

LEBANON OIL AND GAS: NOT FOR THE FAINT-HEARTED

By: Dr Carole Nakhle, Director, Crystol Energy

For nearly a decade, Lebanon has been trying hard to join the club of oil and gas producers but a combination of factors dominated by domestic political infighting have always meant that ambition falls well short of reality.

With unproven geological potential and a lack of infrastructure compounded by high political and security risk, Lebanon is surely not a venture for the faint-hearted, especially in today's relatively low oil price environment.

Lebanon has no proven oil or gas reserves as of to date since not a single offshore well has been drilled, let alone any discoveries been made. Onshore exploration was attempted back in the 1940s by the then Iraqi Petroleum Company without success. After the end of the civil war in the early 1990s, seismic surveys were carried out, but the political uncertainties in the country then held back progress towards a licencing round. Between 2006 and 2013, Norwegian Petroleum GeoServices (PGS) and British Spectrum carried out 2D and 3D seismic surveys covering more than 70 per cent of the Lebanese coast. Some estimates of the potential resources were given but a clear divergence in the figures is noted. According to Spectrum, Lebanon's seabed could hold between 12 and 25 trillion cubic feet (tcf) of technically recoverable gas, and according to French Beicip Franlab, Lebanon's oil resources could range between 440 and 675 million barrels (Mbls) [*Credit Libanais (2015) Oil & Gas Sector: A New Economic Pillar for Lebanon*]. Former Minister of Energy and



Water, Jibril Bassil, gave more optimistic figures, quoting 95.5 tcf of natural gas and up to 865 Mbls of oil (*Basam, L. (2013) Lebanon says gas and oil reserves may be higher than previously expected. Reuters*).

The disparities in these figures highlight the significant uncertainties surrounding estimating oil and gas resources anywhere. Seismic surveys indicate possible presence of offshore hydrocarbon accumulations but until companies are able to start exploration activities, the existence of oil or gas is theoretical.

Meanwhile, Lebanese policy makers and some media outlets, among others, got lost in translation, sometimes building unrealistic expectations among their people and making grand plans for the potential windfalls long before the country's geological potential is proven. Figures of more than US\$480 billion were quoted as the potential bonanza – rather unwisely and prematurely. Such a reaction, though, is not

confined to Lebanon only.

In the East Mediterranean region, only the gas potential of the Levant Basin, which encompasses approximately 83,000 square kilometre (km²) of the eastern-most portion of the Mediterranean area, stretching from Israel to Syria, and including Lebanon and Cyprus, has been confirmed. According to the US Geological Survey (USGS), the basin could hold 1.7 billion barrels (bnbls) of recoverable oil and natural gas liquids (NGLs) and 122 tcf of gas – which is rather modest by international standards especially when compared to countries like Saudi Arabia and Qatar which sit on proven reserves – not resources - of 264.5 bnbls of oil and 884.5 tcf of gas respectively [*BP Statistical Review of World Energy (2016)*].

Most discoveries have been made in Israel, the best known are the Tamar and Leviathan fields discovered in 2009 and 2010 respectively and which were hailed then as the two biggest gas discoveries of the last decade. British BG announced the discovery of Gaza Marine in the waters of the Palestinian Authorities in 1999. Cyprus made its first and, to date, only discovery – the Aphrodite field – in 2011.

Deepwater offshore gas is typically more difficult and costly to market than oil, especially if the infrastructure is lacking. Cyprus's Aphrodite field, is one example; the field is still awaiting development plan until a commercial solution for its exploitation is found.

In Lebanon, the lack of infrastructure will add to the investment bill. Furthermore, the country is yet to initiate its licensing round that will give the green light to exploration. The Ministry of Energy and Water (MoEW) announced the beginning of the companies' pre-qualification process in February 2013.



GAS DISCOVERIES IN THE EASTERN MEDITERRANEAN			
Country	Discovery Year	Name	Size (tcf)
Cyprus	2011	Aphrodite	5.00
Israel	1999	Noa	0.04
	2000	Mari-B	1.50
	2009	Dalit	0.70
	2009	Tamar	10.00
	2010	Leviathan	19.00
	2011	Dolphin	0.08
	2012	Simson	0.55
	2012	Tanin	1.20
	2013	Karish	1.80
	2014	Royee	3.20
Palestinian Territories	2016	Daniel	8.9
	2000	Gaza Marine	1.00

Source: Delek Drilling and Avner Oil Exploration, 2016&2014; Energy Information Agency, 2013, Noble Energy 2016, Israel Opportunity, 2016, Haaretz, 2016

Fifty two international oil companies submitted pre-qualification applications and 46 were short listed, including major oil companies such as Shell and ExxonMobil, which satisfy the country's relatively strict financial and technical pre-qualification requirements.

A lot of excitement followed the announcement; officials referred to the high level of interest as a confirmation that Lebanon was sitting on oil and gas resources that could exceed those of its neighbours. However, it is worth clarifying that while this was a positive development, it was not particularly unique. Oil and gas companies constantly look for new opportunities especially during periods of high oil prices; between 2011 and summer 2014, the oil price hovered around US\$110 per barrel. Also, since Lebanon's Offshore Petroleum Resources Law (OPRL) requires a consortium of at least three companies (one of them being the operator), the total number of consortia that can therefore be formed will be smaller than the total number of companies that were pre-qualified. Finally, a difference exists between companies that pre-qualify, those that actually bid, and the number of contracts awarded; the numbers commonly shrink as we move toward the latter category.

According to the MoEW's original plan,



bidding was supposed to start in May 2013 and was expected to continue for six months, with the first Exploration and Production Agreement (EPA) to be signed in February 2014. However, the resignation of the Mikati Government in March 2013 took many by surprise and left the future of the round in doubt.

The problem is that, prior to the government resignation, two important

decrees still had to be approved by the Council of Ministers, as required by the OPRL: first, the exploration and production model agreement which includes the fiscal terms and second, the delineation of the ten offshore blocks in question. Additionally, the Parliament still needs to pass the draft petroleum income tax law. Without these, the country's first licensing round, which has already been postponed several times, cannot go ahead.

In addition to the above geological, technical, commercial, legal and political risks, there is the issue of the contested maritime boundaries between Lebanon and Israel. The Lebanese Government does not officially recognise that there is any disputed area and has divided its offshore area into ten blocks, ranging between 1,500 and 2,500km² each, whereby parts of Blocks 8, 9 and 10 cover what Israel claims to be a disputed area of 854 km². The international community has been trying to mediate with no progress to date.

Lebanon Offshore Blocks and 'Disputed' zone

Maritime boundary disputes are common and some can take decades to be rectified. Defining maritime borders is therefore not a prerequisite for holding a licencing round. However, given the sensitive relationship (or lack of it) between Lebanon and Israel, such unresolved issues can distort investment decision in the blocks which fall in the contested area. No company wants to acquire a block which can be revoked one day as a new borderline is drawn.

Against this unsettled background, any rational investor would expect significant rewards to justify the high risk venture in Lebanon.

Today's relatively lower oil prices has increased competition between governments for international capital. Many variables such as geology and oil price go well beyond any host government control, be it an established producer or a new comer. However, governments can minimise one important risk – that is the political risk. In Lebanon, this may sound as a wishful thinking but it is not unworkable; it requires strong political will and commitment.