THE ENERGY LANDSCAPE IN THE EASTERN MEDITERRANEAN

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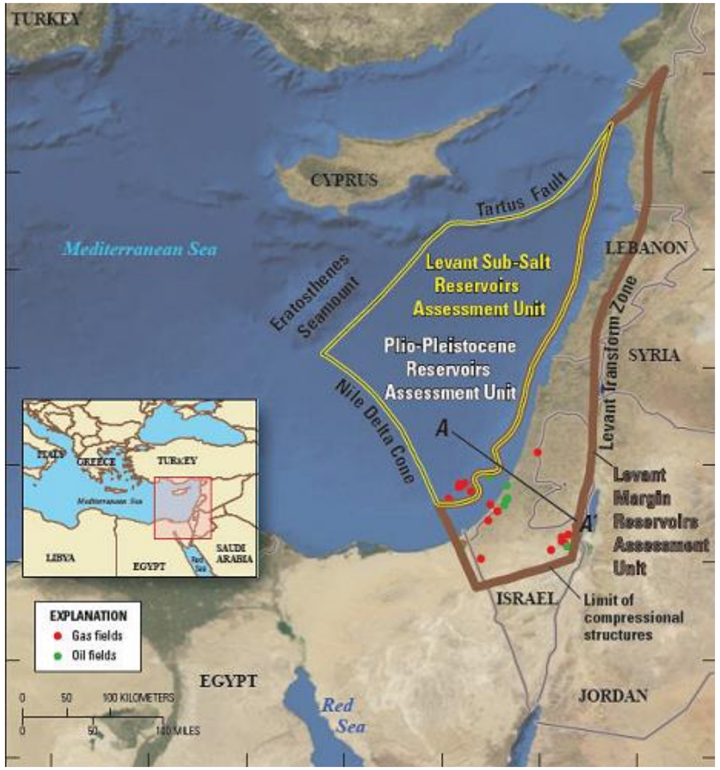
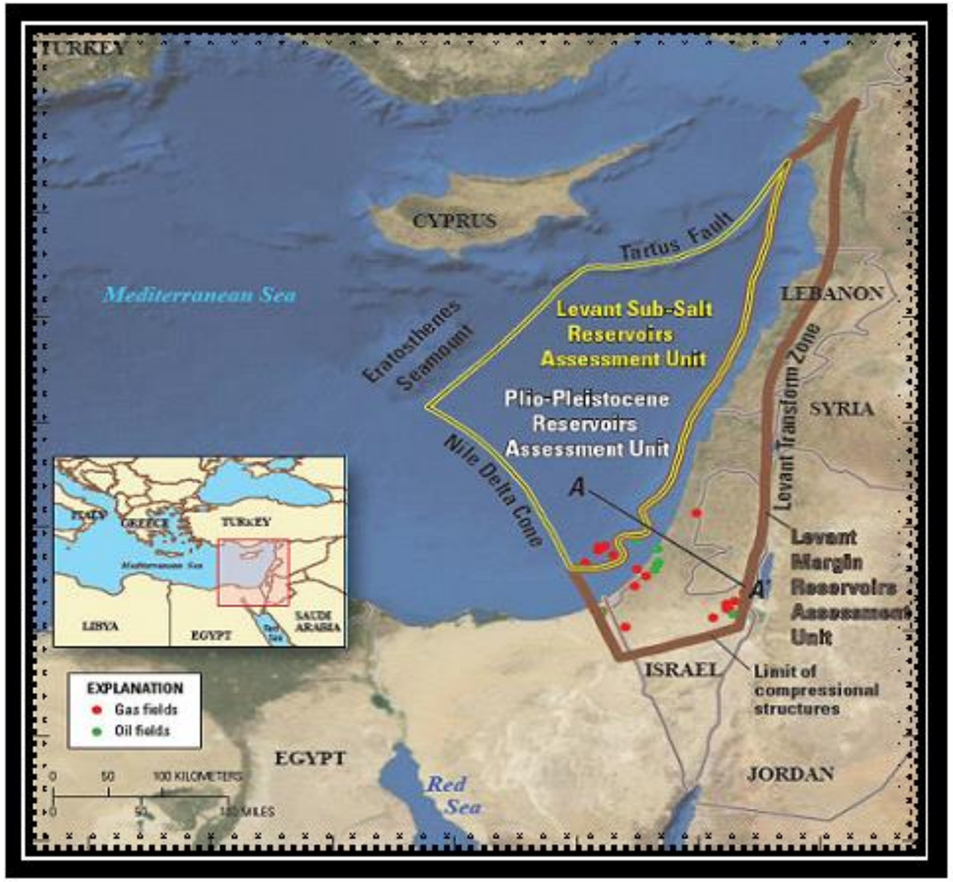
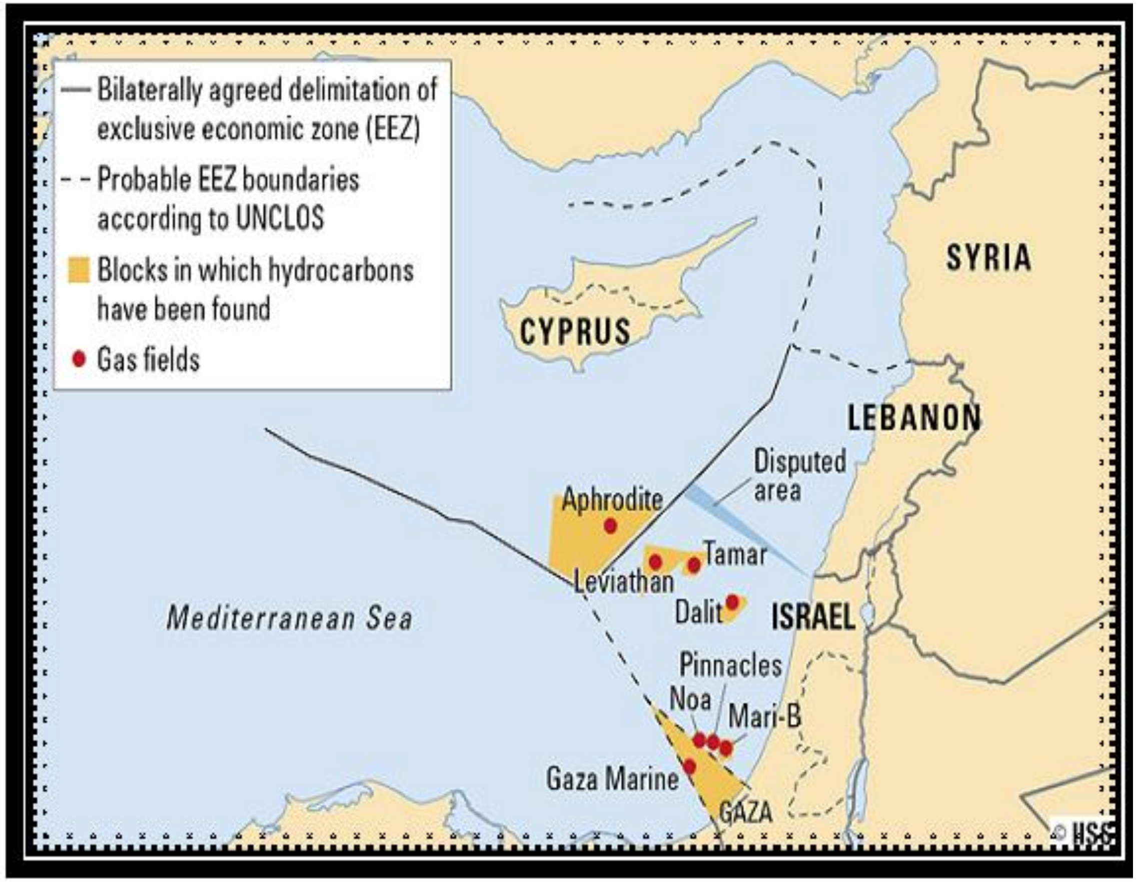
JANUARY 21ST, 2016

LEVANT BASIN



- USGS (2010): a mean of 1.7 billion barrels of recoverable oil & a mean of 122 trillion cubic feet of recoverable gas.
- Significant for the small, resource-poor countries of the region, but hardly a game-changer on the global scale. Spread among various countries.
- Perspective: Proven reserves of Algeria: 159 tcf.
- Oil potential is inferior to the proven reserves of Syria (2.5 billion barrels)





ABOUT A THIRD OF GAS ESTIMATES DISCOVERED SO FAR.

MAIN GAS DISCOVERIES IN THE LEVANT		
Leviathan	Israel	22 tcf
Tamar	Israel	10 tcf
Aphrodite	Cyprus	4+ tcf
Gaza Marine	Palestinian Territories	1 tcf

LEVANT BASIN

- Largely unexplored.
- Increase in global demand in 1990s + rising prices generated interest for underexplored provinces.
- Early activity conducted off Israeli coast. Modest oil discoveries in early 90s / several gas discoveries late 90s.
- Although modest, they have rekindled the industry's interest in the area.

LEVANT BASIN

- Further discoveries were made in deeper water, located in Lower Miocene – Oligocene sands:

  Tamar in 2009, Leviathan in 2010, Aphrodite in 2011.

- Indicate significant gas potential, with good evidence suggesting oil potential.

ISRAEL

- Most developed oil & gas sector among newcomers in the Eastern Mediterranean.
- A sort of a laboratory. First discoveries there sparked interest for exploration elsewhere in East Med.
- The discovery of Tamar (2009) and Leviathan (2010) radically changed prospects for the Israeli gas sector: can meet local gas demand for decades, and allow Israel to become a net gas exporter.

ISRAEL – REGULATORY HURDLES

- Repeated interventions since 2010, after major discoveries.
- Antitrust Authority: in 2014, Revoked a previous agreement that allowed Noble Energy & Delek to retain ownership of Leviathan, in return for giving up two small fields, Tanin & Karish.
- Sheshinski committee: Major tax increase (2011).
- Tzemach committee: Cap on gas exports (2013).

- **STABILITY AND THE ABILITY TO ANTICIPATE THE REGULATORY FRAMEWORK ARE PARTICULARLY VITAL FOR THE ENERGY SECTOR**

- Failure to anticipate developments. Always a step behind.

ISRAEL – REGULATORY HURDLES (CONTINUED)

LoI between BG (Idku-**Egypt**) and the Leviathan partners, to supply 7 bcm of gas per year over a period of 15 years. The deal is estimated to be worth around $30 billion.

A preliminary deal between the Leviathan partners and **Jordan**'s National Electric Company to supply 45 bcm of natural gas over a period of 15 years, for approximately $15 billion.

A $1.2 billion preliminary deal between the Leviathan partners and the **Palestine** Power Generation Company to supply 4.75 bcm of natural gas over a period of 20 years. Back in March the PPGC declared that the deal would be canceled if regulatory issues are not solved.

LoI between Leviathan partners and **Egyptian** company Dolphinus Holdings for the supply of up to 4 bcm of gas per year over 10-15 years.

LoI between Tamar partners and **Egyptian** company Dolphinus Holdings for the supply of 5 bcm of gas over 3 years.

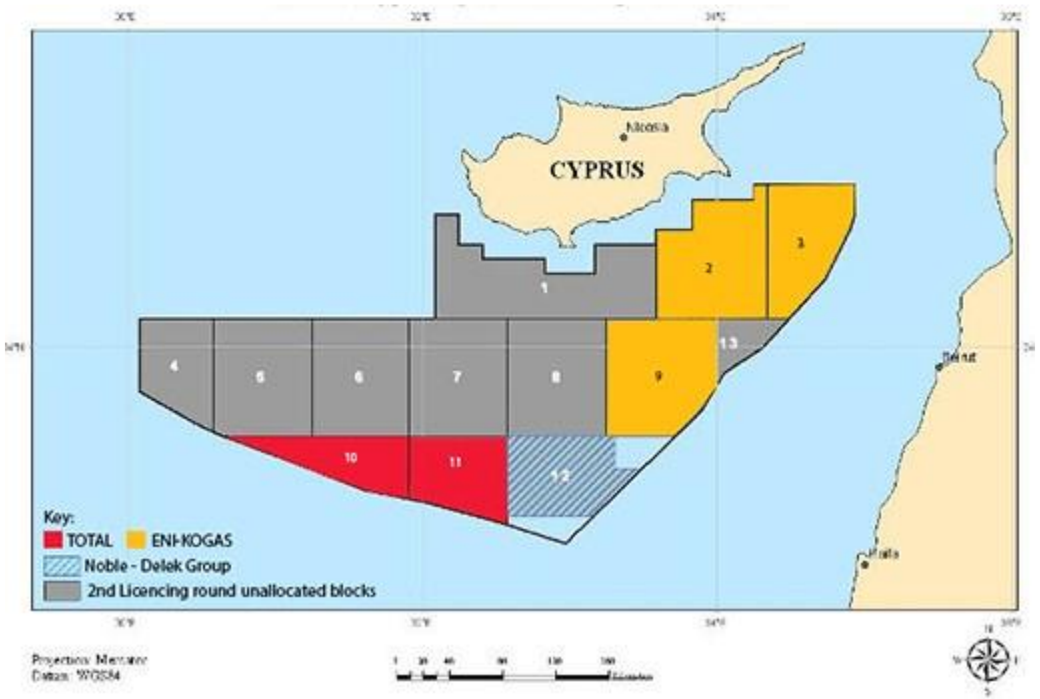
LoI between Tamar partners and Union Fenosa Gas (Damietta-**Egypt**) to supply 4.5 bcm of gas per year over 15 years.

ISRAEL

- Views gas resources as a strategic commodity.
- Hopes resources would provoke a geopolitical change & strengthen its position by creating shared interests.
- **It is precisely this dimension that is threatened** by the delays caused as a result of regulatory uncertainty.
- Time factor not taken into account. Endless regulatory debates after discoveries.
- Scaring away investors, like Woodside, ironically Israel’s best bet to avoid a monopoly.

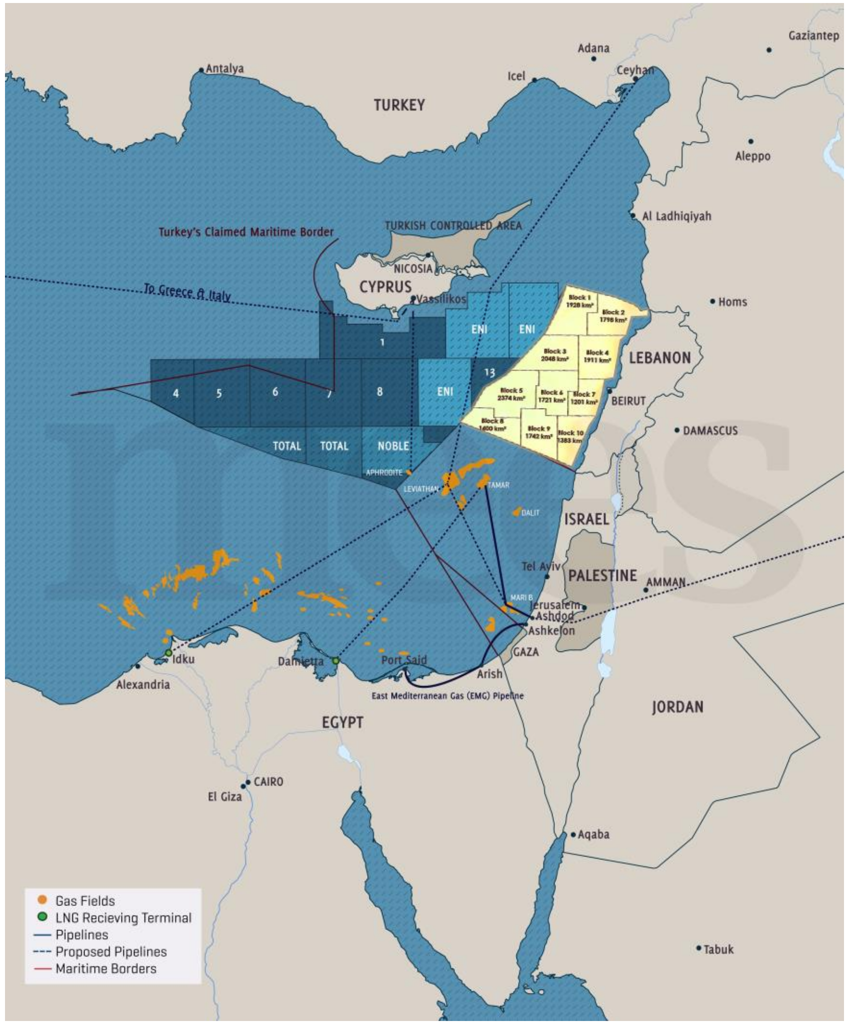
CYPRUS

- 1st licensing round in 2007. One block (12) awarded to Noble Energy (joined by Delek in 2013 & BG in 2015).
- Discovery of Aphrodite late 2011.
- 2nd licensing round in 2012. Blocks 10 & 11 awarded to Total. Blocks 2, 3 & 9 to ENI-KOGAS.
- ENI drilled 2 wells in Block 9. No commercial finds.
- Total failed to identify targets for drilling. Abandoned Block 10.



CYPRUS

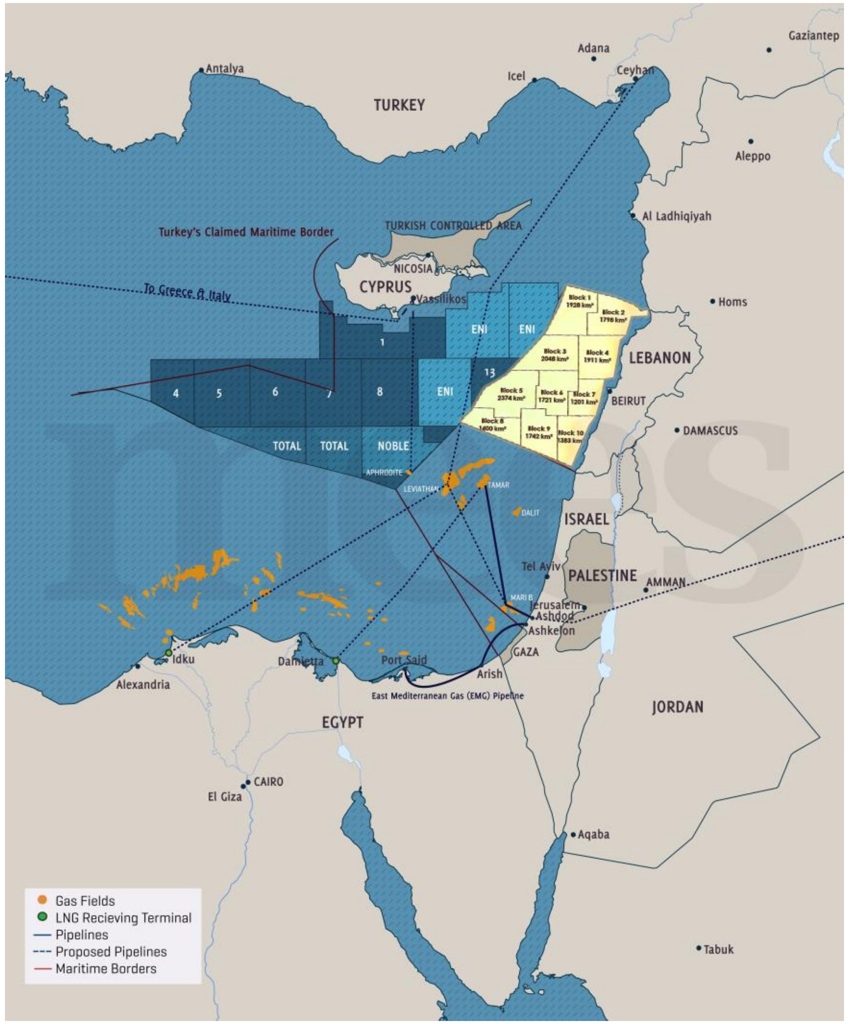
- Small local market does not alone justify developing Aphrodite.
- Gas from Aphrodite alone does not justify LNG plant in Vasilikos.
- Other options include Egypt, Turkey, or even Greece (although feasibility questioned).
- One feature we keep seeing in Levant Basin: the resources – so far – are modest in size, and impose cooperation for exploiting and exporting them.



CYPRUS

- On paper, Turkey most reasonable option. But not feasible unless progress in Cyprob negotiations.
- Pipeline to Greece: Not an easy feat. Exorbitant price tag.
- Egypt: Large market (gas imports until 2022). And 2 underused LNG plants.

  But drop in LNG prices major challenge.
- Despite good relations, Israel never gave Cyprus **the autonomy it needed to exploit its gas.**



EGYPT

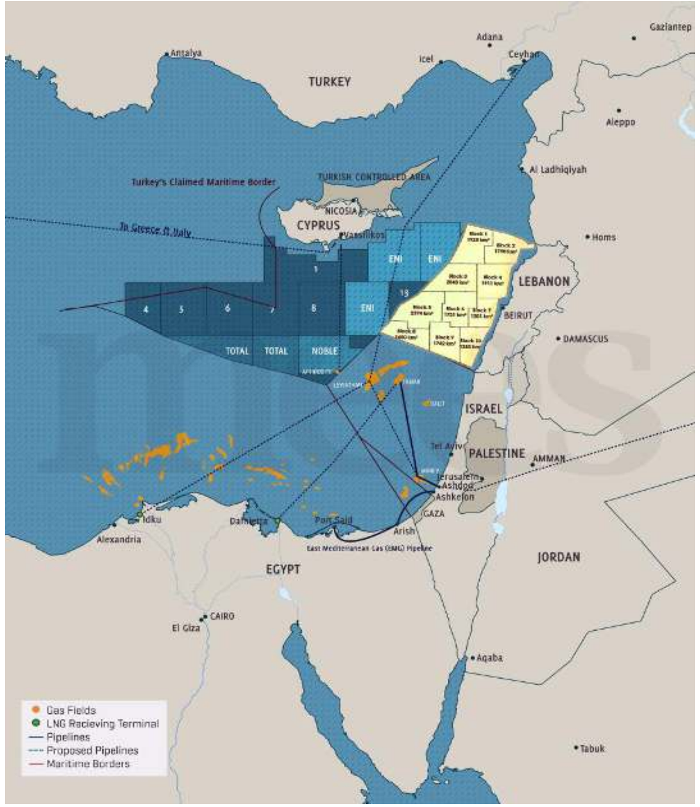
- Resources, infrastructure & policies affect the overall East Med region.
- Combination of factors explain the energy crisis: A far too low price ceiling + Political instability since 2011.
- For over a year, Cairo has been pursuing reforms to encourage investments and boost production. 1) Improve terms for IOCs; 2) Repay debt; 3) Cut down subsidies.
- Decline in Production + Soaring consumption => divert supplies away from exports to the local market, leaving 2 LNG plants idle (an opportunity for Cypriot and/or Israeli gas?).
- Also, to meet local demand, Egypt started importing LNG in 2015.

EGYPT - ZOHR

- Hoped to bring some balance between supply & demand, and extricate Egypt from its energy crisis.
- Based on what we know now, more gas is needed to restart exports.
- All the more reason for ensuring a favorable climate for investors, to encourage E&P. Would be unwise for Egypt to halt reforms.
- Zohr a much-needed boost, but sense of urgency has not dissipated.
- Room for improvement: Prices not fully liberalized. Delays in repaying debt. Freeze on exports.

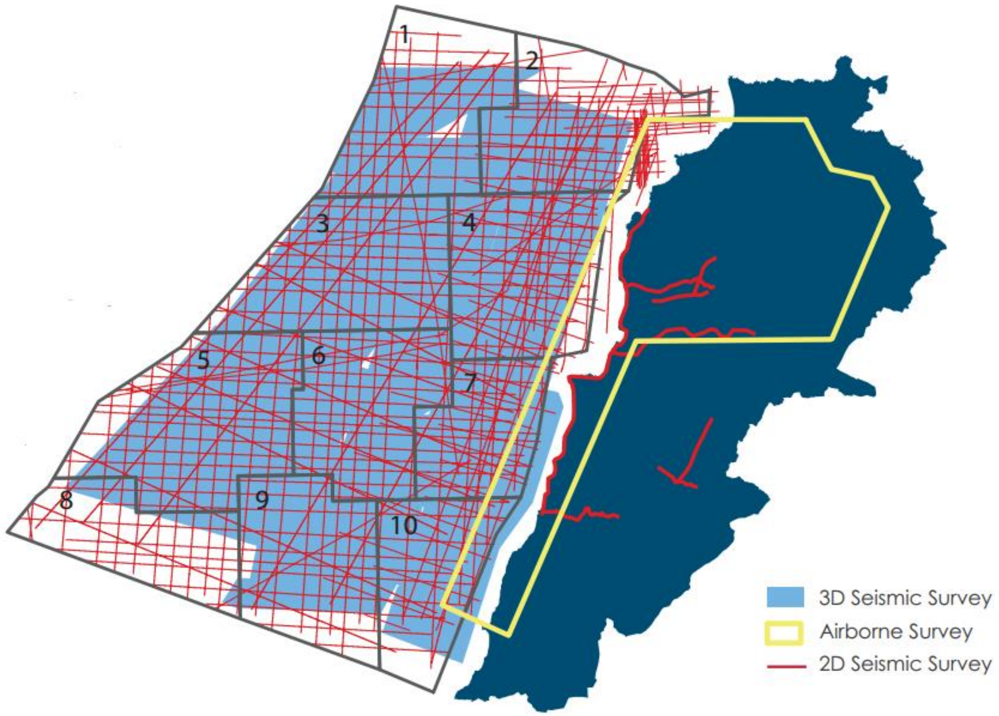
EGYPT – ZOHR & EAST MED

- Export of East Med gas to Egypt not necessarily doomed.
- Local market will absorb most of Zohr. 1st output expected in 2017 but imports to continue until 2022.
- That leaves 2 LNG plants needing to be refilled.
- ENI's vision: regional gas export hub in Egypt connecting gas from neighboring countries for European markets and beyond.
- But LNG imports in Europe have to match price of piped gas.
- Turkey a "competitor"?



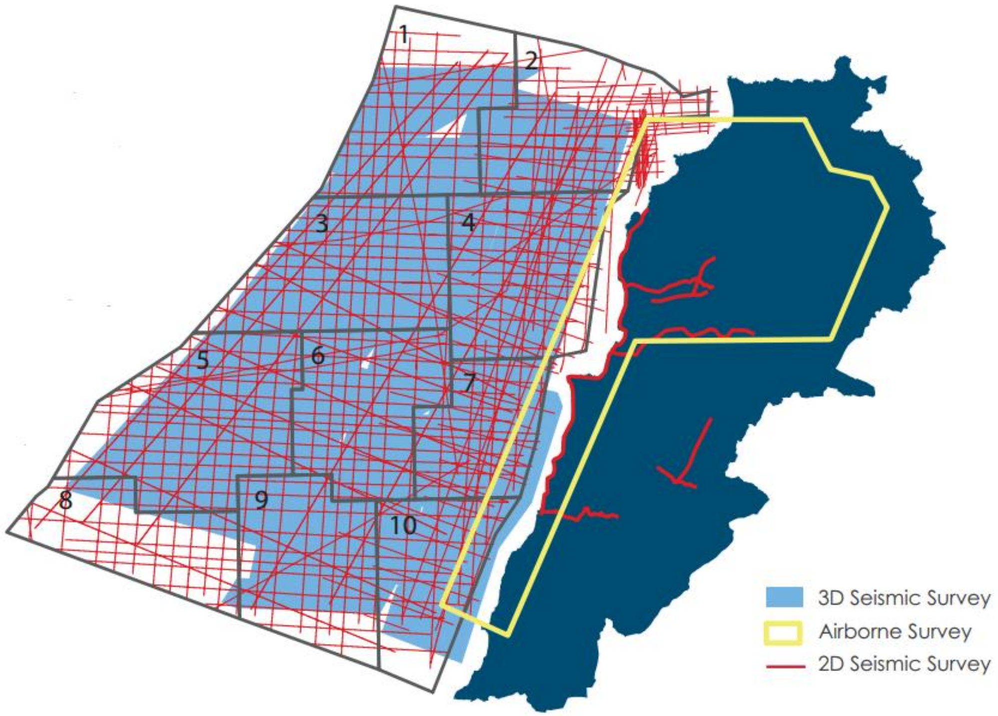
LEBANON

- 1st licensing round: May 2013. Previously, 52 companies sought to pre-qualify, 46 were successful (12 operators, 34 non-operators).
- BUT, absence of basic documents: Petroleum tax law & 2 decrees (defining offshore blocks, and the tender protocol & model EPA).
- Companies unable to place bids. Closing of the tender repeatedly delayed.
- Success of pre-qualification round brought sector into center stage.
- Overestimating the stakes. Stalling became inevitable.



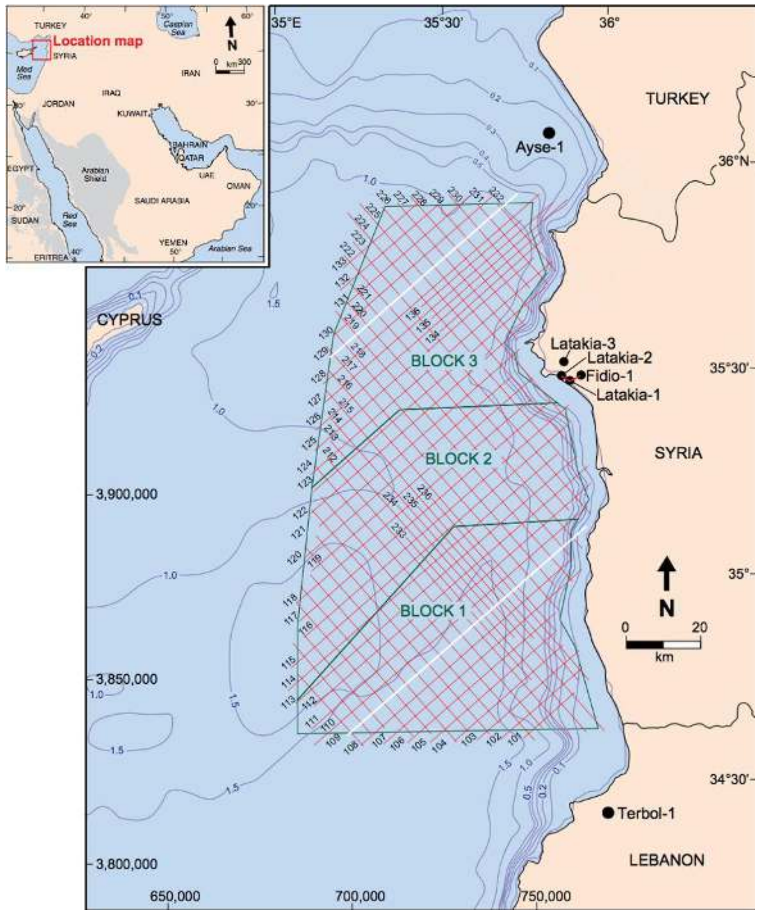
LEBANON RETAINS A CERTAIN ATTRACTIVENESS

- Process fairly transparent so far.
- Government sought to reduce the perception of risk in its unexplored waters by preparing comprehensive data packages.
- Entire offshore area covered with 2D surveys and 70% by 3D surveys, showing prospectivity is high.
- Based on available data, Lebanese offshore seems to be a gas province, but the presence of liquids such as condensate and/or oil is not ruled out, particularly close to the shore.



SYRIA

- No wells drilled offshore.
- 4 wells drilled onshore in the 1980s. Dry or small amounts of gas/oil.
- 2007: 1st bid round. No licenses awarded.
- March 2011: 2nd bid round.
- 2013: Soyuzneftegaz awarded an exploration & production license in block 2.
- 2015: Gave it up due to risks involved. Reportedly passed to another Russian company.
- Opportunities will depend on the outcome of the war.



MAIN FEATURES OF EAST MED GAS

1. Levant Basin resources are modest. Significant for the small, resource-poor countries of the region, but hardly a game-changer on the global scale.

2. Although not a game changer, the potential is interesting, not only for these countries, but also for other nearby countries, with rising gas demand, some of which are seeking to diversify their gas supplies.

MAIN FEATURES OF EAST MED GAS

3. Size of discoveries in the Levant Basin (and the size of the local market) did not grant these countries the autonomy they would have wished for exporting, and even exploiting them. This fact imposes cooperation…

4. Important to be precise: These resources are *not* an instrument for peace. They impose cooperation. Some are keen to use them to appease tense situations. But whether or not they will actually contribute to appeasing conflicts is a different matter.

5. The countries in the region have to attract billions of dollars of investments to monetize resources. Challenging considering current market conditions, security concerns, and geopolitics.

MAIN FEATURES OF EAST MED GAS

6. New alignments: Troubled relations with Turkey have deepened relations between Egypt, Cyprus & Greece and Israel, Cyprus & Greece. Foundations of these emerging partnerships are not as robust as they would appear at first, the rationale being the troubled relationship each of these countries hold with Turkey, *at this point in time*. A possible improvement in relations with Turkey, an increasing possibility, would relativize the importance of these partnerships.

7. East Med is a complex environment. To the usual industry challenges, add an even tougher factor: geopolitics. To maximize the benefits, authorities must consider geopolitical and political risk when devising the regulatory framework, and always have the time factor in mind.

MIDDLE EAST STRATEGIC PERSPECTIVES

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