

# A wealth of data

## New studies help de-risk Lebanon's off- and onshore

OIL & GAS 2015    SPECIAL REPORT    October 21, 2015    by Jeremy Arbid

---



Thulborn-Chapman Photography | Flickr | CC BY-SA 2.0

The third time proved the charm for Italian oil and gas company ENI in the past 12 months. In late 2014 and early 2015, ENI and South Korean partner KOGAS found nothing when drilling offshore for hydrocarbons in Cyprus' exclusive economic zone (EEZ). On August 30, 2015, however, the company announced the discovery of a "supergiant" gas field dubbed Zohr – estimated at 30 trillion cubic feet (tcf) – not far from its dry wells, but in Egypt's EEZ.

While the Lebanese Petroleum Administration (LPA) tells Executive that, "It's a bit early to evaluate how we should position ourselves in terms of further studies and assessments" of Lebanon's EEZ in light of the ENI discovery, the dry wells have already led to some reanalysis of the data collected covering Lebanon's offshore. The LPA says that two more studies of the data were performed to "better understand the sedimentations and the potential reservoir parameters in light of the recent failures of ENI in Cyprus," without indicating what results these studies achieved.

Lebanon's EEZ has already been extensively covered by both 2 and 3-dimensional seismic

surveying. A new interactive map on the LPA's website details where surveying has been conducted in both offshore and onshore Lebanon. The map also shows the delineation of the offshore blocks and those that will be tendered for exploration and production – information yet to be officially declared via a delayed decree. According to the LPA, blocks 1, 4, 5, 6, and 9 will be up for bidding whenever the licensing round moves forward.

An advisory body to the Ministry of Energy and Water with some regulatory powers, the LPA has been cautious about playing the numbers game when it comes to offshore prospectivity. As the ENI examples highlight, data only goes so far. Drilling is the only reliable way to know what lies below the seabed. That said, the LPA has previously offered so called P50 estimates for **offshore blocks 1, 4 and 9**. A P50 estimate means that there is a 50 percent chance of finding a certain volume of oil or gas. The LPA said that each block had a P50 estimate of at least 13 tcf.

And while offshore re-evaluation of data will continue, says the LPA, the real survey work in 2014/2015 was done onshore.

### **Onshore exploration: a brief history**

The LPA's map also shows where exploratory wells have been drilled onshore in the past. Exploratory wells drilled by the Iraq Petroleum Company (IPC) – before 1928 IPC was named the Turkish Petroleum Company, and many Western oil firms owned controlling interests in the company – implies a longstanding interest in Lebanon's petroleum prospects since at least the 1930s and '40s. In 1938 a concession was granted by Lebanon to the IPC, forming the Lebanese Petroleum Company to control the exploration license. Delayed by the Second World War, the company did not begin drilling until the late 1940s.

According to IPC's 1948 company handbook (pages 12 – 14), "Road making, building and work preparatory to drilling was then undertaken and a well spudded-in in May, 1947, on the Jabal Tarbol structure, in the presence of Lebanese Ministers and officials. By the end of 1947 it had reached a depth of some 4,500 feet, and by June 1st, 1948, 6,400 feet." Later, in the 1950s and 1960s, the company drilled a number of wells across Lebanon at Yamour, Nahr Ibrahim, Al Qaa, Adloun, and Tall Znoub – none were successful. Demonstrating that even back then the investment costs of exploration were high and carried a significant amount of risk.

### **Onshore exploration: present day**

NEOS GeoSolutions, a US based company, surveyed 6,000 square miles mostly onshore Lebanon in late 2014 and early 2015 with local partner PetroServ as an underwriter with **\$7.5 million invested**. The new survey, as Executive has previously reported, provides a baseline of data indicating where potential oil or gas reservoirs might be located and narrows the focus of any future data acquisition. More data helps reduce risk and gives companies coming to explore more precision in where they plop down their drilling equipment in the physical search for petroleum, as well as, hopefully, reducing the number

of wells they have to drill before striking it rich.

Just a few months ago, NEOS said the survey data helped identify onshore “sweet spots,” but, says PetroServ president Ziad Abs, companies are yet to purchase the resulting data, and further studies are needed before estimating onshore prospectivity. NEOS hopes to conduct additional studies, says Amanda Jane, NEOS’s Lebanon Project Manager, in an email to Executive. The company’s next step, depending on how the Ministry of Energy and Water decides to move forward, would be to conduct parametric drilling. The drilling aims to establish the precise boundaries of rock layers and as Jane points out, “serve as calibration points for seismic and non-seismic” surveying in the future.

### When will drilling begin?

The million-dollar question is impossible to answer at this point. Lebanon’s first offshore licensing round launched back in 2013 technically remains open and cannot close until **cabinet passes two decrees**. The LPA’s website says that once the decrees are passed, bidding will close a maximum of six months later. Regulations for onshore exploration seem less advanced. As the LPA’s Wissam Chbat explained at a conference in June, bits and pieces of existing legislation (namely laws from 1933 and 1975 along with a cabinet decree from 2011 and a Ministry of Energy decision from 2013) mean Lebanon can legally move forward with an onshore licensing round, but the LPA and the ministry have drafted a new law specifically tailored to regulating onshore exploration and both prefer using that as a framework instead of what’s already on the books. Additionally, neither the ministry nor the LPA have indicated that tender protocol, model contracts or block delineation have been drafted for Lebanon’s onshore acreage. As to whether onshore or offshore exploration is a priority at the moment, Minister of Energy and Water Arthur Nazarian tells Executive in written answers to questions, “Preparations for both onshore and offshore petroleum activities are moving in parallel and they complement each other.”



**Jeremy Arbid**

Jeremy is Executive's in house energy and public policy analyst.

