Natural Gas in the Eastern Mediterranean: Casus Belli or Chance for Regional Cooperation?

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IEPN Israeli European Policy Network

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מאקרו MACRO המרכז לכלכלה מדינית THE CENTER FOR POLITICAL ECONOMICS

Natural Gas in the Eastern Mediterranean

Casus Belli or Chance for Regional Cooperation?

Editors:

Dr. Roby Nathanson

Ro'ee Levy

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Cover by Assaf Ben-Ari,
assaf-ba@bezeqint.net

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The Israeli-European Policy Network

The Israeli-European Policy Network (IEPN - www.iepn.org) works under the direction of the Israel Office of the Friedrich-Ebert-Stiftung (FES), and its partners, the MACRO Center for Political Economics, Tel Aviv and the Universität der Bundeswehr in Munich, Germany.

Since 2003 IEPN aims to uphold a continuous, long-term, constructive and critical dialogue between decision-makers, key public figures, academics, journalists and other professional groups from Israel and the EU on pertinent issues in EU-Israeli relations and wider Middle East politics. IEPN focuses on economic, social, political and security issues which are of common interest to both sides and on the potential of increasing Israel's convergence with Europe. What distinguishes IEPN from other organizations engaged on similar issues is not only its multi-layered, flexible structure and its focus on concrete issues, but also its twin anchorage in the EU and in Israel.

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The Institute for National Security Studies (INSS – www.inss.org.il), an independent and non-partisan institute, is Israel's leading think tank on issues relating to Israel's national security agenda. Positioned between the more superficial analysis of journalism and the slower-paced analysis of academic research, INSS is committed to encouraging new dynamic ways of thinking, devising creative policy solutions, and expanding the traditional contours of establishment analysis.

INSS sees its policy-oriented research as a means to launch, engage in, and shape the public debate of the leading issues on Israel's national security agenda, identify policy opportunities, and propose creative solutions to the national security challenges facing the State of Israel.

Executive Summary

In the past few years large gas fields have been discovered in Israel and Cyprus, and the Eastern Mediterranean region is believed to be holding substantial amount of natural gas and perhaps oil. The public agenda has so far focused on the economic potential of these new findings. Natural gas will assist the local industry, lower the electricity prices while polluting less, and has potential to revolutionize car fleets which are currently dependent on oil. Natural gas may even be used to produce shale oil. Furthermore, gas will probably be exported to Europe or Eastern Asia, and the taxation of the natural resource profits can create new revenues for the region's countries. The natural gas profits will have to be used wisely in order to prevent major changes in the exchange rates which may hurt the competitiveness of local manufacturing industries.

With the potential, the new findings also bring major challenges. The countries in the region will have to delimit their maritime borders. So far, Cyprus has been leading such efforts and has signed and ratified agreements with Israel and Egypt. However, Israel and Lebanon have a border dispute over 850 square kilometers, an area with natural resources potential. The dispute between Cyprus and Turkey is more complicated. The Turkish Cypriots object to all drilling operation by the Republic of Cyprus at least until an agreement is reached between the sides. In addition, Turkey claims that the Republic of Cyprus license blocks overlap with its continental shelf. Resolving the legal disputes may be necessary in order to attract major investors and maximize profits.

The development of the new natural gas fields is also challenging. Private developers and the governments in the region will have to lay infrastructure to transfer, distribute and export the gas. Gas treatment facilities often cause local objections which may delay the process. In addition, environmental and safety regulations will need to be

taken into account. The natural gas may be exported either through a pipeline or in liquid form. A pipeline connecting the new fields to Turkey does not seem likely due to the tensions with Israel and Cyprus, while connecting the fields to Greece will demand a very large investment. The gas could be liquefied in a LNG plant which would probably be constructed in Israel or Cyprus or offshore, using new technology to construct a floating plant (fLNG). The main risk with such a plan is that natural gas prices may decrease due to increasing supply worldwide and in such a scenario LNG may not be cost-effective.

Perhaps the most important aspect of the natural gas findings is geo-strategic. The new discoveries will reduce the energy dependence of countries in the region. Still, relying solely on natural gas also endangers countries' energy security, and they may need to take precautionary measures to prevent power disruptions in case of technical accidents, natural disasters or terrorist attacks. Europe, currently dependent on Russia for natural gas, may have an interest in diversifying its energy resources and buying natural gas from the Eastern Mediterranean, especially if natural gas can be produced in Cyprus, a member of the EU. Russia, on the other hand, has no interest in new competition in the natural gas market and therefore prefers to see the natural gas consumed within the region or exported to East Asia. In any case, if natural gas is exported, Russia would like to take part of the project.

Within the region, the new discoveries have increased tensions between Israel and Lebanon, and between Turkey and Cyprus. In the former case, leaders in both countries used warmongering rhetoric, but recently the military threats have reverted to (unilateral) legal arguments, and the dispute has been limited to a specific territory, where both sides are avoiding drilling operations. The Turkish-Cypriot dispute seems like the greatest cause for concern at this stage. Turkey has been using explicit threats to promote its interests. It claimed that it will not allow drilling in the disputed area

and will not allow international companies which operate under the Republic of Cyprus's concession blocks to take part in future Turkish energy projects. The natural gas discoveries also had positive influences on the region, and the best example is probably the increased cooperation between Israel and Cyprus.

To conclude, the new gas findings bring tremendous potential for the region. While experts can assist in resolving the technical and legal issues, political will is needed in order to ensure that natural gas will increase cooperation between the countries instead of exacerbating existing tensions.

Introduction

Recently significant amounts of natural gas have been discovered offshore in the Eastern Mediterranean. Countries that have so far been dependent on energy imports will have the opportunity to develop massive gas fields, increase their energy security and even export natural gas to other regions. The discoveries are expected not only to affect the energy market, but may also be considered a game-changer with geo-strategic, legal and social implications.

Since natural gas is expected to have a dramatic impact on the regions, the Friedrich-Ebert-Stiftung, the Macro Center for Political Economics and the Institute for National Security Studies organized a conference in the framework of the Israeli-European Policy Network. The conference, titled "Natural Gas in the Eastern Mediterranean: Casus Belli or Chance for Regional Cooperation?" took place on July 5, 2012 in Tel Aviv. It included many international experts from the region and the EU and focused on the strategic and legal aspects of the natural gas findings. This publication summarizes the main findings of the conference, but does not necessarily represent the opinions of the speakers at the conference or the organizations they represent.

The first section will describe the natural gas discoveries; exploration activities will be explained along with estimates of current discoveries. The second section will deal with the legal implications of the natural gas fields including the international maritime law, the legal disputes between the countries and delimitation agreements. The next section will focus on the development of the fields, from the production stage to transporting the natural gas and will discuss potential export options. The following section will deal with the economic and social considerations of the demand for gas, possible uses and regulation. The last sections will discuss the geo-strategic

aspects of the discoveries: The relations between the region and other actors, and the relations between countries within the region.

"Many of us, when we were kids, used to study geography by maps. One of the maps focused on energy resources and these resources in the Middle East were concentrated in the East: Saudi Arabia, Iran, Iraq, the UAE. Energy is now moving west to countries that never before had this wealth of natural resources. Countries that never before enjoyed this natural gift are now coping with a new challenge"
Major General (ret.) Amos Yadlin

Facts and Figures - Natural Gas in the Eastern Mediterranean

Gas and oil explorations have been persistently conducted in the region for many decades. In Israel, small gas fields were discovered in late 1950s in the southern Judean Desert. Offshore drilling in the Eastern Mediterranean began as early as 1969, but during the next 30 years the 17 exploration wells drilled turned out to be dry. Only in 1999-2000 were the first major discoveries made offshore Ashkelon. The first field discovered was Noa and the biggest of the fields was Mary B. The former was recently developed and the latter started to supply gas to the Ashdod power station in 2004. The Mary B field (30 BCM) is in the depletion stage and may later be used as a natural gas storage field. Off Gaza, the Gaza Marine Reserve was discovered in 1999 and contains more than 30 BCM; the field has never been developed, mostly due to failed negotiations and the political situation in the area.

The Mary B discovery was not significant internationally, but supplied domestic needs and demonstrated that the region has great natural gas potential. The next six exploration wells did not lead to new discoveries until the Tamar field was discovered in 2009, the largest discovery in the world that year. A year later, the Leviathan field was discovered representing the largest natural gas discovery in a decade. While the Mary B field is 250 meters deep and located west of Ashkelon, the Leviathan and Tamar fields, both discovered by Noble Energy, are 1500-1700 meters deep and located 80-135 km west of Haifa. The Tamar field contains approximately 275 BCM, and the Leviathan field is estimated to contain 480 BCM. To put the number in perspective, in 2011 Israel consumed 5 BCM of natural gas. Therefore, it is clear that, even with demand increasing, the new gas finds could supply Israel's gas needs for several decades at least. The Tamar production platform is expected to be installed by the end of 2012 and production should begin in the second quarter of 2013.

Other smaller wells discovered in 2009-2012 include the Dalit field west of Hadera (estimated at 7-8 BCM), the Tanin field north-west of the Leviathan field (approximately 34 BCM), the Dolphin field south-east of Leviathan (2.3 BCM) and the Shimshon field west of Ashkelon (16 BCM). In addition, ultra-deep drilling being conducted in the Leviathan could discover much more natural gas and perhaps oil, for which there is substantial potential in the region, but has yet to be discovered.

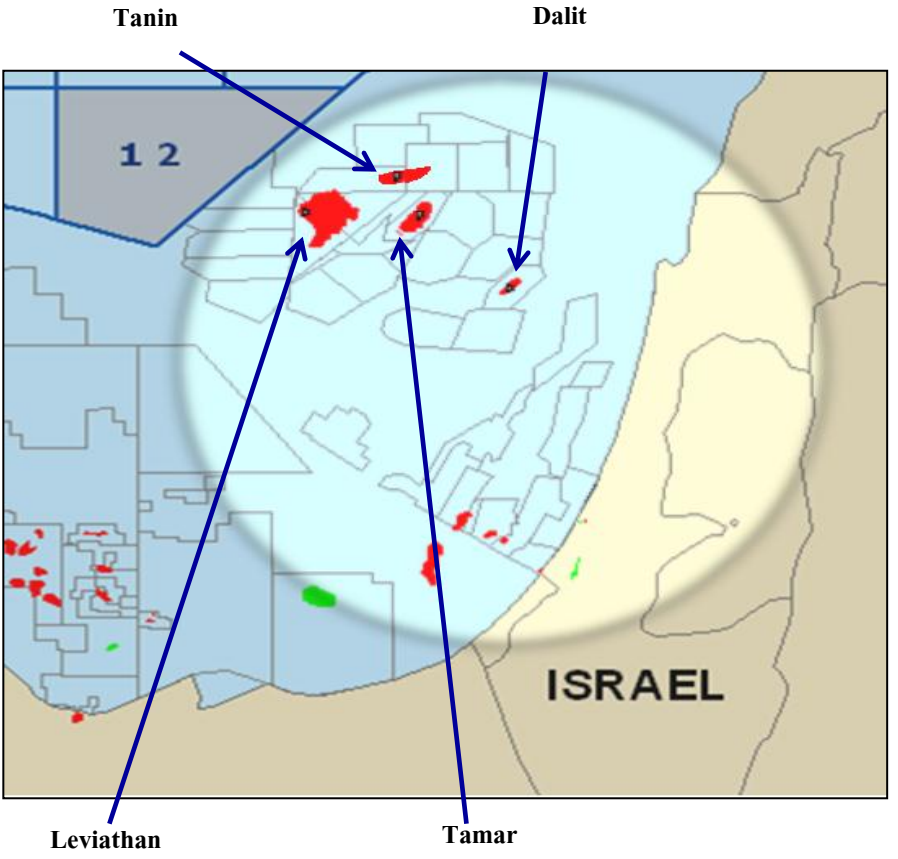

Figure 1: Natural gas fields in the Eastern Mediterranean

Israel is leading the exploration in the region but other countries are not far behind. In 2007 Cyprus held the first round of auctions for exploration licenses. The Aphrodite gas field was discovered in December 2011 west of Leviathan in "Block 12". The

field is believed to hold 200 BCM of natural gas with potential for oil in deeper horizon. Cyprus is in the process of a second licensing round for 12 more exploration blocks.

Lebanon and Syria have also announced timetables for offshore licensing rounds. Syria has delayed the process due to the political situation, whereas in Lebanon the first licensing round is possible as early as 2013. According to a recent estimate initiated by the Lebanese government, 708 BCM of natural gas may be available offshore south-west Lebanon. The country has significant gas and perhaps oil potential and is currently in the process of legislation to regularize gas exploration.

These discoveries are all part of the Levant Basin offshore Israel, Gaza, Lebanon, Syria and Cyprus. Most of the basin is covered by the Exclusive Economic Zones (EEZ) of Israel, Lebanon and Cyprus and almost half of it is in Israel's EEZ. A recent US Geological Survey estimated that the basin holds close to 3,450 BCM of natural gas and 1.7 billion barrels of oil. The Nile Delta Basin, in the south-east Mediterranean, situated in Egypt's and Cyprus's EEZ, is estimated to hold even more natural gas (6,315 BCM) and oil (1.8 billion barrels).

Together with the Aegean Basin offshore Greece, it appears that the Eastern Mediterranean has huge oil and gas potential, and it is clear why there is worldwide interest in exploration of the region. However, it should be noted that all the estimations regarding the potential in the area have a very high level of uncertainty. On the one hand, after many failed drillings in the past, it could turn out that the basin has less potential than expected. On other hand, there are claims that according to recent 3D seismic data, the current estimates may even be conservative.

The natural gas resources are likely not only to benefit the economy, but also to have geo-strategic value. Therefore, it is not surprising that shortly after large amounts of

natural gas were discovered, territorial disputes over these resources arose. The legal nature of these disputes will be discussed in the following section.

"Trying to evaluate the value of the potential of natural gas reserves according to the US GS report of 2010… we took reference prices (a conservative price of $78 for oil) and we came to figure of close to 717 billion US dollars."
Sagi Karni

Legal Perspective and Border Disputes

Abstract: *The most important international maritime agreement is the United Nations Convention on the Law of the Sea (UNCLOS). The convention defines where countries can exploit natural resources according to their Exclusive Economic Zones (EEZ) or continental shelves. However, even with UNCLOS, which reflects customary international law, countries have to agree on their maritime borders since their various maritime zones often overlap. Cyprus has signed and ratified EEZ delimitation agreements with Israel and Egypt, and an agreement between Cyprus and Lebanon was signed but not ratified by Lebanon. Several territorial disputes in the region remain unresolved. Israel and Lebanon do not agree on the maritime border between the countries, and though the size of the disputed territory is relatively small, the area has potential to be full of natural resources. Within Cyprus, the Turkish Cypriots claim that they have an equal right to all natural resources surrounding the island and demand that the Greek Cypriots share the new natural gas discoveries with them. In addition, Turkey argues that the license blocks of the Greek Cypriots overlap with its continental shelf.*

In this section we will analyze the territorial claims for resources in the region according to the main sources of international law. We will discuss the United Nations Convention on the Laws of the Sea and customary law, examine Cyprus's leading role in signing bilateral agreements in the region, analyze the Israel-Lebanon border dispute and present the Turkish legal position according to its interpretation of international law.

"There are three main sources of international law: Treaties, Custom and General Principles. An important auxiliary function is accorded to judicial decisions and the teachings of the most highly qualified lawyers."
Christoph Moosbauer

United Nations Convention on the Law of the Sea

Since 1945 the freedom of the seas doctrine has been challenged, and countries began claiming jurisdiction over larger territories surrounding their shores and over their continental shelf. Initial maritime international treaties were signed in 1958 after the first conference on the law of the sea, but did not address the boundaries of territorial waters. In 1973 the third conference on the law of the sea began with the purpose of defining an international regime over the sea and in 1982 the United Nations Convention on Laws of the Sea (UNCLOS) was signed. The convention deals with, *inter alia*, navigational rights, territorial sea limits, economic jurisdiction, legal status of resources beyond jurisdiction limits, protection of the marine environment and a procedure for settlement of disputes between countries. The treaty came into force in 1994 after 60 nations ratified it and it is today the most important international maritime agreement.

According to UNCLOS, the territorial sea extends 12 nautical miles (22 kilometers) from territory. In this area the state holds full sovereignty and jurisdiction, exactly like the land within the state's territory; however, in this area foreign vessels are granted the right of innocent passage for purposes of ordinary navigation (so long as such does not prejudice the safety or security of the coastal State). Beyond the territorial waters lie 12 additional nautical miles defining a Contiguous Zone where a state can exercise limited sovereignty by enforcing customs, fiscal, immigration or sanitary laws if an infringement has occurred or is about to occur in its territory.

An Exclusive Economic Zone is defined in the sea as 200 nautical miles (370 kilometers) from the coast. In the EEZ the coastal nation has exclusive rights to exploit, explore, conserve and manage natural resources, and exclusive rights and jurisdiction over artificial islands, installations and structures, marine scientific research and the protection of the marine environment. It should be stressed that the

EEZ is not under the sovereignty of the state. In addition, states have exclusive rights to harvest resources in the subsoil of their continental shelf, defined as the relatively shallow extension of the seabed surrounding the shore.

Obviously countries' maritime zones can overlap. In the crowded Eastern Mediterranean the distance between countries is often less than 200 nautical miles and therefore specific rules are necessary to decide on the delimitation between the states when there are conflicting territorial claims. The convention states in article 123 that "*states bordering an enclosed or semi-enclosed sea should cooperate with each other in the exercise of their rights and in the performance of their duties under this Convention*". The definition applies to the Mediterranean Sea but clearly the political reality poses obstacles to this rule.

According to article 74 of UNCLOS "*The delimitation of the exclusive economic zone between States with opposite or adjacent coasts shall be effected by agreement on the basis of international law*". Until such an agreement is reached states "*shall make every effort to enter into provisional arrangements of a practical nature and, during this transitional period, not to jeopardize or hamper the reaching of the final agreement*". If even an interim agreement is not possible, states shall recourse to peaceful means of dispute settlement.

Dispute settlement mechanisms can include the International Court of Justice (ICJ), the International Tribunal for the Law of the Sea (ITLOS) or arbitration. Such mechanisms have been used successfully before. In 2002, the ICJ ruled that the sovereignty over the Bakassi peninsula lies with Cameroon. With the support of the UN, this decision settled a dispute between Nigeria and Cameroon and Nigeria withdrew its troops from the region. More recently, in a 2009 verdict, the ICJ defined a maritime boundary delimiting the continental shelf and the exclusive economic zones of Romania and Ukraine. The countries agreed in advance that if their bilateral

negotiations failed they would have a right to turn to the ICJ and both countries accepted the verdict. ITLOS recently published its first decision dealing with the issue of maritime borders, ruling on a sea border dispute between Bangladesh and Myanmar.

When an international legal forum considers the proper methodology for delimitation, it uses a technical or mathematical analysis in order to draw an equidistance line and then considers if special circumstances should be taken into account to provide an equitable solution. There is no defined list of special circumstances, and they can include unusual geographic conditions, proportionality, the existence of historical maritime agreements and whether the states involved have granted their explicit approval to a given *de facto* maritime delimitation. It seems as if adjusting the border according to special circumstances may not be necessary in the region given the lack of unusual geographic features and absence of relevant historic agreements relating to the maritime arena.

"Given the circumstances in the situation at stake, the figuration of the coast here is rather unspectacular; no adjustments seem to be necessary, and no adjustments were made also in the treaties concluded between certain states."
Prof. Daniel Erasmus Khan

162 nations have so far ratified UNCLOS, including Lebanon and Cyprus, and the number of ratifying countries is constantly rising. However, Israel, Turkey and Syria have not ratified the convention, and the United States (which is involved in the region since Noble Energy, an American company, has discovered and is developing most of the gas in the region) has not ratified it either. Despite previously objecting to UNCLOS, today the official position of the US is that joining the convention is a top priority. Yet since a two-thirds majority is needed in the Senate to ratify the treaty, 34

Republicans have been able to block the latest attempt to ratify UNCLOS. The primary reason behind Turkey's reluctance to ratify the Convention is the maritime delimitation dispute with Greece in the Aegean Sea.

Most legal experts explain that UNCLOS, and especially the rules concerning the delimitation of the sea, binds all countries, including countries which have not signed it, since it has become part of customary international law. Israel, for example, generally views the convention as reflective of customary law, and considers the provisions of the legal regimes in the maritime zones as binding. Those provisions guided the country in its negotiations with Cyprus.

Overall, it is clear that UNCLOS provides a useful legal framework, but that states in the region will still need to come to an agreement to define their maritime borders. We will discuss such attempts in the following sections.

Cyprus's Leading Role in Bilateral Agreements

Since the EEZ regime is not sufficient to demarcate the boundaries in the Mediterranean Sea and since there are no historic maritime agreements in the region, new delimitation agreements between the countries are required in order to provide certainty and clarity for potential investors. Cyprus has been the leading force in signing such agreements.

The first agreement on the delimitation of the EEZ was signed between Cyprus and Egypt in February 2003 and entered into force in March 2004. In the same year Cyprus declared its EEZ in legislation. Egypt and Cyprus also signed a confidentiality agreement in 2006 and exchanged seismic data on the region.

An agreement between Cyprus and Lebanon was signed in January 2007. The agreement was ratified in Cyprus and the country is basing its activity on it, but it was not ratified by Lebanon's parliament.

Cyprus and Israel signed the third delimitation agreement in December 2010 after short negotiations. The agreement meshed with the previous Cyprus-Egypt and Cyprus-Lebanon agreements and states specifically that the Cyprus-Israel-Egypt border and the Cyprus-Israel-Lebanon border could be modified in the future if all three states agree on a change.

"The agreement with Cyprus, from the beginning of negotiations to the ratification of the agreement took less than one year. For comparison, when five friendly European countries decided to delineate their boundaries in the North Sea it took 15 years. The agreement between Norway and Russia in the Barents Sea was reached only after 40 years.

So the Israel-Cyprus agreement resembles a world record. The reason for this is the mutual interest of both countries and the desire to reach an agreement. Where there is a will there is a way, and in spite of some disagreements in our negotiations, we succeeded in reaching the agreement in a quick and effective way."

Alexander Varshavsky

All three agreements signed by Cyprus are based on the principle of equidistance (the median line principle), since no special circumstances exist to modify the delimitation. It is important to note that all the treaties contain a standard clause which allows for future amendments to the delimitation line when it borders with third countries. The clause applies the principle that a legal agreement between two states may not have an effect on a third state (the third party rule).

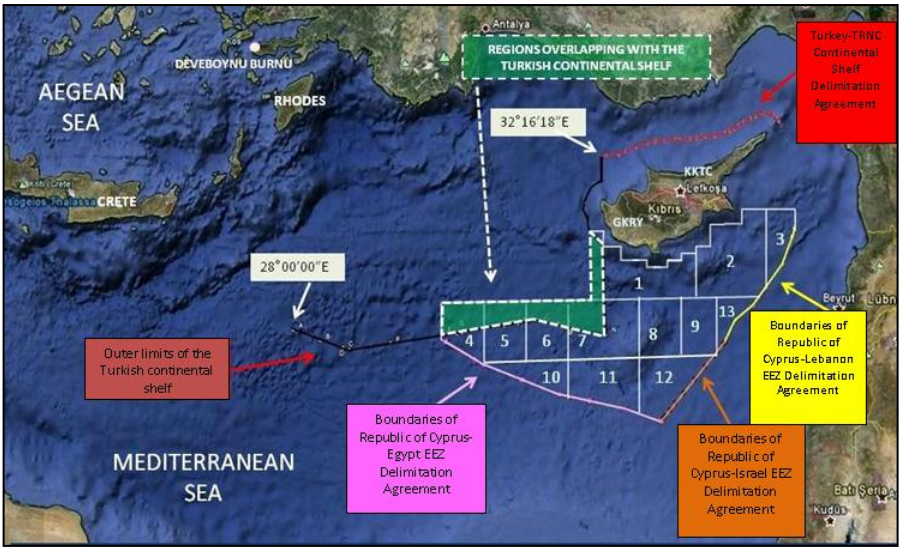

Figure 2: The maritime borders of Cyprus

In addition to delimitation, Cyprus is leading the effort to sign unitization agreements. Unitization is needed when natural gas reservoirs cross the maritime border between countries. Currently Israel and Cyprus are in advanced negotiations regarding a possible framework unitization agreement which may be concluded by the end of the year. Cyprus and Egypt have already signed a framework unitization agreement concerning the development of cross-median line hydrocarbon resources.

Unitization agreements are very complex since they involve cooperation at the government and commercial level; the countries cooperating often have different fiscal systems and import-export policies. In addition, it is often difficult to identify the share of gas in each country's economic zone and the shares may need to be updated with further development of the reservoir. Under a unitization regime, the countries agree that a single unit operator will develop the cross-boundary reservoir in order to maximize profits, and the profits will be divided between the countries. International law does not mandate that countries enter into a unitization agreement, still they are common and are developing as international practice. The series of

agreements between the UK and Norway often serve as the model for unitization agreements.

Surprisingly, countries have been able to reach agreements to develop jointly transboundary hydrocarbons reservoirs even when there was no defined border between them. In these cases the agreements are referred to as 'joint development projects' and are useful when reserves are discovered before a border between the countries is agreed and finalized. The agreements can define a clear legal framework to attract investors despite the border dispute, while noting explicitly that such agreements shall not affect the maritime border between the countries or prejudice future delimitation negotiations. The Timor Sea Treaty, an agreement between East Timor and Australia for joint petroleum exploration, provides just one example of a joint development project.

Joint development projects could be used in the Eastern Mediterranean when countries cannot agree on delimitation, but such agreements still require cooperation between the relevant parties. In some cases, such as the Israel-Lebanon dispute, which will be described in the next section, such cooperation seems unlikely at present, given the absence of diplomatic relations or dialogue between the two States.

The Israel-Lebanon Border Dispute

In 2010 Lebanon submitted to the UN a chart of geographical coordinates defining the western, northern and southern limits of its Exclusive Economic Zone. The chart unilaterally delimits the Lebanon-Israel maritime border and extends the Lebanon-Cyprus maritime boundary southwards, such that it differs from the 2007 Lebanon-Cyprus bilateral agreement which was not ratified by Lebanon. In June 2011, Lebanon protested against the agreement between Israel and Cyprus, arguing that it conflicts with Lebanon's EEZ.

Israel objected to Lebanon's 2010 unilateral positions on both legal and cartographic grounds and wanted to present its own professional calculation of the maritime border, thereby avoiding tacit acceptance of the line set by Lebanon. Therefore, in July 2011 Israel submitted its official position to the UN on the delimitation of the border between the countries.

"Israel does not agree with the unilateral positions that Lebanon submitted to the UN from both a legal and cartographic point-of-view. In an effort to provide clarity as to Israel's stance regarding the precise location of the northern limit of Israel's territorial sea and exclusive economic zone, as determined in accordance with the dictates of customary international law and accepted cartographic practice, Israel submitted its official position on the matter to the UN in July 2011, pursuant to a Government decision adopted earlier that same month. In its submission to the UN, Israel stressed that it is open to dialogue with its neighbors (including Lebanon) on maritime border issues in line with the dictates of international law."
Adv. Sarah Weiss-Ma'udi

Lebanon responded in September with an official letter to the UN arguing that the Israeli claims "*flagrantly violate the principles and rules of international law and constitute an assault on Lebanese sovereignty*". Lebanon put forward an argument that the maritime border between Israel and Lebanon is dependent among other factors on the international land border between the countries. Lebanon argues that Israel's coordinates violate the 1923 Paulet-Newcombe Agreement between France and Britain, which set the 'international border' on land and the 1949 Lebanon-Israel armistice line. According to Lebanon, the maritime border it submitted is based on solid cartographic ground (Israel does not accept this claim) since the western border point lies 123 kilometers from three relevant lands points (tri-equidistant point).

Lebanon notes that its submitted border actually aligns with Israel's Alon exploration blocks.

Israel, on the other hand, notes that the 1923 international land border established under the Paulet-Newcombe Agreement is actually several meters shy of the coast (i.e. the land line terminates several meters east of the coast) and never actually set a point on the coast between Britain and France (now Israel and Lebanon). Israel further notes that there is no agreed, signed map or set of coordinates attached to the Israel-Lebanon 1949 Armistice Agreement (i.e. no detailed line was established under that agreement). Moreover, Israel argues that there is little relevance to the position of any licenses it granted in the area; certainly a coastal State does not have to actively grant licenses or materialize its economic claims in order to claim maritime areas. It claims that its submitted border should be accepted because Lebanon has already agreed to the western point in its earlier agreement with Cyprus.

Although the length of the disputed territory in the Israel-Lebanon coast is only 22 meters, the length at the outer edge of the EEZ is approximately 17 kilometers, such that the total size of the disputed territory is approximately 850 square kilometers. The size of the disputed area is relatively small as compared with Israel's EEZ, which totals 25,000 square kilometers, and does not overlap with the gas fields discovered so far, yet the area definitely has potential to be full of natural resources. Thus far there have been no drilling activity in the area and the countries have not granted licenses in the disputed territory.

The countries have avoided direct or even indirect negotiations to settle the maritime border. Despite the ongoing dispute, negotiations seem unlikely at this juncture considering the fact that Lebanon does not even recognize Israel. Recently it has been reported that Cyprus is attempting to mediate between the countries. Cyprus has a

clear interest in defining a clear border between all three countries, to attract investors and promote joint exploration ventures.

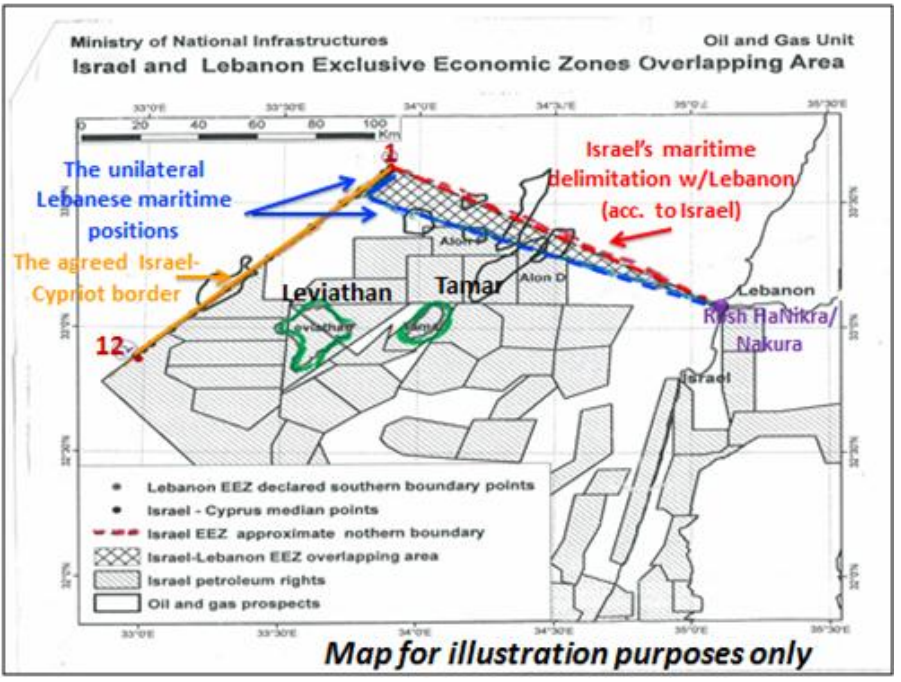

Figure 3: Israel and Lebanon Exclusive Economic Zones Overlapping Area

Turkey's Legal Stance

Officially the Republic of Cyprus (referenced as the Republic of Cyprus or Cyprus throughout this publication) has sovereignty over the entire Cyprus Island and its surrounding waters, but *de facto* the island is split into two. The Republic of Cyprus controls the south of the island while the Turkish Republic of Northern Cyprus (TRNC), recognized only by Turkey, controls the north. Two sovereign British military base areas also lie in Cyprus – Akrotiri and Dhekelia, but it seems unlikely that these bases will have an impact on the maritime negotiations in the region. The Turkish-Greek rivalry is a crucial factor in explaining Turkey's legal position in the region which will be presented in this section.

Turkey's political stance is that the Republic of Cyprus should not enjoy the new oil and gas discoveries without sharing the resources fairly with the northern portion of the island or reaching an agreement on the future of the island. Turkey prefers that the issues between the Turkish Cypriots and Greek Cypriots be resolved in a political agreement. The country holds the same position in relation to its maritime dispute with Greece in the Aegean Sea. Turkey argues that the disputes should be resolved through negotiation, while Greece understands the dispute to be of a legal nature and therefore requires a judicial solution.

The legal dispute between Cyprus and Turkey stems from Turkey's reliance on the continental shelf (on which the hydrocarbons are located) to define its Mediterranean borders while Cyprus relies on its Exclusive Economic Zone. Prof. Tzimitras explains though that the EEZ only grants three rights which are not covered by continental shelves: fishing rights, exclusive jurisdiction for the protection of the marine environment and rights over the superjacent airspace, used for offshore turbines. Therefore, it can be argued that the EEZ regime is not necessary for resolving disputes over natural gas and oil. The continental shelf regime grants coastal states exclusive exploration and exploitation rights regardless of their exercise or declaration of sovereignty (UNCLOS article 77.3), while under the conditions of the EEZ regime, the zone has to be claimed in order to become active and no state has a right to exploit an area if other countries claim it and the sides have not reached a delimitation agreement. It can also be argued that the continental shelf regime is more established and provides certainty. Finally, since Turkey did not join UNCLOS, it may claim that the applicable treaty for the country is the 1958 Convention on the High Seas which does not include the EEZ regime.

According to the Turkish position it is not clear that the ICJ will rule in favor of Cyprus if it approaches the court for two reasons: First of all, in previous cases islands

were disregarded completely or partially by the court, for example in the Malta-Libya maritime dispute. Turkey has tried to argue against using islands to calculate maritime zones due to its ongoing dispute with Greece in the Aegean. Similarly, Turkey argues that Cyprus's continental shelf should be smaller due to its size and the fact that it is an island. Secondly, while the entitlement of certain geographical territories may be set according to the countries' principle rights to an area, the delimitation of the area also depends on special circumstances. Special circumstances could include the rigid conceptualizations of security and sovereignty in the region which do not go hand in hand with the cooperative spirit of UNCLOS.

Turkey's stance is backed by actions. Turkey objected to Egypt's agreement with Cyprus and presented its complaints to the UN claiming the agreement concerns Turkey's sovereign rights and stating that there is no single authority which is competent to jointly represent the Turkish Cypriots and the Greek Cypriots. In September 2011, after Cyprus started drilling for resources in the region, Turkey signed a continental shelf delimitation agreement with the Turkish Republic of Northern Cyprus. In addition, in April 2012, Turkey published the basis on which it granted a hydrocarbon exploration license to the Turkish Petroleum Company in the East Mediterranean. Cyprus claimed that some of the territories fall within its Exclusive Economic Zone and argues that therefore the license granted has no legal validity. Currently there is an overlap between the Republic of Cyprus's research block and the Turkish continental shelf claim. However, this zone is relatively small and probably does not hold much gas.

The Turkish Republic of Northern Cyprus has also defined research blocks overlapping with the Republic of Cyprus blocks and has granted the Turkish Petroleum Company rights to conduct explorations in the area. Turkey argues that the resources of the island belong to all its residents no matter where they are found. It

calls on the Greek Cypriots to stop drilling or to set up a joint committee, with the UN's participation, which will decide on licenses and revenue sharing.

"Let me summarize briefly the official Turkish position:

a. Turkey formally does not accept the right of the Republic of Cyprus to represent, in law or in fact, the whole island.

b. The Greek Cypriots' unilateral actions also challenge Turkey's maritime jurisdiction areas in the Mediterranean area west of the island and in the south the plots overlap with Turkish Cypriot concessions to the Turkish Petroleum Company.

c. The proposal by Turkey is either to leave the issues to the aftermath of a comprehensive settlement, or for the two sides together to bring the issue before the UN Secretary General and determine, ad hoc, jointly the future exploration and exploitation.

d. Turkey is not a signatory member of UNCLOS but subscribes to parts of it, for instance the 12 mile territorial sea and argues that in the jurisprudence, islands, including Cyprus for that matter, have never been granted full effects - or in very few circumstances.

Ankara says either share the resource with Turkish Cypriots or share it with us, you decide."

Prof. Harry Tzimitras

Unsurprisingly, the Republic of Cyprus argues that the Turkish legal arguments are not accepted in international law. It explains that it is not just an island, but an island state recognized by the UN and entitled to an EEZ. It further argues that all its actions have been legal and that it would like to cooperate with Turkey to resolve the problems of the island so that all its residents will benefit. The Republic of Cyprus promised to share the natural gas resources with the Turkish Cypriots, but is reluctant to participate in formal negotiations on the issue.

To sum up, international treaties, customary law, and bilateral agreements provide a comprehensive framework for the exploitation of natural resources in the sea.

However, the disputes between countries are often political and not only of a technical nature. As long as countries in the region choose not to cooperate they will usually also find legal arguments on which to base their case. Thus, while the legal framework has proven useful in some cases (notably between Israel and Cyprus), it has not resolved the disputes in others (Israel-Lebanon, Cyprus-Turkey).

Natural Gas Development

***Abstract**: Natural gas development in the region is expected to encounter several challenges. First of all, the countries in the area are not experienced in offshore drilling and may need technical assistance in this highly specialized field. Secondly, environmental concerns will have to be taken into consideration and new regulations may be required in order to minimize risks associated with the development. Furthermore, new infrastructure to transfer the gas and process it is required. Constructing new gas facilities may be delayed due to local objections, as the cancellation of the Dor Beach natural gas entry point demonstrated. Finally, exporting gas proves even more challenging. It may be possible to lay a long subsea pipeline to Greece and from there export the natural gas to the European market, but such a project would be quite costly and it is not clear if the investment would be worthwhile. Another option is transferring the gas in liquid form to the East Asian or European markets. For such a project an LNG plant or a floating plant (fLNG) would have to be constructed. However, there is some risk that due to increased natural gas supply, the price of natural gas will decline and in such a scenario the LNG option might not be cost-effective.*

Before the region can enjoy benefits of natural gas, an infrastructure to extract, transfer, process and export the gas is required. This section will discuss the development of natural gas infrastructure, and the challenges it entails, with a focus on Israel, where the exploitation of natural gas is at the most advanced stage in the region.

Production and Environmental Concerns

The development of the natural gas fields creates environmental, bureaucratic and technological challenges. Due to the depth of the region's natural gas fields, special equipment is needed in order to produce the gas. Offshore drilling is a very specialized field which demands unique expertise; so the countries in the region, which lack experience in natural resource production, rely on multinational corporations for the technical knowhow required to develop such fields.

The environmental damages associated with offshore drilling provide a reason for concern. Extensive drilling endangers the sea's biodiversity and pollutes the water of

the Mediterranean. In addition, the Deepwater Horizon oil spill in 2010 serves as a reminder of the risk of an environmental disaster due to offshore drilling. Though natural gas fields may be less dangerous than oil wells, an accident is still possible (in the form of an explosion after a gas leak). Israel is planning new laws to deal with the environmental challenges for two reasons. First of all, some of the current laws were written many years ago before the gas industry entered the region. Secondly, the current laws do not always apply to the country's EEZ.

Due to the risks and following recent environmental drilling disasters, the European Parliament and Commission are in the process of adopting new environmental standards and requirements. According to a new proposal, operators will be required to prepare environmental impact assessments, site-specific contingency plans and emergency response plans. The EU's offshore safety standards will apply wherever EU companies work overseas and the operators will be subject to verification by independent bodies. Member states will have to establish competent authorities for supervision of safety, environmental protection and emergency preparedness. The rules will apply to all operations after a 1-2 year transition period. Therefore, they will significantly impact offshore drilling in Cyprus, member of the EU. Any cooperation between Israel and Cyprus will also probably be affected by the new requirements.

Extraction and production of gas is already taking place in the region. It will continue developing, but due to all of the challenges detailed above and to new regulations, delays in the development of the newly discovered gas fields can be expected.

"I have told you about the political delay [in developing the gas fields], the technological delay, and geopolitical considerations. Yet we have to bear in mind that the biggest delay might actually be caused by the administrative and bureaucratic burden."
Dr. Antonyia Parvanova

Transfer

After extraction, natural gas can transferred from the offshore fields through pipelines to the gas treatment facilities. The first challenge in developing the natural gas system is the pipelines themselves. The gas in the Aphrodite field is expected to be connected to Cyprus through a pipeline in 2017 at the earliest. In Israel, the capacity of the current pipeline which carries natural gas is not sufficient to deliver the anticipated future demand. The government will need to define a mechanism to regulate the flow of gases to various users. The Natural Gas Authority has already published an initial document stating that the transfer of gas to small users will not be disrupted and the rest of the users (including the Israel Electric Corporation) will receive less gas in proportion to their average consumption.

In the long run, one solution to the problem is installing pipelines to carry natural gas to new entry point treatment facilities. In the facilities the gas will be cleaned, pressure will be reduced and the gas will be transferred to the national distribution system. According to early plans an entry point to the Tamar field was supposed to have been constructed at Dor Beach, south of Haifa. However, the plan drew significant public objections mostly of the local community and environmental organizations. As a result, the construction of the facility was cancelled and the gas transfer was delayed by almost a year while the country was already facing a shortage of natural gas due to the explosions in the pipeline which transfers gas from Egypt.

Gas treatment facilities face Not In My Back Yard (NIMBY) objections worldwide mostly due to security and environmental reasons. Municipalities in Israel object to the entry points and claim that they may facilitate a polluting gas industry in the area, that the facilities may become targets for missile attacks and endanger the local population, and that the entry points are national sites but built according to the plans of private companies without consideration of the public interest. The municipalities

demand that the facilities be built entirely offshore, while the government argues that this option is unprecedented and not reliable.

The Israeli government is currently considering five possible northern locations for future entry points, and is planning on speeding up the authorization process and offering monetary stimulation to municipalities where the facilities will be constructed in order to reach a final decision by the end of 2013. Some of the future entry points may be split: the gas will enter into an offshore facility, be partially processed there, and then the process will continue in a smaller facility onshore.

Due to the delay in building a new entry point, the developers of the Tamar field changed course and installed a 150 km long pipeline connecting the Tamar field with a new platform which is planned to be erected by the end of 2012. This is adjacent to the existing platform of the Mary B field which is nearing depletion. The platform will be connected to the Ashdod treatment facility.

After the natural gas is transferred to the country, a local network is needed to distribute the natural gas. In Israel, a basic network exists and it will be further developed in the coming years. Israel's Natural Gas Lines Company is planning a new eastern pipeline, a pipeline connecting Jerusalem to the national network and doubling the capacity of a couple of existing pipelines. In Cyprus, there is no such network for public or private use. The country has authorized a plan to construct a pipeline connecting the three power plants to natural gas and at a later stage the distribution network could be extended for other uses.

Export Options

Since countries in the region will have quantities of gas that far exceed their current demand, significant amounts of natural gas will be exported. The natural gas found in

Israel or Cyprus can be exported either by connecting subsea pipelines to their customers or by liquefying natural gas.

The gas fields could be connected through a subsea pipeline to Turkey. Turkey's demand for importing natural gas is rising rapidly, and it could transfer extra natural gas to Europe through the existing Turkish gas transport network. This option seems unlikely due to the political circumstances and the disrupted relations between Turkey and Israel, and, even more so, between Turkey and Cyprus. Still Israeli executives have stated that they are assessing the option and Turkish representatives have also expressed support for the idea which may be feasible both technically and economically. Theoretically, the gas could have been transferred to Turkey through Syria but obviously, this option is not realistic today due to the internal Syrian conflict and the relations between Israel and Syria. Another possibility is to connect a pipeline from Israel to Jordan if the demand is sufficient and if the relations between the countries make it possible to close a deal to sell natural gas to Jordan.

The gas could also be transferred to Greece via a pipeline. A pipeline connecting the gas fields to Cyprus and from there to mainland Greece through the Greek island of Crete would be the longest and deepest in the world and hence would be very expensive. Moreover, the plan would be costly because Greece has no natural gas infrastructure. Therefore, the pipeline would probably be worthwhile only if it could transfer both Israeli and Cypriot gas. The project was submitted to the EU and is currently being examined. However, any plans of Cyprus's to lay pipelines may also be complicated by Turkey's continental shelf claims. According to Article 79 of UNCLOS all states have the right to lay submarine cable and pipelines on the continental shelf of another state, however "*the delineation of the course for the laying of such pipelines on the continental shelf is subject to the consent of the coastal*

State". This clause may be used in legal challenges concerning trans-boundary pipelines in the region.

Figure 4: Proposed pipeline between the discovered gas fields and Greece

If constructing pipelines turns out not to be economically viable, liquefying the gas may be a more realistic option. It would be possible to connect the Leviathan and Aphrodite fields and then transfer the gas from both fields to the same facility. Liquefaction could take place either at an onshore LNG facility or in a floating facility (fLNG). The most probable locations for an onshore facility in Israel are Eilat, Ashdod and Ashkelon. Building the facility in Eilat would allow the developers to export the LNG to Asia without being dependent on Egypt for the Suez Canal passage. Constructing such a facility is a huge project, and it could create thousands of jobs, but it would also take up significant public space and impose environmental and security risks. The Ministry of Environmental Protection has already voiced its objection to such a project in Eilat since the facility would need to be kept several kilometers away from other civil uses of land, and the current proposal places the facility only 600 meters away from people's houses.

The private developers would prefer to build the LNG facility in Vasilikos, Cyprus. Cyprus is reviewing this option and has allocated land and carried out environmental impact studies and risk assessment studies. The gas could also be liquefied in Akaba, Jordan or in Egypt pending the political situation there. The Israeli National Security Council has voiced its objections to an export facility outside Israel's territory due to concerns of strategic dependence on other countries. The Inter-Ministerial Committee to Examine the Government's Policy Regarding Natural Gas in Israel stated that there is an absolute preference not to use a facility outside Israeli territory or economic waters, and that export from facilities outside the country should be permitted only in the framework of bilateral agreements between countries.

Another option is to liquefy the gas offshore. This idea is tempting for energy companies since it would enable them to circumvent the long authorization process and local objections to an onshore facility and thus accelerate construction. However fLNG is a very new technology which has yet to be tested; the first such facility is being constructed by Royal Dutch Shell and will be completed in a few years. Noble Energy is considering exporting the gas from the Tamar Field using an fLNG terminal and has already signed a memorandum with Daewoo Shipbuilding concerning the construction of the terminal and a letter of intent with Gazprom on selling the LNG.

The development of gas infrastructure depends on the export market available for the region. The two main options are the European and East Asian markets. In Europe, the production of natural gas is diminishing and, according to the International Energy Agency (IEA), the production in the EU27 is expected to decline from a current level of 215 BCM to 100 BCM by 2030. Therefore, the need to import natural gas will rise. However, large parts of the European market are already over-supplied, mostly with gas from Russia. A market may still be able to be developed since some regions are

not receiving enough natural gas, especially in south-eastern Europe, and because Europe may prefer to diversify its energy suppliers.

China uses natural gas for only 4-5% of its primary energy consumption and relies heavily on the Middle East for natural gas imports. There is potential for significant growth in Chinese natural gas imports and for diversification of its gas sources since the country puts emphasis on energy security. Therefore, China would probably like a stake in the new gas discoveries. From the developers' point of view, China is an attractive customer due to its huge market. However, importing the gas in LNG form may be too expensive for China since the gas prices there are often coupled to coal and are relatively low. Furthermore, despite its interests in the region, China may not be willing to sacrifice its relations with Iran to deal with Israel, for geo-political reasons and since Iran exports oil which is more valuable for China than LNG.

Japan and South Korea are willing to pay higher prices for natural gas and are therefore possible customers. Yet, once Australia’s rising export of natural gas is taken into account, along with possible LNG exports from the USA and Canada in the second half of the decade, the Asian markets also seem quite saturated in the future.

Figure 5: Prospective markets for gas in the Levant

There is a realistic possibility that there will be a glut of gas becoming available in the next 5-10 years, as a result, among other reasons, of new discoveries in east Africa and increased shale gas production in North America; this will generally lower natural gas prices. Since the cost of LNG plants is not expected to decline, the construction of LNG may be less cost-effective and in such a case the region may have to rely on pipelines or use the gas mostly for domestic purposes.

To conclude, the countries in the region have more natural gas than they currently need, and gas will most likely be exported either by pipeline or liquefaction, but while Asia seems like a possible target in the short run, it is not yet clear who will be the consumers of the new discoveries in the long run.

Socio-Economic Aspects

***Abstract**: Most domestic demand for natural gas is expected in the power sector which so far has been almost completely dependent on the imports of natural resources. Natural gas will not only lower electricity prices, but will also produce less air pollution and reduce greenhouse gas emissions. In addition, natural gas may be used in the manufacturing industry, the transportation sector (using CNG, methanol or GTL technologies), in the process of producing shale oil and exported. Supporters of exporting gas argue that the new natural gas discoveries satisfy the local demand, that exports are required in order to attract developers and that exporting gas is often more efficient than using it locally. Objectors claim that the supply of natural gas in the local market will create demand, that natural gas should be reserved for at least 50 years and that preference should be given to local use for environmental reasons. The natural gas market will also need to be regulated and taxed. There is significant risk of the formation of monopolies, especially in supplying the local markets, and therefore regulators will need to encourage competition or control prices. One decision that has already been made in Israel is to tax the natural gas profits. The profits will be invested abroad by a new dedicated wealth fund, in order to prevent major changes in the exchange rate which may hurt the competitiveness of the manufacturing industry.*

Once the technical infrastructure is developed, the natural gas can be consumed locally by various economic sectors, it can be used as an input for producing shale oil and it may be exported in order to maximize profits. In Cyprus alone, the gas revenues may amount to 100 billion euros and it is not surprising that the gas discoveries have sparked much hope in that country which is facing a severe financial crisis. The huge benefits of the discovered natural resources will be determined not only by deciding how the natural gas will be used, but also by the distribution of the gas profits between the natural gas developers and the public. The possible uses of natural gas, the profits to be derived from it and the regulation of the natural gas market will be discussed in this section.

Domestic Demand

Gas is expected to be used for three main purposes: electricity, industry and transportation. The market penetration of natural gas in Israel occurred in 2004 and by 2011 Israel consumed approximately 5 BCM of natural gas, 90% for power generation and the rest for industry. According to the Energy and Water Ministry, consumption is expected to rise to 12.5 BCM in 2020, 18 BCM in 2030 and 27.1 BCM in 2040. The accumulated consumption predicted in the years 2012-2040 is 500 BCM.

The most urgent use for natural gas is obviously for production of electricity. In 2003, Israel consumed no natural gas and its power generation relied mostly on coal and, to a lesser extent, on oil. By 2010, 40% of electricity was generated using natural gas. According to the prediction of the Energy Ministry, 60% of electricity will be generated from gas in 2027, and 68% in 2040. Other forecasts predict that by 2020 the share of natural gas in power generation may rise to 70%. The extremely quick transition to natural gas offers significant benefits. The price of natural gas is much lower than that of other fossil fuels and it pollutes less. The transition to gas reduces air pollution which poses serious health concerns in the country.

The developers of the Tamar gas field have already signed a contract with the Israeli Electric Corporation to sell natural gas for 15 years. The agreement drew criticism since it was claimed that the developers used their monopoly status to sell the gas at prices higher than the market price. Eventually the Electricity Authority and the Israeli Antitrust Authority approved the agreement but only after modifying several clauses, claiming the changes will save the Israeli public NIS 1 billion. The Antitrust Authority also intervened in gas agreements with power companies in order to ensure that there would be capacity left in the gas pipeline for future agreements with other customers and suppliers. However, so far, the regulators have not intervened directly

in natural gas prices. In May 2012, the Price Committee recommended subjecting the natural gas prices to oversight and it is not clear if this recommendation will be implemented. Since the developers of the Tamar field will provide the vast majority of natural gas in the coming years, the government will have to continue its oversight of the market using various mechanisms, and ensure that gas is also delivered to small and medium businesses at reasonable prices.

Natural gas usage in the power sector is especially important in Cyprus as an EU member with binding commitments to reduce greenhouse gas emissions. The country also experienced power shortages after the 2011 Evangelos Florakis Naval Base explosion, which reminded Cypriots of the importance of a reliable energy source.

It is expected that over the years natural gas will also be used more widely in the transportation sector and that in 2040 approximately 15% of Israel's natural gas usage will be consumed directly in transportation (in addition to electric cars which will also consume natural gas indirectly). Compressed Natural Gas (CNG), a veteran technology which is already used by millions of cars, mostly in the Asia Pacific and Latin American regions, offers a cheaper, environmentally cleaner and less noisy fuel compared to gasoline. CNG can be used in public transportation; however there is a risk for greater damage in case of a terrorist bombing. Another disadvantage is the heavy costs associated with building the infrastructure to transfer the gas to stations throughout the country.

Another option is to use methanol, a synthetic alcohol fuel which can be produced offshore as a fuel for cars. Currently methanol is used in cars mostly in the Chinese market and is commonly mixed with conventional fuel. Methanol is less energy-intensive and may require refueling the car more often. An advantage of methanol is that it can be produced from various materials including bio-mass and therefore the infrastructure would not depend only on natural gas.

A third option is to convert the gas to liquid fuels, such as gasoline or diesel; the process known as gas to liquid (GTL) has been proven to work on a commercial scale. Recently the largest GTL plant in the world was built in Qatar. The main advantage of GTL is the ability to continue using the same infrastructure for fuel transportation, gas stations and car fleets. Currently the conversion process is still not very efficient but in the future GTL may become widespread.

Israel and Cyprus can take advantage of their small size and serve as worldwide models for shifting their car fleet to natural gas.

Shale Oil

The natural gas may also be used to assist the development of the new oil shale discoveries in the region. Shale oil, produced from oil shale rocks, and heavy oil are generally called unconventional oil since they do not come out of a well naturally under their own pressure. In some cases this oil is not buried deeply and can be found at depths less than 500 meters under the surface.

"The USA has the largest oil [shale] deposit in the world, but the second largest is in Israel and Jordan. These are sister deposits and there are about a trillion barrels of oil between them. Israel alone has over 250 billion barrels of oil, and they are quite producible at prices that are cheaper than the Arctic's very deep water. This is a resource that is today quite economic."
Dr. Harold Vinegar

The Israeli reserves are of high quality. Most of them lie in Israel proper, in the Shfela Basin, the Beer-Sheva Basin and the Hadera Basin. A significant amount also lies in Palestinian territory in the Jenin Basin. Israel has granted oil shale rights to four companies in the Rotem and the Shfela regions, including the Israel Energy Initiative (IEI) company for a pilot project to produce shale oil in the Shfela. IEI is hoping to produce oil commercially by the end of the decade. Jordan has signed memorandums

of understanding with companies for shale oil production and is planning construction of an oil shale power plant. Israel and Jordan are also in early stages of negotiations regarding potential cooperation in oil extraction in order to increase profits.

The demand for oil in the global market is constantly growing due to population and economic growth in developing markets. Limited conventional oil supplies are not able to keep up with demand and thus oil prices have increased. Since oil is still rare in the world, in contrast to coal and natural gas, the prices are not expected to drop. The higher oil prices make the costly extraction process of shale oil worthwhile.

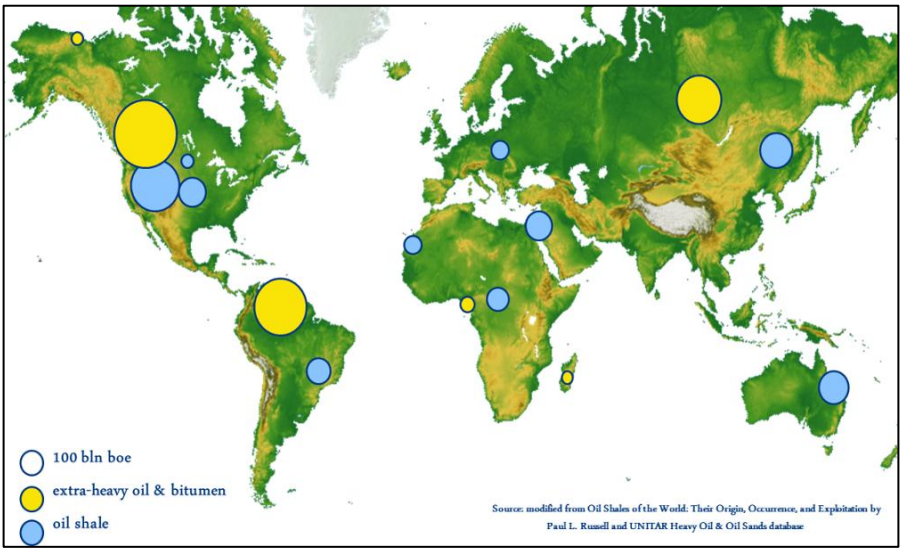

Figure 6: Unconventional oil reserves

Besides the low energy returned on energy invested ratio, one of the main disadvantages associated with shale oil is the environmental damage in terms of waste, water usage, air pollution, CO2 emissions and land use. An environmental improvement may be achieved with the *in situ* conversion process, developed by Shell, which will be used in the IEI pilot. In the process, oil shale is heated in the ground and converted into liquid in horizontal wells instead of mining the shale oil like coal and heating it above ground (the traditional process is being explored in the

Rotem region). In-site conversion will leave the carbon underground and save energy. Theoretically, with extremely efficient heating devices shale oil extraction may even emit slightly lower carbon dioxide emissions than conventional crude oil. However, the technology is still in the development phase.

While in-site conversion holds environmental benefits, it also carries risks such as groundwater pollution. Israeli environmental organizations have objected to the production of shale oil claiming that the process is energy intensive, constitutes a risk to public health, and harms the local environment. They explain that the technology has not yet been tested commercially and that thorough environmental reviews are needed before authorizing production. Environmentalists fear that it will be impossible to stop the commercial project after pilot production begins.

Israel is fortunate since natural gas is necessary to heat the shale oil trapped in shale stones. The gas arriving in Ashdod will be very close to the Shfela Basin and Israel has the basic infrastructure to transport and export oil, although a new refinery may be needed for shale oil. Oil shale extraction using natural gas is economical due to the price difference between oil and natural gas which is expected to continue growing in the coming years. Having both oil shale and natural gas could make Israeli industry self-sufficient and help the country become energy independent.

Export Share

Exporting natural gas does not only pose a technical challenge but also has social and economic aspects. In order to formulate national policies for the development of the natural gas sector in Israel, the Natural Gas Inter-Ministerial Committee (the Tzemach committee) was created in October 2011. The main goals of the committee were ensuring energy security, ensuring domestic competition, leveraging the environmental benefits of gas use and maximizing Israel's economic and political

benefits. The committee submitted its recommendations to the government in August 2012.

One of the important decisions in national gas policy is the share of gas which should be devoted solely to domestic use. While the committee estimated that Israel's total gas reserves will amount to 1480 BCM, it based its recommendations on available natural gas. The available gas includes reserves and contingent resources (800 BCM) and prospective resources with 90% probability (150 BCM). The committee recommends that 450 BCM of the total 950 BCM available be dedicated to the domestic market for 25 years and that gas export be limited to 500 BCM, 53% of the available natural gas. The committee also recommends that lease owners of gas fields will have to supply the domestic market with a significant share of their reserves. The reserved share will be proportional to the size of the gas fields and will reach 50% for the biggest gas fields (lease owners will be able to trade their export quotas).

The recommendations attempted to prioritize the needs of the local market while permitting natural gas exports. Since the potential supply of natural gas greatly exceeds the local market demand, it is claimed that exporting gas is required to attract major international gas companies and develop more gas fields; this will also result in increased competition. Furthermore, supporters of exporting the natural gas argued that it is often more efficient to export the gas rather than use it locally in order to subsidize a new industry. The recommendations stirred controversy and the Ministry of Environmental Protection's representative in the committee objected to the recommendations in a minority opinion. The Ministry claimed that it was too early to allocate gas for export when there is still great uncertainty regarding the available natural gas reserves. In addition, those objecting to the recommendations claimed that the local market might use much more natural gas than the projections of the committee, especially in the transportation sector, and that natural gas use has

important environmental benefits for the country. Furthermore, critics claimed that the committee's foresight of only 25 years was too short for the energy market and that supply should have been ensured for 50 years. Environmentalists argued that the committee risks returning the energy market to expensive and polluting oil and coal resources after 25 years.

Distributing the Profits

There is no doubt that the gas discoveries will create huge profits, but it is not clear who should enjoy these profits - the private developers who took risks and found the treasure or the citizens of the country to whom the natural resources belong. Will the resources be used to narrow the gaps in society or to reward a small group of developers?

The Committee to Examine the Fiscal Policy on Oil and Gas Resources in Israel headed by Prof. Eytan Sheshinski (the Sheshinski Committee) was created to discuss the distribution of oil and gas profits and draw up recommendations regarding the taxation of the natural resources. Since Israel did not have significant natural resources previously, the tax on oil and gas exploitation was very low and needed to be updated after the new discoveries. The committee's work stirred a vocal public debate for and against the increased taxes, which even included a personal smear campaign against Sheshinski. The committee released its final recommendations in January 2011 and those were approved by the Knesset in March 2012. In August 2012, the Israeli Supreme Court rejected several appeals against the Sheshinski Law.

According to the Sheshinski Law, the rate of royalties on natural resources will remain 12.5%. In addition to the royalties, a new progressive tax on profits was imposed. The tax will equal 20% to 50% of the natural gas profits according to the amount of excess profits. The companies will start paying this tax only once they have recovered 150% of their expenses. As a result of the new taxes, the State's share of

the overall net profits will increase from one third to 52%-62%. The committee claims that the recommendations will allow the country's citizens to enjoy its resources, while allowing the developers to receive reasonable returns on their investments and providing incentives for entrepreneurs to develop the gas fields.

After it has been decided that the country will enjoy a substantial share of the gas profits, a second issue is how to use these profits. Should the profits be used at once or saved for the long term? Should the profits be used to lower the country's debt, for new infrastructure projects, for environmental protection, or perhaps for security needs?

One of the considerations in the use of the profits is to avoid the "Dutch Disease". The term describes situations in which a large natural resource discovery strengthens the country's currency and thus increases the cost of export products, making the manufacturing industry less competitive. The "disease" may infect employment since the capital-intensive gas industry does not employ many local workers compared to the manufacturing industry. The term was named after the decline of the Dutch manufacturing industry following the discovery of natural gas in that country. In addition, decision makers will need to take into account the limited timeframe of natural gas profits.

"There is huge potential to improve or to increase the economic welfare of the countries and the people in our region, but we know that the use of natural resources for improved welfare is effective for a limited time. Therefore, it is most advisable to use these resources in order to allocate them to infrastructure and targets that will have a long-term impact, for example education."
Dr. Roby Nathanson

The Israel government has decided to set up a natural gas wealth fund for natural gas profits. The planned fund is expected to begin receiving money starting in 2018 and its total revenue is predicted to reach 80 billion dollars by 2040. It will invest the gas profits outside the country, to prevent major changes in the exchange rate. Approximately 3-4% of the fund's assets will be spent on designated domestic projects according to the governments' decisions (probably education and security). The government may be able to borrow more money from the fund in cases of emergencies such as an earthquake or war and the Knesset could decide to turn such loans into grants. The proposal has not yet been authorized and many Knesset Members claim that the fund's objectives should be defined by law and that the profits should not be used for security purposes, while the Ministry of Environmental Protection demands that the profits also be used to oversee gas production and prepare the country for the possibility of an environmental disaster. It is crucial for the country to be very transparent in handling the fund, to ensure that the current and future generations benefit from the gas profits.

Cyprus is also considering the option of setting up a wealth fund for its gas profits. The government has asked for the assistance of the IMF in studying the topic and is learning from the successful experience in Norway. However, in addition to all the challenges faced by Israel, the Republic of Cyprus will also have to decide how to fairly share the gas profits with Northern Cyprus. So far Cyprus has not been willing to negotiate such an agreement.

Geo-Political Considerations

***Abstract**: Any major energy discovery has important strategic implications. The most obvious impact is that the countries in the region will lower their dependency on foreign energy. However, the countries' energy security will still be threatened since the new discoveries do not offer diversity of energy sources (at least until oil is discovered). Any country relying on the new natural gas fields will be prone to power disruptions in the case of technical accidents, natural disasters or terrorist attacks. Therefore, precautionary measures may be needed in case gas does not flow. The discoveries will also impact the relations with countries outside the region. Europe has witnessed growing dependence on Russia for natural gas and has an interest in diversifying its energy sources. While it is likely that the EU would welcome natural gas produced in Cyprus, natural gas agreements with Israel may depend on political concerns. Russia obviously has less of an interest in new competition in the natural gas market. The country hopes that most of the gas will be consumed within the region. If the gas is exported, Russia prefers the exports to target the Asian market and would like to take part of the project.*

The discovery of natural gas is of such importance that its implications will not be confined only to the socio-economic realm. The new natural resources are already having strategic implications for the region, and such implications are expected to grow in significance.

> "This enormous undersea bonanza constitutes a strategic game-changer; it will lead to a complete change in the geo-strategic situation in the region. Now it is up to the region's stakeholders and their international partners, to turn this energy bonanza into a blessing or into a curse. It can serve as a trigger for more tension and conflict or as an engine of economic and social development and can be turned into a chance for peaceful regional cooperation."
>
> Dr. Ralf Hexel

This section will present the strategic context affecting the region, the importance of energy security and the position of two central players with influence on the region: Europe and Russia.

Background - Strategic Context

The strategic implications of the gas discoveries are connected to the region's strategic context.

> "The strategic context in the Eastern Mediterranean is characterized by uncertainty, changes in the regional balance of power and tremendous political instability. The important developments over the past few years include: the Arab Spring, the Iran nuclear crisis, the new strategic role of Turkey, the Syrian conflict, Turkish-Israeli tensions, the Euro crisis, European inward-lookingness, Russian posturing, global resource security concerns and perhaps the United States disengaging."
>
> Dr. Rem Korteweg

The **Arab spring** has already led to deterioration in the Israel-Egypt relations, and eventually terminated the supply of Egyptian gas to Israel. This emphasized the risk of energy dependence and accelerated the development of Israel's gas fields. In addition, it is still not clear how the relations between the EU, the United States and Egypt will evolve under the new regime. Therefore, Turkey has become a much more important ally for Western countries to retain their influence in the Arab world and serve as a model for how Arab revolutions could develop. As a result, the US and EU are much less willing to put pressure on Turkey especially since Turkey also has an important role in managing the Syrian conflict. The new strategic role of Turkey and its impressive economic growth can explain the growing assertiveness in its foreign policy.

The **Euro crisis** threatens Greece and is a great cause of concern for Cyprus which is strongly connected to the Greek economy. Cyprus received a three-year loan from Russia in 2011 at a below-market interest rate. In mid-2012, Cyprus asked for a second loan from Russia for 5 billion Euros and sought a bailout from the troika (the

European Commission, the European Central Bank and the IMF). If Greece leaves the EU, there is a real risk that Cyprus will default due to Cypriot bank exposure to Greece and this will most probably delay gas developments.

The Euro crisis not only creates a difficult financial framework for the tremendous investments needed to develop the gas fields, it also leads to **Europe's inward focus**. European policy makers are not currently concerned with the gas in the Levant which may flow to Europe in several years, but are bothered by the fact that there is a real possibility of the Euro collapsing in the near future.

When decision makers in Europe deal with the region, the **Syrian conflict** is a much more urgent and important concern. The continued escalation of the conflict is already impacting Lebanon and may delay gas exploration plans. A possibility also exists that the Syrian regime may try to drag Israel into the conflict.

Similarly, with the withdrawal from Iraq, the **United States is disengaging** gradually from the Middle East and directing its foreign policy focus towards the Asian-Pacific region. The United States is still involved in the Eastern Mediterranean, and has economic interests with Noble Energy as the dominant gas company in the area, but the actors in the region probably should not expect the US to be the significant power broker the region has grown accustomed to.

Energy Security

The new oil discoveries could provide energy security to countries that were, until recently, almost completely energy dependent on outside sources. The dependence on energy is especially a strategic threat for Israel due to the OPEC monopoly. The gas bonanza, not only in Israel but all over the world, may break OPEC's cartel. Currently the world is dependent on oil mostly because there is no suitable substitute for it in the transportation sector and most of the conventional proven reserves are in the Middle

East with a very significant share controlled by OPEC countries. However, the dependence on oil may change with the use of gas in the transportation sector. The Alternative Fuel Administration was created in Israel's Prime Minister's Office in order to promote the Oil-Free Initiative with the ultimate goal of "*reducing the world's dependence on oil in transportation*". One of the main targets is increasing the use of natural gas in the Israeli transportation sector which can serve as a model for other countries.

Still, the natural gas discoveries create new energy security risks. One of the basic principles of energy security is diversification of energy sources, and depending solely on natural gas goes against this principle. As Israel, Cyprus, and other neighboring countries rely more and more on natural gas they will also be prone to threats to the gas infrastructure.

"For the next 5 years, Israel is going to be solely dependent on 1 field, 5 producing wells, 1 pipeline, 1 treatment facility offshore, 1 entry pipeline and treatment facility in the civil terminal in Ashdod, for producing 70 percent of the electricity, supplying the industry, and for other uses."
Dr. Amit Mor

The gas flow could be threatened by technical hitches; almost every platform or field encounters technical problems at some point or another. A second possible threat is earthquakes, which are likely in the region. In any of these scenarios, Israel or Cyprus may experience a blackout if the national power system relies mostly on gas.

A third threat, and perhaps most significant, is military. The Aphrodite field could easily be damaged by Turkey, the Mary B and Noa fields are within the range of Hamas missiles, and the Leviathan and Tamar fields are within Hezbollah's missile range. Israel also fears missiles from Syria and terrorist acts which could sabotage

production, for example by crashing a plane on a drilling facility. The Israeli army is aware that it will have to protect the production and exploration fields. Drones have already been used to protect the northern fields and the navy will devote a substantial share of the operations of its missile boats to patrolling and defending the fields.

Countries will have to take precautionary measures in case gas does not flow. These measures may include dual fuel power stations, emergency gas reserves and the ability to import LNG at need. In addition, they will need to develop more than one field, pipeline and treatment facility in order to not rely completely on one component for gas delivery.

Europe and the Region

In 1975, a European directive forbade the use of natural gas in electricity generation in order to reserve the gas for premium applications and, for 16 years, it was not permissible to build new capacities for power plants burning gas. However, the restriction was canceled in 1991 and since then the share of gas in Europe's electricity production has grown significantly. Today gas represents 25% of Europe's energy demand. Europe's energy requirements are expected to grow, and the demand for natural gas will grow at a higher rate than the general demand for energy due to its price and environmental advantages.

"The demand for energy will continue to increase in the world because the population is growing and since more people want to increase their quality of life. It is impossible to have growth without energy… In Europe we are developing more and more the use of gas. Thanks to gas shale, tight gas and coal bed methane, the world has more than 250 years of gas reserves. We had 70 years of reserves only a few years ago. Gas is the energy of the 21st century."
Prof. Samuele Furfari

Europe is currently dependent on Russian gas for 35-40% of its energy production. While European officials claim that they trust their partner and do not have fundamental disagreements with Russia, Russia has shut the gas off before, due to disputes with Ukraine on natural gas prices. The most severe disruptions were in January 2006 and January 2009. In each case the gas flow to Europe through the Ukraine was stopped or reduced. The effect was felt immediately in several European countries. The gas disputes have political roots and the Russia-Ukraine divide may also be a factor explaining the shut-offs. Russia's assertive foreign policy may make it risky for the EU to rely on it so heavily for natural gas.

In order to ensure that future disputes will not affect Europe, the new North Stream gas pipeline, the longest subsea pipeline in the world, has been opened between Russia and Northern Germany through the Gulf of Finland. The planned South Stream pipeline will connect Russia to Bulgaria through the Black Sea. The pipelines connect Russia directly to the Union without passing through transit countries; consequently they also increase the dependence on Russia as the main energy supplier of the EU.

One option considered for the diversification of Europe's natural gas sources is constructing the Nabucco pipeline between Turkey and Austria. The pipeline which could bring gas from Azerbaijan to Vienna is considered a competitor of the South Stream. However, the project has run into difficulties and it is still not clear if it will be built. Another diversifying option is to buy gas from the Eastern Mediterranean in order to ensure future energy security. Therefore, the EU is starting to view the Levant Basin as a strategic energy area of interest and would like to ensure that at least some of the natural gas in the region will reach Europe.

In 2010 the EU had 21 countries supplying gas to the Union, but only nine of the countries were member states, and therefore the EU will be especially inclined to buy gas from Cyprus. Since the EU is increasing its regasification capacity, it is also

reasonable that Europe will buy LNG from the region if a pipeline from Cyprus to Greece is not constructed. Already 25% of the natural gas arriving in the EU is in liquid form.

The relations with Israel are, unsurprisingly, more complex. The delimitation agreement between Israel and Cyprus also defined in essence a maritime border between Israel and the EU. The gas discoveries may strengthen EU-Israeli relations. However, they may also be used as a political tool. Currently the ties between the actors are often strained because of political concerns. For example, the Agreement on Conformity Assessment and Acceptance of Industrial Products (ACAA) with Israel is blocked in the European Parliament for political reasons. The agreement would reduce technical trade barriers between the parties and facilitate trade, especially in pharmaceutical products. Just as European parties are using the agreement to pressure Israel on the settlements and on the Gaza Flotilla, natural gas agreements may also be used in the future for political purposes.

In addition to natural gas, the EU has an interest in mediating tensions created by the gas discoveries. The cooperation between the EU and NATO has faltered because of disagreements over Cyprus, and the relations between the organizations could get worst with growing tensions between Turkey and Cyprus over the gas finds. A third interest for the EU in the region is freedom of transport and commerce. The EU would like to make sure that maritime territorial disputes in the region do not disrupt the region's normal transport and commerce, which are considered a crucial cornerstone of prosperity. The EU can promote its interests in the region by providing knowledge and using its experience in market regulation and environmental risks to assist the regions' countries in developing their own energy markets.

One arena for cooperation between the EU and the region is the Energy Committee in the Union for the Mediterranean (UfM). The Union was created in 2008 in the

framework of the Barcelona process and it includes the EU states and countries from the Mediterranean basin. Though the UfM suffers from political disputes, especially the Arab-Israeli conflict, the Energy Committee has been able to continue working professionally and will remain a prominent committee in the UfM. One of the committee's flagship projects, the Mediterranean Solar Plan launched in 2008, aims to assist countries in the south shore of the Mediterranean to develop power generation capacities based on renewable energies. Most of the electricity produced should be used locally while the rest will be exported to the EU. This project can be seen as competing with the natural gas fields, and developers of the fields will have to be cost-effective in order to penetrate the EU market. Nevertheless, renewable energy projects and natural gas can also be seen as complementing each other. Natural gas has the advantage of providing rather predictable constant energy and is not dependent on the specific weather, while renewable energy is not only environmentally important but also provides crucial diversification and thus increases energy security.

Russia's Perspective

In order to understand Russia's energy interests, it is essential to analyze Gazprom's actions. Gazprom is the largest gas extraction company in the world and is majority-owned by the Russian government. While less than a third of Gazprom's gas is sold to Turkey and Europe, 51% of gas revenues arrive from those regions, and Gazprom will not be interested in competition from Eastern Mediterranean gas. Therefore, it is swiftly promoting the North Stream and South Stream pipelines, in an attempt to tie consumers to long-term "take-or-pay" gas contracts. In such contracts the consumers agree to buy a certain volume of natural gas and pay a fine if they do not take the full amount. Consumers who have invested in the pipelines and signed such agreements will be less inclined to promote new large projects from other regions. The contracts are tied to oil prices which are not expected to decline significantly in the future and thus promise stable revenue.

To make sure their energy interests are promoted in the region, Gazprom has recently signed a letter of intent with the developers of the Tamar field to buy almost all the LNG offtake. So far Russia has not been a big LNG exporter and has relied on Gazprom's possession of the largest gas transport system in the world. Putin called for an LNG strategy in March 2012 targeted at the Asian market. The agreement with Gazprom is non-binding, but it has been reported that Gazprom representatives are eager to close the deal in the near future.

"Russia wants to control the flow of gas, the price and the almost total exclusivity that they have for supplying Europe."
Dr. Oded Eran

Russia has several spheres of influence in the region to ensure future energy interests. First of all, Russia has strong economic ties with Cyprus. In addition to the loan given to Cyprus with fewer conditions than European bailouts, there is a large share of mutual direct investment between the countries. Russia has also supported Cyprus in its dispute with Turkey. Moreover, Russia exerts a cultural influence in the region due to the many Russian expatriates in Cyprus and in Israel, and key political figure in Cyprus and Israel studied or grew up in Russia.

"Russia seems to have decided: if you cannot beat them, join them. They want to make sure that the gas does not reach the European market. It would be best for Russia if Israel would use the gas in its own market and export it to Asia, and if the gas is exported to Asia it would be best if Russia takes part in it."
Jonas Grätz

Some commenters have argued that Russia might even be willing to accept Israel's position regarding Iran's nuclear program as part of a bargain which would include

Russia's participation in developing the natural gas reserves. However, such a scenario does not seem likely since Russia has geo-political interests in Iran and the country would not be willing to make security policy concessions for energy. Furthermore, the rise in oil prices caused by the tension with Iran may actually favor the Russian economy.

Casus Belli or Regional Cooperation?

***Abstract**: The new natural gas discoveries have strategic implications within the Eastern Mediterranean region. Turkey is worried that the delimitation of the Mediterranean and increased cooperation between Israel, Cyprus and Greece will diminish its role in the region. Turkey responded aggressively to Cyprus drilling, it signed an energy agreement with the Turkish Republic of Northern Cyprus and then sent an exploration ship, accompanied by frigates and jets, to an area overlapping with license blocks issued by the Republic of Cyprus. It seems as if the negative impacts on the Israel-Lebanon relations are less dangerous at this point. While both sides have used warmongering rhetoric, the military threats have reverted to legal arguments, and the dispute has been limited to a specific territory. Still Israel fears that the disputed territory will serve as an excuse for an attack by the Hezbollah, similarly to the Shabaa farms, while Lebanon worriers that Israel is trying to create a new maritime buffer between the countries similarly to the security zone. The gas discoveries also had positive strategic impacts in the region and the best example is the Cyprus-Israel relations. Both countries have an interest to cooperate in developing the gas fields, in order to attract investors, maximize profits and share infrastructure. Unsurprisingly, Israel-Turkey relations, which have already deteriorated after the Turkish flotilla to Gaza, may grow worse due to the close cooperation between Israel and Cyprus.*

After focusing on the geo-strategic context and the implication for the major powers outside the region, it is important to analyze how the new discoveries will affect the relations between the countries within the region.

Negative Influences

History teaches us that tensions can rise in areas that have been relatively quiet once resources are discovered. Such has been the case in the South China Sea where warmongering rhetoric is characterizing the dispute between China, Vietnam, the Philippines and Malaysia over the Paracel and Spratly islands and their surrounding waters, which are presumed to hold large natural gas and oil reserves. The Middle East is already characterized by increased securitization of various issues and the zero-sum thinking regarding natural resources may raise tensions further. The

discoveries have had negative influence on the Cyprus-Turkey, Israel-Lebanon and Israel-Turkey relations. Each of these cases will be discussed in this section.

Cyprus – Turkey

Turkey has become an important regional power over the past decade. Some of Turkey's power stems from its position as a geo-political hub, and the country would like to become an energy hub. Delimitation of the Mediterranean and increased cooperation between Israel, Cyprus and Greece will diminish Turkey's role in the region. In addition, Turkey's energy needs are rapidly increasing and it wants to ensure for itself some of the natural resources found in the region. That is why the unilateral Greek Cypriots' actions are so problematic in Turkish eyes – not only because they do not represent the entire Cyprus Island and violate the Turkish Cypriots' rights, but also because they threaten Turkey's regional power and may prevent energy resources from reaching the country.

As mentioned in the first section, there are territorial disputes between Turkey and the Republic of Cyprus and between the Greek and Turkish Cypriots. So far, the sides have not come to the table to negotiate the disputes. The Republic of Cyprus is benefiting from the new status quo and attempting to explore and produce hydrocarbons as quickly as possible. For Greek Cypriots the gas discovery may even be used as leverage in future negotiations. Conversely, Turkey has issued calls to stop all activities until a settlement is reached or to bring the two sides to negotiations exclusively on this issue with the participation of the UN.

Turkey has been using threats to promote its interest and stop Cyprus. It stated that it will not allow drilling in the disputed area and that it will even respond to drilling in the Aphrodite field. Since then Turkey has carried out provocative maritime military exercises in the region. Furthermore, Turkey declared that it will not allow international companies which operate under the Republic of Cyprus's disputed

concession blocks to take part in future Turkish energy projects. Turkey also sent frigates and jets to accompany the Piri Reis Turkish ship exploring an area which overlaps with Block 12 where the Aphrodite gas field is located. The area was licensed by the Turkish Republic of Northern Cyprus and Turkey has argued that it will support the Turkish Cypriots under its responsibility as the guarantor power of the TRNC.

The relations between the countries also affect Turkey-EU relations. In July 2012, Cyprus took over the presidency of the EU for six months. Turkey has already announced that during this time it will partly freeze relations with the EU and boycott the presidency.

So far Turkey has not been able to stop Cyprus's exploration and drilling activities but further escalations may drive international companies away, prevent Cyprus from producing natural gas, and deny any possibility of Turkey entering the EU. Despite the growing tensions, a solution seems possible and perhaps the economic crisis can be used as an opportunity to resolve the disputes. Turkey needs new natural gas imports and could be a profitable consumer and a gateway to the European market for Cyprus. It is possible to envisage a future deal trading Turkish water for Cyprus gas. However, resolving the energy disputes probably depends on finding a more comprehensive agreement between the Turkish and Greek Cypriots.

"For Turkey, the Greek Cypriots have been pursuing an adventurous policy in the Eastern Mediterranean through concluding maritime delimitation agreements and conducting oil/gas exploration and issuing permits for such activities around the island. This is against international agreements and goodwill and prevents the negotiation process from achieving a fair and acceptable solution on the Cyprus issue. For Turkey, the Greek Cypriots' Administration does not represent, de jure or de facto, the Turkish Cypriots and Cyprus as a whole. As such, the Administration is not entitled to negotiate and conclude international

agreements as well as adopt laws regarding the exploitation of natural resources on behalf of the entire island."
Prof. Mitat Çelikpala

Turkey – Israel

The relations between Turkey and Israel have deteriorated since the Turkish flotilla to Gaza in 2010. Supposedly, since Turkey does not object to Israel's right to hydrocarbons within its EEZ, the relations between the countries should not have been further harmed by the natural gas discoveries. However, the Aphrodite field which Turkey threatens to exploit also lies partly in Israeli territory. Turkey does not have a claim on Israel's territory but a unitization agreement between Israel and Cyprus could provide a future point of dispute with Turkey. It is clear that Turkey is not pleased with the growing Israeli-Cypriot cooperation.

The relations between Israel and Turkey are characterized by increased securitization. When Turkey froze military cooperation with Israeli following the Gaza flotilla, it also withdrew from the joint Reliant Mermaid military drill with Israel and the United States. In 2012, the exercise was held for the first time without Turkey. In addition, since 2011 a new yearly military exercise named Noble Dina was held between Israel, the United States and Greece, Turkey's traditional rival. Reportedly the exercise included simulating the protection of offshore gas platforms. Furthermore, it has been reported that Israeli warplanes flew over Cypriot airspace towards the Piri Reis Turkish exploration ship.

Overall, the gas findings provide another dimension to the already frayed relations between Israel and Turkey. In the long run, cooperation remains in both countries' strategic interests for promoting their mutual priorities in the Middle East.

Cooperation over Syria may serve as an opportunity to mend the relations between the countries.

Israel – Lebanon

While the legal aspects of the Israel-Lebanon border dispute have already been described, this dispute also has geo-political implications. When the Leviathan field was first discovered, there were claims that some of the field was in Lebanon's territory. Since then, both countries have demarcated their maritime border, and the disputed area was precisely defined and does not include any discovered gas fields.

Still, Israel fears that Hezbollah will turn the disputed area into a new maritime version of the Shebaa Farms, a small territory currently held by Israel and claimed by Lebanon. The territory has been used by Hezbollah to justify continued attacks against Israel. On the other hand, Lebanon does not want the territory to become a new security buffer between the countries, similar to the security zone Israel occupied in South Lebanon in 1985-2000.

Both sides have been using warmongering rhetoric. For example, Israel's Minister of Infrastructure threatened that Israel will not hesitate to use force to protect its gas fields, and Lebanon's Ministry of Energy and Water Resources claimed that country is determined to defend Lebanon's natural resources and that if Israel violates this law, it will pay the price. Naim Qassem, second in command in the Hezbollah, stated that Lebanon will not allow others to enjoy the country's gas, and will continue monitoring the situation in order to recover its rights, without regard to the price. It is reasonable to expect that if Syria and Lebanon do not find offshore natural gas fields as they hope, the frustration over the resources in Israeli waters will further increase tensions over the disputed territory.

There is always a risk that strong rhetoric will develop into unexpected military action, and therefore it is crucial for the sides to find a way to mitigate tensions.

Fortunately, the military threats have reverted to legal arguments, which were presented unilaterally to the UN. It is to be hoped that the sides will be able to act rationally and solve the dispute by an interim agreement, by turning to the UN for a solution, or perhaps through a joint development project. At the very least, it is desirable for the dispute to remain limited to a specific territory and only to the legal domain.

Positive Influence

The President of the European Commission arrived in Cyprus in 2012 and proposed following the Coal and Steel Community as a model for political reconciliation through resource sharing. Such a model may be unrealistic today in the region but concrete proposals to increase energy cooperation are on the table.

"I believe our assistance - the academicians, the technocrats, and the lawyers - can contribute towards the politicians breaching the strategic problems. We have to trigger initiatives which can change the politicians and help the people of the region. The prudent handling of the new hydrocarbon discoveries can guarantee the geo-political stability and safety of the region."
Solon Kassinis

Israel – Cyprus

The bilateral relations most improved by the natural gas discoveries are definitely the Israel-Cyprus relations. In February 2011, Prime Minister Netanyahu met with the Cypriot President Christofias as part of the first official visit to Cyprus by an Israeli Prime Minister. The leaders discussed a new pipeline connecting the gas fields of the countries, export options and cooperating to secure the gas fields.

The countries signed energy and security agreements including a search and rescue deal. The deal allows Israel to use Cypriot air space and territorial waters for search and rescue missions. In addition, it has been reported that Israel is discussing the

option of using Cypriot airfields, providing strategic depth necessary in case of escalation with Iran, and that Israel has given Cyprus security guarantees and might take part in protecting the Cypriot gas fields. Cyprus is also investigating the option of importing natural gas from Israel until its fields are developed.

Another project which can further improve the ties between the countries is a proposed undersea electric power line between Israel, Cyprus and Greece. Currently Israel and Cyprus are isolated in terms of electricity and do not export or import almost any power. The plan will increase the countries' energy security and also fits in with the EU's plan of having an interconnected energy market. The 2000-megawatt cable, termed the EuroAsia InterConnector may be the longest undersea power cable in the world. An initial agreement to advance the power line was signed in March 2012.

The emerging cooperation between the countries stems from two main reasons. Strategically, in the wake of the tensions with Turkey, Israel is attempting to promote a regional bloc of cooperation which will include Cyprus, Greece, Bulgaria and Russia. Economically, the countries understand that only by cooperation will they be able to maximize their natural gas profits. Investments in a lengthy pipeline or an expensive LNG facility are cost-effective if the infrastructure serves the gas fields in both countries. Therefore, while the countries still have disputes, mostly Cyprus's support for the Palestinian cause and Israeli projects in Northern Cyprus, it seems likely that the relations between them will continue to improve.

Summary

It is clear that natural gas in the region is a complex multi-dimensional issue. The gas discoveries have economic, political, legal and social implications. Legally, maritime borders have to be defined and agreed upon. UNCLOS provides a framework for the delimitation process but there are still disputes over the countries' borders in the region. After a territory has been claimed, infrastructure needs to be set up to develop the fields. Development of a pipeline and facilities often leads to environmental, technical and financial objections. Finally when the infrastructure is created, the gas can be used domestically for electricity, transportation, manufacturing or to develop other fossil fuels. It may also be exported to other countries, probably to the European or East Asian markets. The revenue from the taxes on the gas profits can be invested in the regions' long-term goals and used for social purposes. The entire process depends on the strategic context: the regions' relations with other main actors in the natural gas market and relations between the countries within the region.

While each issue was discussed separately in order to maintain a coherent structure, throughout the sections it is apparent that the legal, political and economic aspects are all inter-linked. For example, Turkey's legal objections to the maritime claims of Cyprus stem from the political situation; Israel will probably not export the natural gas through Turkey, despite the economic advantage that would accrue, due to the tension between the countries; and Israel and Cyprus are strategically cooperating since there are economic incentives for mutual development of their gas fields.

The tensions between the countries could exacerbate the disputes over the gas fields, but the region would be much better off if these disputes could be resolved through legal channels and without resorting to the use of force. Tools, such as unitization, can facilitate increased cooperation between countries, and turn the gas fields into a positive sum game. The economic need to attract foreign investors may also serve as

an incentive for further cooperation. It is even possible to envision future regional cooperation to deal with energy.

"The European Community for Coal and Steel might be a model for the region. Maybe future generations will look at maps on the Eastern Mediterranean and see a regional organization coming up and energy might be the starting point."
Prof. Stephan Stetter

To sum up, energy can be a blessing or a curse: while oil has often caused misery, for example, in Angola, it has also created huge benefits for countries such as Norway. In the treaty of Versailles in 1919 energy was a penalty imposed on Germany and the treaty had dire consequences. However, in the European Coal and Steel Community formed in 1951, energy was used as instrument of peace with great success.

Whether natural gas becomes a blessing or a curse depends entirely on the countries of the region and their ability to solve legal and political disputes.

List of Speakers

"Natural Gas in the Eastern Mediterranean" Conference

Prof. Mitat Çelikpala	Kadir Has University, Istanbul
Dr. Oded Eran	Institute for National Security Studies
Prof. Samuele Furfari	Free University of Brussels, Advisor to the European Commission's Directorate General on Energy
Mr. Jonas Grätz	Center for Security Studies (CSS), ETH Zürich
Dr. Ralf Hexel	Director, Friedrich-Ebert-Stiftung, Israel
Mr. Sagi Karni	Head of the Foreign Affairs Division, Ministry of Energy and Water Resources, Israel
Mr. Solon Kassinis	Director of Energy Services, Ministry of Commerce, Industry, and Tourism, Cyprus
Prof. Daniel Erasmus Khan	Universität der Bundeswehr München
Dr. Rem Korteweg	The Hague Center for Strategic Studies, Netherlands
Mr. Christoph Moosbauer	IEPN Coordinator
Dr. Amit Mor	CEO, Eco Energy Financial and Strategic Consulting
Dr. Roby Nathanson	Director, Macro Center for Political Economics

Dr. Antonyia Parvanova	Member of the European Parliament, Vice-Chairperson of the Committee on Energy, Environment and Water to the Parliamentary Assembly of the Union for the Mediterranean
Prof. Stephan Stetter	Universität der Bundeswehr München, IEPN Coordinator
Prof. Harry Tzimitras	Bilgi University, Istanbul
Mr. Alexander Varshavsky	Petroleum Commissioner, Ministry of Energy and Water Resources, Israel
Adv. Sarah Weiss-Ma'udi	Deputy Director of the International Law Department Ministry of Foreign Affairs, Israel
Maj. Gen. (ret.) Amos Yadlin	Director, Institute for National Security Studies

גז טבעי במזרח הים התיכון

עילה למלחמה או הזדמנות לשיתוף פעולה אזורי?

עורכים:

ד"ר רובי נתנזון

רועי לוי

תל אביב

נובמבר 2012

תקציר

בסוף המאה ה-20 החלו להתגלות שדות גז משמעותיים במזרח הים התיכון, מול אשקלון. השדות החדשים לא הכילו כמות גז משמעותית מבחינה בינלאומית, אבל הדגימו את פוטנציאל הגז הטבעי באזור. כעשור מאוחר יותר, בשנת 2009 התגלה מאגר תמר שעל פי הערכות מכיל כ-275 BCM גז טבעי, התגלית הגדולה בעולם באותה שנה (לצורך השוואה ישראל צרכה בשנת 2011 כ- 5 BCM של גז טבעי). ב-2010 התגלה מאגר לוויתן (480 BCM), אחד המאגרים הגדולים ביותר שהתגלו בעשור האחרון. במקביל נמצאו מספר שדות גז קטנים יותר, ובקפריסין התגלה מאגר אפרודיטה המכיל על פי הערכות כ-200 BCM. סקר של המכון הגיאולוגי האמריקאי מעריך שאגן הים התיכון, הכולל את המים הטריטוריאליים של ישראל, עזה, לבנון, סוריה וקפריסין מכיל כ- 3,450 BCM של גז טבעי ו-1.7 מיליארד חביות נפט. לכן, אין זה מפתיע שגם לבנון מקדמת בימים אלו תוכניות לחיפוש גז טבעי, וקידוחי האקספלורציה נמשכים בישראל וקפריסין.

התגליות החדשות צפויות לשנות לא רק את שוק האנרגיה, אלא יכולות להוות גורם בעל השפעות גיאו-אסטרטגיות על האזור עם ממדים משפטיים, כלכליים וביטחוניים. מדינות שעד כה היו תלויות בייבוא דלקים יהפכו להיות יותר עצמאיות אנרגטית ואף ייצאו כנראה גז. כמו כן, תגליות הגז יכולות להניב שיתוף פעולה בין מדינות שעד כה שרר ביניהן מתח, אך עלולות גם להוביל להסלמה של סכסוכים טריטוריאליים.

לכן קרן פרידריך אברט, מרכז מאקרו לכלכלה מדינית והמכון למחקרי ביטחון לאומי ערכו ב-5 ליולי 2012 כנס בינלאומי במסגרת ה- Israeli European Policy Network (IEPN) המתמקד בהיבטים משפטיים ואסטרטגים של תגליות הגז. ספר זה מסכם את המסקנות העיקריות

שעלו הכנס, אך אינו מייצגת בהכרח את עמדות המשתתפים. בחלק זה מופיע תקציר בעברית ואת המסמך המלא ניתן לקרוא באנגלית.

היבטים משפטיים ומחלוקות על גבולות

האמנה הבינלאומית החשובה ביותר בתחום המים היא "אמנת האומות המאוחדות לחוק הים" (UNCLOS) שנחתמה ב-1982. האמנה נכנסת לתוקף ב-1994 וקובעת שהמים הטריטוריאליים נמשכים 12 מיילים ימיים מעבר לחוף (22 ק"מ), ושבשטח זה למדינה אותה סמכות חוקית כמו ביבשה. אחד החידושים החשובים של האמנה הוא הגדרת שטח המים הכלכליים הבלעדיים של המדינה (EEZ) הנמשך 200 מיילים ימיים מהחוף. שטח זה אינו מוגדר תחת תחום השיפוט של המדינה, אך יש לה זכויות בלעדיות לחיפוש, ניצול, שימור וניהול המשאבים הטבעיים במים הכלכליים. מעבד לכך, על פי האמנה למדינות יש זכויות בלעדית לניצול משאבים במדף היבשתי שלהן, המוגדר כמדרון בשולי היבשת הנמשך אל מתחת לפני הים בשיפוע מתון.

כמובן שבשטח צפוף כמו המזרח התיכון השטחיים הכלכליים של מדינות חופפים. במקרים אלו האמנה קובעת שעל המדינות להגיע להסכם או הסדר זמני לקביעת הגבול הימי ביניהן. אם המדינות אינן מצליחות להגיע להסכם הן נקראות לפנות לאמצעיים להסדרת מחלוקות בינלאומיות כגון בית המשפט הבינלאומי לצדק (ICJ) שהצליח בעבר להתמודד בהצלחה עם סכסוכי גבולות ימיים, למשל בין קמרון לניגריה. אפשרויות נוספות כוללות בוררות בינלאומית או פנייה לטריבונל שהוקם מכוח UNCLOS. בקביעת גבולות ימיים בית המשפט נשען על ניתוח מתמטי של קו האמצע בין המדינות, תוך התחשבות בנסיבות מיוחדות שיכולות לכלול תנאים גיאוגרפיים יוצאי דופן, הסכמים היסטוריים, שיקולים של הוגנות ועוד.

למרות שהאמנה לחוק הים אושררה על ידי מעל 160 מדינות, ישראל, תורכיה וסוריה לא חתמו על האמנה. אף על פי כן, רוב המומחים מסכימים שהאמנה, ובעיקר הסעיפים הנוגעים לתיחום הים, הפכה להיות חלק מהנוהג הבינלאומי ולכן חלה גם על מדינות אשר אינן חתומות עליה.

קפריסין מובילה את המאמצים לחתימה על הסכמים דו-צדדיים באזור במסגרת האמנה. ב-2003 קפריסין ומצרים חתמו על הסכם לקביעת הגבול הימי ביניהם אשר נכנס לתוקף באותה שנה, הסכם עם לבנון נחתם ב-2007, אך מעולם לא אושרר בפרלמנט הלבנוני, והסכם בין קפריסין לישראל נחתם ב-2010 (ונכנס לתוקף ב-2011). ההסכמים נחוצים לקפריסין כדי למשוך חברות בינלאומיות שיזכו לבהירות וודאות בהשקעותיהם בפיתוח הגז הטבעי באזור. כמו כן, קפריסין מובילה מאמצים לחתימה על הסכמי איחוד פעולות במסגרת הפקת הגז (unitization), המדינה חתמה על הסכם מסגרת עם מצרים ונמצאת במשא ומתן מתקדם עם ישראל. הסכמי איחוד פעולות נחוצים כאשר שדות גז חוצים את הגבול הימי בין מדינות. במקרים אלו המדינות חותמות על הסכם לפיתוח משותף של השדה ומתחלקות ברווחים על פי שיעור הגז הטבעי בשטח של כל מדינה. באופן מפתיע, מדינות הצליחו להגיע להסכמים על פיתוח משותף אפילו כאשר לא הוגדר קו גבול ברור ביניהן. הסכמים אלו המכונים 'joint development projects' יכולים באופן תיאורטי לסייע באזור, אך עדיין דורשים מידה רבה של שיתוף פעולה ולכן פחות רלוונטיים לסכסוך הגבול בין ישראל ולבנון.

ב-2010 הגישה לבנון לאו"ם קואורדינטות הקובעות חד-צדדית את גבולות המים הכלכליים של המדינה. ישראל חלקה על ההגדרה והגישה גרסה שלה לקו הגבול ביולי 2011. לבנון טוענת שהקו שלה נקבע על פי הנקודה שנמצאת במרחק שווה מישראל, קפריסין ולבנון ושהקו הישראלי מפר הסכמים היסטוריים בין המדינות. ישראל, מצידה, טוענת

שעמדתה עולה בקנה אחד עם הפרקטיקה המשפטית/קרטוגראפית המקובלת ומצביעה על כך שהסכמים ההיסטוריים לא הגדירו את הגבול הימי או את הגבול בין החופים של המדינות, ושלבנון כבר הסכימה לקו הגבול שהוגדר על ידי ישראל בהסכם שהיא חתמה (אך לא אישררה) עם קפריסין. שטח המחלוקת, כ-850 קמ"ר, הוא קטן יחסית ואף מדינה לא מבצעת שם קידוחים בשלב זה, אך זהו שטח בעל פוטנציאל משמעותי למשאבים טבעיים.

מחלוקת משפטית מורכבת יותר נסובה על קו הגבול בין קפריסין ותורכיה. ראשית, קפריסין למעשה מחולקת לרפובליקה התורכית של צפון קפריסין שמוכרת על ידי תורכיה בלבד, ולרפובליקת קפריסין בדרום שיתר העולם מכיר בה כנציגה היחידה של כל האי. תורכיה טוענת שלתושבי צפון קפריסין זכות זהה ליהנות מתגליות הנפט של קפריסין, בעוד שהקפריסאים היוונים מבטיחים להתחלק ברווחי הנפט, אך עד כה נמנעו ממשא ומתן בנושא. צפון קפריסין חתמה על הסכם עם תורכיה להגדרת קו הגבול הימי ביניהן, ובעקבות ההסכם העניקה לחברת הנפט התורכית רישיון לחיפוש גז במים הכלכליים שלה. שטחי החיפוש חופפים בחלקם לשטחי רישיון שכבר הוגדרו על ידי רפובליקת קפריסין. מעבר למחלוקות בתוך האי, קיימת גם מחלוקת טריטוריאלית בין תורכיה עצמה לרפובליקת קפריסין. המחלוקת נובעת מכך שתורכיה נשענת על משטר המדף הימי, והמדף הימי המוגדר על ידי תורכיה חופף בחלקו לשטחים שרפובליקת קפריסין טוענת שיש לה בלעדיות כלכלית עליהם.

לסיכום, אמנות בינלאומיות, נוהג משפטי והסכמים דו-צדדיים מספקים מסגרת לקביעת גבולות ימיים בין מדינות, אולם לעיתים קרובות המחלוקת סביב תיחום המרחב הימי הן בעיקר פוליטיות ולא משפטיות מטבען. כל עוד מדינות יבחרו להימנע משיתוף פעולה, הן ימצאו לרוב הצדקות משפטיות לפעולות שלהן. לכן בעוד שהמסגרת המשפטית

מועילה במקרים מסוימים (למשל בין ישראל לקפריסין), היא לא הצליחה ליישב סכסוכים ימיים אחרים (ישראל-לבנון, קפריסין-תורכיה).

פיתוח הגז הטבעי

מעבר לצורך לקבוע גבולות ימיים, פיתוח מאגרי הגז מציב אתגרים פיננסיים, טכניים וסביבתיים. המודעות לסכנה הסביבתית בקידוחים ימיים גדלה מאז דליפת הנפט במפרץ מקסיקו ב-2010. האיחוד האירופי מקדם תהליך של קביעת סטנדרטיים סביבתיים חדשים שיחולו בכל מדינות האיחוד ובכל האתרים בהן פועלות חברות אירופאיות. תוכניות כאלו ישפיעו כמובן על התגליות של קפריסין. ישראל מתכננת במקביל חוקים סביבתיים מעודכנים יותר שיחולו בשטח הכלכלי של המדינה.

לאחר פיתוח המאגר, אחד האתגרים בהעברת הגז הטבעי לשטח המדינה הוא התנגדות תושבים מקומיים להקמת מתקן גז ליד בתיהם. בצינור שמחבר את שדות הגז הישראליים לאשדוד אין קיבולת מספיקה לביקוש של המשק לגז, והממשלה החליטה לחבר את המאגרים החדשים לתחנת קליטה בחוף דור באמצעות צינור צפוני. אולם התנגדות של תושבים וארגוני סביבה עצרה את הקמת המתקן וכתוצאה חיבור מאגר תמר עוכב בכמעט שנה. התנגדות מקומית למתקני גז נובעת מהסכנה הבטיחותית, מדאגה שהמתקנים יתמרצו הקמה של תעשייה מזהמת באזור ומחשש שהמתקן יהפוך ליעד לטילים במקרה של מלחמה. בעוד שרשויות מקומיות דורשות שהמתקנים יוקמו לחלוטין בים, המדינה טוענת שאין תקדים לכך ושמתקן ימי אינו אמין מספיק.

העברת הגז לייצוא מורכבת אף יותר. ראשית, מדינות יצטרכו להחליט אם להעביר את הגז דרך צינור או בצורה נוזלית (LNG). ניתן לחבר את הגז באמצעות צינור לתורכיה, שם הביקוש לגז טבעי גבוה והמדינה

יכולה להעביר את הגז הלאה בתשתית קיימת לאירופה. אולם ייתכן שהיחסים בין תורכיה לישראל וקפריסין אינם מספיק טובים כדי לאפשר הסכם שכזה. אפשרות נוספת היא חיבור הגז בצינור ליוון ומשם חיבורו לאירופה. צינור בין ישראל ליוון יהיה יקר מאד בשל אורך ועומק הצינור, וגם כיוון שביוון אין תשתית של גז טבעי. למרות מחיר הפרויקט הוא יכול להיות משתלם אם קפריסין וישראל ישתפו פעולה והיתכנות הפרויקט נבחנת בימים אלו.

כדי להעביר את הגז באמצעות ספינות יהיה צורך להקים מתקן LNG להנזלת הגז. היתרון בהקמת מתקן בתוך ישראל הוא יצירת מקומות עבודה והגברת הביטחון האנרגטי, אך החיסרון הוא שמתקן כזה יזכה להתנגדויות שיעכבו את בנייתו. המשרד להגנת הסביבה כבר הביע התנגדות להקמת מתקן באילת (שיאפשר העברת גז למזרח אסיה מבלי לשלם על המעבר בתעלת סואץ) בשל הסכנה הבטיחותית לתושבים באזור. ניתן גם להקים את המתקן בקפריסין, שעורכת בדיקה סביבתית ובטיחותית עבור מתקן פוטנציאלי וכבר הקצתה שטח לכך, ותיאורטית גם ירדן ומצרים יכולות להקים מתקן בשטחן, אם כי אפשרות כזו תלויה במצב הגיאו-פוליטי באזור. אפשרות אחרונה היא הקמת מתקן צף בים (fLNG). בחלופה כזו ניתן לקצר תהליכים ולאפשר הקמה מהירה של המתקן, אך הטכנולוגיה להקמת מתקן צף עדיין לא נבדקה בפועל. בינתיים בעלי הזכויות של מאגר תמר חתמו על מסמך הבנות לבחינת האפשרות לבניית מתקן צף.

נראה שהשווקים העיקריים אליהם יש פוטנציאל ייצוא הם אירופה ומזרח אסיה. אירופה צפויה להגדיל את הביקוש לגז טבעי בעשורים הקרובים, אם כי חלקים נרחבים ביבשת חתמו על חוזים ארוכי טווח עם גזפרום. במזרח אסיה, סין עושה שימוש מועט בגז טבעי ולא צפויה להסכים לשלם מחיר גבוה עבורו, בעוד שיפן ודרום קוריאה הן לקוחות

פוטנציאליים, אך ייתכן שהשוק יהיה מוצף בגז טבעי מאוסטרליה, ארה"ב וקנדה.

היבטים כלכליים-חברתיים

במקביל לפיתוח שדות הגז הטבעי, החלו כבר דיונים על ההשלכות הכלכליות והחברתיות של הגילויים. הן בקפריסין והן בישראל השימוש הדחוף ביותר הוא לייצור חשמל. התבססות על גז טבעי תאפשר הפקת חשמל באופן אמין, זול ונקי יותר ביחס לדלקים מאובנים אחרים. מעבר לענף החשמל, צפוי שימוש בגז טבעי בתעשייה וכן בענף התחבורה. כיום ענף התחבורה ברוב העולם תלוי כמעט לחלוטין בנפט שמחירו עולה לאורך השנים. אולם, ניתן לתדלק מכוניות עם גז טבעי במספר טכנולוגיות הכוללות גז טבעי דחוס (CNG), מתנול והפיכת הגז הטבע לדלק נוזלי (GTL). ישראל וקפריסין יכולות לנצל את שטחן הקטן ולשמש כמודל עולמי למעבר לצי מכוניות ירוק.

אפשרות נוספת היא שימוש בגז הטבעי כדי להפיק נפט מפצלי שמן. על פי הערכות, בישראל ובירדן מצוי אחד המאגרים הגדולים בעולם של פצלי שמן. לרוב הפקת נפט מפצלים מזהמת מאד, אך שיטת הפקה חדשה שפותחה לאחרונה מאפשרת לחמם את הפצלים מתחת לקרע ולשאוב את הנפט בטכנולוגיית *in situ*. הטכנולוגיה עדיין בשלבי פיתוח ופרויקט המתבסס על טכנולוגיה זו נמצא כעת בשלב הפיילוט באזור השפלה. הגז הטבעי משמש לחימום פצלי השמן ותהליך ההפקה משתלם כלכלית כיוון שהנפט יקר בהרבה מגז טבעי.

גילוי הגז הטבעי מציב גם דילמות חברתיות, בעיקר לגבי הקצאת גז לייצוא וחלוקת רווחי הגז. בישראל ועדת צמח המליצה להגביל את הייצוא ל-500 BCM, 53% מהגז הטבעי הזמין על פי הערכות הועדה. נטען שכיוון שגילוי הגז הנוכחיים מספיקים לאספקת הביקוש של המדינה,

הייצוא הכרחי כדי למשוך משקיעים לפיתוח מאגרי גז חדשים. ההמלצה עוררה מחלוקת רבה, והמשרד להגנת הסביבה ומתנגדים אחרים טענו שבשלב זה מקודם מדי להעריך כמה גז זמין יש למדינה, שהביקוש בענף התחבורה יכול להיות גבוה מהערכות הועדה ושעדיף לשמור עתודות גז ל-50 שנה ולא ל-25 שנה בלבד.

באשר לרווחי הגז, ועדת ששינסקי המליצה לא לשנות את התמלוגים על גז, אך להטיל מס חדש בגובה 20-50% מרווחי הגז. אחת הסכנות שהגילויים מציבים לכלכלה היא 'המחלה ההולנדית'. הכינוי ניתן לתופעה בה גילוי משאב טבעי מחזק את המטבע המקומי וכך מגדיל את מחיר הייצוא והופך את התעשייה המקומית לתחרותית פחות. לכן, הוחלט להקים קרן הון ריבונית ישראלית לניהול רווחי הגז. הקרן תשקיע את הכספים מחוץ למדינה ומדי שנה המדינה תעשה שימוש ב--3 4% מרווחי הקרן לפרויקטים מקומיים ייעודיים. ההצעה עוד לא אושרה ונותרו מחלוקות על אופי השימוש בכספי הקרן. קפריסין שוקלת הקמת קרן דומה ולומדת את המודל הנורווגי לניהול הרווחים של משאבים טבעיים.

שיקולים גאו-אסטרטגיים

אחד היתרונות המרכזיים בגילוי הגז הוא עצמאות אנרגטית. מדינות מזרח הים התיכון תלויות בייבוא דלקים מאובנים לצורך הפקת אנרגיה והגז הטבעי יפחית תלות זו שמהווה סיכון גיאו-פוליטי. אולם, הגז הטבעי עלול ליצור איום חדש על הביטחון האנרגטי. כאשר מדינות תלויות בצורה בולטת במקור אנרגיה אחד, הן חשופות יותר לפגיעה באותו מקור. למשל, כיום לישראל יש צינור אחד ותחנת קליטה אחת להפקת שיעור ניכר מהחשמל במדינה. לכן תאונה, אסון טבע או פיגוע טרור יכולים להשבית את החשמל. מדינות האזור יצטרכו להכין אמצעי

ביטוח למקרים אלו, בין אם באמצעות הקמת תחנות כוח דו-דלקיות, שמירה על מאגרי חרום, גיוון מקורות האנרגיה או הקמת מתקני גיבוי כחלק מתשתית הגז הטבעי.

הגז הטבעי ישפיע על היחסים של מדינות האזור עם אירופה ורוסיה. אירופה כיום תלויה ברוסיה לייבוא גז טבעי, וכיוון שהרוסים הדגימו בעבר שהם לא חוששים לסגור את ברז הגז (כפי שקרה ב-2006 ו-2009 לאחר מחלוקות כספיות עם אוקראינה), סביר שמדינות אירופה ישאפו לגוון את מקורות האנרגיה שלהן. אינטרס שני של אירופה באזור הוא גישור על סכסוכים שיכולים להיווצר בעקבות גילוי הגז, וכן שמירה על הים כאזור חופשי לתעבורה וסחר. אירופה יכולה לסייע למדינות האזור על ידי אספקת ידע בתחום הרגולציה של שוק הגז וכן שיתוף פעולה וסיוע לפרויקטים בתחום האנרגיה במדינות הים התיכון. אולם בהחלט קיימת סבירות ששיתוף הפעולה יוגבל בגלל שיקולים פוליטיים, כפי שקרה בעבר כאשר הפרלמנט האירופי חסם הסכם עם ישראל בשל ההתנחלויות והמשט לעזה.

רוסיה היא שחקן מפתח בכל הקשר לגז טבעי ואין לה אינטרס לתחרות בשוק האירופאי. לרוסיה מספר מנופים להשפעה בקפריסין החל מהלוואות (הנחוצות לקפריסין אשר ניצבת לא רחוק מחידלון פירעון), דרך השקעות הדדיות וכלה בתמיכה פוליטית בקפריסין במחלוקות שלה עם תורכיה. כמו כן לרוסיה קשר תרבותי הן עם קפריסין והן עם ישראל. המטרה של רוסיה היא להפחית את ייצוא הגז מהאזור, ובמקרה של ייצוא לוודא שהגז יועבר למזרח אסיה ושרוסיה תיקח בכך חלק. לכן גזפרום כבר חתמה על מזכר הבנות עם בעלי הזכויות של תמר.

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ההיסטוריה מוכיחה שמתחים יכולים לעלות לאחר גילויים של משאבים טבעיים, כך קרה למשל בדרום ים סין במחלוקות הטריטוריאליות בין סין, וייטנאם, הפיליפינים ומלזיה. עד כה התמקדנו בהיבטים המשפטיים במחלוקות בין הצדדים, בחלק זה נתמקד בממד האסטרטגי.

לסכסוך בין קפריסין לתורכיה השפעה רבה על שוק הגז באזור. תורכיה חוששת שתיחום הים התיכון ושיתוף פעולה בין ישראל, קפריסין ויוון יפחיתו את מעמדה וימנעו ממנה משאבים הנחוצים לצמיחה המהירה שלה. לכן המדינה קוראת לקפריסין להפסיק את כל קידוחי הגז עד שיושג פתרון כללי לסכסוך בין הקפריסאים היוונים לקפריסאים התורכים, או לנהל משא ומתן ממוקד על נושא המשאבים הטבעיים בחסות האו"ם. לקפריסין, לעומת זאת, הגילויים החדשים מציבים הזדמנות, והיא מעדיפה לשמר את הסטטוס קוו החדש. תורכיה נעזרת באיומים לקידום האינטרסים שלה, היא הבהירה שלא תאפשר קידוחים בשטחיים שנויים במחלוקת ואף איימה להגיב לקידוח בשדה אפרודיטה. יתרה מכך, המדינה מקדמת תרגילים צבאים באזור והיא הבהירה שלא תשתף פעולה עם חברות אנרגיה בינלאומיות שפועלות תחת הרישיון הקפריסאי. תורכיה אף שלחה מטוסי קרב לליווי ספינת אקספלורציה בדרכה לחקור שטחים שהוקצו על ידי צפון קפריסין וחופפים בחלקם לשטחים הימיים עליהם רפובליקת קפריסין טוענת בעלות. עד כה תורכיה לא הצליחה לעצור את הקידוחים של קפריסין, אך בהחלט ייתכן שהסלמה נוספת תרחיק מאזור חברות בינלאומיות ותוביל לקרע בין האיחוד האירופי לתורכיה.

גם יחסי תורכיה-ישראל התדרדרו בשנים האחרונות, בעיקר בעקבות המשט לעזה, ומאז שיתוף הפעולה הצבאי בין המדינות נפסק. נראה שתגליות הגז רק החריפו את המשבר. אמנם תורכיה אינה טוענת לבעלות על התגליות בשטח הכלכלי של ישראל, אך היא לא רואה בעין

יפה את שיתוף הפעולה של ישראל וקפריסין, ואת הברית המסתמנת בין שתי המדינות ליוון.

לבסוף, תגליות הגז סיפקו תחום מחלוקת נוסף למתיחות בין ישראל ללבנון. שרים בשני הצדדים נעזרו ברטוריקה לוחמנית והבהירו שמדינתם תעשה כל מה שנחוץ כדי להגן על המשאבים. ישראל חוששת שהשטח במחלוקת יהפוך לגרסה הימית של חוות שבעא, ויספק תירוץ מתמיד לפעולות תוקפניות של חיזבאללה. לבנון, מצידה, חוששת שישראל יוצרת למעשה רצועת ביטחון ימית חדשה בשטחה. תמיד קיימת סכנה שרטוריקה מאיימת תתפתח לכדי פעולה צבאית לא צפויה, ולכן מיתון ההצהרות של המנהיגים ותיחום המחלוקת לשטח מוגדר וספציפי מהווים התפתחות חיובית.

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הדוגמא הטובה ביותר לשיתוף פעולה פורה בעקבות תגליות הגז היא יחסי ישראל-קפריסין. בפברואר 2011 ביקרה לראשונה משלחת רשמית של ראש ממשלת ישראל בקפריסין. במסגרת הביקור נחתם הסכם לשיתוף פעולה בתחום הגז. המנהיגים דנו בחיבור צינור גז בין המאגרים של המדינות, באפשרויות לפיתוח משותף ובשיתוף פעולה באבטחת הגז. כמו כן, דווח שעלתה אפשרות שישראל תעשה שימוש בשטח הטריטוריאלי של קפריסין ותגן על מאגרי הגז שלה. המדינות גם מקדמות פרויקטים אזורים גדולים יותר ודנות באפשרות לחבר כבל חשמלי בין ישראל, קפריסין ויוון. שיתוף הפעולה הגובר בין המדינות נובע מהמתח של שתיהן עם טורקיה וכן מההבנה שרק באמצעות שיתוף פעולה ניתן יהיה למקסם את רווחי הגז.

לסיכום, לגילוי הגז הטבעי השלכות כלכליות, חברתיות, משפטיות, פוליטיות ואסטרטגיות השזורות זו בזו. התגליות יכולות להחריף את הסטטוס קוו של מתיחות בין מדינות האזור, או דווקא לעודד שיתוף פעולה, בדיוק כפי שקהילת הנפט והפחם האירופית שהוקמה ב-1951 הפכה בסופו של דבר לאיחוד האירופי. ההשפעה הסופית של תגליות הגז תלויה בחזון של מקבלי ההחלטות וביכולתם לפתור סכסוכים טריטוריאליים.

גז טבעי במזרח הים התיכון: עילה למלחמה או הזדמנות לשיתוף פעולה אזורי?

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