Finding Petroleum
North Africa and the Eastern Mediterranean

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London, 12th December 2016
Setting the scene - key developments & highlights - Major gas discoveries and Libya's revival?

- Labor protests & industrial unrest in Tunisia contributing to production declines
- Morocco could become gas player by 2019. Sound’s Tendrara surpasses expectations
- Algeria to bring on 3 major projects onstream by 2017; increasing gas production by 11%*
- Positioned as an energy hub; EastMed pipeline & Aphrodite reserves require a market
- Headed for economic revival as Libya plans to double oil output exempt from OPEC cuts
- Zohr gas discovery reviving the O&G sector in Egypt
- Persistence of territorial disputes in Lebanon, weak governance & huge fiscal debt
- Unified O&G policy and reconciliation of regional relationships reducing barriers to export

* Based on 2015 OPEC figures
The Eastern Med has significant exploration and export potential

**Area highlights**

- Zohr has opened up the Lower & Mid Miocene carbonate play - BP, Dana, SDX, ENI and others actively exploring in Egypt
- Israeli government announces 28 blocks in upcoming licensing round & commitment to fast-track development of Leviathan
- Additional resource potential in Cyprus on back Zohr discovery?

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**Key**

- Significant discovery
- Existing LNG plant
- Source of gas
- Connection points
- Proposed pipeline route

**Cluster has a potential of 1890bn m³**

**19bn m³/year LNG export infrastructure currently idle**

Source: Interfax energy

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The Eastern Med to become a gas hub through different routes

Where will new gas go?

**Local consumption**
- Egypt been experiencing energy crisis since 2011
- Israel & Cyprus are likely to have a surplus

**LNG**
- Egypt has large capacity in place already
- New facilities elsewhere?

**Pipeline to Europe**
- Europe diversify from Russia
- Market for Israeli & Cypriot resources

Key hurdles limiting success
- Political instability in the area has deterred large investment- economic interests provide a catalyst for development
- Are existing resources sufficient to support pipeline export to Europe?: Cyprus & Israel may become net exporters ~2025
- High cost projects (pipeline $5.7bn) & low oil price. Funding likely to come from Europe to provide energy security
Libya set to re-export oil and Morocco could become a gas exporter to Europe

*Is the risk worth it?*  
NOC accepting offers for fields. Military present at facilities but attacks still happening (Mar 16)

*Is increased production good news?*  
0.6m bpd Q4 '16 → 1.1m bpd Q4 '17. Ports are set to reopen, but more barrels places pressure on recent OPEC induced rise

*Is Morocco the next export hub?*  
More stable political environment & success of Tendrara offers attractive diversification EU gas sources

*How much will economic protests impact O&G?*  
ENI continue exploring onshore. Petrofac forced to pause operations due to labour protests
# Political instability in North Africa and the East Med is the bottle-neck in unlocking potential

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<td><strong>North Africa</strong> - Will Morocco change the game?</td>
<td><strong>Primacy</strong> - A market is required for the gas in Morocco</td>
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<td>• In Morocco, smaller companies have secured frontier acreage – Sound have been successful</td>
<td>• History of political instability - attacks still occurring across most of the region</td>
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<td>• In theory options exist in Algeria, Tunisia and Libya</td>
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| **Eastern Mediterranean** - The new export hub? | |
| • Further exploration offshore | • East Med pipeline requires cooperation between many countries and funding |
| • Increased export options | |

## What next?

1. Will the majors renew their focus in Morocco post Tendrara?
2. Zohr and Tendrara were surprises, how many more geological unknowns are there in the region?
3. Will Libya get it’s act in order? Lots of oil (gas?)