Energy Geopolitics in the South-Eastern Mediterranean: The Ramifications of the Cypriot Energy Policy

Ioakeim D. Ampartzides

This paper provides a synopsis of possible scenarios, which Cyprus will have to take into consideration in accordance to future investments in the natural gas sector and related infrastructure projects in the Eastern Mediterranean Basin. It examines the current status of the Cypriot energy policy after the discovery of the Aphrodite reserve, and the outcome of the 3rd Licensing Round for offshore hydrocarbon exploration in the Cypriot Exclusive Economic Zone (EEZ). Analysis focuses on the 5+1 potential scenarios for future offshore gas projects, connected with the Cypriot EEZ, identifies the context of the geopolitical complexities in each case and their implications on potential regional synergies in hydrocarbon exploitation (Greece, Turkey, Egypt, Israel, Jordan). It concludes by examining the role of Turkey in the energy “jigsaw,” in relation to the ongoing Cyprus Problem, and provides recommendations to policy makers on how Cyprus can maximize its benefits and minimize the obstacles.

From the EEZ to the discovery of Aphrodite

The Republic of Cyprus (RoC) established an Exclusive Economic Zone in 2004,¹ which was submitted to the Secretary General of the United Nations, as the depository of the 1982 United Nations Convention on the Law of the Sea (UNCLOS).² Cyprus which ratified UNCLOS in 1988, is

¹ Enactment of the Exclusive Economic Zone and Continental Shelf Law (Law No. 64(I)/2004); http://www.mfa.gov.cy/mfa/mfa2016.nsf/all/8D45DA891DD0F91C2258042004122E8/$file/EXCLUDING%20ECONOMIC%20ZONE%20AND%20CONTINENTAL%20SHELF%20LAWS%202004%20AND%202014FINAL.pdf?openElement.

² “According to the Exclusive Economic Zone and Continental Shelf Law (which was amended in 2014 (No. 97(I)/2014)), the outer limit of the EEZ of the Republic of Cyprus is defined to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. However, in the event that any part of the EEZ of the Republic of Cyprus covers part of the EEZ of any other state whose coast lies opposite those of Cyprus (as is the case in the Eastern Mediterranean), the limit of the EEZ of the Republic of Cyprus and the EEZ of the other state is determined in accordance with an agreement between them. In the absence of such an agreement, the limit of the EEZ is the median line.” http://www.mfa.gov.cy/mfa/mfa2016.nsf/mfa86_en/mfa86_en?OpenDocument.
the only state in the Eastern Mediterranean that succeeded in signing bilateral EEZ delimitation agreements with Egypt (2003), Lebanon (2007)\(^3\) and Israel (2010) — following the equidistance-median line, method of demarcation (Figure 1) — while none of the neighboring states managed to do so.

Oil and Gas (O&G) exploration in Cyprus is dated back to 1938,\(^4\) when the island was still under British colonial rule, and continued until the mid 1990s, after the illegal Turkish invasion of 1974 and the de facto occupation of one third of the northern part of the island. Currently, the Republic of Cyprus is heavily dependent on foreign oil imports for electricity and transportation and doesn't use or have any natural gas infrastructure.\(^5\)

![Figure 1: The Cyprus EEZ (© 2017 EMGR)](image)

---

\(^3\) Even though the Lebanese Parliament has not yet ratified the agreement, it has accepted the demarcation line when Lebanon announced recently its first EEZ licensing round.


In October 2008, Cyprus awarded an Exploration License and Production Sharing Contract (EPSC) for Block 12 to Noble Energy International Ltd – a Houston-based low to mid-range oil company – for an initial term of three years. Almost three years later, Noble Energy’s drilling efforts (A-1 exploratory well) were successful and the company announced a significant discovery (called Aphrodite)\(^6\) in Block 12, estimating that the quantities of the newly discovered offshore gas field could range from 5-8 trillion cubic feet (tcf).\(^7\) Later, in 2013, after an appraisal drilling in Aphrodite, Noble Energy decreased the estimated amount of capacity from 3.6 to 6 tcf\(^8\) (P75\% estimate, A-2 appraisal well findings). That downward revision of reserves created a significant sense of disappointment among the members of the project.

Aphrodite, Cyprus’s only gas field to date, even though it was declared as commercial in 2015 by the consortium of companies\(^9\) who own the rights to the field – coupled with a combined announcement of intention to begin exporting gas by 2019 by the Cypriot Government and the Noble-led consortium\(^10\) – has yet to be monetized. This is due to five main reasons:

Firstly, the only official estimate available on the size of Aphrodite was given by Noble/Delek in 2014 with a P50\% estimate at 4.54 tcf or 120-140 billion cubic meter (bcm) equivalent.\(^11\) But in order to declare a reserve commercially exploitable a P90\% estimate is needed, something that still remains unclear. This means that most probably Aphrodite has less than 100 bcm capacity, a size which doesn’t allow many viable export options.

Secondly, it is not clear if the Aphrodite field lies exclusively in the Cypriot EEZ or whether a part of it lies inside the Israeli EEZ, a situation that complicates its status of ownership and development. Moreover, Aphrodite is divided into four separate reservoirs and until now only two out of the four have been drilled. In case it is a joint reserve, then Cyprus and Israel have to agree on pooling the resources of the field (sign a Common Unitization Agreement).

Thirdly, despite the fact that Aphrodite itself can cover the domestic consumption of Cyprus for decades (even with a conservative estimated scenario), however the volume is not enough (commercially speaking) to feed autonomously a pipeline or a floating/onshore Liquefied Natural Gas (LNG) terminal unit in Cyprus. The cost of monetizing Aphrodite, just for the needs of the still nonexistent Cypriot gas market, is too high for any upstream developer since Cypriot needs will not exceed 1 tcf over the next 30-35 years. Thus, the gasification of the Cypriot domestic market is conditional on a viable export option for Aphrodite. Its initial reserve estimates are not sufficient to justify an economically viable two-train LNG facility (which requires at least 8-10 tcf of proven reserves in order to become bankable).

---

\(^6\) The Aphrodite field is located 160 km south of Limassol, and 30 km northwest of the Leviathan field, in an area where the sea depth is about 1,700 meters. The field was discovered following drilling of the A-1 exploratory well, which began on 20 September 2011, continued for 116 days, and reached a depth of 5,860 meters below sea level. The field covers an area of 120 square kilometers, and the maximum thickness of the reservoir is 320 meters.” [http://www.delekdrilling.co.il/en/project/aphrodite-gas-field/](http://www.delekdrilling.co.il/en/project/aphrodite-gas-field/).

\(^7\) The Cyprus Hydrocarbons Company (CHC) is the National Oil and Gas Company of Cyprus, established in March 2014, [http://chc.com.cy/core-activities/block-12/](http://chc.com.cy/core-activities/block-12/).

\(^8\) Ibid.

\(^9\) Delek Drilling (15\%), Avner Oil Exploration (15\%), Noble Energy (35\%) and British Gas (35\% since November 2015).

\(^10\) Noble Energy Inc announced that Britain’s BG International has agreed to acquire a 35\% stake in Block 12 for a total cash consideration of $165 million as the operator of Aphrodite with 35\% interest. Cypriot Government approved the entry of BG on January 2016.

Fourthly, Cyprus cannot go alone since it has signed a Joint Marketing Agreement (JMA) with the developers of Block 12. This signifies that without their approval, Cypriots themselves can do nothing about the exploitation of the Aphrodite field.

Last but not least, two interrelated factors that complicate the development of Aphrodite is the lack of a route to market for its offshore field and the reality of much larger discoveries in neighboring countries (Zohr, Leviathan, Tamar, etc.).

Since a finalized plan for Aphrodite has not yet been established, and it is prohibitively expensive for the RoC to build an LNG terminal or a pipeline by itself (also considering the existing JMA mentioned earlier), along with the drop of international crude oil prices and the lack of commercial incentives for IOCs to solely monetize the reserve, the only path for Cyprus is to intensify exploratory drilling operations. Moreover, in January 2013 the Republic of Cyprus signed an EPSC with Italian ENI and South Korean KOGAS companies for Blocks 2, 3 and 9, after conducting a 2nd Licensing Round in 2012. Notably, the two exploratory drills, in December 2014 and March 2015 in Block 9 (the Onasagoras and Anathousa projects), were unsuccessful in discovering new exploitable amounts of natural gas, and in January 2015 TOTAL showed reluctance to conduct drillings.

Third Licensing Round

After almost two years of delays and postponements – while, in parallel, the bi-communal dialogue mediation continued, following the election of Mustafa Akinci in April 2015 – the RoC has successfully completed the 3rd Licensing Round for the exploration of Cypriot EEZ (Figure 2). On 7 March 2017, the Cypriot Cabinet approved the negotiations with the selected bidders. Thus the international O&G companies that are now involved in the EEZ are: ENI-KOGAS in Blocks 2, 3 and 9, ENI in Block 8, ENI-TOTAL in Blocks 6 and 11, EXXON-MOBIL-Qatar Petroleum in Block 10, and Shell-Noble-Delek in Block 12. The last developments seem to revive optimism and reinforce the prospects of hydrocarbon exploration in Cypriot EEZ, as the Cypriot Minister of Energy, Commerce, Industry and Tourism, Yiorgos Lakkotrypis, noted at the ceremonies of signing the energy contracts with the selected bidders on April 2017. In addition, Lakkotrypis stressed that “a total of twelve exploration wells will be drilled in the newly licensed Blocks 6, 8 and 10.”

The presence of energy giants in the Cypriot EEZ can only be viewed as one more act of recognition for the legitimacy of the RoC to exploit its hydrocarbons, and a strong proof that significant amounts of energy resources can be discovered in the region. But the Cypriot energy strategy continues to look very uncertain until additional evidence, from offshore exploration activities, is provided at the 3rd licensing round.

In case the abovementioned expectations will be fulfilled, and if the amount of discovered hydrocarbons allow exports, the final quantities will judge the outcome of the exploitation procedure.

---


16 Ibid.
The 5 (+1) potential scenarios for future offshore gas projects, that are connected with the Cypriot EEZ, are presented below. This paper intentionally follows a hierarchical approach from 1 to 5 so as to show from top to bottom the extent that the RoC will benefit from a possible implementation of one of the five scenarios: 1. LNG plant at Vasilikos; 2. East Med Interconnector pipeline (ICGI); 3. Pipeline to Egypt, 4. Pipeline to Jordan (via Israel), 5. Pipeline to Turkey, through the occupied territories of the Republic or Leviathan-Ceyhan.

![Figure 2: The Third Licencing Round in Cypriot EEZ (© 2016 RoC)](image)

5 + 1 Export Scenarios

1. An onshore LNG plant in Cyprus, at Vasilikos Energy Center, is by far the best option from an economic, geopolitical and strategic view. It will allow autonomy, security (no transit risk) and flexibility (transportation and alternative markets) – compared to a floating LNG platform or a pipeline – and such a scenario could offer significant benefits to the Cypriot society (jobs, standard of living, lower prices in electricity sector, energy self-sufficiency). Not only the RoC, as a EU member-state, can provide the European markets with "indigenous" energy resources but also Cyprus will have the ability to export natural gas to the Asian markets where prices might be more profitable. An extra factor which supports this option is, as quite recently the Cypriot Minister of Energy said: "the latest developments have created a dynamic for a liquefaction center, since Qatar Petroleum is one of the companies taking part in research in Block 10." On the contrary, high manufacturing cost, time and lack of expertise are some problems that need to be considered.

2. The East Med pipeline can bring significant political and financial benefits to the RoC, as a potential project within the EU energy security content and as an alternative supply source (Southern Gas Corridor to Europe) for the energy-consuming European markets. It will work as an energy “axis” between Israel, Cyprus, Greece and Italy (and under certain conditions Egypt) and will

---

connect existing networks in Europe (Connecting European Facility program). The project is already under the EU’s common interest (PCI), and the involved parties have signed, on April 2017, a joint declaration agreement that commits them to support the application for obtaining EU funding for the first level of feasibility (technical, financial and competitiveness) studies. Moreover, the European Climate and Energy Commissioner, Miguel Arias Canete, stated that, “This is an ambitious project which, as the Commission, we clearly support, as it will have a high value in terms of security of supply and diversification targets.” East Med will enhance the strategic value of Cyprus and the overall southeastern Mediterranean region and de-isolate Cyprus from its geographical position. The energy developments of fruitful tripartite meetings among the western oriented, non-muslim countries of the region, under the EU institutional “umbrella,” led to the signing of Memoranda of Understanding (MoU) between Greece, Israel and Cyprus, which also work as an extra amplifier for the project.

On the contrary, apart from considerable technical (sea depth and distance) problems, financial (construction and maintenance) and commercial (transit costs) difficulties due to the economic crisis, the absence of a Greek-Cypriot proclamation of an EEZ is an obstacle. Except for Greece and Cyprus, the East Med project is not a top priority option for the rest of the parties. Extra infrastructure is needed to connect Greece with Italy as the final destination and Turkish-Israeli relations (scenario 5) also complicate the energy equation. Existing infrastructure and mobility in Egypt and Israel, as far as the lack of transport options – compared to LNG, are also negative factors for the implementation of the project. It is still not certain if the East Med can become bankable under current circumstances.

3. The discovery of the Egyptian Zohr gas field was a game changer and undoubtedly affected and will continue to affect the energy scene in the region for years to come. The Zohr gas field discovered by ENI, close to the Cypriot EEZ, is the biggest in the area and the twentieth largest in the world. This factor, combined with the Egyptian experience in the gas sector for more than half a century, the geographical proximity, and the existence of two LNG terminals in the Nile Delta region (Idku and Damietta), give the advantage to the Egyptian side and makes Egypt an attractive destination for Cypriot gas.

A pipeline from the potential Cypriot fields to one of the two LNG facilities is a realistic, cost worthy and technically feasible option. In 2003, Egypt signed with Cyprus the first EEZ agreement in the south-eastern Mediterranean region, an act that reflects their traditional strong bilateral relations, dating back to a friendship between late presidents Gamal Abdel-Nasser and Makarios III. Needless to say that BG (an Aphrodite’s stake holder) is the facilitator of the Idku terminal and ENI is active in both EEZs. We cannot also neglect the fact that under the al-Sisi regime, tripartite relations between Cyprus, Greece and Egypt have recently flourished and their strategic

---


19 An initial survey estimated the cost of the undersea segment of a pipeline with an annual capacity of 12-16 billion cubic meters (bcm) at $5.7 billion; “Commitment to East Med pipeline remains, despite cost concerns,” http://cyprus-mail.com/2017/04/03/commitment-east-med-pipeline-remains-despite-cost-concerns/.


cooperation is already a fact. On December 2013, Cyprus and Egypt signed a Common Unitization Agreement (CUA) and, on February 2015, they signed a MoU to explore the feasibility of exporting gas to Egypt from Aphrodite. Moreover, the current Israeli government, the EU and the US are also in support of General al-Sisi.

On the other hand, political fluidity in Egypt, Islamic terrorism in Sinai by ISIS, internal conflict between religious communities, the lack of flexibility in Cypriot transport options, internal abnormalities in Egyptian domestic market, transit costs, and chronic problems in the Middle East, are reasons that make Egypt rather risky and complicated. Moreover, Delek's view, about Cypriot gas, which favors the option for the Egyptian domestic market and Cypriot cooperation with Turkey, limits the availability of alternatives. Needless to say that as time goes by and Cyprus continues to appear reluctant in its energy policy, it is not certain that Egypt will need Cypriot imports, while new discoveries will keep increasing its proven natural gas reserves and decrease its net import dependency.

Two important elements that make the Egyptian option not so attractive, is the fact that a pipeline to Egypt will not elevate Cyprus as an energy hub in the region, and that without the protection of the EU's legal and political framework Cyprus will be depended on a market and a country where there is little or no room for maneuvering.

4. A gas pipeline to Jordan is still an option if Israel decides to export its own reserves eastwards. Bilateral agreements between Jordan and Cyprus in 2014 and 2015 allow such a development. Although some present an alternative option – an onshore pipeline which will connect Cypriot fields with Jordan via Egypt – still such a project has to encounter all the obstacles mentioned above for scenario 3, adding also the problems of distance and the route of the final destination. On the positive side lies the geographical proximity, the relatively low technical and economic cost, the existing Israeli infrastructure and transport network (except the initial pipeline) and the Jordanian political stability.

However on the negative side, the small size of Jordanian domestic market, the forced attachment via Israel (due to the lack of geographical continuity), transit costs, and potential complications similar to those in Egypt, make this project unattractive for obvious reasons. This scenario can only be supplementary to another option, but clearly cannot be the main choice of the RoC. Moreover, such a scenario allows the implementation of the fifth (and worse) scenario, as Delek's CEO Yossi Abbu stated, “supplying natural gas to Jordan will enable our neighbors in Jordan to benefit from efficient, clean and cheap energy, just like the citizens of Israel [...]”.

22 Delek's CEO Yossi Abbu, during a meeting with the Cypriot President Nicos Anastasiades in September 2015, said that: “The discovery of Zohar in Egypt brings us to a place that we assess the Egyptian market and the need for gas in this market. We see more potential in the local market of Egypt for more demand for natural gas. The needs and the demand for natural gas in Egypt is around 60-70 bcm a year which is a significant demand and we believe that there is a place also for natural gas from the Cypriot discoveries,” http://www.offshoreenergytoday.com/delek-drilling-committed-to-aphrodite-cyprus/.

23 Cyprus Mail, “Cyprus and Jordan step up energy cooperation”: “Based on the memorandum signed in 2014 during my visit to Jordan, we agreed to activate the technical groups to discuss the technical details of a possible cooperation in the gas sector.” Lakkotrypis said during a joint news conference with his Jordanian counterpart Ibrahim Saif, http://cyprus-mail.com/2015/12/22/cyprus-and-jordan-step-up-energy-cooperation/.

24 Kehila News Israel, “Israel Signs $10 Billion Natural Gas Deal with Jordan”; “Signing this contract is historic in terms of what it means for the development of the oil and gas industry in Israel, the positive impact it will have on our economy, environment, and energy security, and, more importantly, the positive impact this industry in general, and Leviathan in particular, will have on our relationship with our neighbors, Noble Energy’s Israel Branch, Binyamin Zomer stated,” https://kehilanews.com/2016/09/28/israel-signs-10-billion-natural-gas-deal-with-jordan/.
Leviathan consortium will continue to push forward additional deals including with Egypt, Turkey and the Palestinian Authority.”

5. This scenario involves a pipeline to Turkey under two options: a) A direct interconnection with Turkey via the northern occupied part of the RoC, presupposes a just, viable and functional solution of the Cyprus Problem. However, even after a possible solution, this option must not be a scenario that any “transformation” of the RoC should favor. Any direct or indirect dependence on Turkey in the energy, economic and political arenas, will pose immediate risks for the Greek Cypriot majority of the island; either by turning Cyprus into a Turkish protectorate or by gradually, but inevitably, Turkifying Cyprus after a few decades. This option is interconnected with the other scenarios and is interrelated with the bi-communal talks, which now seem to be stuck for various reasons. b) A pipeline crossing the Cypriot EEZ, linking the Leviathan reservoir with Ceyhan port (which cannot be prevented by the RoC under international law), will be a negative development that would invalidate scenarios 2 and 4 and will perplex energy planning for Cyprus.

Additionally, such a scenario may allow only the Egyptian option, with all its difficulties, and will enforce a Turkish sphere of influence in the region against the interests of the RoC and the EU. The Cypriot-Israeli relations will inevitably worsen and Israel will lose its strategic depth and energy linkage with Europe. The RoC should be prepared and work towards postponing or even blocking such a scenario with diplomatic measures. Although Cyprus cannot legally refuse permission for third parties to build a pipeline through its EEZ, it has the right to require full environmental impact assessments and participate in the determination of the route. For now, Israel has explicitly stated that without the cooperation of Cyprus it will not support the construction of such a project.

6. A Floating LNG (FLNG), could be an option, in particular as it would offer an answer to smaller 3-5-tcf fields such as Aphrodite. The technology is relatively new as well as the technical know-how; that’s why for this new technology to be introduced the involved parties would need to go through a foreign company. Charles Ellinas, the former CEO of the Cyprus Hydrocarbons Company, is a supporter of the FLNG scenario both for Cyprus and Israel. He believes that, in case none of the above options materialize, “it leaves FLNG as a longer-term option.” Ellinas stressed that, “FLNG can be a game-changer. It creates new opportunities for producing countries by unlocking access to isolated gas reserves, which are not cost-effective for development by other means. The units are easily redeployed and can be used offshore, combining gas production, treatment, liquefaction and export. FLNG takes the entire process offshore far from populated areas.”

Despite the political, social and technical opportunities, FLNG in Cyprus can be an option since ENI, an active partner of the RoC, has already deployed ENI’s Coral FLNG in Mozambique. On the contrary, a common problem with all the projects is that it is capital intensive and requires significant investments.

---


Turkey’s maximalist and hostile role

Turkey, which does not recognize the existence of the RoC, considers the three licensing rounds in the Cypriot EEZ as illegal, and doesn’t accept that the RoC can have an EEZ; it perceives all Cypriot actions as unacceptable and hostile against its interests and its illegal ‘TRNC’ protectorate.

Turkey unceasingly challenges Cypriot sovereignty by launching verbal threats and taking aggressive actions in order to force the RoC to stop its energy planning to monetize its energy resources, until a solution of the Cypriot Problem is reached. Since 2011, Ankara has tried, without any significant success, to interfere in order to stop any energy developments by deploying air and naval forces inside the Cypriot EEZ, by conducting illegal exploration in Cypriot contiguous waters, and by threatening the imposition of investment embargos to any of the IOCs that are active in Cypriot EEZ.

In the last weeks, Barbaros is conducting research activities inside the Cypriot EEZ28 and Turkey continues its diplomatic and economic pressure on the IOCs and their countries. Under current circumstances, it is highly risky, but not impossible, for Turkey to exercise its military power29 against Cyprus. Nevertheless, political risks and ongoing tensions in the Cypriot EEZ will remain as long as Turkey feels that her objectives in the area are not fulfilled and Cyprus counterbalances its geostrategic dominance. Lately, the geostrategic failures in Syria and Iraq, where Turkey barely reached its initial objectives, as well as internal turbulence, make Ankara extremely nervous and unpredictable. Irrationality in international politics can easily lead to abnormalities and non-manageable developments.

Conclusion

Obviously there are too many variables in the natural gas equation in the south-eastern Mediterranean region. It is a complex puzzle of connected issues. As for Cyprus, two crucial elements should be considered for its energy strategy: time and framework. A new pragmatic approach is needed in order to allow the exploitation of Aphrodite and Cypriot EEZ. This can be achieved only by the intensification of the drilling program (more appraisal wells needed) and by disassociating hydrocarbon developments from the prospects of resolving the Cypriot Problem.

For the time being, Cyprus is left essentially with only one export market, Egypt and more specific the Egyptian LNG facilities in Idku and Damietta, but this window, as time passes by without further actions, is gradually closing. Turkey’s neo-Ottoman revisionism orchestrated by the Turkish president Erdogan and his AKP government may cause serious problems to the RoC, on the occasion Turkey acquires its own drilling platform and tries to operate within the Cypriot EEZ. As long as no tangible progress has been recorded after endless rounds of UN-mediated talks between the Greek Cypriot and Turkish Cypriot leaderships for a peaceful political settlement, the RoC should continue its energy planning by any means while simultaneously utilizing international


29 Ankara sent an official letter to UNSG questioning the validity of Cyprus’ EEZ Block 6 saying that “that Turkey is committed to protecting its sovereign rights emanating from international law and will not allow foreign companies to conduct unauthorized hydrocarbon exploration and exploitation activities on its continental shelf, as it was strongly underlined in several statements on the issue by the Turkish Ministry of Foreign Affairs, most recently on 6 April 2017,” http://www.liberal.gr/admin/uploads/N1710207.pdf
support and its role in the EU. The Greek Cypriot leaders should bear in mind that “nation-states cannot be sustained when they do not reflect the wishes of their populations.”

The Eastern Mediterranean Policy Notes (EMPN) is a monthly electronic series of scholarly articles and non academic essays that focus on the analysis of contemporary questions pertaining to Eastern Mediterranean geopolitical affairs, the Cyprus Problem, and other regional issues that affect European and global affairs.

EMPN Editor: Petros Savvides, savvides.p@unic.ac.cy.