EU Energy Security Through Supply Diversification: Do Natural Gas Reserves in the Eastern Mediterranean Present A Viable Option?

By Isabella Ruble*

Despite the increase in worldwide recoverable conventional and unconventional reserves of natural gas (currently estimated at 6,600 tcf), and the ensuing changes in market structure, as well as the increasing role played by the LNG trade, this market remains predominantly regional. Therefore, geopolitical considerations are of great importance.

Over the past decade security of energy supply and diversification of supply sources for natural gas have consistently been the highest priorities of EU energy policy. Additionally, the EU has set ambitious targets in the area of climate change and energy conservation .

The EU's primary energy supply is projected to decrease throughout the period 2010-2050, yet the share of natural gas stays constant at 24%, the share of renewables increases while the shares of oil and solids are expected to decrease (EC, 2013). The decrease in primary energy production will exceed the decrease in supply, mainly because of declining domestic reserves and the low probability of Europe significantly developing its unconventional resources (EC, 2013). While the final demand for energy is expected to decrease as well throughout the period 2010-2050, net imports and import dependence for natural gas and oil are expected to increase (EC, 2013).

According to IEA projections the EU's high dependence on oil and gas imports, currently representing respectively 80% and 60% of 'total primary energy consumption', are expected to further increase to 90% and 80% by 2035 (EC, 2014). Similarly, the EU's expenditures on fossil fuel imports are expected to rise by 50% by 2030 reaching 600 billion Euro in constant 2010 prices (EC, 2013). Furthermore, low oil prices will lead to increased import dependence on natural gas (Bilgin, 2011).

The EU relies on only four countries for around 90% of its natural gas and LNG imports, Russia, Norway, Algeria and Qatar. An effort for diversification led to imports from Nigeria and Libya (see Table 1).

Trading Partner	Value (Share %)	Net mass (Share %)
Russia	41%	39%
Norway	32%	34%
Algeria	14%	13%
Qatar	7%	7%
Libya	2%	2%
Nigeria	2%	2%

Table 1. EU 28, Natural Gas & LNG Imports 2013
Source: Eurostat, 2014

The EU's efforts to improve security of supply of natural gas have focused on the establishment of pipelines that avoid transit through countries that have frequent disputes with Russia, and increased integration of the EU's internal energy market in order to facilitate inner EU gas flows, and the diversification of supply sources to reduce its dependency on Russia in particular (Bilgin, 2011).

This article highlights some of the difficulties pertaining to the diversification of the EU's natural gas supply sources. The first part analyzes the EU's increasingly intricate relationship with Russia as a dominant natural gas supplier to its market. The second part analyzes the potential that the newly discovered offshore natural gas discoveries in the Eastern Mediterranean Levant basin bear for EU supply diversification.

Russia's Dominant Position in the EU Natural Gas Market

Russia's reputation as a reliable supplier has increasingly been shattered over the past decade. The EU's success in its endeavor to diversify natural gas suppliers has been limited and the existing infrastructure that has developed over a period of 50 years is certainly partly to blame. Russia is eager to hold on to its dominant position in the EU as traditionally this allowed for fetching higher prices than other countries such as China or India were willing to pay.

The Russian economy is highly dependent on natural gas sales to the EU, its oil and gas sector account for 30% of GDP (Shadrina, 2014). Through its political influence on some of its neighbors, and Gazprom's strategic investments in Europe and other regions bordering the EU (such as the Caspian, Middle East and North Africa), Russia aims at maintaining its EU market share. The changes in the global gas market structure, and the emergence of the U.S. as a net gas exporter have reduced global demand pressures for LNG and are not conducive to Russian dominance in this market. Furthermore, regulatory pressures highlight the differences in market structure evolution and institutions between Russia and the EU, in the former government intervention and concentration in the energy sector has increased whereas the EU is aiming for a more competitive market within its borders (Shadrina, 2014). Price pressures forced Gazprom to revisit its pricing formula with the EU and the trend is moving away from contracts based solely on oil-indexed prices to including a larger spot market component. As a conse-

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quence, Russia has also started to diversify its export markets. Maturing fields in Western Russia led to planned developments of the fields in its East and this will make exporting to countries like China, Japan and South Korea more attractive (Shadrina, 2014). The 'Power of Siberia' pipeline, which is financed by Russia and China will deliver 38 bcm of natural gas a year to China starting in 2019 (Shadrina, 2014).

The recent war in the Ukraine has highlighted again the EU's strong dependency on Russian gas and its vulnerability to supply interruptions. In 2013 the EU imported 162.7 bcm of natural gas from Russia, of which 85 bcm transited through the Ukraine; this transit amount corresponds to 15% of EU total gas demand (Gazprom, 2014). This example shows Russia's use of market power to interfere in European foreign policy. Previous disputes with the Ukraine and Belarus, mainly because of large unpaid gas bills to Russia, led to supply interruptions for several EU countries in 2006 & 2009.

The Ukrainian conflict however emerged as a result of an attempt by the Ukraine to enter into a trade agreement with the EU instead of opting for closer trade ties with Russia in the fall of 2013. As the government withdrew from its plan this led to nationwide protests and a change of government. In response to Russia's annexation of the Crimea the EU and U.S. imposed sanctions on Russia. In December 2013 the price of gas and Ukrainian debt were reduced. After the change in government, however, Russia started a gradual upward revision of its gas price to Ukraine, reaching 485 USD per 1000 cum. Furthermore, in June 2014 Russia stopped its gas deliveries to Ukraine because of unpaid gas bills of 5.3 billion USD, and in September Russia reduced its gas supplies to the EU, in an attempt to increase its pressure against the sanctions. EU mediation and guarantees allowed reaching an agreement between the Ukraine and Russia in October 2014. Ukrainian transit capacities are limited during the winter months, so low stocks in the Ukraine can potentially have significant effects on EU supply security. Russia will resume deliveries to the Ukraine against an advance payment of 378 USD per 1000 cum in 2014 (BBC, 2014).

Do the Offshore Natural Gas Discoveries in the Eastern Mediterranean Levant Basin Present an Opportunity for EU Supply Diversification?

The Eastern Mediterranean Levant Basin is shared by Cyprus, Israel, the Palestinian Territories, Lebanon and Syria and accounts for 140.2 trillion cubic feet (tcf) of natural gas reserves out of which only 18.2 tcf are proved reserves to date. Despite this amount of natural gas being minimal when viewed through a global lens, the implications for the wider region could be substantial. To put this in perspective yearly imports for the EU-27 amount to roughly 11 tcf. If estimated reserves were to become proved the Levant Basin could, therefore, potentially supply the entirety of EU-27 imports for over 12 years. There is, however, substantial uncertainty not only about the amount of natural gas that will ultimately be available, but also, and perhaps more importantly, about the ability of these countries to successfully manage their energy sector. International companies only have the required level of expertise in offshore exploration and production, and to guarantee commercial viability in addition to technical and economic factors, the final market for the gas has to be agreed on ex-ante. In principle countries can either export natural gas via pipelines or in liquefied form (LNG). Piped gas is generally cheaper, but requires long-term commitments. LNG provides the seller with more flexibility but is more costly. Disputes between nations and the political instability in the region are two major challenges for countries of the Levant to export their gas successfully and for the EU to benefit from these new discoveries.

Country	Natural gas reserves		Oil reserves	
	Estimated	Proved	Estimated	Proved
Cyprus	7 tcf		3 bb	
Israel	33.42 tcf	10.1 tcf	610 mb	11.5 mb
Lebanon	25 – 96 tcf		865 mb	
Syria	--	8.5 tcf	6.9 bb	2.5 bb
Levant Basin	122 tcf	18.6 tcf	1.7 bb	2.5 bb

Table 2. Natural Gas and Oil Reserves in the Levant Basin
Source: Adapted from EIA, 2013

Prior to the discoveries in the Eastern Mediterranean Sea, Israel, Cyprus and Lebanon were importing nearly 100% of the energy consumed domestically, hence these discoveries have the potential not only to make these countries energy self sufficient but possibly to transform the region into an energy hub. The biggest challenges for the Levantine countries will be to create the necessary institutional and foreign policy conditions that will allow for successful sector management and efficient exploitation of these resources. So far the countries with stronger institutions have fared better.

Cyprus and Israel are the most advanced of the Levant countries when it comes to offshore exploration and production process.

Israel has the longest history of energy sector development. Its petroleum law was created in 1952 and drilling started in 1953 (Ministry of National Infrastructures, Energy and Water Resources, 2014). In 1999 the first substantial offshore discoveries were made and this allowed Israel to start its transition from nearly 100% import dependency to becoming an energy producer. The Tamar and Dalit fields are currently supplying a large share of natural gas for electricity production (EIA, 2014). By 2017 produc-

tion is projected to increase to 144 bcf of LNG yearly.

Estimates for Cyprus' offshore Aphrodite field range from 4.1 to 96 tcf. Following two licensing rounds in 2007 and 2012, two European companies have won the bids, Total (French) and ENI (Italy). Exploration started at the end of 2014.

Lebanon's current estimates of offshore natural gas wealth range between 25 and 96 tcf. Over the past decade great progress in the establishment of the institutional structure of this new sector was made. The Lebanese Petroleum Authority was created in 2010 and an offshore Petroleum Resource Law was developed and adopted in 2012. The first licensing round for offshore exploration & production was launched in May 2013. The dire internal political situation, with a caretaker government ruling for nearly a whole year from March 2013 until February 2014 led to repeated extensions of the bidding process as two necessary decrees for its completion are still missing (Ruble, 2014). If proved reserves tend towards the higher end of the currently estimated reserves, Lebanon could potentially export large amounts of natural gas as its domestic consumption needs for the next 20+ years could be satisfied with 12-15 tcf.

Syria is rich in fossil fuels (see Table 2); and before the Syrian war started in 2011 Syrian oil exports went predominantly to Europe, accounting for 70% of its export revenues. Natural gas was mainly used domestically in oil and electricity production. The weak institutional framework of the energy sector has, however, kept investors at bay. The war in Syria led to nearly a total destruction of its infrastructure, yet despite the ongoing conflict Russia's Gazprom secured a deal for offshore exploration along the northern coast.

If a large share of currently estimated reserves become proved reserves, then the domestic energy consumption needs of Israel, Cyprus and Lebanon can be satisfied with a fraction of available resources and large amounts will be available for exports. The major obstacle for countries to export or for the EU to benefit from these resources on its borders is the regional security situation and the disputes between the Levant nations.

The war in Syria and the Arab Uprisings have plunged the Middle East into a state of turmoil. Additionally, there are longstanding disagreements about maritime borders in the Eastern Mediterranean that are largely the result of past wars and conflicts. Cyprus signed an EEZ agreement with Lebanon in 2007 and Israel in 2011. While Cyprus has ratified its agreement with Lebanon, Lebanon has not done so: instead the Lebanese government has submitted a unilateral proposition for redefining its maritime border with Israel to the UN in 2010. The proposed maritime boundary overlaps with offshore areas claimed by Israel and bears the potential for renewed conflict between the countries. While Lebanon lags behind with its exploration and production endeavors, Israel has abstained from issuing exploration licenses for the concerned blocks (Ruble, 2014).

Aside from Lebanon and Israel, Turkey may also play an important role in Cypriot energy endeavors. In 1974 Turkey established the Republic of Northern Cyprus claiming some of the blocks within the Cypriot EEZ. In the fall of 2014 the announcement by Turkey to carry out a seismic survey off the coast of Cyprus led the latter to leave the ongoing peace negotiation. In retaliation for Turkey's violation of Cyprus' EEZ the latter opposes Turkey's accession to the EU. Clearly, as exploration is progressing tensions are mounting in the fight for resources.

Conclusion

There are two major consequences from these disputes. Firstly, Turkey is a major natural gas transit hub with access to the EU natural gas network. If Cyprus or Israel could access the Turkish pipeline system exports to the EU could be achieved at reasonable cost. The dispute between Cyprus and Turkey precludes this option. Similarly, Israeli cooperation with Cyprus will prevent Israel's gas from accessing the EU via Turkey. Secondly, Lebanese relations with Turkey have remained strong before the onset of the Syrian war in 2011 the potential for future Lebanese exports to access the EU natural gas market via onshore pipelines through Syria constituted a viable option. The Syrian segment of the AGP only had a small stretch to be completed in order to join the Turkish network. However, this is no longer an option as a result of the current situation in Syria. An offshore pipeline from Lebanon through Syrian high waters to Turkey would be an alternative and another option would be LNG terminals. Cyprus was exploring the possibility to cooperate with Israel for a LNG terminal. Another option for Israeli and Cypriot exports considered was a pipeline from Cyprus to mainland Greece. Provided that offshore Levantine natural gas reserves turn out to be sufficiently abundant the geopolitical situation in the region still bears a lot of uncertainty in terms of security of supply. In one form or another these reserves should, however, be considered as an additional option for EU natural gas supply diversification and can in the longer term possibly even lead to further energy market cooperation and integration.

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