sector will also recover, and it is assumed that demand will reach 15.5 bcm in 2025, amounting to a total 90 bcm of gas consumption by 2025 for all

sectors. Thus, the growth rate in Egypt relative to today, as well as the growth rate in Israel based on the Israeli Ministry of Energy's forecast for 2025, show that Egypt is in a position to absorb a lot of the volume between 2020-2025, and Israeli gas can constitute a real source."

Another factor which has entered into the play this month, is the fact that Union Fenosa Gas was awarded \$2 billion in an arbitration ruling from the World Bank's International Centre for Settlement in a case involving the idled Damietta LNG plant in Egypt. The ruling will help to ensure that this terminal could be in a position to resume exports of LNG again in 2019 as it is believed that Egypt will pay the fine in the form of gas supplies to the Damietta plant instead of paying them in cash.

This means that Egypt (barring a major discovery) will barely have enough gas for its own consumption let alone able to export 17 bcm a year."

The transaction is based on sound commercial fundamentals

What other advantages do you see in this pipeline transaction?

"There are a number of additional advantages: first, It is the speediest of all alternatives to export significant volumes of Israeli gas to any country; there are no transit countries en route and it ensures that the capacity of both Tamar and Leviathan will always be full between the Israeli, Jordanian and Egyptian markets.

Second, in order to carry out further exploration in Israel, it is vital to have a market for gas. Linking Israel to a major market (both contractually and through existing infrastructure) is one of the main aspects that will incentivize future exploration and enable to monetize discoveries from existing leases such as Ratio's Royee in the south and the 5 Energean blocks in the north, should discoveries be made.

Third, for Egypt, it enables the country to leverage its strategic location and tap into new demand markets (for Egyptian, Israeli and Cypriot gas). Indeed, because of the location of the 2 LNG plants, just north of the Suez Canal, cargoes can economically be sent to buyers in both the Atlantic and Pacific basins. Shipping costs from Egypt to Europe are under \$0.60/MMBtu and under \$0.90 from Egypt to India or Kuwait (at current oil prices). Thus, Egyptian LNG can undoubtedly be a competitive source of supply to Europe, the emerging markets in South Asia and the Middle East. This versatile supply would also be highly attractive to traders and large portfolio players who wish to optimize cargoes."

And what about the risks, such as terror attacks against the pipeline?

"I would like to correct a common misconception: The EMG pipeline was never bombed; the line that was blown up is the 36" line from Arish to Port Said in Egypt's northern Sinai. The Egyptians have been restoring stability in the area and this line has been operating unhindered the last few years."

And yet, what are the disadvantages and risks of this transaction?

"It is not yet clear what will be the tolling fee to use the EMG line. Indeed, the full cost of the line as reflected by the transaction amounts to \$1.3 billion, so the tolling fee might be high. In addition, the tolling fee to use the line from Jordan to Egypt is also not known,

nor the gas losses that may occur along this long route. There is the need to upgrade Egypt's infrastructure to feed into the two LNG export facilities."

What issues have not yet been concluded to complete the deal

"The pre-requisites prior to closing the agreements include gaining government approvals, ensuring that the pipeline is technically operational (a matter which can probably be achieved within the next few months at a minimum investment), and concluding legal procedures including an existing EMG debt to an Egyptian bank, etc. In addition, the \$2 billion debt owed by Egyptian gas companies to IEC as part of the arbitration judgment won by IEC is still unresolved"

The bottom line: you sound quite optimistic regarding the chances of exporting gas from Israel to Egypt

"And so, just as our story has a beginning, and has a perfect convergence of events to make it all possible, as the saying goes 'it ain't over until the fat lady sings'. Indeed, although this is the norm with such mega-deals, it includes a number of conditions precedent which need to be resolved prior to it become effective. The final date stated by Delek to achieve this is 30.6.2019."

"The failed exports of Egyptian gas to Israel are not a precursor of what is to come with this transaction, which is based on totally different fundamentals. And yes, although opportunities, especially when the market is so large and dynamic, do include risks, unlike the chaotic failure of the original gas sales agreement to Israel made by EMG back in 2004, this transaction is based on sound commercial legs representing real market needs involving the Egyptian Governmental Affiliate company East Gas, thus diminishing the risks associated with the transaction."

"What is important is to remember that an opportunity was missed after 2014 when the MOU was signed to export gas to Egypt, because of the hustle and bustle of the gas outline. Between April 2015 and September 2018, Egypt imported 24.93 bcm of LNG, gas which Israel could have readily supplied to Egypt at a higher price than the average gas price in Israel and considerably lower than the LNG price paid in Egypt."

"The government of Israel must now lend its support to this project and enter immediately and extensively into government-to-government agreements. Let us hope that this will be a new beginning."

In my view (Eli Zipori), Cohen uses too gentle a word when describing what happened around the gas outline as 'hustle and bustle'. In my view, it was much more than this. It was an unnecessary superfluous festival which caused the loss of an opportunity to export gas to Egypt. We must all hope that this time, this opportunity will not be squandered.