

***Global Oil & Gas prices
and their impact on
East Med Natural Gas Exports***

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Contents

- **East Med Overview**
- **IEA's WEO-2015**
- **Impact on the oil sector**
- **Impact on natural gas**
- **Impact on Europe and East Med**
- **Future Implications**

East Med Overview

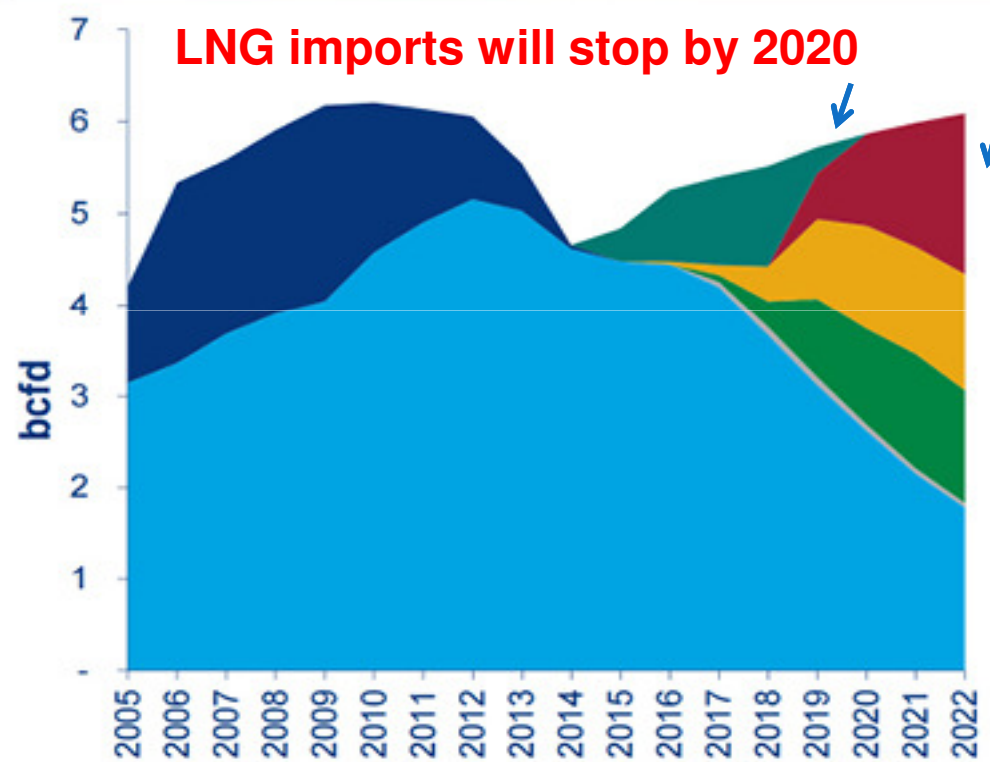
- Israel is hoping to overcome its regulatory problems soon and reconsider development of Leviathan in the light of Zhor
- But the award of an arbitration settlement by ICC of \$1.76bn to Israel Electric Corporation and Egypt's immediate response to suspend any gas import negotiations with Israel complicates the East Med picture, unless resolved soon
- Egypt has more arbitration cases pending with Union Fenosa and BG. Any more decisions against it may complicate the picture even further
- This decision may also scupper resolution of the regulatory problems in Israel as this is based on invoking Article 52 which can only be used to bypass the Antitrust Commissioner in cases of national security and importance
- Yuval Steinitz is already considering other gas export options from Israel to other countries in the region

East Med Overview

- The discovery of Zhor by ENI has given Egypt a massive boost but has turned East Med plans and thinking upside down
- Given the favourable prices it has secured for its gas, ENI will proceed with development of Zhor as a matter of priority and, together with BP's North Alexandria and Atoll and Shell's shale gas finds, there is enough gas to supply Egypt's additional domestic needs, and replace LNG imports, but could also free gas to supply the two idle LNG plants at Damietta and Idku.
- In any case Egypt plans to resume LNG exports by 2022
- On the positive side, the discovery of Zhor reconfirms that the East Med is prolific in gas and is attracting new interest to the region
- It is an opportunity for Cyprus and Israel to refocus their attention and start thinking seriously about new licensing rounds and more exploration to coincide with the start of oil price recovery.

Egyptian domestic gas supply by Wood Mackenzie

Egyptian Gas Supply



Source: Wood Mackenzie

Bringing another 1/3rd of Egypt's reserves into production can add 30-40 bcm/y

Zhor could add 15 bcm/y by 2020, but can produce up to 30 bcm/y after 2022, pending appraisal

This projection takes into account only 1/3rd of Egypt's proven gas reserves, excluding Zhor. There is more gas and with the new prices development may start soon

And then there is Turkey

- It was stated last month in conferences in Istanbul and Tel Aviv that Turkey expected to obtain 10-12 bcm gas per year from the East Med for its future needs
- That was before the recent incident and the standoff between Turkey and Russia
- As a result of this Turkey is now looking for alternative supplies of gas from the region to lessen dependence on Russia. It has, for example, signed a preliminary agreement to import gas from Qatar and another with companies in Kurdistan
- Should Cyprob be resolved, Israel and Cyprus jointly can in fact supply more than 20 bcm per year to Turkey, should this be acceptable and provided the price is right
- And markets and prices matter given the glut of oil and gas now in the global markets

IEA's World Economic Outlook 2015

- The IEA released last month its annual World Economic Outlook (WEO-2015) and it makes grim reading as far as oil prices are concerned.
- In the central scenario of IEA, a tightening oil balance leads to a price around \$80 per barrel by 2020
- But IEA also examined the conditions under which prices could stay lower, at \$50-\$60 per barrel by 2020, and stay low for much longer
- This would push out most higher-cost sources of supply and increase reliance on Middle East producers, with all risks it would entail

Impact of WEO-2015 on renewables

- According to the IEA, the deployment of renewables grows worldwide, with a strong concentration in the power sector
- Renewables-based power generation reaches 50% in the EU by 2040, around 30% in China and Japan, and above 25% in the United States and India
- But the overall contribution of renewables to global energy use reaches only 16%-17% by 2040 - fossil fuels will still be essential in terms of global energy
- And if the cost of fossil fuels remains low for 10 years, as one of the IEA scenarios suggests, it may delay further the transition to renewables.

Impact on the Oil-Sector

- **IEA expects oil demand to rise by less than 1% a year between now and 2020, and only by 0.7% thereafter, a slower pace than necessary to quickly mop up the oil glut that has driven prices to such lows**
- **Low oil prices are leading to further deep investment cutbacks in the industry, in addition to last year's. The IEA estimates this year investments will decline by more than 20%, this decline will continue next year as well**
- **The East Med is not immune to this. Investment by the oil & gas companies is expected to be selective and only projects with strong commercial viability and low risk will be funded**
- **With the market in a state of persistent oversupply, this glut of oil is here to stay until demand grows sufficiently to balance supply. This is not expected to be before 2020**

Lower for longer

- **Oil & Gas producers are now resigning themselves to selling oil and gas at a lower price for a longer period**
- **BP and most of the other majors are cutting spending to ensure profitability at as low an oil price as \$60/b**
- **In the futures market Brent crude for delivery in December 2021 is trading at only \$65/b**
- **And decision by OPEC last week to maintain its current policies is reinforcing this. As a result, the price of Brent crude is now near \$40 per barrel and Goldman Sachs predicts it will go substantially lower before it goes up again**

Impact on natural gas

- **Similar arguments apply to gas prices, through oil-price linkage in long term sales contracts and a glut in the global supply of LNG**
- **By 2018, global liquefaction capacity is set to grow by over 140 bcm per year which is 28% over 2014 levels, and another 40-50 bcm/y is expected by 2020, mainly from Australia and the USA**
- **This is in addition to a glut of LNG already on the market, which has led to global LNG prices tumbling down to the current very low prices.**
- **It is now a buyers' market, with buyers renegotiating unfavourable long term contracts and dictating supply terms**

Impact on gas prices

- Wood MacKenzie expects the LNG glut to be deeper and last longer than anticipated and to persist for some years. In Asia LNG prices may bottom out by 2019 at \$5 per mmBTU and in Europe by 2020 at about the same level. Societe Generale makes similar forecasts
- And if coal prices fall down further, the floor price for gas may drop to \$4 per mmBTU.
- Bloomberg estimates that LNG prices in Asia may drop by another 25% in 2016 and that surplus LNG supply in the global market may reach 8%
- Reuters reports that the Asian LNG market is to enter a deeper glut in 2016 as demand falters and supplies soar, and will be even worse in 2017. Asian spot LNG prices may fall below \$5/mmBtu in 2016 and remain low for the foreseeable future

Impact on gas prices

- Recovery after 2020 will be slow as demand gradually balances supply. This is not expected to happen until mid-2020s. And on top of this demand in China, and even Japan and South Korea, is faltering
- COP 21 in Paris may help shift interest to gas, but it is by no means certain
- Conclusion: Low prices are here to stay for a long time
- The single most important factor that has shaken global norms is shale oil & gas. It has done away with the notion of “peak oil” with potential reserves both in oil & gas now considered to be 3-4 times conventional reserves. The massive increase in shale oil & gas production in the USA, its resilience and flexibility are impacting traditional global markets and prices

Impact on European gas prices

- **European gas prices are subject predominantly to the actions of Gazprom.**
- **Its low gas cost base and the devaluation of the ruble allow it to compete and dictate prices. Russian gas exports can be viable even at \$5 per mmBTU**
- **And in Europe LNG imports have to match piped gas to be competitive.**
- **Russian piped gas prices in western Europe are now down to \$6.2 per mmBTU and are expected to remain low for quite some time.**
- **Even if the oil-price rises to \$60 per barrel, these may not rise above \$7 or so per mmBTU.**

Impact on European gas prices

- The reduction of Gazprom prices has led to a massive increase of Russian gas imports to Europe over the last six months, 41% up y/y in October, and a drop in LNG imports from other countries.
- And that despite sanctions and the EU drive for diversification away from Russian gas to other suppliers.
- It is no wonder that Germany, in addition to supporting Nord Stream 2, is now pushing for EU rapprochement with Russia in the investment and energy sectors
- Gas buying in Europe is carried out by gas traders and gas companies and it is evidently driven by commercial factors, not by EU politics
- Something the East Med must be aware of and aim to be competitive at such prices if it is to be able to export gas to Europe.

Impact on East Med gas exports

- The fact is that gas prices are low and will remain low for quite a while, possibly beyond 2020
- In addition, Europe is a market which in terms of gas usage is stagnating at least for the foreseeable future. Gas can be sold to Europe only if it is competitively priced
- Cheniere Energy's Sabine Pass LNG terminal in the US is expected to begin exports by early 2016. But even with its low cost gas feed, it is still finding it difficult to penetrate the low LNG-price markets of Europe
- If Cheniere is finding it difficult, how can East Med LNG, with its more expensive gas feed requiring \$9-\$10 for LNG delivered to Europe, hope to find buyers.
- In recent meetings with ministries in Berlin and Brussels it was made clear to us that prices and timing matter. East Med gas must meet these to gain firm sales

Future implications

- East Med, and Cyprus, will have to compete with these low gas prices, \$6-\$7 per mmBTU, at least to the end of this decade, but very likely beyond 2020, if the various export projects currently being mulled are to become commercially viable
- When the vision of the future is uncertain, you're better off being flexible, keeping all your export options open
- East Med and Cyprus must do the same, and, while negotiating with Egypt, leave their options open and include FLNG and marine CNG in re-developing future export plans – need to have Plan B and Plan C
- Marine CNG exports to southeast Europe may be viable even with current gas prices
- And in the longer term, possibly in ten years, with more gas discoveries and a price recovery, LNG exports from Vasilikos may return as an option.

Future implications

- **If and when Cyprob is resolved it may open up exports to Turkey, possibly in cooperation with Israel**
- **But this should not end up being the only option as it could make negotiations one-sided**
- **There are opportunities for the region to export its gas, but not at any price and at any time!**
- **Sooner than later East Med and Cyprus will have to face and meet commercial realities if they are to succeed**
- **The global and regional energy and gas scene has been undergoing rapid changes and future policies and development plans can become rapidly outdated unless reviewed and updated regularly. This also applies to East Med and Cyprus.**