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Is Lebanon Really an Oil and Gas Producing Country?

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I. General Introduction

Over the past fifteen years or even more, there have been news about the possibility of Lebanon having oil and gas reserves. This has encouraged some oil and gas multinational companies to visit Lebanon and have talks with the Lebanese authorities concerning the launching of drilling and extraction projects.

The seismic studies conducted in 2002 and 2006 by the British Spectrum Company and Norwegian Petroleum Geo-Services Company, as well as the U.S. Geological Survey conducted in 2010, in the territorial waters of Lebanon, pointed to the presence of offshore gas and oil reserves in the country.

These studies indicated that there is nearly 1.7 billion barrels of technically recoverable oil and 122 trillion cubic feet of technically recoverable gas in the Levant Basin, of which part of each is found in Lebanon.

Oil and Gas Reserves in
The Levant Basin

Commodity	**Reserves**
Oil	1.7 billion barrels
Gas	122 trillion cubic feet

Sources: Spectrum, Geo-Services and US Geological Survey Companies.

According to these studies, and based on the figures announced by the Ministry of Energy and Water (MEW), the 10% of surveyed Lebanese waters show some 30 trillion cubic feet of gas, and 660 million barrel of liquid oil.

Oil and Gas Reserves
in the Lebanese Waters*

Commodity	**Reserves**
Oil	660 million barrels
Gas	30 trillion cubic feet

***** The 10% surveyed Lebanese waters.

Sources: Spectrum, Geo-Services, US Geological Survey Companies, and MEW.

To cope with this promising development, the Lebanese government approved in August 2010, the "Offshore Petroleum Resources Law" to manage the country's wealth of oil and gas. Very recently, the government approved the decrees to launch the exploration activities. The political tension continues to be a major impediment to start the exploration process.

If Lebanon proves to be an oil and gas producing country, this will certainly reflect positively on the country's economic growth, public finances, trade, and social conditions.

A major issue in the gas-oil file is how Lebanon would manage the gas and oil resources: a savings fund for future generations or offsetting a part of the existing high public debt.

II. Legal and Implementation Measures

In the Legal and implementation frameworks, the "Offshore Petroleum Resources Law" 2010/132 was ratified by the Parliament in August 2010. This Law is supplemented by 28 decrees for its implementation.

The Law paved the way for the establishment of the "Petroleum Administration Board" (PAB) to supervise and control the prequalification, and bidding and licensing functions. On December 2012, the Cabinet appointed the six members of the PAB, thus enabling to proceed with its first round of licensing.

The pre-qualification requirements were included in a special decree issued in February 2013 which was approved by the government.

The MEW announced on February 13, 2013 the pre-qualification process for oil companies to bid on offshore oil and gas exploration.

The MEW announced on April 18, 2013 that 46 international oil companies were selected to bid to explore for oil and gas in the Lebanese offshore waters. 12 of these companies were selected as operators and the other 34 as non-operators in the licensing period.

The licensing and bidding contracts were planned to be signed between the government of Lebanon and the winning companies in February 2014.

Also, the development phase was planned to be launched this year, and the first extraction operation of oil and gas was expected between 2018 and 2020. Unfortunately, the political conflict on the oil and gas file still hampers such plans and expectations.

The MEW is still awaiting the ratification of the "Exploration and Production Agreement", which gives the selected oil companies the right to explore oil and gas reserves in Lebanon's "Exclusive Economic Zone" (EEZ)*, as well as the approval of the block delineation decree which specifies the number of blocks to be explored, knowing that there are 10 blocks with a total area of 17,901 square meters with an average block area of 179 square meters.

Concerning the exploration and extraction of oil and gas contract, which specifies the share of revenues for each of the Lebanese government and the companies, it is not yet disclosed. In fact, the agreement is based on some sort of a production sharing system, whereby the international companies would be

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* Lebanon's EEZ is an integral part of the Levant region. It is a 22,730km2 region bordering Syria, Cyprus and Israel Waters.

retained by the government of Lebanon to invest in exploration. If discovery is achieved, the investments made by the companies then will be recovered up to a certain ceiling, and then some royalty will be paid to the government in terms of revenue sharing. The production will be divided between the government and the companies on the basis of a certain ratio, as indicated by the "Exploration Production Agreement".

In fact, the regulations needed to implement the Law are mostly ready. Some are approved, and others are on the way which all are important for the first licensing round.

III. Oil and Gas Benefits

If the estimates of oil and gas wealth in the Lebanese offshore waters are real or even chose to real, then Lebanon would become an energy independent country in the end.

Lebanon will get a share of oil and gas revenues as per the agreements with international companies. These oil-gas reserves will depend on four major factors. The first factor is the real volume of gas and oil that can be economically extracted and produced. The second factor is the country's ability to monetize the oil and gas it produces, which will depend on the government's planning, efficient building and operation of LNG facilities as well as coherent policy for exportation. The third factor is the development of global and regional oil and gas prices, which will affect Lebanon's exports of these two commodities. The fourth factor is ensuring the proper control and use of oil-gas revenues which depend on halting illegal smuggling, fraud and trading in the black market.

Real explorations and production of oil and gas in Lebanon would transfer Lebanon into a self-sufficient country in oil and gas, and a net exporter of these two commodities, or even of natural gas. This is expected to reflect positively on the electricity sector, public finances, trade balance and GDP, and the economic outlook of the economy will be completely changed.

The oil and gas revenues would decrease Lebanon's imported energy needs (which stand today at about 90%), thus improving its balance-of-payments, reducing its public deficits and indebtedness, increasing its foreign-currency reserves, enhancing infrastructure investments, and increasing job opportunities.

Also, the oil and gas production will enhance the construction activity in the country, as it will launch a large-scale hydrocarbon facilities like ports, pipelines, and compounds for workers.

In addition, public-private investments will grow in the years to come, thus stimulating economic growth and lowering unemployment by creating job opportunities for the local Lebanese besides drawing on the expertise of many Lebanese expatriates.

The discovered and produced gas can help Lebanon decrease the pollution of fuel-oil powered electricity generation as it moves to a gas-fired power generation. By this, Lebanon could develop its potential in the field of renewable energies whose utilization is globally increasing.

IV. Estimated Size of the Oil-Gas Reserves and Economic Contribution

According to the "Energy Information Administration" (EIA)*, the total estimated value of Lebanon's gas reserves is nearly USD 163.91 billion between 2020 and 2039. Also, the estimated value of Lebanon's oil reserves is nearly USD 90 billion for the same period.

Estimated Value of Oil
and Gas Reserves in Lebanon
Between 2020 and 2039

Commodity	**Estimated Value (USD, billion)**
Oil	90
Gas	163.91

Source: EIA.

* It is the statistical and analytical agency within the U.S. Department of Energy.

According to “Beicip Franlab”, Lebanon’s total oil reserves is likely to range between 440 and 675 million barrels, or an average of 557.5 million barrels. If the country’s daily production is uniformly distributed over twenty years, its daily oil production is estimated at 76,370 barrels. This ranks Lebanon at 52nd worldwide (out of 102 oil producing countries) and at 13th in the region in the list of CIA’s world fact book.

With regard to its natural gas reserves, “Spectrum” estimates Lebanon’s offshore gas reserves between 12-25 trillion cubic feet, or even 20 trillion cubic feet. If production is uniformly distributed over twenty years, then the country’s annual gas production is estimated at 1 trillion cubic feet. This places Lebanon in the 30th rank worldwide, and 8th in the region in the list of CIA’s world fact book.

Lebanon’s Ranking in Daily
Production of Oil and Gas

Commodity	International Ranking	Regional Ranking
Oil	52	13
Gas	30	8

Source: CIA’s world fact book.

Under such figures, the average annual gas reserve is estimated at nearly USD 8.2 billion, and that of oil at USD 4.5 billion. These estimates of the values of gas and oil reserves will definitely contribute to an increase in the GDP and economic growth of Lebanon over the assumed twenty years.

As for the public finances of Lebanon, the government's revenues are expected to be boosted from the exploitation of oil and gas: 15% corporate income tax, 60% profit share on hydrocarbon production, 4% royalty fee on gas production, and 5-12% royalty fee on oil production.

With such figures, the estimated average annual revenues from oil and gas is nearly USD 5.7 billion over twenty years. This will enhance the government's public revenues and keep the average ratio of fiscal deficit to GDP at a depressed level of 4-5% per annum. Consequently, the government would be better able to control the growth of its public debt, and perhaps lowers it to below 100% if radical fiscal reforms are adopted to curb public spending and enhance public revenues.

Regarding the country's current account balance, the production of oil and gas is expected to lower Lebanon's hydrocarbon imports, thus reflecting positively on the balance, where one can expect the balance to record a surplus that could reach nearly 1-1.5% of GDP over twenty years.

Also, the exploration and production of oil and gas will require substantial investments from the international companies. This means more FDI inflows to Lebanon, thus enhancing the capital account.

With an enhanced position of both the current and capital accounts, the country's balance-of-payments is expected to record a substantial surplus.

Given these positive contribution of the oil and gas extraction and production on one hand, one can expect some negative repercussions on the other hand mainly the "Resource Curse" and "Dutch Disease".

In fact, the revenues derived from exhaustible resources such as oil and gas have three special features. The first feature is that such resources are depletable and are only temporary in nature. Second, these revenues are highly volatile due to the high volatility in oil and gas prices on the international markets. Third, rents from oil and gas are typically larger than those for other commodities, and reflect monopolistic powers. These special features present the Lebanese government with challenges and difficult policy alternatives.

Economic Literature and evidence links dependence on natural resources (such as oil and gas) to poor economic performance (the so-called "resource curse"). In fact, many oil producing countries witnessed major economic setbacks once they started exploiting the oil and gas resources. This happens as the higher price volatility exerts a negative impact on economic growth, acting through a lower accumulation of physical and human capital. If the size of the hydrocarbon industry in Lebanon proves to be large and no prudent and effective measures are put in place to strengthen institutions, governance structures, fiscal accountability and transparency, then one can expect the “resource curse” and corruption are likely to occur in full force.

Another related concern is the “Dutch Disease”. This means that strong capital inflows can cause real exchange rate appreciation of the Lebanese Pound, and can trigger a boom in the non-tradable sector – mainly the construction and banking sectors – by lowering import prices or stimulating external credit. Such a development can undermines financial resilience of the country and exposes its economy to high risks when the world oil and gas prices and revenues fall. Furthermore, the higher inflation rates and appreciation of the local currency stimulated by larger capital inflows and increased money supply affects the entry of firms into the tradable sector, thus limiting diversity in production and hindering firms from developing their export capability. The recent experience of Lebanon clearly shows that while its banking sector has shown high resilience in the face of many political and financial crises, its economy is still exposed to volatility and instability caused by real estate ups and downs, a relatively weak tradable sector and persistent current account and budget deficits.

In fact, Lebanon’s national currency is already showing signs of over-valuation as the IMF indicates in one of its 2012 reports. A specific concern is that a potential sharp real appreciation of the Lebanese Pound could weaken the competitiveness of its export and tourism sectors, resulting in employment losses and hence higher unemployment.

The route in which oil and gas production could boost inflation is as follows: oil and gas production is expected to enhance Lebanon's current account balance as well as capital account balance. This implies increased capital inflows and money supply in circulation, and consequently inflation would rise.

Another source of increased inflation is the expected increase in public revenues and also public spending, thus raising aggregate demand in the local economy and hence inflation.

The route in which oil and gas production could cause real exchange rate appreciation of the Lebanese Pound is as follows: The oil and gas resources will increase the country's exports, thus causing an appreciation of the Pound. Consequently the prices of domestic goods are expected to increase relative to those of foreign goods, which will hinder Lebanese exports.

To avoid the appreciation of the Lebanese Pound, and given the Central Bank's policy of exchange-rate pegging of the Lebanese Pound to the US Dollar, then the Central Bank should increase the supply of Lebanese Pounds. This could lead to further inflation, unless the Central Bank buys U.S. Dollars.

V. Risks vs. Opportunities

The launching and growth of the hydrocarbon industry in Lebanon faces specific obstacles and risks, both on the political level, as well as on the economic level.

On the political level, and as indicated earlier, the oil and gas reserves in the Levant region belongs to Lebanon, Cyprus and Israel. Today there is a dispute between the three countries concerning an 874 square kilometers maritime area, which delays the exploiting of the potential energy resources of this area.

Also, on the political level, the major obstacles are the ongoing domestic political bickering on the petroleum laws and decrees, the continued conflict in Syria, and the observed political instability in the Arab region caused mainly by the Arab Spring.

The security threat remains clear in Lebanon, given the Israeli's bad intentions towards Lebanon and its potential gas and oil reserves.

As for the economic obstacles, the first one is the expected long period of extraction of oil and gas which could extend to some 7-10 years in minimum. Also, there is the large cost of exploration which could reach USD

100 million per well. Since exploration is costly, the international companies have to form consortiums between themselves to share the 10 blocks.

A major obstacle or issue concerning the hydrocarbon industry in Lebanon is related to the management of oil and gas resources in the future.

As stipulated by the “Offshore Petroleum Resources Law”, and according to the MEW, the government’s share of oil and gas revenues will be kept in a sovereign fund set for future generations. Officials at the MEW say that such fund will not be used for paying the public debt, which will be paid as the country’s GDP grows due to the impact of oil and gas on the economy. It is also said by some politicians that the proceeds of the fund will not be included in the balance sheet of the government.

Some policy makers in Lebanon have been debating the utilization of the fund’s proceeds in reducing the public debt to nearly 60% of GDP, from the current 135%, before fulfilling other expenditures.

But actually this fund has not been created yet, and there is no separate law for the fund yet too. It is not clear how the fund will be governed and how it will be managed. In fact, a stabilization fund could be needed also to cushion the economy and avoid deep cuts in the government’s oil and gas revenues in case of sharp decline in international prices of these two commodities.

In fact, the "Offshore Petroleum Resources Law", in its Article 3, stipulates that "the statute regulating the fund, the rules for its specific management, the principles of investment, and use of proceeds shall be regulated by a specific law, based on clear and transparent principles for investment and use of proceeds that shall keep the capital and part of the proceeds in an investment fund for future generations, leaving the other part to be spent according to standards that will guarantee the rights of the state and avoid serious, short, or long-term negative economic consequences".

This article paves the way for the use of the potential proceeds of oil and gas resources in three main directions: The first for future generations; the second for reducing the fiscal deficit and paying part of the debt to reduce its ratio to GDP; and the third to deal with any potential short and long-term negative economic consequences. This is an ideal opportunity, measure, and policy to manage the oil and gas wealth of Lebanon once the extraction and production processes take place.

Paying off part of the public debt is a necessary and significant step. This is crucial to improve the sovereign rating of Lebanon, and hence to lower the interest rates at which the private sector can borrow further to expand its business, to improve the competitiveness of the economy, and to boost overall economic growth.

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